

RECREATION

Headwaters Region



Connecticut River Management Plan



2008

RECREATION

Headwaters Subcommittee

adopted April 9, 2008

Cover image: The Connecticut River, looking downstream from Stratford, New Hampshire and Brunswick, Vermont

Connecticut River Joint Commissions
PO Box 1182
Charlestown, New Hampshire 03603
603-826-4800 ~ www.crjc.org

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PREFACE

A Citizen-based Plan for the Connecticut River

The Headwaters region’s plan is a blueprint for stewardship of the Connecticut River – for communities, landowners, visitors, businesses, and agencies on both shores. Gathering together to create this plan for the Headwaters segment of the river were representatives from the towns of Pittsburg, Stewartstown, Colebrook, Columbia, Stratford, and Northumberland, New Hampshire and Canaan, Bloomfield, Brunswick, and Maidstone, Vermont.

The strength of the Headwaters Subcommittee’s planning process lies in the diversity of its membership. These citizens, as directed by RSA 483, represent local business, local government, agriculture, recreation, conservation, and riverfront landowners. All of the recommendations of the Headwaters Subcommittee’s plan represent the consensus of this diverse group of citizens.

Origin of the Connecticut River Management Plan

The Connecticut River Joint Commissions (CRJC) mobilized hundreds of valley residents and local officials to join them in nominating the Connecticut River into the New Hampshire Rivers Management and Protection Program in 1991-2. The New Hampshire Legislature subsequently designated the river for state protection under RSA 483, which authorized CRJC to develop a river corridor management plan. CRJC sought support from the Vermont Legislature as well, so citizens from both states could engage in planning for their shared river.

With backing from both legislatures, CRJC contacted select boards or city councils from the 53 New Hampshire and Vermont riverfront communities and asked them to nominate representatives to serve on five bi-state local river subcommittees. This partnership between local town representatives and the state commissions for the Connecticut River enabled CRJC to publish the first edition of the *Connecticut River Corridor Management Plan* in 1997, after five years of work by the Commissions and the five bi-state local river subcommittees. Since this planning process began in 1993, nearly 200 citizens have thus participated in the subcommittees’ work. A summary of progress on the plan’s recommendations for recreation appears in Appendix B.

A New Recreation Plan

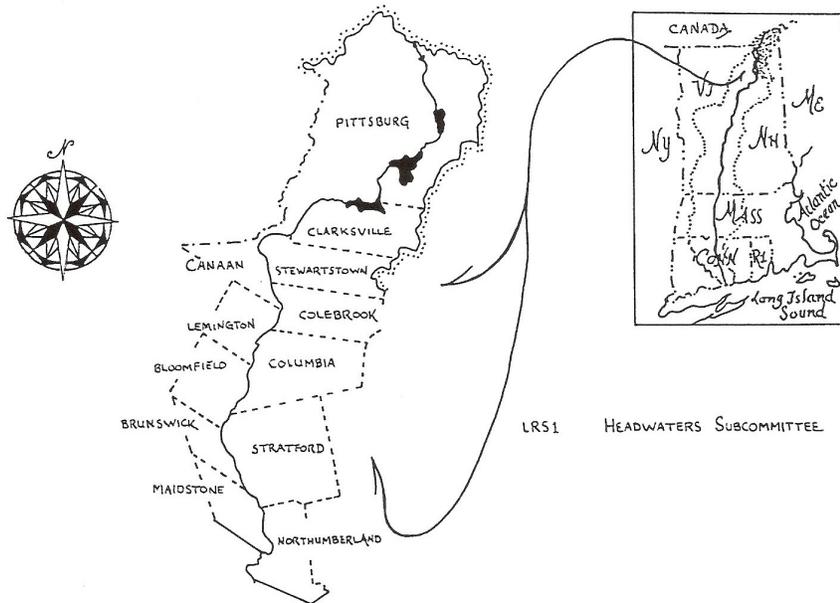
Increasing attention to public recreation in the region, including protection of thousands of acres in the Connecticut Lakes Headwaters and the Nulhegan River basin and the development of the Northern Forest Canoe Trail, prompted CRJC to ask the local river subcommittees to update and expand the 1997 Recreation chapter of the *Connecticut River Corridor Management Plan*. The Subcommittees have explored new topics, especially in land-based-recreation, in an attempt to portray and address the full range of recreation issues in the region.

Plan Process

The Headwaters Subcommittee met at the Columbia Town Hall throughout 2004 and 2005 to develop the new recreation chapter for this section of the river. CRJC's Conservation Director, who manages the five subcommittees' communications with each other, CRJC, and state agencies and organizations, transcribed the subcommittee's discussions to construct drafts of the plan, which the members revised and approved. Final updates were included before the plan was approved in 2008.

Scope of the plan

The Subcommittee has concentrated its planning upon the 80 miles of the Connecticut River from Fourth Connecticut Lake in Pittsburg through Maidstone and Northumberland. Recommendations are presented within each topic area, and are summarized in Appendix A, arranged by responsible party. Some are aimed beyond town boundaries, to guide state and federal agencies. The Subcommittee recognizes that proper care of the river is such a large task and important public duty that help from beyond the watershed is sometimes appropriate and needed from those agencies which share responsibility for the river.



The Connecticut River Joint Commissions

The New Hampshire legislature created the Connecticut River Valley Resource Commission in 1987 to preserve and protect the resources of the valley, to guide growth and development, and to cooperate with Vermont for the benefit of the valley. The Vermont legislature established the Connecticut River Watershed Advisory Commission in the following year. The two commissions banded together as the Connecticut River Joint Commissions (CRJC) in 1989, and are headquartered in Charlestown, New Hampshire. The Commissions are advisory and have no regulatory powers, preferring instead to advocate and ensure public involvement in decisions that affect the river and its valley. CRJC's broad goal is to assure responsible economic development and economically sound environmental protection. The thirty volunteer river commissioners, fifteen appointed by each state, represent the interests of business, agriculture, forestry, conservation, hydro power, recreation, and regional planning agencies on both sides of the river.

Acknowledgments

The following subcommittee members and river commissioners participated in creating this updated recreation plan for the Connecticut River in the Headwaters region:

Pittsburg - Bob Ward, Lisa Savard, Paul Amey, John Amey
Canaan - David Begin, Tom Caron
Stewartstown - Allen Coats
Colebrook - Kevin McKinnon, Larry Rappaport
Lemington - Chuck Patterson
Columbia - Bill Schomburg, Ken Hastings
Bloomfield - Bob Postier, Denault Routhier
Stratford - Gary Paquette
Brunswick - Brendan Whittaker*
Northumberland - Ed Mellett (Chair), Mary Sloat*
Maidstone - Louis Lamoureux, Bruce Hobaugh

**Connecticut River Commissioner*

The strength of this plan lies largely within its creation by a cross-section of local citizenry. From time to time, however, the local subcommittee called upon the expertise of state agencies and others to educate them about issues of particular concern. We would like to express our gratitude to those who lent their time to share information with the Headwaters Subcommittee:

- ◆ Tim Carney and David Chappell, *NH Department of Environmental Services Dam Bureau*
- ◆ Jim Kearns, *Public Service Company of New Hampshire*
- ◆ Mark Maghini, *U.S. Fish & Wildlife Service, Nulhegan Basin Division*
- ◆ Steve Couture, *NH Department of Environmental Services Rivers Coordinator*
- ◆ Nat Tripp, *Connecticut River Commissioner*

We are particularly grateful to the town of Columbia for providing meeting space.

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NH Department of Environmental Services

National Oceanographic and Atmospheric Administration

RECREATION ON AND ALONG THE CONNECTICUT RIVER AND LAKES

There are few places more appealing for recreation than the headwaters of the Connecticut River. Swimming, fishing, boating, camping, hiking, bicycling, snowmobiling, hunting, trapping, and wildlife-watching are popular with residents and visitors, many of whom come to see for themselves the source of this legendary river. Here, one can observe bald eagles and loons, fish for wild brook trout, capture moose on camera, or follow the tracks of bear, bobcat, or pine marten. Free-flowing waters and rapids appeal to paddlers, and the remote Connecticut Lakes have their own magnetism. The river's only designated natural segment draws canoeists and kayakers, and the Northern Forest Canoe Trail follows a section of the Connecticut River here. Bicycling along the river is increasingly popular. Hiking opportunities are growing, most notably the Cohos Trail, fire towers, and mountain summits reward hikers with long views of the river valley below.

In winter, the region's vast network of snowmobile trails has become a destination for riders from throughout the Northeast. The lakes become villages of ice fishermen in winter, while spring and fall make them excellent for waterfowl-watching during bird migration.

The Headwaters region's dramatic scenery is dominated by the river threading through the forested slopes surrounding the Connecticut Lakes in the north to the Percy Peaks in the south. Overlaid is the region's visible history, including the covered bridges that still protect some river crossings. Long before national designation of the Connecticut River Byway in 2005, valley people have enjoyed driving along the river for the pleasure of the view. Byway visitor centers in Colebrook and Lancaster are now introducing residents and visitors to the natural and cultural heritage of New Hampshire's Great North Woods and Vermont's Northeast Kingdom.

The Connecticut River Headwaters region has a long and honored history as a working landscape of industrial forest land and family farms. Farming remains a primary way of making a living in the region, and views of farmland contribute to the region's appeal for recreation.

It is increasingly clear that safeguarding the recreational value of the Connecticut River and its tributaries supports both "quality of life" and an important aspect of local economic health. In 2003 the State of New Hampshire invested in the largest land protection project in its history, protecting 171,500 acres here at the headwaters of its largest river. Six years earlier, the State of Vermont and the US Fish and Wildlife Service's Conte Refuge conserved 132,000 acres of forested acreage in the Nulhegan River and Paul Stream basins and at West Mountain. A key goal of each state was to defend the tradition of public access for recreation in this especially wild and beautiful country. Private conservation lands, such as The Nature Conservancy's Vickie Bunnell Preserve, also offer foot trails and valley views to the public.

The region's economy depends increasingly upon visiting recreationists who are drawn by the natural beauty of the Headwaters region, creating a strong need for good stewardship of private lands and the essential ingredients of the area's appeal. This is especially important because the visitor infrastructure typical of state or national parks is largely absent: park rangers and programs, bustling campgrounds and shops, elaborate trailheads and large parking areas, and the associated environmental disturbance these can bring.

Economic Value of Recreation - Guides, outfitters, and sporting camps have been a fixture of the Headwaters' economy and culture since the Industrial Revolution drove "sports" north of the notches to escape crowded and smoky cities. These businesses are still thriving, along with merchants, campgrounds, and other businesses that derive income from both local and visiting recreationists who come to enjoy the Connecticut River and Lakes.

A number of recent studies confirm the economic value of the Headwaters region's woods, waters, and wildlife for recreation. Wildlife-related recreation, including observing and photographing wildlife, fishing, and hunting, contributes dollars spent on trip-related expenses, equipment purchases, licenses, contributions, land ownership and leasing, guide services, and other items. Americans spent \$122.3 billion on fishing, hunting, and especially wildlife-watching in 2006, equal to one percent of the Gross Domestic Product. In that year, 61 percent of Vermonters and 51 percent of New Hampshire residents participated in wildlife-associated recreation. (1) The Vermont Data Tourism Center has found that outdoor recreation visitors spend nearly a third more than the average visitor when they come.(2)

Many more people spend money and time on wildlife-watching than on fishing or hunting. In 2006, 14 percent of Vermonters and 12 percent of New Hampshire residents went fishing, 11 percent of Vermonters and 5 percent of New Hampshire residents went hunting, and a remarkable 55 percent of Vermonters and 46 percent of New Hampshire residents spent time watching, feeding, and/ or photographing wildlife. Vermont ranks second highest in the nation (after Maine) in the percentage of the population that spends time watching wildlife, and New Hampshire fourth highest. (1) It stands to reason that a good portion of this activity, and the related economic benefit, occurred in the North Country and Northeast Kingdom, home to some of the two states' richest wildlife habitat and best angling.

A 2007 study in New Hampshire (3) found that about \$379 million in total sales is generated by those who are fishing, boating or swimming in New Hampshire fresh waters, or about 26% of all summer spending in the state. Fishing, boating and swimming have about the same economic impact as snowmobiling, downhill skiing, cross-country skiing, and ice-fishing combined. Interviews with users of eight public boat ramps in the Great North Woods area, including at Second Connecticut Lake and both ramps at Lake Francis in Pittsburg and Big Diamond Pond in Stewartstown, found that 61% of anglers, boaters and swimmers say they would decrease their intended visits to the Great North Woods if water clarity and purity grew poor(er). For the purpose of this study, "water clarity and purity" include milfoil or other invasives, mercury, and algae. Of those who would decrease their intended visits, 22% would leave the state and 11% would leave the region. Approximately 27% would go to some unspecified location in New Hampshire, and 40% would remain in the region. Those recreationists who would leave the state because of declining water clarity and purity would create a loss of 7% – or about 73,000 visitor days.

The study found that overall, surface water recreation in the 14 towns in New Hampshire's Great North Woods tourism region generates over 400 jobs, over \$9 million in personal income and more than \$26 million in business sales, totaling about 7% of the recreational revenue generated by anglers, boaters and swimmers in New Hampshire. A perceived decline in water clarity and purity in the Great North Woods region would lead to a loss of almost 30 jobs, a loss of about \$650,000 in personal income and a loss of nearly \$2 million in business sales.

An earlier study in 2003 (4) found that boating, fishing, and swimming in New Hampshire's rivers, streams, lakes, and ponds contribute up to \$1.2 billion to the state's economy each year, attracting visitors, generating spending, creating jobs and household income, and boosting tax revenue. Similar figures are not currently available for Vermont. To understand the value of river-related recreation to local communities, North Country Council and the National Wildlife Federation conducted a study for the Headwaters and Riverbend Subcommittees in 1996. (5). This survey of businesses that provide goods and services both directly and indirectly related to water-based recreation on the Connecticut River, from Pittsburg to Haverhill, showed that in New Hampshire alone, water-based recreation is at least a \$26 to \$31 million business, creating a minimum of 650 to 750 jobs. Business respondents strongly supported improving fishing opportunities in riverfront towns and supported public investment for fishing, swimming, canoeing, and kayak access, improving water quality, and habitat management. Businesses also called for local and state government help to protect the Connecticut River.

Snowmobiling is also a roaring economic engine in the Headwaters region, with numbers growing annually. A 2004 study (6) found that the total impact of snowmobiler spending on New Hampshire's economy (direct, indirect and induced impacts) was nearly \$1.2 billion during 2002-2003. The average spending per visitor day by snowmobile travel parties was \$66.07 for in-state travel parties and \$88.30 for out-of-state travel parties. The economic impact of snowmobiling in Vermont has grown to \$550 million annually. Vermont's statewide snowmobile trail system has grown from 2,700 miles in 1993 to over 5,000 miles in 2008, and membership in VAST has grown from 18,000 to 35,000 in the same time period. (7)

Aware of the economic value of the region's natural heritage, citizens on both sides of the river formed the Nulhegan Gateway Association in 2002 to coordinate community and economic development that supports the region's environmental stewardship and traditional character. The Association includes Vermont and New Hampshire communities along the northern Connecticut River, and has cooperated with the National Geographic Society to create a geo-tourism map of the Northeast Kingdom that focuses on the natural and cultural assets of the region.

Public pressure on private lands is growing - In the Headwaters region, much public recreation makes use of private land. Public use of private land is a privilege. People in the North Country and Northeast Kingdom have a cherished tradition of sharing their land with others who want to walk, hike, snowmobile, hunt, fish, and ski, with the understanding that the visitor would leave no trace and respect the property as if it were his or her own.

This long-standing northern New England tradition is increasingly threatened. A growing number of property owners complain that some users of their land treat access as a right, not a privilege. Some landowners point to the growing number of visitors who come from regions where this tradition is long lost, and who disregard the rights of and abuse the hospitality of private landowners. The problem is growing as the pace of land development quickens and new homes crowd into what were once woods and fields. Newcomers who are not themselves hunters or snowmobilers may be uncomfortable allowing their land to stay open to the public. Other landowners are understandably frustrated by visiting recreationists who speed on trails, do damage to the land, leave trash, cut fences, or otherwise disrespect them. The end result is that land is posted and trails are blocked, and the region suffers both a diminishing sense of neighborly cooperation and the loss of the recreational opportunities enjoyed by residents and visitors alike.

This issue is especially important on the wild and scenic lands of the Connecticut Lakes Headwaters Working Forest, a model of public-private cooperation. The State of New Hampshire holds a conservation easement on the property that allows some forms of public recreation, but the land is not a state park. It remains privately owned by a timber investment company as a working forest, and visitors must act responsibly when they use these lands. Private landowners may turn down similar projects in the future if public use is seen as a liability.

RECOMMENDATIONS

Safeguarding the tradition of public use and expanding opportunities for public recreation in the future will take work by citizens, the state legislatures and agencies, the federal government, recreational groups and clubs, and private landowners. The Headwaters Subcommittee recommends the following:

- State parks and recreation agencies should work with snowmobile clubs and other recreation groups to seek ways of recognizing and rewarding landowners who keep their land open to the public.
- Snowmobile clubs and other recreation groups should educate their members about the respectful use of private land.
- The NH Department of Resources and Economic Development should take strong steps to educate the public about visitor responsibility regarding respect for private land in the Connecticut Lakes Headwaters Working Forest.
- Visitors, whether from down the road or down the river, should respect private property and ask permission. Close fences, avoid cutting firewood or building campfires, respect “no trespassing” signs, avoid causing erosion, and carry out all garbage and waste.

BOATING

From a quiet paddle on the designated “natural” segment in Stratford/Brunswick/Maidstone (*see next page*) to a morning spent trolling for lake trout on Lake Francis, there are many ways to enjoy boating in the Headwaters region. Kayaking continues to grow in popularity, and more people are planning multi-day paddling trips and seeking spots along the river for camping.

The Headwaters Subcommittee offers recommendations for boating with the intent of protecting the river from erosion and over-use, increasing safety on the river, protecting private landowners from property damage by the recreating public, and protecting the natural appeal of the river and its environment.

More people are using the river for recreation - River use has steadily increased in recent years, although patterns of use have changed little since 1996, when the Subcommittee conducted an aerial study of river recreation and found that the narrowest and most environmentally sensitive parts of the river appeared to be sustaining the most recreation traffic. The stretches from Canaan to Colebrook and from North Stratford/Bloomfield to the Stratford-Maidstone Bridge still seem to be the most frequently used portions of the river. The designated “natural” segment attracts frequent canoe and kayak traffic. Fishing pressure seems heaviest in the 25.5 mile stretch from Canaan to Bloomfield/North Stratford, a well-known cold water fishery. In the 24 miles between Bloomfield/North Stratford and Guildhall/Northumberland, which is characterized by some quick

PSNH STUDY PROGRESS REPORT:

The primary recreational activities observed during the initial study period at the recreational access sites near the Canaan Dam were walking (43 percent), fishing (37 percent), biking (7 percent), sightseeing (6 percent), jogging (4 percent), and playing ball (1 percent). People primarily recreated during the morning period (before 8 a.m.) (36 percent); the month of August received the greatest level of use (25 percent); and the days of the week receiving the greatest level of recreational use were Sunday (23 percent), Wednesday (22 percent), and Saturday (20 percent). Most recreational activity in the area under study occurred near the Route 114 bridge.

water giving way to slow moving meanders with sandy beaches, oxbows are frequently used for camping.

The number of large groups paddling down the river has risen, although litter problems have not followed, because these groups generally demonstrate good stewardship and clean up after themselves.

PSNH Study of Recreation, Land Use and Aesthetics - In 2005-6, Public Service Company of New Hampshire conducted a study of river recreation from Murphy Dam in Pittsburg to Colebrook, as part of the federal re-licensing for its hydro dam at Canaan. The Connecticut River Joint Commissions and the Headwaters Subcommittee have participated as stakeholders in this re-licensing process, and advised on the plans for this and other studies.

Boating Law Enforcement - Throughout the Headwaters segment below Murphy Dam, the Connecticut River is too narrow for legal travel above headway speed by any boat. Yet, motor boats sometimes travel between Colebrook and Canaan above this speed, in areas vulnerable to erosion from boat wakes. Many river users consider that enforcement of boating laws should be increased. Boaters are sometimes unaware of the boat speed law and boater responsibilities. While boaters frequently disregard state boating law, the agency has received few complaints, and has encouraged residents to report problems.

Boater education and safety - Fortunately, New Hampshire has now joined Vermont in requiring boater education. This includes the erosion impacts of boat wakes, how to avoid spreading invasive nuisances such as Eurasian milfoil and Zebra mussel, and respectful use of private land. Posting information about boating laws, invasive species, and respect for private land at access points could help inform visiting boaters. Good stewardship by river users is also important for its continued health and value for recreation.

The northern Connecticut River attracts a growing number of recreationists, including some who may not have the skills to navigate more challenging parts of the river, such as at Lyman Falls. Near accidents at the breached Wyoming Dam in Northumberland revealed a lack of preparedness for water rescue.

State boater education: In New Hampshire, boater education is administered by the Department of Safety. A person under 16 years of age may not legally operate a vessel powered by more than 25 horsepower unless he or she is accompanied by a person 18 years of age or older who has a valid Safe Boater Education Certificate.

In Vermont, the State Police administer boater education. The law requires all boaters over the age of 10 and born after 1974 to take the course to operate a motor boat. Vermont boater education currently does not cover the rules in effect on the Connecticut River.

RECOMMENDATIONS

- NH Marine Patrol should patrol the Headwaters reach of the river more regularly to enforce existing boating laws, to prevent boating conflicts and minimize boat wake-induced riverbank erosion.
- Residents should report problems to NH Marine Patrol.
- Outfitters and guides can help improve boating safety and their customers' experience by reminding them of boating laws and visitor responsibilities, teaching them to wash their boats and gear to avoid spreading Didymo, and cautioning them not to disturb loons and other wildlife.
- Boaters should obey boating laws, dispose of litter properly, and avoid creating boat wakes which erode riverbanks. They should use designated public access to reach the river, rather than crossing private land.
- Local fire departments should have water rescue equipment. available for river recreation emergencies at all seasons, and the training to use it.
- Citizens should obey existing boat speed laws.
- Landowners should leave a thick riparian buffer of native vegetation on their streambanks and riverbanks to help keep soil in place and reduce erosion.

Boating on the Connecticut River in Vermont and New Hampshire, a pamphlet published by the Connecticut River Joint Commissions and posted at www.crjc.org/boating.htm, indicates public access sites, the natural segment, and other useful information for boaters.

Boating laws - New Hampshire boating law is in force on the Connecticut River and Lakes. Boats may not exceed headway speed (no-wake, or 6 mph) within 150 feet (300 feet for ski craft) from shore, islands, bridges, other boats, swimmers, or floats. Boats towing water skiers on the lakes may exceed headway speed when starting up if the safety of others is not endangered. The designated natural segment, from the mouth of Wheeler Stream in Brunswick to the Stratford Maidstone Bridge, is closed to motorized boats by state law.

Canoeing and kayaking on the Connecticut River - The Headwaters region offers some of the finest paddling in New England for canoes and kayaks. Drift boats, sometimes used by river guides, also ply the river below Canaan Dam. The 70

miles of uninterrupted, undammed boating water between Canaan and Gilman is longer than any similar boating water in Vermont.

Experienced paddlers can navigate the Class I-III rapids from Indian Stream to Beecher Falls at high water. Canaan Dam must be portaged, although the portage trail is currently unsafe because it requires paddlers to cross under the barrier above the dam to leave the river. Below the dam, the river offers a quarter-mile section of Class II rapids and a pleasant quickwater paddle to Colebrook. A mile below the Colebrook-Lemington bridge is a short section of Class III water. The breached dam at Lyman Falls, between Bloomfield and Columbia, can sometimes be run on the New Hampshire side by experienced paddlers, but should be scouted first. The river's only designated "natural" segment, from Wheeler Stream in Brunswick to the Stratford-Maidstone Bridge, includes a 1.5 mile section of Class II water, and otherwise is quickwater. Below the Stratford-Maidstone Bridge, the river enters a series of flatwater meanders that feature dramatically shifting views and slower currents. The river then becomes wider, often deeper, and straighter below the confluence of the Upper Ammonoosuc River near Groveton.

Natural segment - The New Hampshire Rivers Management and Protection Act designated the seven mile segment of the Connecticut River from Wheeler Stream in Brunswick to the Stratford-Maidstone Bridge as the only "natural" segment of this river in the state, citing fine scenery, high quality natural resources, and naturally vegetated shorelines. The law specifies that only non-motorized boats shall be used in this segment, except for emergency purposes. The river here is too shallow for boats with propellers.

Between Guildhall and Northumberland, the river passes over the remains of the Wyoming Dam, breached in the 1980s. This hazard should be portaged on the Vermont side, where safe passage for paddlers around the dam has recently been reopened.

Paddling Safety - As interest in paddling the Headwaters region of the Connecticut River has grown, so has the incidence of accidents involving paddlers who attempt to run the river in hazardous conditions or without adequate skill or equipment. Hazardous conditions include debris from breached dams, high water and cold temperatures, especially in spring, and the rushing water just below active dams.

Many inexperienced paddlers have run into trouble at the breached Lyman Falls Dam. Access to this part of the river is difficult, and canoeists have relied upon nearby riverfront landowners to rescue them. In 2000, the Connecticut River Joint Commissions arranged for removal of exposed rebar and timber spikes from the dam's remains, greatly reducing the hazard for boaters and fishermen, but the site still requires skill to navigate. While the Pittsburg Fire Department is well equipped with boats and training for water rescue, this is not the case for the small towns downstream. Paddlers must take responsibility for their own safety.

Paddlers should be aware that high water can make for difficult and sometimes dangerous boating. Releases from Murphy Dam at Lake Francis can result in sudden water level changes, as can heavy storms in the high country surrounding the river. Canaan Dam operates as a run-of-the-river dam, and does not influence river flow. Boaters should watch for debris such as submerged or floating logs. Paddlers can check on water conditions at the Connecticut River Joint Commissions' web page on river flow (www.crjc.org/riverflow.htm), which provides links to river gages and to the hydro power company's page on current and projected flows at Connecticut Lakes dams.

RECOMMENDATIONS

- Paddlers must take care not to attempt to paddle the river without the skill or equipment it requires in this region, or under hazardous conditions.
- The Connecticut River Byway Council and area visitor centers should provide information on river conditions and paddling safety.
- The states should investigate the breached Wyoming Dam for ways to reduce hazards to boaters who miss the portage.
- NH Marine Patrol should continue to inform boaters of the law on non-motorized boating on the natural segment.

Northern Forest Canoe Trail - Following a route from the Adirondacks of New York to Lakes Champlain and Memphremagog, the Northern Forest Canoe Trail joins the Connecticut River for 21 miles from the Nulhegan River in Bloomfield down to Northumberland. The trail then continues east, up the Upper Ammonoosuc River, with portages to the Androscoggin, Penobscot, and St. John drainages to the end of the trail in Fort Kent, Maine. The trail project began in 1994 to focus the attention of small rural communities upon their rivers and to encourage appreciation of the natural and cultural history of the Northern Forest. A map describes the canoe trail route and identifies campsites on the Connecticut and the Upper Ammonoosuc Rivers. The Northern Forest Canoe Trail project has been active in the Headwaters region by helping to establish public river access and campsites.

Power boats on the River - With the exception of the seven-mile natural segment, motor boats are currently allowed on the entire Connecticut River in the Headwaters section. While a few parts of the river below the lakes may be deep enough for propeller-driven boats, the river is too narrow throughout this region to allow legal travel over headway speed. Therefore, the entire river between Lake Francis and the Lancaster-Lunenburg Bridge is a no-wake zone.

Motor boat wakes are a key cause of bank erosion on the Connecticut River, especially in the narrow section between Canaan and Colebrook. The waves they create wash away soil at the base of the bank, particularly if it is unvegetated, allowing the unsupported soil above to collapse into the river, leading to water pollution and loss of high quality farmland, and sometimes forcing landowners into expensive stabilization projects. The Headwaters reach of the Connecticut River is renowned as a trout fishery, and should be protected from turbidity, sedimentation, and gasoline pollution, all of which can result from power boat use on relatively narrow, shallow rivers. For all of these reasons, the Headwaters Subcommittee believes that use of non-motorized boats is more in keeping with the nature of the river in this region.

Power boats on lakes and ponds - Several ponds in the Headwaters area have boating restrictions. On Back Lake in Pittsburg, motorboats may not travel at a speed exceeding 10 miles per hour, except between the hours of 12:30 p.m. and 3:30 p.m. daily on that portion of Back Lake, easterly of a line running from Washburn's Camp on the south to the New Hampshire Guides Lot on the north. Motorboats are not permitted on Big Brook Bog, Boundary (Mountain) Pond, Coon Brook Bog, Moose Falls Flowage, or Scotts Bog in Pittsburg. In Stratford, boats powered by gasoline, naphtha or any other petroleum products are not permitted on Stratford Bog Pond.

RECOMMENDATIONS

- Those operating motor boats on the river in the Headwaters Region must not create a wake.
- Owners of launch sites providing access for motor boats to the river should post signs alerting boaters that the river is a no-wake zone in this area.
- Boaters should be courteous to those in smaller craft, and avoid disturbing wildlife.
- NH Marine Patrol should patrol the Headwaters region more regularly and continue to inform boaters of the law on non-motorized boating in the natural segment.
- Outfitters and guides should ensure that their clients are familiar with boating safety, speed laws, and visitor responsibility, including respect for wildlife.
- Landowners should leave a thick riparian buffer of native vegetation on their streambanks and riverbanks to help keep soil in place and reduce erosion.

Connecticut Lakes - The Connecticut Lakes, a chain of four ponds and the impoundment of Lake Francis, are the source of New England's largest river and a symbol of New Hampshire's remote wilderness. Tiny Fourth Connecticut Lake, a few hundred yards from the Canadian border at 2670 feet in elevation, is a 2.5 acre beaver pond. The Nature Conservancy received its entire 78 acre watershed as a gift from Champion International Corporation in 1990. Third Lake is bounded by the Connecticut Lakes State Forest and a natural area now owned by the State of New Hampshire. The shoreline of First and Second Lakes (2800 and 1300 acres respectively) is owned by TransCanada Hydro Northeast, Inc., the power company that purchased these and other assets of US Gen New England in 2005. The company owns and manages the dams which long ago raised the level of these natural lakes to store water for hydro power generation downstream. State and private lands surround 1895-acre Lake Francis, the last of the Connecticut Lake chain and the only artificial lake, built for water storage, flood control, and recreation in the 1940s.

The Connecticut Lakes region is home to venerable guest camps with traditions reaching back into the late 1800s, and also to more recent seasonal and year-round private cottages, especially at First Lake. The terms of the 2001 operating license for the Fifteen Mile Falls hydro development, a series of three power-producing dams downstream in the Riverbend region, include a Supplemental Agreement that will lead to conservation of the hydro company's land holdings surrounding the Connecticut Lakes, presently enrolled in the Current Use program, permanently protecting the shoreline from uncontrolled development.

Lake water levels -The Connecticut Lakes' role in water storage for hydro generation and flood control may conflict with their use as a recreation destination during very dry summers. The lakes are vulnerable to drought because they are located at the very head of the watershed, fed only by rain and snow falling nearby, and not by streams with large water-collecting basins of their own. In a drought year, a dramatic reduction of water levels can leave docks high and dry on an exposed lake bed, making it difficult or impossible for shore front owners to reach the water.

The federal license for Fifteen Mile Falls requires a minimum river flow from Comerford Dam to sustain fish and aquatic life in the river below. If there is not enough natural flow in the river to meet this requirement, water is taken

from Comerford and Moore Reservoirs, Lake Francis, and so on up the chain to Second Lake. While the required minimum flow is lower (818 cubic feet per second) from June through September than it is the rest of the year (1145 cfs for October - March, and 1635 cfs for April - May), the lakes may be lowered to provide water for the rest of the river in times when there is little or no summer rain. A New Hampshire legislative study committee concluded in 2003 that a lack of rainfall in 2002, combined with the terms of the then-new license for Fifteen Mile Falls, led to the temporary drop in lake levels observed that year. Wise forest management and the recent protection of the many feeder wetlands surrounding the lakes are a good insurance policy against the effects of drought.

Ski craft and personal watercraft - Commonly called “jet skis,” these craft were not seen on the Connecticut Lakes until very recently. The Connecticut River itself is too narrow in this region to permit their legal use.

Use of jet skis has expanded very quickly in the Connecticut Lakes area in the last two to three years. Operators have been observed doing considerable damage on the water, including stirring up sediment near the First Lake Dam and running over loon nesting platforms. The craft have been banned from Back Lake by citizen petition, and are not allowed on any public body of water less than 75 acres in size. Because of hazards posed by these craft to wildlife, water quality, and the nature of this remote region, the Headwaters Subcommittee recommends that they be similarly excluded from First, Second, and Third Connecticut Lakes.

A ski craft is defined in New Hampshire as: less than 13 feet in length as manufactured, capable of exceeding 20 mph, and has the capacity to carry not more than the operator and one other person. A personal watercraft has the capacity to carry more than the operator and one passenger and must follow the regulations set forth for a motor boat. New Hampshire’s current legal definition of “ski craft,” which must stay 300 feet from shore, applies only to one- and two-person craft. The three- and four-person personal watercraft are nearly the same size and are similar to ski craft in engine design, maneuverability, propulsion system, shallow draft, acceleration and speed, but are currently defined as boats, and may travel above headway speed at 150 feet from shore. Such inconsistencies in the definition of personal watercraft have resulted in confusion as to which laws apply to which craft, and have made enforcement difficult.

Use of Surface Waters

Both New Hampshire and Vermont have the ability to regulate the use of surface waters. Those who wish to request a change in this use, such as a no-wake zone, or to limit use by certain kinds of craft, or in certain areas, may apply to the states.

NH: File a petition with the Dept. of Safety Services carrying the signatures of 10 residents or property owners in the town or towns where the subject lake, pond or river is located. The Department will hold a public hearing before deciding whether to place a restriction on the use of the water body.

VT: Petitioners should contact the Vermont Water Resources Board.

RECOMMENDATIONS

- The Headwaters Subcommittee strongly encourages a dialogue among all lakeshore landowners, including the power company, to help landowners become better informed about water quality, lake level management, and other issues that can affect their property.
- Pittsburg citizens should file a petition with the NH Department of Safety Services to ban use of ski craft and personal watercraft (“jet skis”) from First, Second, and Third Connecticut Lakes.
- The New Hampshire General Court should update the statutory definition of personal watercraft to define all such craft as ski craft, retaining the 300 foot distance from shore as a requirement for travel over headway speed. The New Hampshire Department of Safety should support efforts to update these rules.
- Businesses renting jet skis should be certain their customers understand how and where these craft can be legally operated on the lakes. Operators should respect wildlife such as loons, and other boaters.

River and Lake Access - There are eighteen sites providing public boat access to the Connecticut River in the Headwaters segment, including seven launches at the lakes for all kinds of boats and eleven sites on the river serving largely car-top boats. These access sites vary in size, amount of parking, availability of picnic sites, and other amenities. There are also three places where the public can walk to the river for fishing and swimming.

Public access points

TOWN	ACCESS NAME	TYPE OF ACCESS	OWNERSHIP	RIVER MILE*	COMMENTS
<i>Pittsburg, NH</i>	Fourth Connecticut Lake	foot access only	The Nature Conservancy	410	0.6 mile trail from U.S. Customs station on Route 3. Good signage at parking and trail. Trail guide available.
	Third Lake Boat Launch	trailer and car-top boats	State of New Hampshire	405	Gravel ramp. Needs a sign board and erosion control.
	Second Lake Boat Launch	trailer and car-top boats	TransCanada Hydro Northeast	397	Concrete log ramp. This access needs a sign board and erosion control.
	Camp Otter Road	small trailer and car-top boats	Town of Pittsburg	391	Roadside access (steep)
	Merrill Road	small trailer and car-top boats	Town of Pittsburg	390	Roadside access.(steep)
	First Lake Boat Launch	trailer and car-top boats	TransCanada Hydro Northeast	389	Concrete log ramp. Receives heavy use. Recently rebuilt; needs a sign board.
	Lake Francis State Park	trailer and car-top boats	State of New Hampshire	385	Concrete log ramp. Has a sign board.
	Pittsburg Boat Launch Lake Francis	trailer and car-top boats	State of New Hampshire	381	Concrete log ramp. Has a sign board.
	Amey Farm	foot /fishing access only	State of New Hampshire	377	Trail from Route 3. Has a covered sign board.
	Indian Stream	car-top boats	State of New Hampshire	377	Just upstream from confluence with CT River. Has a covered sign board.
<i>Canaan, VT</i>	Beecher Falls	car-top boats	Henry Maurais	371	Between Post Office and Candlelight Restaurant; built by Grace Methodist Church
	Canaan Dam Portage	car-top boats	PSNH (upper) Town of Canaan (lower)	369	Above dam: portage take-out in pool. Below dam: gravel ramp below Route 114 bridge.
<i>Colebrook, NH</i>	Colebrook Access	car-top boats	NH Fish & Game	360	Erosion control is needed near the railroad tracks.
	Colebrook/Lemington Bridge	car-top boats & small motor boats	Colebrook Industrial Park	359	Gravel path.
<i>Columbia, NH</i>	Columbia Covered Bridge	car-top boats	State of New Hampshire	354	Gravel path; little room for parking
<i>Bloomfield, VT</i>	Route 102	fishing/cartop boats	State of Vermont	352	Roadside access at two nearby points.
	Lyman Falls State Park	foot /fishing access only	State of Vermont	347	Trail from Route 102.
	DeBanville Access	car-top boats	State of Vermont	344	Parking on west side of Route 102 near DeBanville's Store.
<i>Stratford, NH</i>	North Stratford Playing Fields	car-top boats	Town of Stratford	344	Path through open field.
	Stratford-Maidstone Bridge	car-top boats	State of NH	333	Parking on south side of Bog Road. Stone steps of stones from original bridge abutment.
<i>Guildhall, VT</i>	Wyoming Dam portage	car-top boats	upstream: State of VT; downstream: Town of Guildhall	320	Upstream: gravel path, stone steps Downstream: sandy path, good signage. Public toilet needed at this popular site.

*River mileage is expressed here in distance from the mouth of the river at Long Island Sound. River mileage shown in *Along the Northern Connecticut River: An Inventory of Significant Instream Features* by MicroDATA Inc., CRJC, 1994, uses distance from the Massachusetts border, 134 miles from the Sound. (8)

Car-top boat access - The river is generally very accessible for canoes and kayaks in the Headwaters Region, other than a few key sections, and adding many more places to launch boats could change the undeveloped nature of the river. Where there is not adequate access, people often launch over and camp on private lands, sometimes without the permission of landowners, causing damage to crops and the riverbank, and sometimes leaving trash.

The Subcommittee recommends a new public access to the river above the safety boom above Canaan Dam, possibly on land owned by the State of New Hampshire on the Vermont side. Currently, boaters portage the dam by taking out at an unsafe, informal access below the boom and close to the dam. Public Service Company of New Hampshire, which owns Canaan Dam, has proposed to provide a car-top boat take-out and 2,112 foot long portage around the dam as part of its application for a new license. The take-out will be located above the dam on the north bank of the reservoir. Portage trail users will travel down Power House Road to the intersection of Route 114, cross the road, and follow the access road down to the river on land owned by the State of Vermont next to the bridge. Here, the company will request permission from Vermont to place signage denoting the car-top boat access and location where public parking is allowed. The company also proposes to enhance a recreation area near the powerhouse.

Access is also needed on the 13-mile long, meandering section of river between the Stratford Maidstone Bridge and Guildhall.

There is little room for parking at the Columbia Bridge access. It may be possible to purchase land on the New Hampshire side to provide parking for a few cars and to create a small riverfront park.

Access to the natural segment - It is no surprise that the natural segment is one of the most popular sections of the river for paddlers. Recent conservation work by the State of Vermont with the assistance of CRJC has protected public access to this reach, near the mouth of the Nulhegan River. At the downstream end of the natural segment, the State of New Hampshire cooperated in construction of public access at the Stratford/Maidstone Bridge, where federal funds were used to reconstruct the bridge. For years, a private landowner allowed the public to reach the river over a steep bank on his farm. The Subcommittee recommended construction of a public access on the New Hampshire side of the bridge in 1997, in the earlier edition of this plan.

Recognizing that such an access would benefit Vermont recreationists and the Vermont landowner, the Vermont Agency of Transportation provided funding for conceptual designs for the access on the New Hampshire side. Following re-construction of the historic bridge in 2005, plans moved ahead for a new public fishing and car-top boat access by the New Hampshire Department of Transportation with the assistance of the Headwaters Subcommittee and the Northwoods Stewardship Center. The access was finally completed in 2007. An especially attractive feature of the access is the large granite blocks serving as steps to the water, that were once part of the original bridge abutment. The Stewardship Center planted a riparian buffer of native woody plants at the site, with a planting design provided by CRJC. A local youth group, conservation commission, or trail club should take responsibility for the site, which in the past has been vulnerable to graffiti and other disturbance.

Power boat access - There is no need for additional power boat access to the river or lakes in the Headwaters region, since adequate public access for trailered boats already exists. There are public boat ramps located on each of the Connecticut Lakes, the only parts of the river wide enough for legal travel above headway speed. The State of New Hampshire generally does not approve permits for boat launches or ramps for private use since the potential for long-term water quality degradation resulting from them is so great.

Littering and vandalism - Boat landings and fishing access points sometimes suffer from litter problems and occasional vandalism, whether by visitors or by local residents. Schools can help foster a sense of respect for the river by engaging students in river-related projects such as water quality monitoring, river cleanups, and riverbank restoration.

Docks - The past five years have seen many new private docks installed on First Connecticut Lake and Lake Francis, although there are no docks on the free-flowing portion of the river where it is narrow and subject to sudden heavy flow. TransCanada Hydro Northeast's predecessors, US Gen New England and New

NH Dock Rules: In New Hampshire, seasonal docks on lakes may be 6 feet by 40 feet and permanent docks 6 feet by 30 feet on lots with 75 feet of shoreline frontage or more, and must be located more than 20 feet from the property line. Each additional 75 feet of frontage allows for one more boat slip. Docks on smaller lots are limited to 4 feet by 24 feet. New Hampshire does not permit structures such as decks over the water which transfer activities to the water that are usually associated with the land, such as sunbathing and picnicking. If stairs to the dock are needed, they must be no wider than 6 feet and built over the bank in a way that does not require regrading or recontouring.

England Power Company, allowed no docks on Second Lake, thus protecting its primitive quality. The company owns the part of the lake bottom inundated by the dams at First and Second Lakes, up to the 1898.2 foot elevation at Second Lake and to 1640 feet on First Lake.

To protect the remote and primitive Connecticut Lakes from the kind of shoreline development that has occurred around Lake Winnepesaukee, the Subcommittee recommends against further dock construction on the lakes. Water levels here at the head of the watershed are sometimes difficult to maintain in dry years, and drought can leave docks out of water and unusable. Docks also are subject to heavy damage from ice movement and can pose a severe safety hazard to snowmobilers in winter.

RECOMMENDATIONS

- TransCanada Hydro Northeast and its successors should ensure that there is permanent signage at its boat launches, reminding the public of boating laws, the problem of bank erosion, nuisance aquatics, and boater responsibilities. Continue to maintain public boat access to First and Second Lakes; provide a sign board and erosion control at Second Lake and a sign board at First Lake.
- Public Service Company of New Hampshire should provide a safer river portage around Canaan Dam.
- New Hampshire Fish and Game Department and/or Vermont Forests, Parks and Recreation Department should establish a car-top river access between the Stratford/Maidstone Bridge and Guildhall.
- A Stratford-area youth group, conservation commission, or recreation group should take responsibility for monitoring the new river access at the Stratford/Maidstone Bridge.
- NH Fish and Game should repair erosion at its car-top boat access north of Colebrook.
- State agencies should continue to assist towns in setting up and maintaining access to the river, especially for fishermen, and where federal transportation funds are to be used in transportation projects.
- New Hampshire Fish and Game Department should purchase land for a small parking area at the Columbia Bridge.
- Fish and Game/Wildlife agencies should discourage construction of further access for power boats because adequate access already exists, and provide limited signage at their existing river access points in keeping with the rural nature of the region.
- Towns should discourage construction of new access for motor boats.
- Towns should screen parking at town-owned river access sites with a riparian vegetated buffer strip and provide a site for educational information that is aesthetically in keeping with the area's rural nature, on bank erosion, invasive aquatics, boater responsibilities, and the boat speed law, including notice that the river is a no-wake zone.
- Lakeshore owners wishing to build docks must receive permission from TransCanada and should check with NH DES to see if they can file a Seasonal Dock Notification or whether a permit is needed.
- NH DES should discourage further dock construction on the remote and primitive lakes.
- Docks should be removed at the end of each season for the safety of the many snowmobilers using the ice.
- Landowners should avoid construction of new docks on the Connecticut Lakes.
- Area schools should engage their students in activities that foster a sense of respect for the river.
- Citizens should avoid littering at access sites and along the riverbank, and participate in volunteer cleanups. Use designated public access to reach the river, rather than crossing private land.

Invasive plants and animals

The Connecticut River system is becoming increasingly vulnerable to non-native nuisance plants and animals that could interfere with boating, swimming and fishing, drive down property values, and overwhelm native river life. Infestations of invasive plants downstream of the Headwaters region threaten to move north. In 2007, *Didymosphenia geminata* (Rock Snot) was discovered in the Headwaters reach of the river, raising alarm for the health of the prized trout fishery here.

While the Zebra mussel has not yet invaded the Connecticut River, the river's water chemistry is suitable for this pest, which has already infested Lake Champlain, just a short trip away. This foreign invader reproduces rapidly because it does not have any natural local predators. Juvenile or larval mussels can hitchhike in bait buckets and boat engine cooling water. Zebra mussels and plants such as milfoil also cling to boat trailers and the hulls of boats. Even canoes can bring in unwanted exotics. Eurasian milfoil and water chestnut are now present in the Connecticut many miles south of this region, but have not yet reached this area. Boat wash stations would be valuable in helping prevent infestations, but require staffing by volunteers. A volunteer boat inspection program is now in place at Maidstone Lake, and surveys for invasive species are being conducted.

Didymo - An invasive freshwater diatom (microscopic algae), Didymo was discovered by a fishing guide on the Connecticut River in the designated natural segment at Bloomfield in June, 2007. Biologists later confirmed finding Didymo from the confluence of Perry Stream in Pittsburg to Guildhall. This is the first known occurrence of this diatom in the entire eastern United States. Biologists believe that Didymo was introduced here on contaminated fishing gear, especially felt-soled waders, and that it could also be spread by other recreational equipment such as bait buckets, diving gear (neoprene), water shoes, canoes, kayaks, and life jackets. Within days of learning of the infestation, local fishing lodges responded by creating wash stations for their guests and educating fishermen.

Didymo can form extensive colonies on the bottoms of rocky river beds, smothering aquatic life such as macroinvertebrates (aquatic insects). Didymo's stalks attach to rocks and river vegetation, and it can form masses 10-12 inches thick on the river bottom, trailing for lengths of 2-3 feet in the current. Its appearance is very unattractive, making the water less appealing for recreation. Didymo is generally a northern species of river systems with cobble or rocky bottoms. Water is usually clear and cool (about 60oF), with relatively low nutrient concentrations and generally moderate to moderately fast current. However, biologists are noticing a shift in the habitats where Didymo can survive to include streams in warmer climates, with more nutrients, and even some tannic (tea colored) waters.

There is currently no way to control or eliminate Didymo. The alga is microscopic and can remain viable for several weeks if kept moist. The agencies have concluded that closing the river is not practical, and that the best approach is to attempt to prevent further spread by humans, especially to tributaries.

RECOMMENDATIONS

- State environmental and fisheries agencies should continue to cooperate to better understand and address the Didymo infestation, and post permanent signage at boat accesses and at popular fishing accesses, including just below First Connecticut Lake Dam in Pittsburg.
- Fishermen and other recreationists must carefully clean their gear after visiting the Connecticut River and report sightings of invasive aquatic species to state agencies. Do not release unused bait into the water.
- The New Hampshire Lakes Association should set up a Lake Host program, with the help of TransCanada and NH DES, to check for invasive species at Connecticut Lakes boat launches on holiday weekends.
- Local outfitters, lodge owners, and guides should educate their customers about Didymo and other invasives, and encourage them to clean their gear.
- Boaters or divers traveling from waters infested with zebra mussel must wash and dry all equipment before reuse, hose off the boat, diving gear or trailer, and drain and flush the engine cooling system and live wells of the boat, bait buckets and the buoyancy control device from diving equipment.
- Fishing derby organizers should require boat and trailer checks for invasive species before boats are launched.
- Citizen volunteers should monitor boat access points for nuisance plants.

SWIMMING

The Headwaters region offers fine swimming, whether at a public beach, such as at Lake Francis State Park, or at a natural beach on a sandy river bend. As with all other forms of recreation in this wild and scenic country, swimming is dispersed and generally not supervised. Connecticut River water should not be considered safe for drinking.

The State of New Hampshire conducted a major water quality assessment of the Connecticut River in 2004 at the request of the Connecticut River Joint Commissions, for use in preparing this plan. Results indicated that the Connecticut Lakes are safe for swimming, although there is insufficient information for the sections between them. Below First Lake, the river and Lake Francis are safe for swimming as far as the confluence with Indian Stream in Pittsburg.

The 53 miles of river below Indian Stream to the confluence of the Upper Ammonoosuc River in Groveton are unsafe or could be unsafe for swimming, because of contamination by bacteria from largely unknown sources. Ironically, this part of the Connecticut River, which includes the natural segment, is more popular for swimming than anywhere else in its flow between New Hampshire and Vermont. Among possible sources is the village of Stratford Hollow, where some septic systems have been built to eliminate straight pipe discharges to Bog Brook, which enters the Connecticut River just below the Stratford/Maidstone Bridge. Such sources of bacterial contamination should be eliminated where possible.

Bacteria can reach rivers through poorly functioning septic systems or drainage from areas where animals are concentrated, whether they are moose or cows, especially where the animals have direct access to a tributary or the river itself. Pet droppings on lawns and roads can wash into storm sewers and reach the river this way, and may be a problem in Colebrook. Bacteria counts are variable, but are likely to be higher in the river after a heavy storm.

Among the river's New Hampshire tributaries, the lower 10 miles of Halls Stream, 6.61 miles of Bishop Brook, 9.57 miles of Simms Stream in Columbia, and 5.85 miles of Burnside Brook in Northumberland are also considered unsafe for swimming due to bacteria from unknown sources. The Mohawk River and most of the Upper Ammonoosuc

River are safe for swimming. Conditions in the other New Hampshire tributaries and in the Vermont tributaries are presently unknown and need to be studied.

Muddy water makes the river unappealing for swimming and can take away the fun of a canoe trip. Erosion from riverbanks unprotected by vegetation can lead to silt in the water after a rain. Landowners should leave a thick riparian buffer of native vegetation on their riverbanks to minimize loss of soil into the river.

The possibility of sudden water level and current changes at the Connecticut Lakes dams make swimming hazardous just above and below the dams at First and Second Lakes and below Murphy Dam.

RECOMMENDATIONS

- NH DES should assist local volunteers in monitoring water quality in the mainstem and identifying sources of bacteria.
- NH DES and VT ANR should gather information on water quality in the tributaries.
- Riverfront landowners should keep a thick buffer of vegetation on their riverbanks.
- People should avoid swimming just above and below the dams at First and Second Lakes and below Murphy Dam.
- NH DES should ensure that houseboats using First Connecticut Lake are equipped with holding tanks for waste, and that there is a suitable location for pumping this waste.
- Towns should notify the public immediately if there is a suspected water quality violation at a wastewater treatment plant during the summer recreation season.

RIVER CAMPING

Interest in canoe camping in the Headwaters region is rising sharply as more people take longer trips on the river. People often camp on private lands, sometimes but not always with the permission of landowners, and leave trash, damage crops, and leave farm gates open.

Camping is currently not permitted in the Connecticut Lakes region in the Town of Pittsburg, by town ordinance, except at Lake Francis State Park and at Deer Mountain Campground, which the State recently expanded by purchasing 100 acres of former International Paper Company land. Historically, large landowners such as industrial timber companies and hydropower producers did not permit camping, to protect their land from fire.

Below the Connecticut Lakes, there are currently only four places on the river in the Headwaters segment where the public is allowed to camp overnight. One is at Lyman Falls State Park, purchased by the State of Vermont with the help of the Vermont River Conservancy and CRJC. Here, the state is establishing a small number of primitive campsites accessible only from the river. Another public campsite has been built on private land in Brunswick near the railroad trestle. The Northern Forest Canoe Trail has helped establish a public campsite on the Lovell property in Maidstone. The Town of Columbia plans public campsites on new town property associated with the new town office. Elsewhere, campers must contact private landowners for permission to use their land. Maidstone Lake State Park permits camping, but cannot be reached from the river except by car.

The Subcommittee encourages development of more, dispersed primitive canoe campsites on the river, to help prevent trespassing and disperse camping impacts. Stays at these sites should be limited to one night, to prevent too many people from using them at one time. Camper education is essential.

There is potential for the campsite system to lose its appeal if it is not well monitored, if the sites become overcrowded, or if campers are irresponsible. Wide promotion of the system is not recommended. There is currently no coordinated management of the canoe campsite system, other than that provided by the Northern Forest Canoe Trail, although the National Park Service has produced campsite stewardship guidelines for the Connecticut River that have been refined for the Headwaters region by the Nulhegan Gateway Association.

Primitive commercial campgrounds could help in reducing the threat of waste contamination of the river. However, part of the appeal of the undeveloped river could be lost unless such campgrounds are developed in

The Connecticut River Water Trail: Experience downstream on the Connecticut River has proven the value of designated sites in carefully selected locations, to help focus use in places that can be monitored, and reduce unauthorized camping and trespassing in places where campers are not welcome. Beginning in 1992, the Upper Valley Land Trust created a string of primitive campsites intended for canoe and kayak access from the river only. Land-based access is prohibited. For each campsite, there is a written agreement with the landowner and a group identified to take responsibility for maintenance. The hydro power company also built and maintains several such campsites near Hanover, Charlestown, and Vernon. There is no charge for use of the sites, which are available on a first-come-first-served basis. Campsites are located on parts of conserved or power company land which are easy to reach from the water, do not interfere with the landowner's use of his property, are inaccessible from roads, are not habitat for rare plants or animals, and are not known archeological sites. Some campsites are located on islands which do not flood frequently.

a way that retains that character. Inn-to-inn canoe trips could be promoted to further low-impact use of the river with an economic return to local businesses.

Campsites open to the public in the Headwaters region:

<i>TOWN</i>	<i>NAME</i>	<i>RIVER MILE</i>	<i>COMMENTS</i>
<i>Pittsburg NH</i>	Deer Mountain Campground	390	Drive-in access from Route 3; tent sites, small camper units
	Lake Francis State Park	385	Drive-in access from Route 3; tent sites, showers, and hookups. Has been recently expanded.
<i>Columbia NH</i>	Town of Columbia site	355	Town of Columbia. No amenities, although they are planned.
<i>Bloomfield VT</i>	Lyman Falls State Park	347	River access only. Several campsites below the breached dam at Lyman Falls.
<i>Brunswick VT</i>	Maine Central RR Trestle Campsite	335	Near old stone railroad abutment.
<i>Maidstone VT</i>	Ray Lovell property	329	Northern Forest Canoe Trail site
	Maidstone Lake State Park	X	Drive-in access from Route 102.

RECOMMENDATIONS

- State parks and recreation agencies should work with local volunteers and willing landowners to develop more primitive canoe campsites in locations that are not ecologically or archeologically sensitive.
- The Nulhegan Gateway Association should continue to inform local communities about protocols for developing primitive canoe campsites in the Headwaters region and encourage local stewardship of these sites. The group could encourage development of primitive commercial campgrounds in a way that retains the river’s natural character, and promote inn-to-inn canoe trips to promote low-impact use of the river with an economic return to local businesses.
- Towns should adopt protocols for developing primitive canoe campsites into their master plans.
- Campers must leave campsites in the same or better condition than when they arrived, by carrying out trash, cutting no wood, and leaving no trace of their visit. Campers should avoid going beyond the campsite area and trampling nearby crops, including hay, or opening gates.
- Businesses and paddling groups should adopt a campsite to assist with maintenance.
- Outfitters, guides, and recreation clubs should help educate visitors.

FISHING

Residents and visitors enjoy fishing nearly year-round in the Headwaters region for cold water species such as rainbow, brown, and especially the native brook trout and landlocked salmon. For four months in winter, the Connecticut Lakes become ice-fishing communities of their own. To fish on the Connecticut River, anglers must have either a New Hampshire fishing license or a Vermont resident license. Either license is good on tributaries of the Connecticut River up to the first bridge.

The Headwaters region of the Connecticut River harbors some of New England’s best remaining wild brook trout habitat. In 2008, Trout Unlimited announced its selection of this region as TU’s newest “Home River” in partnership with the Society for Protection of New Hampshire Forests. Goals of the initiative include restoring degraded trout habitat, removing barriers between flowages, and protecting important habitat, including five miles of river frontage in Clarksville.

Fishing access - Fishermen have long had access to their favorite fishing spots on the river, a tradition that may wane if riverfront land is developed for seasonal homes or posted against public use. Development pressure is increasing, and riverfront land with easy water access is limited. Closing off access means that fishermen will tend to put heavier fishing pressure on those parts of the river that are still easy to reach.

Several pieces of land have recently been protected to ensure that the public can continue to enjoy fishing the river. The pool below the breached Lyman Falls Dam is a well known fishing hole. The State of Vermont has purchased 41 acres of riverfront here, creating Lyman Falls State Park, and provided a trail for fishermen to reach the river from Route 102. The Town of Columbia hopes to purchase land on the opposite shore, but a private parcel stands between

it and Route 3. There is an excellent opportunity to keep public fishing access open and safeguard the excellent riparian habitat that protects the quality of the fishery here.

Fishing and swimming are hazardous just above and below the dams at First and Second Lakes and below Murphy Dam, where the water level and current can rise suddenly.

Fishing tournaments - Lake Francis is a popular location for fishing tournaments, drawing boats from all over New England. Tournament organizers must notify NH Fish and Game well in advance, and should also notify NH Marine Patrol. This is a good opportunity to inform visiting fishermen, who may not be familiar with the area, of boating laws on the Connecticut River. Boats brought from infested waters could bring invasive species to the river and lakes.

Fish contamination - While fishing is good sport, the fish are no longer completely safe eating. Mercury, delivered largely by prevailing westerly winds, has entered the food web and accumulated in resident fish to the point where the State of New Hampshire considers the entire river system, and others in our region, to be contaminated. In response to the 1997 *Connecticut River Corridor Management Plan*, EPA and the states of New Hampshire, Vermont, Massachusetts and Connecticut conducted a study of fish tissue toxins in 2000. Results indicate that mercury and other chemicals pose a danger both to humans and to wildlife such as loons, kingfishers, and otters, who feed on Connecticut River fish. Mercury levels in white suckers, smallmouth bass, and yellow perch in the Headwaters region were all above the minimum risk level. However, trout were not sampled in this study, and only a few white suckers were sampled from the reach above Canaan Dam. Further testing should be done of wild resident trout, not stocked hatchery trout, and especially in the Pittsburg-Clarksville section of the river, where recreational fishing is so important to the area's economy and tradition.

It is essential to reduce the amount of air-borne mercury delivered to the Connecticut River Valley, and reduce local sources of mercury. Backyard burning of trash has been prohibited, partly for this reason.

Lead fishing tackle is also a source of waterfowl and loon poisoning. Both states ban use of lead sinkers weighing one ounce or less and jigs less than one inch long on all fresh waters, to protect wildlife from this toxic substance. Loons that eat lead tackle usually die within a matter of weeks.

RECOMMENDATIONS

- Both states and towns should continue to take advantage of opportunities to conserve riverfront land for public access and recreation.
- The Town of Columbia should continue to try to purchase and protect land at Lyman Falls, and encourage continuation of the generations-long tradition of public access to Lyman Falls from Route 3.
- Fishermen should obey the laws of both states and remove their bob houses well before the ice begins to break up in spring.
- Anglers should beware of sudden water level changes just above and below the dams at First and Second Lakes and below Murphy Dam.
- Fishing tournament organizers must notify NH Fish and Game well before the events, and help inform visiting fishermen of boating laws. Organizers should also notify NH Marine Patrol, and require boat and trailer checks for invasive species. NH Marine Patrol should make a special effort to be present at organized fishing derbies.
- New Hampshire Fish and Game and EPA should conduct further testing of fish for toxins in wild resident trout, especially in the Pittsburg-Clarksville section of the river.
- Congress and the states should continue to act to reduce the amount of air-borne mercury delivered to the Connecticut River Valley, and reduce local sources of mercury.
- Citizens should obey the ban on backyard burning of trash.
- Anglers should replace lead sinkers and jigs with safe, legal, non-lead tackle.
- State environmental and fisheries agencies should continue to cooperate to better understand and address the Didymo infestation.
- Fishermen and other recreationists must carefully clean their gear after visiting the Connecticut River and report sightings of invasive aquatic species to state agencies. Do not release unused bait into the water.
- Local outfitters, lodge owners, and guides should educate their customers about Didymo and other invasives, and encourage them to clean their gear.

New Hampshire Fish Consumption guidelines: pregnant and nursing women, and women who may get pregnant, can safely eat one 8-oz. meal of freshwater fish per month. Children under age 7 can safely eat one 4-oz. serving per month. All other adults and children age 7 and older can safely eat four 8-oz. meals per month of freshwater fish. Bass and pickerel should be 12 inches or less in length while following the above guidelines. Advisory does not apply to stocked fish. For rainbow and brown trout, women of childbearing age and children can safely eat one meal per week, others can eat 6 meals per week. Brook trout could be either stocked or from a reproducing population, therefore they should be consumed at the rate of the general statewide advisory.

- Fishermen traveling from waters infested with zebra mussel must wash and dry all equipment before reuse, hose off the boat and trailer, and drain and flush the engine cooling system and live wells of the boat, bait buckets and the buoyancy control device from diving equipment.

LAND-BASED RECREATION

Walking and trail activities are still the most popular form of recreation in the United States, including among older Americans, according to recent research. (9) In New Hampshire, half of recreation takes place within ten miles of home. The most popular recreational activities in New Hampshire are walking, wildlife observation, and hiking. The North Country and Northeast Kingdom also attract heavy motorized recreation traffic from all over the Northeastern United States, particularly snowmobiles. Hundreds of miles of trails allow riders to be out for days at a time, roaming throughout the Headwaters region.

Surveys in Vermont in 2002 (10) showed that the most popular recreational activities are hiking in the warm-weather months, and downhill skiing, followed by cross-country skiing and snowshoeing, in the winter. A higher percentage of Vermont's residents enjoy watching wildlife than any other in the country.

Another 2002 study (11) found that 70% of Vermonters and 72% of New Hampshire people surveyed said that it is very important to ensure there is access to areas where there are no motorized vehicles or logging in the forests of northern New England. Sixty-four percent of New Hampshire residents and 68% of Vermonters said access to the forests of northern New England is very important for hiking, but only 21% and 28%, respectively, felt such access was very important for snowmobiling. With regard to designating more areas for non-motorized wilderness-like recreation, 68.5% of Vermonters agreed or strongly agreed. (10)

Recreation on Private Lands- Trail users, hunters, and other recreationists have long relied upon the generosity of the hundreds of private landowners who allow the public to use trails across their land. Key trail connections often depend upon this cooperation, yet abuses by trail riders threaten to destroy this long-valued system, along with the economic benefits that the region enjoys from visiting trail users. Snowmobile trails are beginning to disappear as new owners acquire property with existing trails and close them, and some long-time landowners are becoming discouraged with the growing problems of trail erosion and disrespectful rider behavior. For example, the amount of posted land in Essex County, Vermont, increased from 12 acres in 1991 to 1,117 acres in 2004, and in Caledonia County from 0 to 10,982 acres. (12)

ATV and snowmobile clubs should be accountable for what happens on trails crossing private land, and consider ways to acknowledge and thank landowners who allow these trails to remain open. In the interest of maintaining the tradition of public recreation on private lands, and in view of the strong and increasing demand for trails by both residents and visitors, the states should also assess new ways to reward landowners who keep their land open to the public.

Fear of liability is often cited as factor in the decision to post land against public recreation. Landowners should be aware that both New Hampshire and Vermont have enacted laws protecting private landowners who open their land to the public for recreation, if the landowner has not charged a fee for this access and has not purposefully created a hazard. In 1998, Vermont updated its law to include liability protection for granting access to rivers and streams. Land taxed under Current Use is not necessarily open to the public, but under this program in New Hampshire, the land is eligible for a 20% tax reduction if it is open.

Land Protection for Recreation - Trails and other open space for active or passive recreation require plenty of space where the public is welcome. As development increases sharply in Headwaters region towns, more and more land that was previously open to the public is becoming subdivided, sold, and posted. The riverfront is especially threatened.

There are several federal and state programs, such as the Land and Water Conservation Fund, the federal Scenic Byway Program, TEA-21, and the Vermont Housing and Conservation Board that can help communities protect scenic views and create trails and other recreation assets. New Hampshire's Land and Community Heritage Investment Program ("LCHIP"), which was established in part to help protect land for public recreation, is not fully funded.

A 2003 survey by New Hampshire (9) found stronger public interest in funding for non-motorized activities than for motorized activities, and more enthusiasm for land, water, and species protection than for recreation development. A similar survey by Vermont (10) showed 91.6% of Vermonters felt it was important to provide opportunities for non-motorized recreation, and 63.6% felt it was not important for the state to provide opportunities for riding motorized recreation vehicles.

RECOMMENDATIONS

- State recreation agencies and recreation clubs should seek new ways to recognize and reward landowners who allow the public to use their land for recreation.

- State recreation agencies, recreation clubs and conservation commissions can help inform landowners about liability protections and tax benefits of keeping current use land open to for public recreation, and ensure respectful use of private land by the public. Snowmobile clubs, hiking groups, bicycle clubs should provide monitoring and educate hikers, joggers, cross-country skiers, snowmobilers, and hunters on the proper use of private land to help prevent unwanted trespassing and littering.
- The New Hampshire legislature should ensure adequate funding for LCHIP.
- Towns should take advantage of LCHIP and other opportunities to protect land, especially on the riverfront, for public recreation and open space. Identify opportunities, when land is developed, to retain easements for public access for trails, birding, car-top access, or other public recreation.
- Regional Planning Commissions should help neighboring communities coordinate their plans for recreation and open space.
- Land conservation organizations should help landowners who want to protect their land, especially land that provides public recreation access for wildlife watching, car-top boats, or trails.

Walking & Hiking Trails - The Headwaters region of the Connecticut River valley has drawn recreational hikers for well over a century. Most towns offer hiking and walking trails enriched by views of the river and surrounding hills. A favorite is Lemington's Monadnock Mountain, recently protected by the Town with the assistance of The Trust for Public Land. The Green Mountain Club, Northwoods Stewardship Center, and other volunteers have restored the historic fire tower at its summit and are rebuilding and rerouting the trail, which has largely followed the steep route of the old power line to the summit, in a path that is less likely to erode.

The 162-mile Cohos Trail, now largely built, is a remote trail in northern-most New Hampshire to the Canadian border, and when completed will be the longest single foot-trail system in the state's history. The Cohos Trail Association has marked most of the trail and produced color maps. Hikers on the Columbia section can use a lean-to at Baldhead South and two campsites in Nash Stream Forest, among others. A shelter for hikers in the Connecticut Lakes region is needed.

A plan for the Heritage Trail, a state-sponsored trail intended to span the length of New Hampshire, remains to be completed by the towns. While the trail has been built as far north as Lancaster, the Northumberland portion has not yet been built to Nash Stream. Colebrook has built foot trails on its newly acquired land north of town.

The Headwaters Subcommittee hopes that the Connecticut Lakes Headwaters Forest will become known for mountain hiking. Mount Magalloway in Pittsburg offers an enjoyable hike to the summit fire tower with views of Maine and Canada beyond the Connecticut Lakes. There is a need for more hiking options in the Connecticut Lakes area, and elsewhere in the region, that are separate from snowmobile trails.

Trail maintenance is always an issue, and volunteers are needed to help keep trails in shape. Trail erosion can become a water quality problem, especially for some of the steeper trails near small headwater streams that harbor trout. Trails should be avoided in wet conditions, especially when they are saturated from snow melt and rain, and require special care between sugaring season and Memorial Day to prevent erosion and damage. Since higher elevation soils take longer to dry out, hikers should stay below 1000' until May 1, below 2,000' until May 15, and below 3,000' until Memorial Day.

RECOMMENDATIONS

- Recreation groups should provide better signage for trails, prevent trail erosion with increased trail maintenance, and explore possible connections between trail systems.
- Trail users should volunteer to help maintain the trails they enjoy, and avoid trails in wet conditions.
- The New Hampshire Trails Bureau should create more hiking options in the Connecticut Lakes Headwaters Working Forest and elsewhere in the region that are separate from snowmobile trails.
- NH Office of Energy and Planning should encourage each New Hampshire town to participate in Heritage Trail construction.
- Towns should explore federal and state funding programs, such as TEA-21, to create local trails.
- State parks agencies should encourage interpretive trails to explain forestry practices.
- The Nulhegan Gateway Association should develop more published information on trail systems.
- Towns should create trail guides to town-owned properties.
- The Cohos Trail should build a campsite or shelter for hikers in the Connecticut Lakes Region.

Bicycling - Bicycling is a popular family and touring sport along the Connecticut River, particularly on a loop along Route 102 and Route 3, which are especially inviting for their easy cycling and fine river views. Canadian bicycle tour groups visit the region, and may consider overnight stays at local inns and bed-and-breakfasts. The potential exists to

promote such tourism. Mountain biking is a growing sport that can take good advantage of woods roads and rail beds, with permission of landowners, but can also cause erosion on steeper hiking trails and in damp areas. Northumberland is considering a proposed mountain bike trail.

Safe traveling for cyclists on busy highways is sometimes a concern, such as on Route 145. A loop from Route 102 to 105 to Island Pond and back on Route 114 is popular, but not safe. Route 3, considered a state bicycle route throughout the region, has recently been rebuilt between Groveton and North Stratford, reducing the danger to bicyclists from truck and other traffic. When road improvements are planned, bicycle lanes and paths should be considered.

RECOMMENDATIONS

- The Connecticut River Byway Council, Nulhegan Gateway Association, and area chambers of commerce should promote bicycle tours with overnight stays at local inns and bed-and-breakfasts.
- Mountain bike trails should be carefully designed to avoid steep, wet, and erodible terrain.
- State transportation planners should improve bicycling safety by adding bicycle lanes and paths as part of road improvement projects, but avoid the type of road widening and straightening that could lead to increased speed of traffic.

Rail Trails - The Upper Coos Recreational Trail runs 10.5 miles between Colebrook and Beecher Falls. Hikers, bikers, horseback riders, snowshoers, cross-country skiers, and sled dogs can legally use this trail along the former railroad bed, and OHRVs can use it when there is continuous snow cover. However, this trail is groomed for and heavily used by snowmobiles, making it difficult for snowshoers, cross-country skiers, and sled dogs to use the trail safely.

OHRV Trails- The network of off-highway recreational vehicle trails in the Headwaters Region is extensive and traveled by riders from throughout the Northeast. The region is best known as a mecca for snowmobiles, and residents report dramatically increasing numbers of visitors towing snowmobile trailers of increasing size on Route 3. The region is also now attracting more all-terrain vehicle and dirt bike riders. Off-highway recreational vehicle registrations in New Hampshire more than doubled between 1996 and 2003.

There is rising demand among ATV riders for trails similar to those used by snowmobiles in winter. Snowmobiles traveling on frozen, snow-covered ground do not have the same ability to cause erosion, degrade wetlands, or disturb as many kinds of breeding wildlife as do ATVs and dirt bikes, although ATV traffic is usually not a problem when riders stay on hardened trails. All of these vehicles, however, are capable of causing erosion on soft ground, threatening nearby trout streams. In an effort to make room for the increasing numbers of riders, clubs are building wider snowmobile trails, sometimes without enough attention to how water will run off them. Some trails need water bars to reduce erosion and keep sediment out of streams.

Both states now have guidance manuals and permit or notification systems in place for trail construction and maintenance, but these permits need to be more detailed, with closer supervision by the permitting agency and, in New Hampshire, the Bureau of Trails. Heavier use of snowmobiles during poor snow cover conditions is leading to increased trail damage in spring, fall, and whenever there is wet, bare ground. While local snowmobile club web sites are responsible about posting current trail conditions, there are still riders on the trails at times when the trails are vulnerable to erosion. More effort is needed to warn snowmobile riders to stay off trails at such times.

All-Terrain Vehicles - ATV numbers are increasing by 10-15% per year. ATVs must be registered if used off the owner's property, and cannot be used on private land without written permission of the landowner. Many farm and forestland owners find ATVs a convenient way to get around on their property. The following comments apply only to recreational ATV use on property owned by others.

Compared to foot traffic, motorized travel by ATVs, dirt bikes, and other machines creates damage which can be especially harsh depending on the season. Private landowners should be educated about the effects of allowing trails over streams and up steep hills on their land. Even owners of conserved land in the region have had difficulty with wetlands degradation and erosion from uninvited riders. Landowners near ATV trail systems report that riders sometimes stray onto their property, leave gates open, and cause erosion. Managers of dams on the river, including Murphy Dam at Lake Francis, report that although ATVs are not permitted on land owned by the hydro power company, ATV riders climb the earth fill and leave ruts that can quickly become gullied, creating a hazard to the fill and threatening the safety of this dam, which is classified as a high hazard dam.

State laws restrict OHRVs from driving through wetlands and surface waters. Enforcement is a challenge that requires help beyond the present system of relying on state personnel. In New Hampshire, because the Fish and Game Department does not have the manpower to enforce responsible riding, it is now making grants to towns to help them take over enforcement responsibility, although few towns desire or have the ability to assume this role. Members of local ATV clubs, who have a vested interest in ensuring responsible behavior by other riders, could serve as deputy wardens.

Penalties for eluding an officer should be meaningful. Concerned about the number of injuries and deaths already occurring through snowmobile accidents, the Headwaters Subcommittee urges strong action toward education and enforcement in the newer and growing sport of ATV riding.

Snowmobile clubs present a good model for ATV riders. Riders should also be required to be members of an ATV organization which would provide education and training. Boaters and drivers are required to pass a safety education course, and there should be a similar requirement for ATV riders. ATV insurance should be mandatory, as it already is for Vermont snowmobiles. Equipment dealers should encourage appropriate use of trails by not promoting the irresponsible behavior shown in advertisements.

North Country residents hesitate to restrict the freedom of others to enjoy any form of recreation, but also appreciate clear trout streams and the stillness and quiet of their remote rural area. Many people object to noise pollution in quiet and remote wilderness. Proposed trails should be developed only after ample public discussion, and if the responsible state agency can adequately monitor the trails, with cooperation from a local club. Even though there is growing pressure, both states should be careful in making the decision to open up public lands and develop trails on private lands.

In Vermont, ATVs are prohibited on nearly all public lands. In New Hampshire, the state manages 250 miles of ATV trails including some on state lands, and is considering building a network of ATV trails on a 7200 acre parcel in the Androscoggin River watershed in Berlin. At Nash Stream, in a state forest purchased by New Hampshire to protect its natural resources, a study is underway to determine whether ATV use on a trial section can cause degradation to the trail.

Riders can now use a large commercial ATV trail system in the Perry Stream watershed in Pittsburg, and the North Country ATV trail system in North Stratford, where dirt bikes are not permitted. Because these options are already available in the Connecticut River valley, and a large new trail network has opened nearby at Jericho Lake State Park in Berlin, the Headwaters Subcommittee believes that there is no need to expand ATV access in the Connecticut Lakes region. The Connecticut River corridor, especially near the designated natural segment, is a poor place for recreational ATV use because engine noise travels easily over water and trail erosion could threaten water quality.

While there is strong hope that active rail service will be revived in the region, unused railroad beds located away from the river can make excellent trails, especially for users who prefer flatter grades. Active railroads may allow recreational use only during the winter months on some lines.

RECOMMENDATIONS

- State recreation agencies should consider assigning and training deputy wardens who are members of local ATV and snowmobile clubs, who have a vested interest in ensuring responsible behavior by other riders. They should promote club management of ATV activities similar to that of snowmobile clubs, including education and training, and establish a required safety education course for recreational ATV riders. They should require mandatory personal injury insurance for recreational ATV riders.
- State legislatures should establish a mandatory registration fee for ATVs that is large enough to provide funds for law enforcement and trail construction; dedicate part of the fee to a landowner restitution fund to which landowners can apply for reimbursement if they have sustained damage from OHRVs.
- NH Division of Parks and Recreation should avoid inviting ATV use in the Connecticut Lakes Headwaters Forest and also in the Connecticut River corridor, particularly near the designated natural segment from North Stratford to the Stratford Maidstone Bridge.
- ATV clubs should build trails only with the written permission of the landowner, and in areas where it is consistent with local planning and zoning, avoiding the Connecticut River corridor. They should continue to educate member riders to respect the land by showing courtesy to landowners and other users, and staying off trails when conditions are poor.
- ATV riders should avoid riding on earth fill dams, skid trails, and on the property of others without permission.

Winter Recreation

Winter brings a different kaleidoscope of recreation opportunities to the Headwaters region. The snowmobile trail system hums with traffic and provides easy grades for cross country skiing. Ice fishermen bring their bob houses onto the Connecticut Lakes. The Balsams Grand Resort Hotel offers snowshoe walks, winter hikes, and downhill skiing. Pond skating remains a favorite, and some towns create temporary rinks for skating and hockey games. While the Headwaters region has become well known for its miles of snowmobile trails, there are many other ways to enjoy being outside in the winter. Colebrook's Recreation Center has opened a lit ice-skating rink.

Cross country skiing, snowshoeing, winter hiking - There is strong interest in healthy, non-motorized outdoor winter sport, and opportunities exist to make low-impact use of forested trails and logging roads for adventure travel. For a

number of years, a creative outfitting business cooperated with International Paper Company to offer cross country skiing and snowshoeing on the company's network of woods roads in the Phillips Brook watershed in Stark, with dispersed overnight camping in yurts and a cabin. The market for such recreation remains strong, and could be promoted by the Nulhegan Gateway Association. Trails for winter hiking, snowshoeing, and cross country skiing in the Connecticut Lakes Headwaters Forest could provide opportunities for winter exploring and wildlife tracking for those who do not want to use a machine to get around, and for times when snow and ice cover are not sufficient for snowmobile travel.

Ice safety - Travel for work or fun on the ice is a staple of North Country life. Those hoping to venture on to the ice should check it first. On the Connecticut River, ice thickness can vary greatly within a few feet, depending upon whether there is a spring below, or where the current is active. In the impoundments behind dams, the water level continues to change, even though the ice cover above it appears solid.

Snowmobiling - The first good snow cover brings a cavalry of snow machines out onto hundreds of miles of well-coordinated and managed snowmobile trails linking most towns. Many of these trails bring riders and business to local stores and eateries. Local clubs like the Pittsburg Ridge Runners, Canaan Border Riders, Stratford Nighthawks, and the Colebrook Ski Bees care for these trails. There are currently an average of 150 miles of groomed snowmobile trails in the Connecticut Lakes Headwaters Working Forest alone.

All riders in Vermont must belong to the local club and also to the statewide Vermont Association of Snow Travelers, or VAST, one of the oldest snowmobiling organizations in the US. Lack of reciprocity between Vermont and New Hampshire sometimes leads to difficulties for riders registered in one state who cannot use the other state's nearby trails. These states should return to a policy of reciprocity, as New Hampshire did with Maine in 2005.

Out of state snowmobile registrations in New Hampshire more than doubled between 1995 and 2002. Over this same period, Route 3 has become a major artery for snowmobilers driving north to ride in the Headwaters region, sometimes with fatal consequences as wide trailers travel the often narrow lanes at high speed. The public would benefit from strong traffic control during peak travel times.

Eighty percent of Vermont's trail system, and probably a similar percentage in New Hampshire, is on private land, through agreements with private landowners allowing winter trails, but not for summer use by the public without the written permission of the landowner. Permission to use snowmobile trails does not extend to ATVs, four-wheelers, motor or mountain bikes, hiking or other uses, unless specifically authorized.

Cross country skiers and snowmobiles now share the trail in most places with little conflict, due to better communication and courtesy by both groups. However, problems still occur. Disrespectful recreationists who threaten a landowner's use of his own property may tempt him to close a trail across his land. During times of thin snow cover when the trails can be damaged, there are riders who ignore trail closings or ride in spite of poor conditions, and trails are suffering.

RECOMMENDATIONS

- The Nulhegan Gateway Association should promote low-impact winter recreation, such as businesses hosting cross-country skiing and snowshoeing on logging road networks with dispersed overnight shelters.
- The New Hampshire Division of Parks and Recreation should work with forest landowners to provide more non-motorized winter recreation trails in the Connecticut Lakes Headwaters Working Forest.
- Parks & Recreation agencies should support snowmobile license reciprocity between the states, and continue assigning and training deputy wardens who are members of local snowmobile clubs, who have a vested interest in ensuring responsible behavior by other riders.
- Snowmobile clubs should consider ways to acknowledge and thank landowners who allow trails on their land, help with trail watches, and continue to educate riders to respect the land by showing courtesy to landowners and other users.
- Snowmobile riders should stay off trails when conditions are poor, and respect private land.
- State and local police should provide more traffic control on highways during peak travel times for snowmobile trailers. Drivers pulling snowmobile trailers should be careful to stay in their lane.
- Snowmobilers should use public trails only, and avoid skid trails.

Ice safety: The US. Army Corps of Engineers' Cold Regions Research and Engineering Laboratory in Hanover, NH, recommends this rule of thumb for new, clear ice: a minimum of: 4 - 6 inches of ice to support a few well-dispersed people; 6 - 7 inches for small, on-foot, group activities; and at least 8 - 10 inches for snowmobile activities. A wise precaution is to carry a long stick to help distribute weight or to lay across a hole in an emergency. If ice at the shore is cracked or soft, stay off. Avoid ice during thaws. Avoid honeycombed ice, dark snow and dark ice, and look for settling ice against the shore. Ice is generally thinner where there is moving water, such as at inlets and outlets, around bridge abutments, islands and objects protruding through the ice. Coves are generally safer than the mainstem.

WILDLIFE -RELATED RECREATION

Birding and Wildlife Observation - Bird and wildlife-watching are growing in popularity among all age groups and offer a way to enjoy natural places with little or no harm to the land or river. The river's role as a migration corridor brings a richer variety of birds, particularly waterfowl, to the region in spring and fall. People regularly visit the area to view moose, loons, and bald eagles.

The Colebrook visitor center on Route 3 features a series of exhibits about wildlife and habitat in the northern Connecticut River valley, created by the Silvio O. Conte National Fish and Wildlife Refuge, and the Refuge has opened the Nulhegan Basin Division visitor center on Route 105 in Brunswick. Pittsburg's "Moose Alley" on Route 3 between Second and Third Lakes is legendary as a moose-watching spot, where hastily parked moose watchers sometimes create more traffic hazard than the moose themselves. The Connecticut Lakes offer the best chance to observe loons. Lake Francis is a favorite bald eagle observation point, where open water below Murphy Dam year-round provides the birds with good fishing when other waters are frozen over. Many of the rail trails in this region also provide good birding and wildlife watching. Isolated areas near the river which offer excellent wildlife observation and habitat should be protected from overuse.

The Connecticut River Birding Trail, a series of nature observation sites, was established in 2001 in the middle river valley from Rockingham to Haverhill. Several groups, including the Conte Refuge and the Fairbanks Museum in St. Johnsbury, have worked together to extend the Connecticut River Birding Trail in hopes of establishing a river-long network of sites where the public is welcome to enjoy the area's wildlife and natural heritage. A free map describing the northern extension of the "trail" in the Headwaters region was published in 2005, and is available to the public. Birding Trail sites in the Headwaters Region include

- Fourth Connecticut Lake
- Connecticut Lakes Headwaters Natural Area
- Deer Mountain Campground
- Lake Francis State Park
- Johnson Memorial Forest
- Indian Stream Road
- Coleman State Park & East Colebrook Fields
- The Balsams & Dixville Notch
- Monadnock Mountain
- Sugarloaf Mountain
- Mollie Beattie Bog
- Nash Stream Forest
- Lost Nation Meadows Drive

Hunting - Hunting as a recreational pastime has decreased in recent years, although it is still an important part of life in the North Country. In Vermont, 81% of hunting takes place on private land, and 76% in New Hampshire, with the remaining hunting on public land. These numbers confirm what many already well understand: that respect for private landowners and courteous use of their land is the key to keeping private land open for hunting. Hunters in both states notice an increase in posting of private land against hunting. Keeping large tracts of land open and undeveloped protects wildlife habitat and water quality, and can help protect the tradition of hunting.

The Connecticut River's role as a migratory flyway brings a wealth of waterfowl to the river each spring and fall. New Hampshire and Vermont have enacted reciprocal migratory waterfowl hunting rights for licensed waterfowl hunters in a Connecticut River Zone. A person holding either a Vermont or a New Hampshire resident hunting license which allows the taking of migratory waterfowl and coots may hunt them in this area subject to New Hampshire laws.

In some waterfowl areas, there are homes close to the water. Hunters should take caution in these places.

RECOMMENDATIONS

- US Fish & Wildlife Service's Conte Refuge should continue to expand environmental education and interpretation opportunities for residents and visitors about wildlife and wildlife habitat in the region.
- The New Hampshire General Court should provide adequate funding for the Land and Community Heritage Investment Program to help protect wildlife habitat and to keep land open for hunting.
- Towns should identify opportunities, when land is developed, to retain easements for public access for birding and wildlife observation.
- Land conservation organizations should help landowners who want to protect their land and keep it open for hunting.

The Connecticut River Zone for waterfowl hunting in this region includes the area between Route 3 in New Hampshire and Routes 102 and 283 in Vermont. Hunters on the Vermont side of the Connecticut River Zone must follow New Hampshire regulations.

Hunters should be aware that in New Hampshire, no one may discharge a firearm within 300 feet of a permanently occupied dwelling without the landowner's permission.(RSA 207:3-a). In Vermont, a property owner may establish a 500 foot safety zone around any occupied building, using signs provided by the VT Fish and Wildlife Department (Title 13 3705; Title 12 5793). Vermont law does not provide for a mandatory safety zone around a building, although there may be local ordinances in effect.

- The Connecticut River Scenic Byway Council and the Nulhegan Gateway Association should encourage bird watching and other nature-based, low-impact forms of recreation.
- Hunters should ask permission to hunt on private land that is not posted, and respect private land as if it were their own.
- Eagle and loon observers should rely on good optical equipment to observe the birds from a distance to avoid disturbing them, and be respectful of private property.

RECREATION ON MAJOR NEW PUBLIC LANDS

West Mountain & the Nulhegan Basin, VT

In 1997, a partnership between the State of Vermont, the federal government, and several conservation groups conserved 132,000 acres of forest land previously owned by Champion International Paper Company in the Nulhegan River and Paul Stream basins. With assistance from the Conservation Fund, a national nonprofit organization, Vermont acquired 22,000 acres in Maidstone and Brunswick now known as the West Mountain Wildlife Management Area. The US Fish and Wildlife Service's purchase of 26,000 acres in 1999 established the Nulhegan Basin Division of the Silvio O. Conte National Fish and Wildlife Refuge in Bloomfield, Brunswick, and beyond. Essex Timber Company purchased the remaining 84,000 acres. Easements protect this land from development and allow continued timber management and production, and keep the land open to the public for recreation.

There are plenty of opportunities for wildlife-related recreation at the Nulhegan Refuge, where research and environmental education program development is well underway. The Refuge headquarters is located on Route 105, and its new visitor center will be an asset in teaching the public how to enjoy low-impact recreation in this tributary's watershed. With little intrusion by human development and an abundance of fish and game, extensive areas of the Refuge offer high quality hunting, fishing and trapping (special use permit required). Snowmobiling is permitted on designated VAST trails. Camping, horseback riding, ATVs, and bicycling are not allowed unless authorized by a special permit.

Visitors also can view and photograph plants and wildlife while driving the 40 miles of gravel roads, walking rustic wooded paths, following stream courses, or hiking in the deep woods. A special gem is the Mollie Beattie Bog, with its wheelchair-accessible boardwalk and interpretive signs. Both the Lewis Pond and Headquarters Overlooks provide scenic vistas of the Nulhegan Basin and the surrounding mountains. The public is welcome to visit the Refuge year-round.

Connecticut Lakes Headwaters Forest, NH

New Hampshire's experience with large timber land sales, which began with the Diamond lands in the 1980s, prompted the State to react quickly in 2001 when International Paper Company announced its intention to sell 171,500 acres in the headwaters of the Connecticut and Androscoggin Rivers in Pittsburg, Clarksville and Stewartstown. Governor Jeanne Shaheen and US Senator Judd Gregg appointed a Connecticut Lakes Headwaters Partnership Task Force and charged it with developing a strategy and assembling the funding to protect its traditional uses, and ensure public access for recreation.

The Trust for Public Land, a national nonprofit organization, purchased the land from IP until local, state and federal officials could prepare an approach. Senator Judd Gregg secured an initial \$4 million to help the State acquire a conservation easement on the land, and the legislature followed with an appropriation. The Nature Conservancy (TNC) helped to identify environmentally sensitive areas, and a total of 25,000 acres were purchased by the State as natural areas to be managed by the Fish and Game Department, with a conservation easement held by TNC. One hundred acres were purchased as an addition to Deer Mountain Campground. The remaining 146,500 acres were sold to Lyme Timber Company. The New Hampshire Department of Resources and Economic Development holds a conservation easement on that entire property.

Responsibility for monitoring and enforcement of recreation on the land no longer lies with the timber land owner, but with the NH Department of Resources and Economic Development. The Headwaters Subcommittee agrees that for the state to effectively manage public recreation in the Connecticut Lakes region, information is needed on the kinds and levels of recreational use in the region; who is using the land for recreation, what they value about the property and how much change they would accept.

Recreation at the Connecticut Lakes Headwaters Working Forest - The Forest Legacy Easement requires a Public Access and Recreation Management Plan for the property. The State of New Hampshire, Lyme Timber Company, and the Trust for Public Land worked together to create an Interim Recreation Plan for the Forest. After consulting with the citizens committee and the public, the State adopted the *Initial Public Access and Recreation Plan and Road Management Plan* in March, 2008. It will be effective for five years. As the state-established local river advisory committee for the Connecticut River, the Connecticut River Joint Commissions and their Headwaters Subcommittee

consulted in the preparation of this new plan. Comments focused on addressing concentrated snowmobile use, protecting water quality through trail maintenance, and provision of more non-motorized recreation opportunities.

Recreational uses permitted in the Forest include:

- Bicycling on roads
- Picnicking
- Canoeing & Boating
- Snowmobiling
- Dog Sledding
- Snowshoeing
- Hunting, Fishing, & Trapping
- Swimming
- Nordic skiing
- Walking & Hiking
- Photography & Wildlife Observation

When the Forest was initially conserved, ATVs, camping, and horseback riding were prohibited. Camping is permitted in designated areas only, and no fires are permitted. Group and commercial events require a permit.

Noting that timber companies have traditionally not permitted ATVs on private timberland, the Headwaters Subcommittee believes that because a large commercial ATV trail system is already open to the public elsewhere in Pittsburg and an extensive ATV trail system has opened on state land in nearby Berlin, it is unnecessary to invite ATVs and associated water quality problems into the Headwaters Forest. The subcommittee observed that the many people who want to experience the Connecticut River from its source to the sea would appreciate a trail following the river through the chain of lakes where the river is too small to paddle.

The new recreation plan for the Forest calls for public information in the form of trail guides, rustic signs, and kiosks, and new or improved trails to Magalloway Mountain Fire Tower, Garfield Falls, Indian Stream Gorge, Deer Mountain, and other key areas. Signage, privies, and parking will be added at high use areas. The Designated Road System in the Forest is owned and maintained by the State of New Hampshire, Division of Parks and Recreation. Motor vehicles registered for highway use are permitted, except motorcycles. Road gates are in place to control vehicle access. Roads are open for public auto and truck traffic from the end of mud season to the end of hunting season (or by snow cover, or by December 15th at the latest) unless there is a decision to close specific roads indefinitely or temporarily based on gate management guidelines and criteria.

RECOMMENDATIONS

- New Hampshire Division of Parks and Recreation should collect information on the kinds and levels of recreational use in the Connecticut Lakes Headwaters Forest.
- The new recreation plan for the Connecticut Lakes Headwaters Forest should focus upon increasing low-impact, non-motorized recreation, such as interpretive trails to explain forestry practices.
- New Hampshire Division of Parks and Recreation should work with the NH Office of Travel & Tourism to educate visitors to the Connecticut Lakes Headwaters Forest.
- The Cohos Trail should build a campsite or shelter for hikers in the Connecticut Lakes Region.

CONNECTICUT RIVER BYWAY

In 1999, the States of New Hampshire and Vermont designated the Connecticut River Scenic Byway, after the Connecticut River Joint Commissions worked with the states and regional planning agencies on a plan for a scenic byway along the 275 miles of the river between Canada and the Massachusetts border. In the Headwaters region, the Byway follows Routes 102 in Vermont and 3 in New Hampshire, visiting historic villages, covered bridges, the lakes, and scenic farmland. The Byway provides an economic reason to protect those things that give the region its appeal, and may provide funding for protecting scenic views and historic buildings.

CRJC now hosts the Connecticut River Byway Council, which encourages the promotion of tourism in the Valley, preservation of scenic, cultural, and recreational features, and signage, exhibits, and other information to enable visitors, whether from the next town or from across the country, to enjoy and explore the region. Membership in the Byway Council is open to all. Its steering committee has balanced representation from towns, chambers of commerce, regional planning agencies, cultural and natural resource organizations, agriculture, and state agencies.

A number of communities have stepped forward to serve as waypoint centers to offer information and services to visitors. Colebrook's rest area on Route 3 serves as such a byway center, and also as an education center for the Conte Refuge and an information center for the North Country Chamber of Commerce, sharing the history and appeal of this and nearby towns on both sides of the river. The chamber sponsors an annual Moose Festival with events on both sides of the river. The Great North Woods center at Lancaster covers the region that includes Groveton.

Road design should allow residents and visitors alike to enjoy the rural beauty of the region at a reasonable pace. Inappropriate development and signage could alter the familiar rural character of the area. Rail is a key part of the region's past, and also of its future. Rail lines pass close to the river in much of this region, and an excursion train could

appeal to both residents and visitors. Unsightly deteriorated rail cars should be stored away from the view of Byway travelers and also from those on the river.

The Headwaters Subcommittee wishes to encourage low impact use and enjoyment of the river, noting that a wealth of outdoor recreation opportunities will also translate into better public health. Byway organizers should help seek protection of sensitive recreational features, to help avoid problems with overuse by tourists, and place a strong value upon the Byway's scenic backdrop.

RECOMMENDATIONS

- NH Office of Travel & Tourism should share results of research on recreation in the Connecticut Lakes area to help the local chambers of commerce better inform visitors to Byway centers.
- Organizations offering recreational amenities should avoid commercialization.
- State transportation agencies should avoid the type of road improvement that could lead to increased speed of traffic.
- New Hampshire Division of Parks and Recreation should assist Colebrook in building a foot trail connecting the Byway center with its new town recreation center.
- State transportation agencies should provide limited signage identifying waterways which is aesthetically in keeping with the area's rural nature. Ensure that deteriorating rail cars are not stored within view of the river or of Routes 3 or 102.
- Regional Planning Commissions should inventory scenic views along the river corridor and the Connecticut River Byway.
- Towns should encourage protection of scenic views of the river corridor.
- Land conservation organizations should help protect scenic views and undeveloped lands, especially along the river.
- The Connecticut River Byway Council and area visitor centers should provide information on river conditions and paddling safety.
- Connecticut River Scenic Byway Council, Nulhegan Gateway Association, and chambers of commerce should attract tour groups rather than individual river users to reduce the impact of travel in the area. Encourage birdwatching and other nature-based, low impact forms of recreation. Help educate residents and visitors on the region's distinctive heritage and the respectful use of private land. Encourage an excursion train along the river, inn-to-inn canoe and bicycle trips. Encourage protection of scenic views of the river corridor and help seek protection of sensitive recreational features, to help avoid problems with overuse by tourists.

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