

RECREATION

Riverbend Region



Connecticut River Management Plan



2008

RECREATION

Riverbend Subcommittee

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Cover image: The Connecticut River, looking downstream from Monroe, New Hampshire and Barnet, Vermont

Connecticut River Joint Commissions

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PREFACE

A Citizen-based Plan for the Connecticut River

The Riverbend 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 Riverbend segment of the river were representatives from the towns of Lancaster, Dalton, Littleton, Monroe, Bath, and Haverhill, New Hampshire and Guildhall, Lunenburg, Concord, Waterford, Barnet, and Newbury, Vermont. Ryegate, Vermont did not participate.

The strength of the Riverbend 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 Riverbend 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 issuance of a new license for Fifteen Mile Falls, 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 Riverbend Subcommittee met at the Littleton Community House 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 towns that border 70 miles of the Connecticut River in this segment. 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 Riverbend region:

Guildhall - Richard Martin, Riverbend Subcommittee Co-Chair
Lancaster - Ron Wert, Bill Allin, Robert Christie*
Lunenburg - Howard Young, Don Hallee
Dalton - Michael and Nancy Crosby, Vic St. Cyr
Concord - Deborah Noble
Littleton - Richard "Doc" Hill, Jan Edick
Waterford - Dennis Goodwin
Monroe - Philip Blanchard
Barnet - Andy Mosedale, Bill Graves, Nathaniel Tripp*
Bath - Rick Walling, Riverbend Subcommittee Co-Chair
Newbury - Scott Labun
Haverhill - Keith Darby, Pauline Corzilius, Glenn English*

**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 Riverbend Subcommittee:

- ◆ John Severance, *Connecticut River Commissioner*
- ◆ Tim Donelon, *TransCanada Hydro Northeast*
- ◆ Steve Couture, *NH Department of Environmental Services Rivers Coordinator*

We are particularly grateful to the Town of Littleton for providing meeting space.

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NH Department of Environmental Services
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RECREATION ON AND ALONG THE CONNECTICUT RIVER

The Riverbend Region offers more varied recreational opportunities than perhaps any other segment of the Connecticut River, due in part to the changing character of the river as it moves from free-flowing stream to the deep expanses of the reservoirs and back, combined with the appealing quality of its water and the scenic nature of the largely undeveloped farm and forest land along its banks. Canoeing, kayaking, rafting, sailing, swimming, and fishing are important low-impact forms of river recreation, while power boating, water skiing, and jet skiing are common higher-impact activities. The river is used here year-round, with ice-fishing a popular winter activity on Moore Reservoir.

Popular land-based recreation includes camping, hiking, bicycling, hunting, picnicking, photography, bird-and-wildlife-watching, snowshoeing, and cross-country skiing, as well as snowmobiling and touring by all-terrain vehicles. The open scenic views of the river valley provide pleasant auto and bicycle touring, particularly along Routes 10 and 135 in New Hampshire, and Route 5 in Vermont, roads designated as part of a National Scenic Byway: the Connecticut River Byway. Byway visitor centers in Lancaster, St. Johnsbury, Wells River, and Haverhill Corner are now introducing residents and visitors to the region's natural and cultural heritage.

The Riverbend Subcommittee seeks for the region's residents a prosperous rural lifestyle with quality leisure time. Recreational opportunities should be available for extended family and friends in a pleasing environment with abundant, healthy and clean food, water, and air.

Economic Value of Recreation

It is increasingly clear that safeguarding the value of the Connecticut River for recreation supports both "quality of life" and local economic health. Outfitters, merchants, campgrounds, motels, bed and breakfasts, and other businesses earn income from those who come to enjoy the Connecticut River. Several recent studies confirm the economic value of the area's woods, waters, and wildlife for recreation.

A 2007 study in New Hampshire (1) 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 nine public boat ramps in the White Mountains Region, including at Dodge Hill and Pine Island boat launches on Moore Reservoir in Littleton, found that 72% of anglers, boaters and swimmers say they would decrease their intended visits to the White Mountains 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, 26% would leave the state and 14% would leave the region. Approximately 35% would go to some unspecified location in New Hampshire, and 26% would remain in the region. Those recreationalists who would leave the state because of declining water clarity and purity would create a loss of 18% – or about 483,000 visitor days. The Riverbend Subcommittee suggests that the economic impact of mercury pollution should be considered for mitigation.

The study found that overall, surface water recreation in the 14 towns in New Hampshire's White Mountains tourism region generates over 1000 jobs, over \$24 million in personal income and over \$67 million in business sales, totaling about 18% of the recreational revenue generated by anglers, boaters and swimmers in New Hampshire. A perceived decline in water clarity and purity in the White Mountains region would lead to a loss of almost 200 jobs, a loss of about \$4 million in personal income and approximately \$12 million in lost business sales.

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.

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. (2) 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 2003 study (3) 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. The Vermont Data Tourism Center has found that outdoor recreation visitors spend nearly a third more than the average visitor when they come.(4)

To understand the value of this recreation to local communities, North Country Council and the National Wildlife Federation conducted a study for the Headwaters and Riverbend Subcommittees in 1996. (5). A survey of businesses from Pittsburg to Haverhill that provide goods and services both directly and indirectly related to water-based recreation on the Connecticut River 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.

The Nulhegan Gateway Association formed in 2002 to coordinate community and economic development that supports the region's environmental stewardship and traditional character, and has begun to look at recreation as a factor in the region's economic future. The Association's region includes communities along both sides of the northern Connecticut River as far south as Lunenburg, VT.

BOATING

The character of the river in the Riverbend region varies from swift and free-flowing to impounded behind Gilman Dam and the three dams of TransCanada Hydro Northeast's Fifteen Mile Falls hydro stations. This influences the kind of boating that takes place in each part of the river.

Canoeing and Kayaking

Between Guildhall and Northumberland, the river passes over the remains of the Wyoming Dam, breached in the 1980s. Kayakers play in the drop, although the remains of the dam can be hazardous to all but the most experienced paddlers, especially at low water. The portage around the breached dam is located on the Vermont side, on land owned by the State of Vermont and the Town of Guildhall.

In the 21 miles from Guildhall to the Gilman Dam, the river moves quickly and is frequently shallow, making it most suitable for canoes and kayaks, although use is light because there are few places to reach the river in this area. The river here is flatwater, providing easy paddling even for beginners. Weekday use is often by camp groups, while weekend use is more often by individuals. In recent years, the Lancaster Rotary Club has sponsored a popular annual paddling trip on the river which concludes with a barbecue at a riverside farm.

Below the Gilman Dam, a canoe and kayak-only swift water stretch soon gives way to the broad waters of Moore Reservoir. This 3500-acre water body, home to bald eagles and a variety of other wildlife, is remarkable for its undeveloped shoreline, a result of its ownership by the hydro power company. This large reservoir, highly valued by area residents, is used by all types of watercraft. Canoeists share the river with power craft here and also in the impoundment behind the Comerford Dam, which begins immediately below Moore Dam. All the dams have portage trails, providing carries and access, although some of the carries are difficult. There is potential for an outfitting business at Moore Dam, where trucking assistance with the portage could be useful.

Below Comerford to Newbury's Place Farm, where the river slows as it reaches the Wilder Dam impoundment, the water is most suitable for canoes and kayaks which are easily portaged around the McIndoe Falls and Dodge Falls Dams. Below these dams, the river is swift and shallow. Residents report observing groups of canoes on this section most summer days. The Lower Cohase Chamber of Commerce sponsors an annual "Paddle the Border" event in the Haverhill-Newbury reach of the river.

Power boats

Above the Lancaster-Lunenburg Bridge at Route 2, the river is not wide enough for legal travel over headway speed, and only small outboards can pass among the rocks. Shallow-draft pontoon boats and smaller craft use the river from the Route 2 bridge to the Gilman Dam in Dalton/Lunenburg. Farther downstream, the broad expanses of Moore and Comerford Reservoirs open the river to waterskiing and cruising. Other than on the reservoirs, the river is in most places barely wide enough for legal travel over headway speed.

Ski craft & personal watercraft - The rules for personal watercraft, also known as jetskis, are confusing on the Connecticut River because the definition of the craft is outdated in New Hampshire. A "ski craft" is a kind of personal watercraft currently defined in this state as any motorized vessel that is less than 13 feet in length, capable of exceeding 20 miles per hour, and can carry no more than two persons. These craft may not exceed headway speed within 300 feet from shore, islands, bridges, other boats, swimmers, or floats, and therefore require a river that is more than 600 feet wide. Ski craft can be used legally in the Riverbend region only on Moore, Comerford, and McIndoe Falls Reservoirs. However, they are regularly observed using the unimpounded part of the river as far north as Lancaster.

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. Because they are currently defined as boats, they may travel over headway speed on any portion of the river that is over 300 feet wide. Inconsistencies in this definition have resulted in confusion as to which laws apply to which craft, and have made enforcement difficult.

RECOMMENDATIONS

- The NH General Court should update the definition of ski craft to apply the rules for ski craft to all personal watercraft, to simplify enforcement and to protect the sensitive river shoreline.
- Businesses renting jet skis should be certain their customers understand how and where these craft can be legally operated.

Boats and their relative effects upon the river

Not all boats have the same effect upon the river environment. Canoes, kayaks, and rowboats or sculls create no wake, provide healthy exercise, and allow paddlers to quietly observe and enjoy the river with little disturbance to other boaters. Small motor boats and pontoon boats create relatively little wake and little or no other impact, although they use a non-renewable energy source.

Large power boats, however, create wakes which cause erosion on the shoreline and can disturb wildlife, use non-renewable energy sources, and do not encourage awareness of the river. Motor boat wakes are a significant cause of bank erosion on the Connecticut River. 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. This leads to water pollution and loss of high quality farmland, and sometimes forces landowners into expensive stabilization projects.

Large sized power boats are commonly used on Moore Reservoir in particular, resulting in boat chop that attacks the shoreline. The Subcommittee encourages slow travel on the river to minimize bank erosion, and urges boaters to be aware of their wake. Boaters should be courteous to those in smaller craft, and avoid disturbing waterfowl.

Jet skis create a high wake and have potential to disturb wildlife resting in areas too shallow for larger boats. There are reports of conflicts between jet skis and fishermen. Jet skis rely on a non-renewable energy source, affect shorelines, offer little opportunity for the rider to experience the river, and diminish a sense of solitude and privacy on the river.

The Subcommittee hopes to minimize the impacts of boat wakes on the riverbank, both through enforcement of existing boat speed laws and by discouraging use of the river by high-speed, high-powered boats by not constructing more public access sites to accommodate them.

RECOMMENDATIONS

- The New Hampshire Marine Patrol and Vermont State Police should confine the use of high-speed, high-powered boats, jet skis, and water skiing to selected areas on Moore and Comerford Reservoirs.

Boating laws

New Hampshire boating law is in force on the Connecticut River. 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 legal speed on the river therefore depends upon the river's width. The 16 miles of river above the Mt. Orne Covered Bridge in Lancaster/Lunenburg are too narrow for legal travel above headway speed by any type of boat. This also applies to the one and a half mile from Comerford Dam to Stevens Island at Barnet, and the 19 miles from the Dodge Falls Dam in Ryegate to just below Bedell Bridge State Park in Haverhill. Ski craft can be used legally in the Riverbend region only on Moore, Comerford, and McIndoe Falls Reservoirs. While there are a few places in these reaches where the river is more than 300 feet wide, the riverbanks are vulnerable to erosion throughout.

Many river users consider that enforcement of boating laws should be increased. Boaters are sometimes unaware of or disregard the boat speed law and boating etiquette. The state line, which follows the Vermont riverbank before construction of the dams at Fifteen Mile Falls, is now inundated by Moore and Comerford Reservoirs. Much of these two reservoirs, therefore, lies in Vermont.

RECOMMENDATIONS

- NH General Court should increase funding for enforcement of boating laws.
- NH Department of Safety should enforce existing boating laws, boating under the influence of alcohol, and other regulations.
- Businesses offering jet ski rentals should be certain their customers understand how and where these craft can be legally operated.

- Outfitters and guides can help improve boating safety and their customers' experience by reminding them of boating laws and visitor responsibility, and cautioning them not to disturb wildlife such as loons.
- Boaters should obey boating laws and aid in policing Moore Reservoir area by calling authorities when an incident occurs, not after the fact.

Boater education - 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. 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.

Boating on the Connecticut River in Vermont and New Hampshire, a pamphlet published by the Connecticut River Joint Commissions and posted on their web site, indicates public access sites and other useful information for boaters. The pamphlet is also available at Byway centers. Central Vermont Public Service Company created an excellent guide to the Passumpsic River, a popular paddling river, but it is now out of print.

RECOMMENDATION

- Central Vermont Public Service Company should reprint its excellent guide to the Passumpsic River.

Boating Safety - A number of cautions exist for boaters in the Riverbend region. At Guildhall/Northumberland, the riverbed still contains concrete, spikes, and rebar, the remains of the breached Wyoming Dam, all hazards to paddlers. Area fire departments need emergency water rescue equipment and training to be prepared for boating, fishing, and swimming accidents, particularly at this spot, and in all seasons.

Water releases from Murphy Dam far upstream at Lake Francis, or from any of the dams at Fifteen Mile Falls, can result in sudden water level changes, as can heavy storms in the high country surrounding the river. Sudden releases of water can also pose danger for boaters anchored below the dams.

Boating hazards in the reservoirs include submerged or floating logs as well as the rocks and shoals that may be more or less submerged due to changing water levels. On Moore and Comerford Reservoirs, strong winds and chop from boat wakes can create difficult conditions for small boats. Following a recommendation of the 1997 plan, the power company worked with the Littleton Fire Department to provide a small rescue boat with lines and life preservers for Moore Reservoir.

RECOMMENDATIONS

- The NH Department of Safety and Vermont State Police should buoy off danger areas on Moore and Comerford Reservoirs.
- NH Department of Environmental Services and VT Agency of Natural Resources should work with the landowners to remove dangerous debris at the breached Wyoming dam.
- State Emergency Management agencies should assist local fire departments in acquiring emergency water rescue equipment for river recreation emergencies at all seasons.
- Boaters should avoid anchoring their boats below dams due to the possibility of sudden water releases, and watch for hazards in the reservoirs such as submerged or floating logs, and for the rocks and shoals that may be more or less submerged due to changing water levels.

River and Reservoir Access

There are 21 boat launches providing access to the Connecticut River in the Riverbend segment, including 11 ramps for all kinds of boats and ten sites serving only car-top boats. They vary in size, amount of parking, availability of picnic sites, and other amenities. People especially enjoy picnicking at power company access sites on the large reservoirs. Central Vermont Public Service Company provides portages around the seven dams on the Passumpsic River. Boat landings in the region sometimes suffer from litter problems, and there is occasional vandalism.

State agencies should continue to assist towns in setting up and maintaining access to the river, especially for fishermen, and where federal funds are to be used in transportation projects. Appropriate signage at access sites is a good idea. The concept of a registration fee for non-motorized boats could be explored, to provide funds for non-motorized river access and enforcement of boating laws.

Any new access sites should be carefully located and designed to prevent a level of boat traffic that leads to unsafe conditions such as conflicts between power boats and swimmers or non-motorized craft, demands a level of enforcement that currently does not exist, or disturbs sensitive habitat. The design of boating access ramps should avoid inviting those boats which can create wakes which can erode the riverbank or travel consistently faster than the width

of the river allows under the law. Access intended for canoes and small boats can be accomplished if necessary by creating a ramp with a pylon in the middle to discourage large boats.

Access for canoes, kayaks, and other car-top boats - Four access points for car-top boats have been added in recent years: at the Mt. Orne Bridge in Lunenburg; on the lower Passumpsic River in Barnet; at the Route 302 bridge in Woodsville; and at Knoxland Farm in Newbury.

More access for canoes and kayaks would discourage trespassing on the property of farmers and other riverfront landowners, and abuse of private property by recreationists. A privy is needed to reduce the present human waste problem at the canoe/fishing access at the breached Wyoming Dam in Guildhall. Vermont is looking to increase non-motorized access to the Connecticut River, and this is an ideal site for state assistance with such access.

Between Guildhall/Northumberland and Gilman/Dalton, the river offers fine paddling but is not as well traveled as it is upstream. More access alternatives in this reach might create a greater variety of possible canoeing and kayaking trips and disperse the impacts of public use. The East Concord Overlook Cemetery, located on land owned by TransCanada, is sometimes used for car-top access, but would not make an ideal public access site because it is difficult to use and challenging to supervise because it is isolated. Access is needed on the New Hampshire side of Gilman Dam in Dalton. While Dalton Hydro maintains a portage around the dam, there is no access for emergency rescue. This could be accomplished, while providing security for the dam, by installing a security gate with a double lock on the service road just beyond the river access so that paddlers could get to the river but not to the dam.

There is currently no public access in Ryegate, where the river is suitable only for very shallow draft boats. People presently use an informal, unauthorized path to the river below the Dodge Falls Dam, on former paper mill property. Signage sometimes can be misleading for paddlers, such as at the takeout above Dodge Falls Dam.

RECOMMENDATIONS

- Fish and Game/Wildlife and Parks/Recreation agencies and towns should encourage more car-top boat access for canoes and other small craft, on the mainstem and tributaries, because of their low impact on the river. Screen parking from the river with a vegetated buffer strip and use low-impact design for their construction.
- State transportation agencies should assist in establishing access to the river where federal funds are used in transportation projects.
- The states should explore a registration fee for non-motorized boats, to provide funds for non-motorized river access.
- The Vermont Agency of Natural Resources should work with the Vermont River Conservancy to explore the possibility of a public access easement for the informal access below the Dodge Falls Dam in Ryegate, on the paper mill property.
- UVLT should work with the owner of land on the NH side of Dodge Falls Dam in Bath to provide better signage at the upstream takeout above dam. The current sign is misleading.
- Guildhall should work with the State of Vermont to provide a privy to reduce the present human waste problem at its town riverfront property, and consider turning this river access over to the State.
- Dalton Hydro and the Town of Dalton should cooperate to open a car-top river access at Gilman Dam, installing a security gate with a double lock on the service road just beyond the river access.

Access for power boats - Sufficient public access to the river for trailered boats already exists in the Riverbend region, and further access should be discouraged. There are public boat ramps located on all parts of the river wide enough for legal travel above headway speed. In Lancaster, Newbury, and Haverhill, there is power boat access to parts of the river which are not wide enough for travel over headway speed. Although parking spillover occurs, expansion of parking would negatively affect the river. 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. Marinas and other high impact uses could invite further enforcement problems which already exist in this reach.

RECOMMENDATIONS

- Fish and Game/Wildlife and Parks/Recreation agencies and towns should discourage new public access to the river for trailered boats, since there is already enough access in the parts of the river wide enough for legal travel above headway speed by motor boats. They should provide limited signage at their existing river access sites, aesthetically in keeping with the rural nature of the region, on boat speed laws, the problem of bank erosion, nuisance aquatics, and boater responsibility.
- Towns should discourage construction of marinas on the river.
- Citizens should take more formalized responsibility for cleaning up trash at all boat access areas. They should use designated public access to reach the river, rather than crossing private land, dispose of litter properly, and avoid creating boat wakes which erode riverbanks.

Public access points: (river miles measured from river mouth).

TOWN	ACCESS NAME	BOAT TYPE	OWNERSHIP	RIVER MILE	COMMENTS
<i>Guildhall VT</i>	Wyoming Dam portage	car-top boats only	above dam: State of VT; below dam: Town of Guildhall	320	above dam: gravel path and stone steps; below: sandy path, good signage
<i>Lancaster NH</i>	MK Convenience Store Access	trailed & car-top boats	privately owned but open to the public	310	at Route 2 bridge; gravel path, campground; ramp silts in easily
<i>Lunenburg VT</i>	Mt. Orne Bridge	car-top boats only	Town of Lunenburg	304	gravel path and steps
<i>Dalton NH</i>	Dalton Car-top Boat Launch	car-top boats	Dalton Hydro Company	301	paved; downstream from the railroad bridge; slightly washed out from spring runoff
<i>Concord VT</i>	Gilman Boat Launch, a.k.a. Walker Pit	small trailed & car-top boats	TransCanada Hydro Northeast	297	Moore Reservoir
<i>Littleton NH</i>	North Littleton Boat Launch	trailed & car-top boats	TransCanada Hydro Northeast	292	docks; Moore Reservoir
	Dodge Hill Boat Launch	trailed & car-top boats	TransCanada Hydro Northeast	289	Moore Reservoir concrete docks
	Pattenville Boat Launch	trailed & car-top boats	TransCanada Hydro Northeast	287	docks; Moore Reservoir
	Pine Island Boat Launch	trailed & car-top boats	TransCanada Hydro Northeast	287	docks; Moore Reservoir
	Moore Dam Boat Launch	trailed & car-top boats	TransCanada Hydro Northeast	287	docks; Moore Reservoir
	Waterford Bridge Boat Launch	trailed & car-top boats	TransCanada Hydro Northeast	286	concrete docks; Moore Reservoir
<i>Waterford VT</i>	Waterford Boat Launch	trailed & car-top boats	TransCanada Hydro Northeast	288	docks; Moore Reservoir
	Moore Dam portage	car-top boats only	TransCanada Hydro Northeast	286	portage around dam
<i>Barnet VT</i>	Pine Grove Boat Launch	trailed & car-top boats	TransCanada Hydro Northeast	281	Comerford Reservoir
	Passumpsic River Car-top Access sites	car-top boats only	Central Vermont Public Service		portages around each of seven dams on the Passumpsic River.
	Passumpsic Village	fishing access	Passumpsic Valley Land Trust	279	wheelchair ramp for fishing access
<i>Monroe NH</i>	Comerford Dam Access & Portage	car-top boats only	TransCanada Hydro Northeast	280	portage around dam
	McIndoe Falls Dam Access	car-top boats only	TransCanada Hydro Northeast	274	portage around dam
<i>Bath NH</i>	Dodge Falls Hydro Access	car-top boats only	Essex Hydro	269	portage around dam; land has been conserved by LCHIP/UFLT. Needs better signage at upstream takeout above dam. Current sign is misleading
<i>Ryegate VT</i>	<i>no public river access</i>				potential for public access at Dodge Falls; currently informal access over private land

<i>Haverhill NH</i>	Woodsville Access	car-top boats only	NH Fish & Game Dept.	265	just below Route 302 bridge; improvements planned
	Bedell Bridge State Park	trailed & car-top boats	NH Fish & Game Dept.	252	excellent bird-watching location
<i>Newbury VT</i>	Knoxland Farm Access	car-top boats only	Knoxland Farm	262	public access through easement with Upper Valley Land Trust
	Haverhill Bridge Access	trailed & car-top boats	VT Fish & Wildlife Dept.	254	has signboard and steep, paved ramp; silts in easily

*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.

Docks

The past ten years have seen new private docks installed on Comerford Reservoir, although there are few docks on the rest of the river in this region.

In New Hampshire, docks on rivers may be up to 6 feet by 30 feet on lots with 75 feet of shoreline frontage or more. They 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 re-contouring. Shoreland owners wishing to install docks should check with NH DES to see if they can file a Seasonal Dock Notification or whether a permit is needed.

Docks must be removed each fall before the river freezes, to protect them from ice damage and for the safety of the many snowmobilers using the ice in winter. Ice damage to docks is common, and each year some are torn loose. The state should consider establishing a date for dock removal similar to that in effect for ice fishing houses, such as when the floating safety lines at the dams are removed at the end of the recreation season.

Docks must be anchored securely to the shore and built so they can be easily removed and stored without damage to the riverbank. Leaving as much native vegetation as possible protects scenic qualities and the landowner's privacy, and safeguards the riverbank. High water, which often comes in June after docks are installed for the season, sometimes carries them away, and they drift downstream to become a hazard to boaters and a nuisance at the dams. Tethering a dock to the riverbank helps prevent this.

There is currently little or no control over docks on the Vermont shore, since New Hampshire jurisdiction extends to the low water mark on the Vermont side, and on the reservoirs, the state line has been inundated by the dams. Both states have been reluctant to apply their dock rules to this no-man's land, leaving the shoreline vulnerable to uncontrolled riverfront development.

RECOMMENDATIONS

- The Vermont Agency of Natural Resources should adopt and enforce rules for docks on the Connecticut River similar to those established by New Hampshire. In the meantime, Vermont towns should consider adopting local control of docks since the state does not control docks on the Connecticut River. States and towns should consider both encroachment on the water and impact upon the banks when issuing dock permits.
- New Hampshire shoreland owners wishing to install docks should check with NH DES to see if they can file a Seasonal Dock Notification or whether a permit is needed.

Invasive Plants and Animals -Eurasian milfoil and water chestnut are exotic plants that interfere with boating, swimming and fishing, and can overwhelm native plants. These nuisance plants are now present downstream, but have not yet reached the Riverbend region. While the Zebra mussel has not yet invaded the Connecticut River, the river's water chemistry is suitable, and the mussel has already infested Lake Champlain, just a short trip for a boater or fisherman. Juvenile or larval mussels can hitchhike in anglers' bait bucket water and boat engine cooling water. These aquatic exotics move around by attaching to boat hulls and trailers, and reproduce rapidly because they do not have any natural local predators.

Didymosphenia geminata (Rock Snot, also called Didymo), discovered on the Connecticut River in Guildhall and upstream 2007, is an invasive freshwater diatom (microscopic algae). It can form extensive colonies on the bottoms of rocky river beds, smothering aquatic life such as macroinvertebrates (aquatic insects). Its appearance is very unattractive, making the water less appealing for recreation. Biologists believe that Didymo was introduced on contaminated fishing/wading gear, especially felt-soled waders, and that it could be spread by any other recreational

equipment, including bait buckets, diving gear (neoprene), water shoes, canoes, kayaks, and life jackets. There is currently no way to control or eliminate Didymo.

The best defense against such invasives is by boaters who check their boats, trailers, and fishing equipment before launching in the lakes, river or its tributaries, to ensure that they are not unwittingly introducing Eurasian milfoil, water chestnut, Zebra mussels, or other unwanted invasive exotic plants and animals into the Connecticut River.

RECOMMENDATIONS

- Fish and Game/Wildlife and Parks/Recreation agencies should set up boat washing stations at launches at infested waters to prevent vehicles from bringing Didymo, Zebra mussels, milfoil, and other invasive species to the Connecticut River.
- Fishing derby and regatta organizers should inform participants about boating laws and require boat and trailer checks before boats are launched, to avoid introducing invasive plants and animals.
- Boaters should check boats and trailers before launching in the Connecticut or its tributaries to avoid introducing unwanted invasives.
- Fishermen and other recreationists should clean their gear carefully to avoid spreading Didymo.

RECREATION AT FIFTEEN MILE FALLS

Much of the stunning beauty of the river and its forested backdrop in the center of the Riverbend region is due to long-time stewardship of these thousands of acres by the hydro power companies that have owned them. Without this stewardship, Moore and Comerford Reservoirs could easily have fallen prey to the same kind of poorly controlled development that plagues Lake Winnepesaukee and others.

While the miles of dramatic cascades and waterfalls that once marked the Connecticut River here are now many feet below the surface of the reservoirs, the scenic power of the river valley remains. Much of the shoreline of Moore and Comerford Reservoirs, and over 8000 acres surrounding them, are now owned by TransCanada Hydro Northeast. TransCanada also owns and manages the three dams that comprise the Fifteen Mile Falls hydro development, having purchased them in 2005 from USGen New England.

Recreation Plan for Fifteen Mile Falls - The new operating license requires the company to prepare a recreation plan and schedule for improvements for its lands and facilities. The company has twelve developed sites and started work in 2007 that will be completed by 2015. Work will take place at all twelve sites, and will include two angler access sites below dams, two primitive campsites on the New Hampshire side below Gilman and Moore Dams, four buoyed areas for swimming, access road improvements, and more. Broken glass at Dodge Hill will be removed.

Recreation use and access - TransCanada Hydro Northeast's predecessors, US Gen New England and New England Power Company, earned the respect of local citizens for creating and managing extensive public recreation access at the reservoirs, including eight boat ramps on Moore Reservoir, two on Comerford, and one on McIndoe Falls Reservoir.

USGen enforced a prohibition on night mooring and overnight camping on Moore Reservoir lands to reduce the hazard of forest fires. Until the company undertook an expensive patrol program, abuse included damage to the shoreline and vegetation, vandalism, and littering, with the threat of forest fire. The company's visitor center at Moore Dam, which once housed exhibits and provided public restrooms, is now closed. River recreationists will benefit from open communication about the management of Moore Reservoir and surrounding lands among the company, the organization(s) holding conservation easements on the Fifteen Mile Falls lands, the public, private landowners, and private user groups.

The Riverbend Subcommittee considers that the impoundments at Fifteen Mile Falls are already experiencing a maximum level of use, and that there is currently no room for expansion of high impact uses. This is especially true of power boating on Moore Reservoir, which has greatly increased in recent years. Concerns include the reliance of power boating and the required facilities on non-renewable resources, damage to riverfront property and associated costs to landowners and taxpayers, and loss of the peaceful atmosphere appreciated and enjoyed by the people of the region. Use of Moore Reservoir for high-speed racing tournaments could have negative impacts upon the river and other river-related recreation, and jeopardize the rural nature of the area.

The large impoundments of the Riverbend Region create some of the best sailing conditions anywhere on the Upper Connecticut River, and could host sailing regattas. Scullers increasingly use the area near Moore Dam, and sculling races and canoeing competitions, which are becoming popular downstream, could also take place here.

Reservoir water levels - In response to public request, TransCanada manages water levels in the Comerford impoundment for recreation following the policy set by its predecessors, USGen and New England Power Company. During weekends from Memorial Day weekend through the beginning of October, when 85% of river recreation occurs,

the water level is kept at 646 feet (above mean sea level) from 4 pm Friday until midnight on Sunday. The water level seldom reaches the limits of the dam's operating permit. By Monday mornings, as power generation for business activity resumes, dam managers return the impoundments to normal operating levels. These limits are not federal license restrictions, and there may be times where circumstances dictate the need to deviate from these levels.

The 2001 federal license for Fifteen Mile Falls requires a minimum river flow from Comerford Dam to sustain fish and aquatic life in the many miles of river below. If there is not enough natural flow in the river to meet this requirement, water is released from Comerford Reservoir. However, because of the many private homes here and limited water storage capacity, the water level on this reservoir is not usually reduced except to make room for the spring freshet. If more water is needed to provide the minimum flow, it is taken from Moore Reservoir and the Connecticut Lakes upstream.

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 reservoirs may be lowered to provide water for the rest of the river in times when there is little or no summer rain. A severe drought in 2002 resulted in draining Moore and Comerford Reservoirs down to a point where bars and other normally submerged boating hazards were exposed. Wise forest management and the protection of the many feeder wetlands surrounding the river are a good insurance policy against the effects of drought in the reservoirs.

Boaters can check on water conditions at the Connecticut River Joint Commissions' web page on 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 mainstem dams.

Scenic landscape- The Riverbend Subcommittee's 1997 edition of this plan recommended that the lands around Moore Reservoir remain undeveloped and as wild as possible, to protect the scenic views for which the area is well known, and to allow hiking and cross-country skiing to continue unhindered. The terms of the 2001 license for Fifteen Mile Falls include a provision to donate permanent conservation easements on approximately 8,000 acres surrounding the hydro project, promising to make the Subcommittee's vision a reality, and permanently protecting both waterfront and ridgelines from uncontrolled development. The company and an advisory committee of agencies and non-profit organizations have worked to shape conservation easements for these lands. Throughout the Riverbend region, an effort to keep farmland open and active, perhaps with the help of conservation agreements, will help retain scenic views to and from the river.

Trails at Fifteen Mile Falls - There is a map for the trail which remains open from the Route 18 bridge to Moore Dam. New trails could offer improved access from Littleton to Moore Dam. The old trail built by a youth corps along Moore Reservoir from Waterford Launch to Dodge Hill and North Littleton is presently impassable due to blowdowns.

RECOMMENDATIONS

- TransCanada Hydro Northeast and its successors should continue to maintain public boat access at Moore, Comerford, and McIndoe Falls Reservoirs, and ensure adequate signage indicating potential danger zones and reminding the public of the boat speed law, the problem of bank erosion, nuisance aquatics, and boater responsibility.
- NH Department of Safety Services should set aside areas for quiet, low-impact boating use, especially on certain stretches of Moore Reservoir.
- TransCanada Hydro Northeast, its successors, and land conservation organizations holding easements to company lands should maintain open communication with the public about the management of Moore Reservoir and surrounding lands, and be alert for opportunities to protect or improve scenic views.
- TransCanada should restore the old trail along Moore Reservoir from Waterford Launch to Dodge Hill and North Littleton.

SWIMMING

Water quality and swimming safety - The Riverbend region offers fine swimming, whether at a public beach at the reservoirs or at a natural beach on a sandy river bend. At Woodsville and downstream, people often picnic on and swim from sandbars on the river.

In preparation for the update of this plan and at the request of the Connecticut River Joint Commissions, the New Hampshire Department of Environmental Services, assisted by the Environmental Protection Agency, conducted an assessment of the entire river in New Hampshire in 2004. The river was found to be safe for swimming throughout most of the Riverbend region. The exception was the northernmost part of this area, from the confluence of the Upper Ammonoosuc River to a half mile below the Guildhall/ Northumberland bridge, due to *E. coli* bacteria from an unknown source.

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 they have direct access to a tributary or the river itself. Pet droppings washing into storm drains also contain bacteria. Bacteria counts are variable, but are likely to be higher in the river after a heavy storm.

Among the river's New Hampshire tributaries, sections of many are not considered safe for swimming. On Israel's River, 6.63 miles in Jefferson and 2.03 miles in Lancaster do not support recreation due to *E. coli* bacteria. Otter Brook, Caleb Brook, and Bone Brook in Lancaster also are contaminated with bacteria. In Littleton, 3.32 miles of the Ammonoosuc River are impaired by *E. coli*. In Haverhill, Oliverian and Clark Brooks are unsafe due to bacteria from unknown sources. In Vermont, swimming is unsafe in the Passumpsic River from Pierce Mills Dam to five miles below the Passumpsic Dam due to combined sewer overflow contamination. CSOs also contaminate the lower Sleepers River.

Whether it is safe to swim in the other New Hampshire or Vermont tributaries is not presently known. New citizen watershed planning groups have formed on the Ammonoosuc, Stevens, and Wells Rivers to address this lack of information, and volunteer water quality monitoring activities are now underway on the Israel's, Ammonoosuc, Wells, and Stevens Rivers.

Due to sudden releases of water, it is unsafe to swim immediately below the dams.

RECOMMENDATIONS

- NH Department of Environmental Services and VT Agency of Natural Resources should assist and support volunteers in monitoring water quality, to ensure that the river is safe for swimming. Sources of bacterial contamination should be identified and eliminated. Regular water quality monitoring at beaches should continue.
- Towns should notify the public immediately if there is a suspected water quality violation at a wastewater treatment plant during the summer recreation season.
- Citizens should avoid swimming or anchoring boats below the dams, due to the danger of sudden water releases.

RIVER CAMPING

Campsites in the Riverbend region - In the Riverbend region, there are currently only six places on the river where the public is allowed to camp overnight. Interest in canoe camping in the Riverbend region is rising sharply, and creation of several new sites will help prevent trespassing and disperse camping impacts. Campfires require a permit from local authorities.

Camping also takes place on private lands, sometimes but not always with the permission of landowners, particularly the hydro power company. Landowners report problems of unauthorized camping on private property. Unauthorized camping on Moore Reservoir, both by through-paddlers and by local residents, has been a problem for years. The reservoirs present barriers to paddlers on extended trips, because they are long, often experience wind-driven waves, provide little or no current, and must be crossed in a single day. TransCanada, which maintains several primitive campsites down river, is finalizing details for construction of a campsite on Moore Reservoir, fulfilling the terms of the 2001 license for Fifteen Mile Falls.

Indian Island, at the confluence of the Passumpsic and Connecticut Rivers, is owned by TransCanada and protected by a conservation easement held by The Nature Conservancy. Water level fluctuations are frequent here, and the island provides important habitat. Therefore, this island is not suitable for a public campsite, although it is frequently used by campers. Saddle Island in Bath, owned by the Upper Valley Land Trust, is open only for day use.

Camper education is essential. Inn-to-inn canoe trips could be promoted to further low-impact use of the river with an economic return to local businesses.

The Connecticut River Water Trail - In the lower portion of the Riverbend Region, the Upper Valley Land Trust has created a series of primitive canoe campsites. Experience has shown the value of designated sites in carefully selected locations, in places that can be monitored, to reduce unauthorized camping and trespassing.

Campsites are located on parts of conserved land that are easy to reach from the water, do not interfere with the landowner's use of his property, are inaccessible from roads, are not rare plant or animal habitat, and are not known archeological sites. Some campsites are located on islands which do not flood frequently. Access to the campsites is from the river only, and land-based access is prohibited. There is no charge for use of the sites, which is on a first-come-first-served basis, with a limit of two nights stay per site. There is a written agreement with the landowner and a group identified to take responsibility for maintenance.

There is potential for the campsite system to lose its appeal if it is not well monitored, if campers are not responsible, or if the sites become overcrowded. Therefore, wide promotion of the system should be avoided. There is currently no coordinated management of the canoe campsite system, although the National Park Service has produced campsite stewardship guidelines, and the Connecticut River Watershed Council has indicated an interest in overseeing the campsite system.

RECOMMENDATIONS

- Fish and Game/Wildlife and Parks/Recreation agencies should work with recreation groups and local volunteers to identify potential canoe campsite locations, especially north of Fiddlehead Island, and work with state historical and natural resource agencies to be certain they are not known archeological sites or critical habitat. Businesses and paddling groups could adopt a campsite and help with maintenance.
- The Nature Conservancy and TransCanada should post a sign on Indian Island to show that it is not open for camping.
- The Connecticut River Byway Council should encourage inn-to-inn canoe trips to relieve pressure on existing campsites and for their benefit to local businesses.
- Campers must do their part to ensure that their visit leaves the site in the same or better condition than when they arrived, by carrying out trash, cutting no wood, and leaving no trace. Campers should get a permit from the local fire warden if they wish to have a campfire.

Camping open to the public in the Riverbend region:

TOWN	CAMPSITE NAME	CAMPSITE MANAGER	RIVER MILE	CAPACITY	AMENITIES
Dalton NH	<i>Dalton Hydro</i>	<i>Dalton Hydro</i>	297	15 campers	Space available only to through-paddlers on the dam's service road. No amenities.
Monroe NH	Fiddlehead Island	Ammonoosuc Conservation Trust	268	15 campers	None
Bath, NH	Dodge Falls	Essex Hydro	267	15 campers	two lean-to shelters, privy; 9 acre site
Haverhill NH	Howard Island	Upper Valley Land Trust	260	large groups	cleared tent site, box privy, fire ring
Newbury VT	Harkdale Farm	Upper Valley Land Trust	254	12 campers	cleared tent site, box privy, fire ring, picnic table
	Vaughan Meadow	Upper Valley Land Trust	248	12 campers	cleared tent site, box privy, fire ring, picnic table with shelter/lantern supports

FISHING

Residents and visitors enjoy fishing nearly year-round in the Riverbend region for cold water species such as rainbow, brown, and especially the native brook trout. There is a big walleye run in the spring in the Wells River area, and fishing for northern pike and rainbow trout is good near Dodge Falls and from Comerford Dam on down. For four months in winter, the reservoirs become ice-fishing communities of their own. The Narrows is a popular fishing area in both summer and, above Concord Station, through the ice in winter. Fishermen have long had access to their favorite fishing spots on the river, a tradition that may end if riverfront land is developed for seasonal homes or posted against public use. The Passumpsic Valley Land Trust has provided a wheelchair ramp at the Passumpsic River for fishing access.

Fishing is dangerous below the dams because of sudden releases of water. New Hampshire fishing licenses or Vermont resident licenses are required for the Connecticut River.

Fishing tournaments - Moore and Comerford Reservoirs are popular sites for fishing derbies, drawing boats from all over New England. Organizers must notify NH Marine Patrol well in advance of an event. Visiting fishermen, who may not be familiar with the area, need to know the boating laws on the Connecticut River, especially with respect to legal speed near islands, other boats, and fishermen. Fishing derbies could bring invasive species such as Didymo or milfoil, as boats transported from infested waters could be launched in the river or the reservoirs.

RECOMMENDATIONS

- Vermont Fish and Wildlife Department and New Hampshire Fish and Game Department should cooperate to offer a joint free fishing day for residents.
- Fishing derby and regatta organizers should notify the NH Fish and Game Department well in advance of the event and contact TransCanada to be sure that there are no scheduled draw downs that could make launching difficult on the day of the event. NH Marine Patrol should make a special effort to be present.
- Fishing derby and regatta organizers should inform participants of boating laws on the Connecticut River, especially with respect to legal speed, and require boat and trailer checks for invasive species before boats are

launched. Inform participants about the need to wash boats thoroughly after visiting the river, to avoid spreading Didymo to other water bodies.

- Fishermen should avoid anchoring boats below the dams, due to the danger of sudden water releases.

Public health and eating local fish - While fishing is good sport, the fish are no longer completely safe eating. Mercury, largely delivered by prevailing westerly winds, has infiltrated 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 with mercury. Because mercury builds up in the meat of the fish, there is no way to prepare or cook the fish that will reduce or eliminate the mercury.

In 2000, EPA worked with the four Connecticut River states to conduct a comprehensive look at toxins in Connecticut River fish(6). Biologists sampled white sucker, yellow perch, and smallmouth bass from eight sections of the Connecticut River, choosing fish species that represent different levels of the food chain and are widely found in the 410 mile long river. Riverbend Region fish were sampled as part of Reach 6 (Wilder Dam to Moore Dam) and Reach 7 (Moore Dam to Canaan Dam). Fish collected throughout each reach were run through a blender before the composite samples were tested; therefore, fish from Moore Reservoir were combined with fish from the free-flowing part of the river upstream, making it difficult to draw conclusions about conditions in various parts of the river.

The study found that total mercury concentrations in all three species of fish were significantly higher upstream than downstream, and particularly in Reach 7. The State of New Hampshire has set fish consumption guidelines for the Connecticut River and others in the state. On Moore, Comerford, and McIndoe Falls Reservoirs, the State has issued stricter guidelines due to the presence of mercury in the sediments of these fluctuating impoundments, which moves up through the food chain in its more dangerous methylated form. Recent studies have associated water level manipulations in reservoirs and reservoir creation with increases in fish mercury concentrations, and identified the Fifteen Mile Falls region of the Upper Connecticut River and similarly managed parts of the upper Androscoggin and Kennebec River watersheds as mercury hot spots. (7)TransCanada is developing a plan for long-term monitoring of mercury in fish tissue at Moore and Comerford as required by the 2001 license for these dams.

Study results for other contaminants suggest that PCB levels do not appear to threaten fish-eating mammals or recreational fishermen in Reach 7, although this threat increases downstream in Reach 6. DDT breakdown products present a threat to subsistence fishermen and fish-eating birds such as kingfishers in the Riverbend region, but not to fish-eating mammals. Fish in this area were tested for dioxins and furans only in Reach 7, where they were found to pose a threat to subsistence fishermen, but not to other fish consumers.

Lead fishing tackle is also a source of waterfowl and loon poisoning. Both states have prohibited 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

- Congress should act to reduce air-borne mercury delivered to the Connecticut River Valley. State legislatures should urge Congress to take action.
- State and federal authorities should continue to legislate reductions in mercury contamination of the region.
- Citizens should avoid purchasing household items containing mercury and recycle them so the toxin does not end up in a landfill or trash incinerator where it could escape into the environment. Citizens should avoid illegal backyard burning of household trash, especially for this reason.
- Landowners use riparian buffers to capture pollutants before they can reach rivers and streams.
- Homeowners should reduce or eliminate use of pesticides.
- Farmers should use setbacks from streams for pesticide use.
- Fishermen and hunters should replace their lead tackle and shot.

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.

On Moore and Comerford Reservoirs, the State has issued stricter guidelines: Sensitive populations should not consume any fish from these waters; others may consume two meals per month. The NH Fish & Game Department's web site has current information: www.wildlife.state.nh.us

LAND-BASED RECREATION & TRAILS

The Riverbend region of the Connecticut River valley has drawn recreational hikers for years, although the valley is not as well known as the nearby White Mountains. Snowmobiling and ATV riding are also popular in the region.

Walking and hiking are still the most common form of recreation in the United States, including among older Americans, according to recent research. (8) A 2003 survey by the State of New Hampshire 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. Surveys in Vermont in 2002 (9) 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 state in the country.

Another 2002 study (10) 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)

The most popular recreational activities in New Hampshire (walking, wildlife observation, and hiking) require plenty of open space. Since half of recreation takes place within ten miles of home, according to the state's survey, it is important for people to have access to trails near home.

RECOMMENDATIONS

- The New Hampshire General Court should provide adequate funding for the Land and Community Heritage Investment Program to help keep land available for public recreation.
- Regional Planning Commissions should coordinate multi-community recreation and open space plans.
- Land conservation organizations should help protect scenic views and open space, especially along the river; encourage farmland conservation to keep farmland active and views open, and provide public recreation access for birding, car-top boats, or trails where possible and appropriate.
- Towns should identify opportunities, when land is developed, to retain easements for public access for trails, birding, car-top access, or other public recreation.

Private Lands

Public use of private land is a privilege. People in the Riverbend region value the tradition of sharing their land with others who want to walk, hike, snowmobile, hunt, 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 value is now threatened as more visitors come from regions where this tradition is long lost, and disregard the rights of private landowners. This problem can grow as the pace of land development quickens, new homes crowd into what were once woods and fields, and newcomers are uncomfortable allowing their land to stay open to the public. Land is posted and trails are blocked, diminishing the sense of neighborly cooperation which has been a hallmark of the region for so long, and closing off recreational opportunities. For example, there were no acres posted against trespassing in Caledonia County, Vermont, in 1991, but by 2004, 10,982 acres had been posted. (11) Visitors, whether from down the road or down the river, must respect private property.

Landowner liability - Fear of liability is often cited as factor in the decision to close land to 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 assessed under the Current Use program in New Hampshire is eligible for a 20% tax reduction if it is open for public recreation.

RECOMMENDATIONS

- Fish and Game/Wildlife and Parks/Recreation agencies and the Connecticut River Byway Council should educate residents and visitors to the region on respect for private land and visitor responsibility.
- Fish and Game/Wildlife and Parks/Recreation agencies, conservation commissions and recreation groups should educate landowners about the benefits of leaving land open to the public and the liability protections offered by existing laws and about NH's 20% recreational adjustment under current use.
- Towns should encourage open communication between the public, private landowners, and private user groups.
- Recreation groups should provide monitoring and educate hikers, joggers, cross-country skiers, snowmobilers, and hunters on the responsible use of private land to help prevent unwanted trespassing and littering, and encourage landowners to keep their land open to the public and indicate uses they allow.

- Those wishing to use private land should ask permission. Close gates, carry out trash, avoid cutting firewood or using campfires, respect no trespassing signs, avoid causing erosion, and do not use someone else's property as an outhouse. Campers should get a permit from the local fire warden if they wish to have a campfire.

Walking & Hiking Trails

Many towns in the Riverbend region offer hiking and walking trails enriched by views of the river and surrounding hills. Favorite local trails include Weeks State Park in Lancaster, Stone Mountain in Guildhall, Black Mountain in Haverhill, and Mount Pulaski in Newbury. The Cross Vermont Trail Association has worked to develop a trail system in the Wells River Conservation Area, and Lancaster features a River Walk with natural history interpretation along the Israel's River. Littleton has published a map of local trails, and built a covered walking bridge across the Ammonoosuc River that provides a scenic downtown trail for walking and bicycling. The Boltonville Nature Trail is a spur off the Montpelier-Wells River Trail. A number of local schools have constructed nature trails for their students and the public.

New trails could offer improved access from Littleton to Moore Dam. There is potential for a recreation area for hiking and mountain biking on TransCanada land in Concord, VT. A map of major area trails would be welcomed. Citizens interested in quiet recreation could approach their towns to request new trails on public land. There is an opportunity in Dalton to create new trails on the town's school property. There are several federal and state funding programs, such as SAFETEA and the Land and Water Conservation Fund, that can help communities create trails and other new recreation assets.

Trail construction often requires a state permit, especially across streams or in wetlands. Guidance for trail construction is available from both states. Trail maintenance is always an issue, and volunteers are needed to help keep trails in shape, especially since erosion can be a problem on steeper trails.

RECOMMENDATIONS

- Towns should explore federal and state funding programs to create walking trails, such as the ones in the Haverhill Town Forest, especially for cross-country skiing, hiking, and snowshoeing. Towns should consider creating trail guides to town owned properties.
- TransCanada Hydro Northeast and its successors should build hiking trails on company lands around Moore Reservoir, and restore the old trail along Moore Reservoir from Waterford Launch to Dodge Hill and North Littleton.
- Recreation groups should encourage local care-taking of recreation areas (campsites, trail heads, trails), take care of trail erosion with increased trail maintenance, explore possible connections between trails, develop more published information on trail systems, and provide better signage where needed.

Rail Trails

The Ammonoosuc Recreational Trail is a well-used 19.2 mile trail on a former railroad bed running from Woodsville to Littleton. While described by the NH Trails Bureau as a multi-use trail for hikers, snowmobilers, bicyclists, horseback riders, snowshoers, cross-country skiers, bikers, OHRVs, and sled dogs, the trail surface is not suitable for any kind of bicycling. In winter, this trail is so heavily used by fast-moving snowmobiles that it is unsafe for any other form of use. Another trail follows the former Wells River-Montpelier rail line from Wells River to Groton State Forest. This trail is considered very good for mountain biking and hiking from Wells River to Marshfield. While there is strong hope that active rail service will be revived in the region, unused railroad beds can make excellent trails, especially for users who appreciate the gentle grade.

Bicycling

Bicycling is a popular family and touring sport along the Connecticut River in the Riverbend region. The river roads are especially inviting routes for their easy cycling and fine river views. Mountain biking is a growing sport that can take good advantage of woods roads and rail beds but can also cause erosion on hiking trails and in damp areas. Commercial bicycle tours visit the region, with overnight stays at local inns and bed-and-breakfasts.

In Vermont, individual bicyclists and bike tour groups use Routes 102, 18, and 5, and a loop along the west side of Comerford Reservoir from Barnet to Lower Waterford and White Village, to Route 135. In New Hampshire, Route 135 from Lancaster through Woodsville, Route 18, and Route 10 are now part of the statewide bicycle route system.

Safe traveling for cyclists on busy highways is sometimes a concern, such as on state-identified bicycle routes that have no shoulder or bike lane. Adding bicycle shoulders must be balanced with the desire to maintain the rural character of the roadway. Adding wide bicycle lanes can result in increased traffic speed and add to snow disposal problems.

RECOMMENDATIONS

- State transportation agencies should work to improve bicycling safety, considering bicycle shoulders where appropriate, when roads are resurfaced. They should identify roads used by bicyclists and, where necessary, assist towns in creating separate bicycle paths.
- TransCanada Hydro Northeast should build mountain biking trails on company lands around Moore Reservoir.
- Drivers should share the road with cyclists, and bicyclists should know the rules of the road and be courteous to other travelers, especially where there is no shoulder. Bicyclists should ride single file.

All-Terrain Vehicles

ATV numbers are increasing by 10-15% per year, and off-highway recreational vehicle registrations more than doubled between 1996 and 2003 in New Hampshire. They have also risen in Vermont. All vehicles 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 them to be a convenient way to get around on their property, and the comments below do not refer to them, but to recreational use on public land or land owned by others.

There is rising demand among ATV riders for trails similar to those used by snowmobiles in winter. The difference is that snowmobiles traveling on frozen, snow-covered ground do not have the same ability to damage crops, cause erosion, degrade wetlands, or disturb breeding wildlife. In New Hampshire, the state manages 250 miles of ATV trails including some on state lands. In Vermont, ATVs are prohibited on state lands. State law restricts OHRVs from driving through wetlands and surface waters.

Landowners near ATV trail systems report that riders sometimes stray onto their property, leave gates open, and cause erosion. The Subcommittee reported in 1997 that four-wheeled off-road recreational vehicles were eroding the earth fill on Moore Dam. This remains a problem, and presents an expense and enforcement issue for the power company, which could be threatened with loss of its operating license if the dam is compromised in any way by erosion caused by ATVs.

Private landowners need to understand the effects of allowing trails over streams and up steep hills on their land. 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. 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. Proposed trails on state lands 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. Some believe that the NH state park trails funding system created in 1991 has resulted in dependency on motorized users, since the Trails Bureau must rely on registration fees from snowmobiles and other OHRVs.

Enforcement of rules for ATV use is essential. Because NH Fish and Game 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 have the ability to assume this role. NH Fish & Game needs more funding to allow it to fulfill this responsibility. NH Fish and Game is required by law to propose a fine schedule, but has not yet done so. Registration fees should be large enough to provide funds for law enforcement and trail construction. Part of this registration fee could also be dedicated to a landowner restitution fund to which landowners can apply for reimbursement if they have sustained damage from OHRVs.

Snowmobile clubs present a good model for ATV riders. Boaters and drivers are required to pass a safety education course, and similar instruction is important for ATV operators. ATV insurance should be mandatory, as it already is for Vermont snowmobiles. The Riverbend Subcommittee believes that the best way to handle the increasing demand for ATV trails may be to designate special areas for them, where water stays on site and trail erosion cannot contribute to water quality problems.

RECOMMENDATIONS

- Fish and Game/Wildlife and Parks/Recreation agencies should enforce ATV rules and require ATV users to pass a rider safety course before registering their vehicles.
- NH General Court should establish a registration fee that is large enough to provide funds to allow NH Fish & Game to fulfill its responsibility for law enforcement, provide for trail construction, and establish a landowner restitution fund. Penalties for eluding an officer should be meaningful.
- The states should require riders to have insurance and to be members of an ATV organization which would provide education, training, and trail maintenance.
- Towns should consider ATV trail development in local planning and zoning and allow construction or improvement only with the written permission of the landowner and with the necessary trail construction permits in place.
- Town officials and landowners should contact Fish and Game if a problem occurs, and should make their concerns known to their legislators.

- TransCanada Hydro Northeast and its successors should continue to try to control traffic by off-road recreational vehicles on the earth fill at Moore Dam.
- Equipment dealers should encourage appropriate use of trails by not promoting the irresponsible behavior shown in advertisements.
- Users must respect private land.

Recreational Developments

The Riverbend Subcommittee values the rural character of the river and its use as a migratory route for wildlife, and recommends that if major recreational facilities are proposed, factors such as sound, light, runoff, and shoreline stability should be considered. Recreational development near the river should not contribute pollution to the river, including sound. Noise from a racetrack, for example, would travel along the river and detract from the river's character. Development of intensive recreational facilities, such as theme parks, should take place only well away from the river, to protect the environment and the passive recreational use of the river.

RECOMMENDATIONS

- Towns should discourage development of intensive recreational facilities such as theme parks near the river, to protect the environment and the passive recreational experience there.
- Marinas and other high impact river uses should be discouraged, because they invite further enforcement problems which already exist in this reach.

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 rich variety of birds, particularly waterfowl, in spring and fall. Many of the rail trails in this region provide good birding and wildlife watching.

The Fifteen Mile Falls area is a favorite for watching bald eagles, where open water below the dams year-round provides the birds with good fishing when other waters are frozen over. Eagle observers should rely on binoculars or scopes to observe the birds from a distance to avoid disturbing them, and be respectful of private property. 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 in the river valley, was established in 2001 and extended north in 2005. Descriptive maps are available to the public showing sites where people are welcome to enjoy the area's wildlife and natural heritage. Birding Trail stops in the Riverbend region include:

- ▶ Lancaster: Martin Meadow Pond and Weeks State Park;
- ▶ Guildhall: the Martin Farm;
- ▶ Barnet: Barnet Mountain, the Barnet School Nature Trail, McIndoe Falls Dam picnic area, and the Inn at Maplemont Farm;
- ▶ Newbury: Bailey's Eddy, Blue Mountain Union School Nature Trail, and the Boltonville Nature Trail; and
- ▶ Haverhill: Bedell Bridge State Park.
- ▶

RECOMMENDATIONS

- Fish and Game/Wildlife and Parks/Recreation agencies should encourage wildlife management to benefit eagles, osprey, and other species.
- Towns and the Connecticut River Byway Council should encourage birdwatching and other nature-based, low impact forms of recreation. The Birding Trail guides should be available in local libraries and byway centers.

Hunting

Hunting as a recreational pastime has decreased in recent years, although it is still significant. In Vermont, 81% of hunting takes place on private land, and 76% in New Hampshire, with the remaining hunting on public land. These statistics 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, especially to the shallow waters at the mouths of tributaries, such as the Passumpsic River and Oliverian Brook. New

The Connecticut River Zone for waterfowl hunting in this region includes that portion of New Hampshire lying west of the line defined by Routes 3, 135, and 10. In Vermont, this zone lies east of Interstate 91, Route 2, and Route 102. Hunters on the Vermont side of the Connecticut River Zone must follow New Hampshire regulations.

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 may hunt them in this area subject to NH laws.

In some areas frequented by waterfowl, there are homes located close to the water. 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' 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.

RECOMMENDATIONS

- Hunters should seek permission from landowners who have not posted their land.
- Hunters should replace their lead shot with safer alternatives.

WINTER RECREATION

The Riverbend region is lively in winter with all kinds of outdoor recreation, including snowmobiling, winter hiking, and cross country skiing. Ice fishermen bring their bob houses onto the frozen impoundments and backwaters. Local organizations such as the Fairbanks Museum offer snowshoe walks and winter hikes. Pond skating remains a favorite.

Snowmobiling

Hundreds of miles of snowmobile trails attract riders to the area. Many of these trails bring riders and business to local stores and eateries. Snowmobilers also use the power transmission line corridors in the region of Moore Reservoir.

Well-coordinated and managed snowmobile trail systems link most towns through the efforts of local clubs working with the statewide New Hampshire Snowmobile Association and the Vermont Association of Snow Travelers. VAST is one of the oldest snowmobiling organizations in the US. All riders in Vermont must belong to VAST and to the local club. Lack of reciprocity between Vermont and New Hampshire snowmobile clubs sometimes leads to difficulties over trail use.

Out of state snowmobile registrations in New Hampshire more than doubled between 1995 and 2002. 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 passage, but not for summer use by the public without the written permission of the landowner. During times of thin snow cover when the trails can be damaged, some riders ignore trail closings. A landowner whose use of his own property is threatened by disrespectful recreationists rightly may be tempted to close a trail across his land. Permission to use snowmobile trails does not extend to ATVs, four-wheelers, motor or mountain bikes, hiking or other uses, unless specifically authorized.

RECOMMENDATIONS

- Fish and Game/Wildlife and Parks/Recreation agencies should step up enforcement of snowmobiling rules.
- Snowmobile clubs must continue their efforts to educate riders to respect the land by showing courtesy and staying off trails when conditions are poor.

Cross Country skiing and snowshoeing

Cross-country skiers and snowmobiles now share the trail in most places with little or no conflict, due to better communication and courtesy by both groups. While there is better cooperation, however, multi-use trails are usually so busy with snowmobile traffic that they are dangerous for cross-country skiers and snowshoers. Separate trails may be the safest answer. Despite the strong interest in healthy, non-motorized outdoor winter sport, there are as yet no commercial public cross country ski or snowshoe trail networks in the area. Opportunities exist to make low-impact use of forested trails and logging roads for winter adventure travel.

RECOMMENDATIONS

- Towns should look into the various funding sources available to provide trails in town forests and on other public land for cross-country skiing and snowshoeing.

Ice safety

Travel on the ice for work or fun is part of North Country life. On the Connecticut River, ice thickness can vary greatly within a few feet, depending upon whether there is a spring below or the current is active. In the impoundments behind

dams, the water level continues to change, even though the ice cover above it appears solid. On Moore and Comerford Reservoirs, there may be a space between the bottom of the ice and the top of the water. This can mean a safety hazard to snowmobilers and those who drive other vehicles on the ice.

CONNECTICUT RIVER BYWAY

The Connecticut River Byway became a state scenic byway in 1999 after the Connecticut River Joint Commissions worked with the states and regional planning agencies on a plan for this designation along the 275 miles of the river between Canada and the Massachusetts border. The Federal Highway Administration designated it a National Scenic Byway in 2005. The Byway passes historic villages, covered bridges, and scenic farmland, and provides an economic reason to protect those things that give the region its appeal.

In the Riverbend region in Vermont, the Byway follows Route 102 in Lunenburg, Route 2 between Lunenburg and St. Johnsbury, Route 5 from St. Johnsbury south through Newbury and beyond, Route 18 between Waterford and Littleton, and the section of Interstate 93 that crosses the river below Moore Dam between St. Johnsbury and Littleton. In New Hampshire, the Byway follows Route 3 from Lancaster north, Route 135 between Lancaster and Woodsville, Route 302 from Woodsville to Bath Upper Village, and Route 10 from Woodsville south.

CRJC hosts the Connecticut River Byway Council, which fosters the promotion of tourism in the Connecticut River Valley, preservation of scenic, cultural, and recreational features, and infrastructure such as signage, exhibits, and other information to enable visitors, whether from the next town or from across the country, to enjoy and explore the Valley. There are no rules or regulations that go with Byway designation. 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. Riverbend region chambers of commerce and civic groups have led the way in helping area residents better appreciate and enjoy the Connecticut River, by sponsoring annual river paddle trips.

Waypoint communities

Ten communities have stepped forward to serve as waypoint centers to offer information and services to visitors and to help residents learn about their region's special features. In the Riverbend region, three historic buildings have found new life as waypoint visitor centers. In Lancaster, the Great North Woods Welcome Center is set in a former bobbin mill, while the 1883 St. Johnsbury train station now houses exhibits for that town's waypoint center. Wells River and Haverhill are cooperating to offer visitor services at a log cabin-style building in Wells River and at the restored Alumni Hall in Haverhill Corner, in the former 1846 Grafton County Courthouse.

In addition to the Byway visitor centers, the State of New Hampshire maintains a visitor center at Exit 44 off Interstate 93 in Littleton that commands a breath-taking view of Moore Reservoir. In the Riverbend region, riverside parks, picnic areas, and roadside pullouts could provide pleasant stopping points along the Byway.

RECOMMENDATIONS

- State transportation agencies should provide limited signage identifying waterways which is aesthetically in keeping with the rural area. They should avoid road improvement that could lead to increased speed of traffic, and work to preserve the rural character of the roads.
- The Connecticut River Byway Council should encourage birdwatching and other nature-based, low impact forms of recreation, encourage an excursion train along the river, and encourage inn-to-inn canoe and bicycle trips for their benefit to local businesses.
- The Byway Council could help communities provide riverside parks, picnic areas, and roadside pullouts. These should be monitored to be sure that they do not present a trash disposal problem.
- Regional Planning Commissions should inventory scenic views along the river corridor and the Connecticut River Byway.
- Land conservation organizations should help protect scenic views and open space, especially along the river; encourage farmland conservation to keep farmland active and views open, and provide public recreation access for birding, car-top boats, or trails where possible and appropriate.

Ice safety: Those hoping to venture on to the ice should check it first. The Cold Regions Research and Engineering Laboratory in Hanover 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.

- Towns should encourage protection of scenic views of the river corridor, including farmland conservation to keep farmland active and views open.
 - Businesses should follow the example of the Lancaster Rotary Club and Lower Cohase Chamber of Commerce, and sponsor an annual paddling trip on the river.
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