

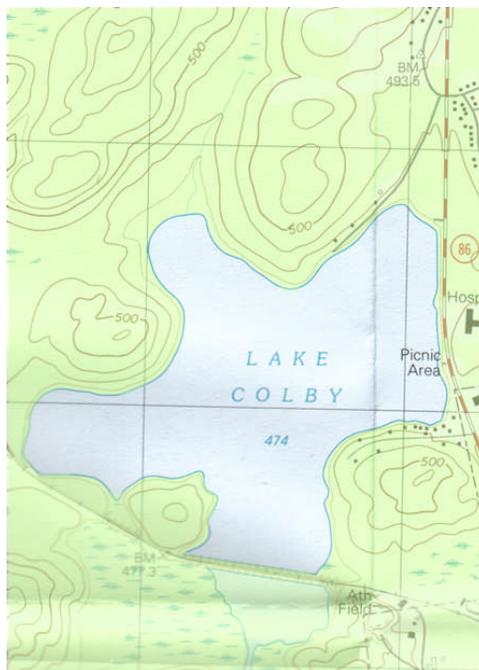
Saving Lake Colby – Master Plan for a Small Lake

Introduction

Lake Colby is a small (286 acre) body of water in the Lake Champlain watershed with a strikingly high public-use profile. Of its approximately 19,000 feet of shoreline only less than 8% is privately owned. More than 70% is forever wild land owned by the State. The balance is comprised of high-use areas like the Village of Saranac Lake public beach, the Town of Harrietstown's Latour Park, the NYSDEC boat launch, and the Environmental Education Camp, also run by the Department of Environmental Conservation.

Lake Colby is spring-fed, with several small tributaries that drain the watershed. Its one permanent outlet is through "Little Colby" and hence into Lower Saranac Lake. The volume of flow out of the Lake is extremely low (20-50 gpm) resulting in a lake with very low turnover (50-70% per year). As a result, Lake Colby is a natural sump for any unnatural inputs into the watershed.

Until Route 86 was constructed and opened in 1964 Lake Colby was both isolated and pristine. With the addition of Route 86 came many sources of strain for the lake: the state boat launch, the Village beach, industry along the highway, and winter salting of the road bed. Construction on the slopes of Mt. Pisgah with the associated runoff into the lake have added to the strain. Open-air storage of sand and salt by the Village of Saranac Lake on the banks of Colby Brook on Van Buren Street, a stream that drains the eastern side of the divide that runs along the Forest Home Road back into Colby, provides an additional source of mineral and chemical burden to the lake. Open-air storage of sand and salt by the Town of Harrietstown on John Munn Road, also in the watershed, leaches even more pollutants into the lake. Chloride levels have been steadily rising, year by year.



Lake Colby is a well-loved asset for the community. It is a pleasant vista for the patients at the Adirondack Medical Center (AMC) and for visitors entering Saranac Lake from the north. It serves as the local beach for the larger Saranac Lake community, and the Latour Park is in constant use by picnickers and shore-fishers. The D.E.C. boat launch is a high volume facility given the restrictions on launch (10HP), and the lake is enjoyed by numerous fishermen both during the day and at night. Because of the horsepower limitation and the lack of communicating waterways, the lake is a preferred venue for fly fishermen, canoers, swimmers, and sailors. Two approved camping sites on the State land are in nearly constant use throughout the summer months. In the winter the lake is a favored target for ice fishing and serves host to numerous ice events. The Environmental

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Education Camp is home to weekly programs in the summer for campers who come to learn about natural processes and ecology.

The [Village of Saranac Lake Local Waterfront Revitalization Plan](#) includes the following action items with respect to Lake Colby:

Wallace Memorial Park (public beach)

- Develop a four-season plan that includes year-round restrooms. Use guidelines for various winter events such as ice fishing, ice skating, ATV and snowmobile races.
- Provide new sand on the beach and in the immediate swimming area.
- Address the point and non-point stormwater runoff problems through a mitigation plan.
- Develop a strategy to address the long-term control of non-native aquatic vegetation in the swimming area at the beach.

Land on Moir Road

- Tear down the existing building on the Village-owned property adjacent to Wallace Memorial Park. Construct a large picnic pavilion in its place with a deck that provides handicapped fishing access.
- Dedicate an area for a launch site for canoes and kayaks.

Walkways to the Beach

- Address safety issues and enhance the sidewalk and trail from the Village to Lake Colby and Lake Flower.
- Provide a more visible pedestrian crossing from the hospital to the Village's Wallace Park.

The LWRP goes on to say “Lake Colby is an exceptional resource for fishing, swimming and use of small boats (10 horsepower or less). The Village owns property along the southeastern shore of the lake. Village holdings include the William J. Wallace Park and an adjacent parcel on Moir Road.

Several impediments exist at Lake Colby and actually discourage the use of this important public resource. The lake bottom is extremely mucky in the designated swimming area. There is also a thick bed of aquatic vegetation growing at this location. In addition, the sand on the beach and in the lake is of poor quality and uninviting to swimmers.”

Much of the vegetation referred to in the report is of recent vintage and is most probably linked to the increased levels of phosphorus and other nutrients in the lake, including the decomposing bio-mass from the huge recent increase in Eurasian milfoil (now nearly under control).

Boat wakes and propeller churn contribute greatly to shore erosion, loon nest destruction, but also to spreading milfoil. For these and other reasons the shore-owners have made enforcement of the 10HP limit a top priority.

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Noting that the D.E.C. launch limit of 10 HP did not apply to boats that residents launch from their own properties, the Lake Colby Association (representing 100% of the shore-owners) petitioned the Town of Harrietstown to ask the State to make the 10HP limit a part of the Waterways Act of New York State. In 2007 the Assembly passed bill A2010 sponsored by Assemblywoman Janet Duprey and the Senate passed S1100, an identical bill sponsored by Senator Betty Little. The governor signed the resulting legislation and as of April 1, 2008 motorized craft on the lake are limited to 10HP.

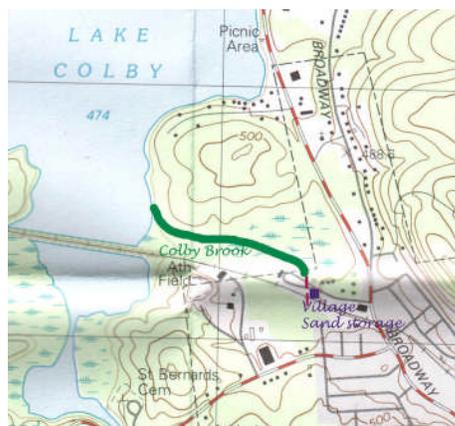
In 1999 the Lake Colby Association (LCA), through its participation in the New York Citizens Statewide Lake Assessment Program (CSLAP) discovered that the lake had been infected at some earlier date by Eurasian Water-milfoil (*Myriophyllum spicatum*) and that three large beds had established themselves in each of the lake's three bays. A vigorous hand-harvesting and benthic barrier program was initiated in 2002 and continues into this report, funded by the LCA, the Lake Champlain Basin Program (LCBP), New York State, the Village of Saranac Lake, and the Town of Harrietstown. Results have been more than promising and it is hoped that if additional funding can be found the lake will soon be in a state where simply annual maintenance can keep the threat of milfoil overrun at bay. However, as Eurasian milfoil is phosphorus-generating, the phosphorus loads in the lake have increased unacceptably, and the resulting annual late-fall blooms of blue-green algae (*Aphanizomenon*) have not yet abated.

Most of the residents on the lake use its waters for drinking, making the potentially toxic algae blooms extremely problematic. Accordingly, reducing phosphorus and other mineral loading of the lake has become a major priority.



There are three culverts under Route 86 that carry run-off from the eastern side of the road into the Lake. This runoff originates as far away as Mount Pisgah, for which Lake Colby is the western watershed. After the spring melt or heavy rain these culverts carry silt, phosphates and salts into the lake. The streams that feed these culverts do not

currently pass through any natural or man-made filters. One of the culverts, as shown in the attached picture, runs directly onto the public beach. As construction has increased on Mt. Pisgah the amount of sand, silt and minerals running into the lake through these channels has increased.



A fourth stream flows year round into Lake Colby from across Van Buren Street on the southwest side of the lake (see map)

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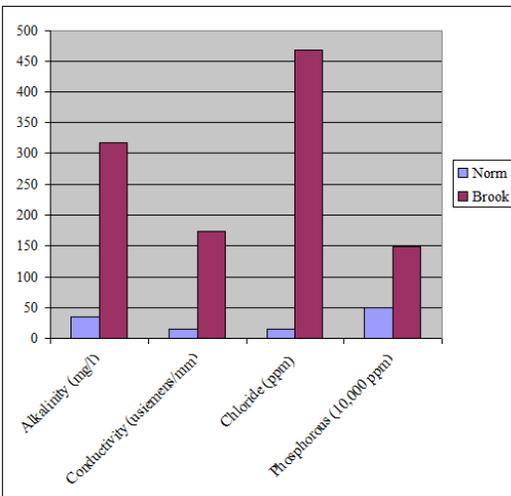
The Village of Saranac Lake stores their sand and salt mixture for road treatment in a facility at the end of Van Buren Street.



The Town of Harrietstown also stores its sand and salt in open piles further upstream. This is a confluence of a drainage system that takes water from the entire northwestern sector of the village and passes it into Colby Brook. The brook passes from the marshy area adjoining the Civic Center through a culvert into a pond that literally defines the edge of the Village’s sand/salt pile (purple on the map) before entering a second culvert (in red) that carries the

water into Colby Brook. The pile itself is on a tilted plateau insuring that any rain will leach material directly into the brook.

In 2001 the LCA presented the Department of Environmental Conservation (DEC) and the Village of Saranac Lake’s Village Manager with these photos and others, and with the chloride and electrolyte readings in the lake, which were also published on the LCA website (<http://www.LakeColby.org>). The LCA requested that the piles be contained in some way to prevent the runoff. The DEC confirmed to the Village that the pollution was a direct violation of Section 17 of NY environmental protection laws and of the federal Clean Water Act. No action was taken by the Village.



The New York State and federal water quality standard for Chloride in surface waters is below 250 parts per million (ppm). In September of 2003, we documented levels of chlorides in the brook at 719 ppm and again asked for some redress, even just covering the piles. Colby Brook readings made by Paul Smith’s in March 2009 showed chloride levels at 590 ppm.

According to the [most recent ALAP report published in January 2009](#) “background

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concentrations of chloride in Adirondack Lakes are usually less than 1 ppm. Chloride levels of 10 ppm and higher is usually indicative of pollution and, if sustained, can alter the distribution and abundance of aquatic plant and animal species.” The average Chloride level for Lake Colby in 2008 was 39 ppm.

For eight years the LCA pressed the Village to cover the sand and salt and the DEC to enforce NY law by forcing the Village to act. In 2005 Village Development Manager Debbie MacDonald used the LCA data to get a grant for the Village to build a shed. Thanks to her efforts a \$175,000 matching grant was issued by the DEC. In the intervening four years, and after failed attempts to build a joint shed with the Town of Harriestown (the Town is now applying for its own grant), the situation is exactly where it was eight years ago, and the lake is worse every year. This must be corrected and is now the highest priority for the lake. Fortunately, several environmental groups (the Residents Committee for the Protection of the Adirondacks and the Adirondack Council) have joined in the effort to force compliance with state and federal laws.

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As is noted in the map above, nearly all of the private residences on the lake are found along Moir Road, a short (1200 foot) private road on the south shore of the lake. While the hospital (Adirondack Medical Center or AMC), the Environmental Education Camp, and the public beach are all on the Village sewer system, none of these residences are currently connected. One business (Camp Colby Cabins) has a private tie-in to the sewerage system. All of the private residences rely on cesspools or septic systems, three of which have leaching fields on the north side of Moir Road in areas no longer acceptable for such use. For several years the Lake Colby Association has been asking for support in creating a Moir Road Sewer District so that at least these houses can be added to the Village system. No testing of the lake water has yet been done to determine if nutrients are leaching into the lake, but such testing is planned.

Several additional items should be noted that would affect the production of a true master plan for Colby. First, there have been a number of unfortunate incidents of shooting from the railroad tracks that separate Colby from Little Colby, and in one recent case a large male loon was killed by gunfire. There is no logical reason for gun discharge along the western edge of the lake: there is no possible hunting there and firing a high-powered rifle over water is extremely dangerous to anyone on the lake. The LCA has recommended that the State adopt a no-shooting zone along the western edge of the lake le still providing hunters with access to the wooded areas beyond the lake.

There are two well-established camp sites on the State land abutting the lake. There are no other suitable or safe places for day or overnight camping. The LCA has requested that the two existing sites be designated as officially-approved camp sites and that any other use of the state land by campers be discouraged.

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Plan for Action

Saving Lake Colby will require the cooperation and coordination of the following constituencies:

- 1) Village of Saranac Lake
- 2) Town of Harrietstown
- 3) Franklin County
- 4) State of New York:
 - a) Adirondack Park Agency
 - b) Department of Environmental Conservation Unit 5
 - c) Department of Transportation Region 7
- 5) Lake Champlain Basin Program
- 6) The Lake Colby Association
- 7) Local business along Route 86
 - a) Evergreen Auto
 - b) Upstate Auto
 - c) Adelpia
 - d) National Grid
 - e) Adirondack Medical Center

The first step will be to convert the LCA's overview "wish-list" as presented below into an engineering plan that can be costed, funded, and implemented. None of the pieces of the project are impossible or even difficult to achieve, and the cost of the entire program is not expected to be a barrier given the immense returns. A coordinated plan and an ongoing means to implement it will be essential, however.

Starting Point – the LCA Wish-List

The following annotated map contains all of the items that the Lake Colby Association has listed as being either desirable or essential for the future well-being of the lake.

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Recommended Department of Transportation Actions on Route 86

- Move the 40 MPH zone north of the Trudeau Road intersection. The current 55 MPH zone ends less than 100 yards north of the (AMC) hospital entrance. Morning traffic heading south must decelerate rapidly exactly where employees are making left-hand turns into the hospital. Left turns from Trudeau Road onto Route 86 are also difficult and dangerous. Moving the 40 MPH zone north just 500 yards would (a) improve safety at the "four corners" intersection at Trudeau Road, (b) reduce the chance of a serious rear-end accidents at the hospital entrance, and (c) reduce road noise in front of the hospital.
- Add a radar speed sign to slow traffic to 40 MPH at the change-in-speed point. *This was accomplished in early 2009 as a joint effort of the Town of Harrietstown, the LCA, and the Adirondack Medical Center.*
- Create a 1000-yard "quiet" zone around the hospital with appropriate signage on Route 86.

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- Install catch basins for the three inlets into Colby, the most important of which is on the eastern side of Route 86 leading into the inlet adjoining the public beach. This basin should be filtered to reduce phosphates and salts. The other two inlets need some mechanical filtering and greater natural filtering, i.e., more wetlands on either side of the road to absorb nutrients.
- Coordinate construction with the Village and Town when the expanded sewer line along Route 86 and the new sewer district on Moir Road are added.
- While resurfacing or maintaining Route 86 assist local businesses (e.g., Upstate Auto, Evergreen Auto, Adelpia, and Niagara Mohawk) in the installation of run-off controls from their parking areas, all of which were formerly wetlands that filtered water flowing into the lake.

Recommended Department of Environmental Conservation Actions on or near Lake Colby

- Confirm the two current camp sites on the lake (see map) and make it clear that other sites are both inappropriate and unsanctioned.
- Improve signage at the State boat launch site to make it much clearer that only boat with 10HP motors or less can be legally launched. At present the sign noting this is tiny and incorporated into the entry sign. A separate sign at the launch site itself would make the restriction far clearer to users and would reduce enforcement calls.
- Improve the invasive species notifications at the launch site. At present it warns of water chestnut only and does not note that Colby contains Eurasian Watermilfoil. More appropriate signage would warn users to wash their boats and trailers after removing them from the lake. The LCA has posted its own signs and distributes educational brochures, but better DEC coordination is recommended.

Recommended Actions by the Village of Saranac Lake

- Eliminate runoff from sand and salt storage on Van Buren Street. This facility leaches directly into Colby Brook and thence into Lake Colby. The pile is currently uncovered, with no run-off controls. The land slopes directly towards the brook, insuring that contaminants will run into the lake with each rain storm. While covered storage would mimic State standards for its own road sand and salt, and run-off and evaporation controls would be a major first step towards reducing pollution in the lake, storing the sand and salt away from a major watershed would be a better overall solution. The \$175,000 grant to support the construction of a containment shed in 2005 has languished for four years and is in danger of being rescinded. It is time to act.
- Provide facilities to the Town to accommodate a Moir Road sewer district. This could most easily be done in conjunction with the expansion of the Route 86 sewer line. To the extent that construction on Route 86 is required and the D.O.T. is involved, a simultaneous upgrade of run-off controls and holding basins with filters would minimize disruption and expense.
- Reduce the parking area at the Village Beach to increase the natural wetland filter zone on the northern side of the lot. This lot is never full and reducing the parking

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area by 20-30 feet would not impact its use but would restore critically needed environmental buffers for runoff.

- Provide financial support to the milfoil control efforts on Lake Colby [*N.B. The Village began to contribute to the milfoil effort in 2008 and has done so again in 2009*].
- Support the implementation of a “hospital zone” and the relocation of the start of the 40 mph speed limit to the north side of Trudeau Road. The DOT has rejected this idea twice, but it is in error, we believe, and the move should be pursued.

Recommended Actions by the Town of Harrietstown

- Create a Moir Road sewer district to handle the houses and businesses at Moir Road to the crest in the road (Upstate Auto, Gilpin, Laramee, Phillips, Colby Cabins (already on a private hook-up), and Leopold). Greene, Keet, and Neill have modern septic systems on the south side of Moir Road but could also be considered for future hook up.
- Pass the unanimous resident's request to modify the Waterways Act on to the State legislators responsible for introducing this legislation that would make the current 10HP launch ban lake-wide and permanent. [*N.B. Done in 2008*]
- Provide continued financial support to the milfoil control efforts on Lake Colby
- Support the implementation of a “hospital zone” and the relocation of the start of the 40 mph speed limit to the north side of Trudeau Road.

Recommended Actions for Adirondack Scenic Railroad

- Denote and enforce a "no shooting" zone along the railroad bed from the Village limit to West Bay of Lake Colby. This pathway is frequently used by both responsible hunters and irresponsible shooters, but does not contain any potential hunting opportunities and does invite malicious and dangerous shooting across open water, e.g., the killing of a full-grown male loon in 2000.

Funding

Several of the initiatives listed above would require funding beyond the current capabilities of the parties, e.g., doing the engineering and construction work for settlement basins, expanded runoff filters, a Moir Road Sewer District, etc.. There are numerous funding sources to be explored, including:

- For the never-ending struggle to fund the eradication of Eurasian Watermilfoil in Lake Colby funds have been made available by the Lake Champlain Basin Program, the Town of Harrietstown, the Village of Saranac Lake, and the NYS DEC through an Aquatic Invasive Species Eradication Grant Program.
- The Clean Water State Revolving Fund for Water Pollution Control. A major part of the going-forward effort would be for the task force to explore this and other sources of low-cost long-term loans and grants.
- NYS Aid to Localities grants may be an additional source of funding, to be discussed with Senator Betty Little and Assembly Members Janet Duprey and Teresa Sayward). It is possible that a “member item” could be included in an omnibus funding bill to assist with the engineering work required for the Moir

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Road sewer district and for the improved buffering of the runoff from the drainage culverts.

- A USDA Technical Assistance Grant might apply to both the work to be done by the Village of Saranac Lake in containing salt and sand and to the planned Moir Road Sewer District engineering studies.
- The Governor's Small Cities Fund might also be a source of funding for the Van Buren Street sand and salt storage facility.
- The State is providing grants to support the Local Waterfront Revitalization Plans of local towns and villages. In part the master plan for Lake Colby may fall under this initiative.
- An additional source of funding may be the recently-approved "General Management Plan" (GMP) of the Lake Champlain Basin Program and the Army Corp of Engineers (ACOE) for watershed improvement projects in the basin. The Lake Colby issues outlined in this paper would appear to be a perfect fit for the ecosystem restoration, preservation and conservation intent of the grant, and will be pursued.
- The annual Lake Champlain Basin Program may also be a source of grant funds for the preliminary engineering studies to determine the costs and alternative approaches to solving the nutrient loading problems of the lake. Grants are normally issued in the spring of each year and the LCA will attempt to work with the affected constituencies to draft grant request(s) that will allow the planning to proceed in late 2010.

The first step will be to seek minimal seed funding (estimated at under \$20,000) to do a comprehensive pre-engineering review of the following projects:

- Moir Road Sewer District, including cost estimates to bring a line from Route 86 to the crest of Moir Road, including an estimate of the cost of potential removal of bedrock in the road bed.
- Creation of sedimentation basins and natural filtering for the three culverts that currently feed Lake Colby under Route 86. This will be done in conjunction with and possibly by the Department of Transportation, but must tie in with changes required in the parking lot at the Saranac Lake public beach.
- Storm water controls and filters for the businesses along Route 86, including an analysis of directing this water back through the natural wetlands at the south side of the ridge south of Moir Road (so the runoff is filtered before entering the lake via Colby Brook – see map).

Next Steps

The next immediate step is for the various constituents to meet to create a Lake Colby Task Force that could provide inter-organization coordination and then to begin the detailed planning to turn the "wish list" into an agreed action plan. Once the action plan and associated engineering studies have been completed, the entire program should be agreed to by the various affected organizations and should be adopted as a part of their internal planning, e.g., the D.E.C.'s Unit 5 master plan and the D.O.T.'s Section 7 long-term highway plan.