



Chocorua Lake Conservancy

FALL 2023/WINTER 2024 NEWSLETTER



Mount Chocorua behind a field of blooming goldenrod and other pollinator-friendly flowers. | *Betsy Whitman Memishian*

PRESIDENT'S LETTER

Dear CLC Members and Friends,

The irony of this popular expression is striking: “The only constant in life is change.” While the saying has an immediate ring of truth, I cannot resist searching for an obvious exception. After five years of serving on the Board of Chocorua Lake Conservancy (CLC), and now as its newly minted President, one constant becomes apparent: the natural beauty and enduring health of the Chocorua Lake Basin. Even as the main north-south corridor through eastern New Hampshire receives necessary improvements, the amazing views of the mountains, the lake, and the surrounding lands remain intact. For generations, this four-mile section of Route 16 has been prized as scenic and special. May future generations have the same experience!

While this important mission is a constant, its implementation changes. As an organization, CLC must adapt and grow to meet today’s challenges. More visitors to our public access areas means more foot traffic and shoreline erosion. A wetter climate affects water quality and lake levels and the Chocorua Lake dam is feeling the strain. CLC has adopted special projects to address these issues, but maintenance is time-consuming and expensive. Additionally, much of our work is done “behind the scenes” and is ongoing. We rely heavily on our many capable volunteers for whom we are grateful.

To meet demands, our staff has grown. We are pleased to have Alex Moot as our Executive Director and Debra Marnich as our Stewardship Director, both full-time. Our part-time staff Troy Emerson keeps the public areas litter-free, and Juno Lamb does an amazing job with our public education and outreach programs. Everyone enjoys the informative print and digital CLC newsletters.

Other significant changes? The venerable Chocorua Mountain Club (CMC) has merged with CLC, expanding our trail system up the slopes of Mount Chocorua. We have created the Chocorua Mountain Club Trails Committee to address the needs and maintenance of this added responsibility. We are also excited about our new Charlotte C. Browne Woods trailhead parking area on the north side of Washington Hill Road, year-round safe access to trails that offer a lovely, wooded walk, diverse habitats to explore, and views of Mount Chocorua and the Chocorua River.

We are excited about our growth and expanded responsibilities. But it comes with a cost. Your financial support makes our mission possible and is an essential ingredient to our success. Please consider increasing your support while knowing that any amount comes with our great appreciation.

So, change is a constant and we welcome it.

Sheldon Perry
President, Chocorua Lake Conservancy Board of Directors



Meet the CLC Board of Directors

From left: Michael Rich, Geoff Gill (treasurer), David Kunhardt, Ruth Weld (secretary), John Kumm, Melissa Baldwin (vice president), Will Zehring, Jean McKinney, Sheldon Perry (president). | Juno Lamb

Name	What motivates you to serve on the CLC Board?	What inspires you or has influenced your relationship to nature?	Share one of your skills, talents, or passions.
Sheldon Perry President	As an outdoor enthusiast, whether hiking with my dog, canoeing, or camping, becoming involved in a conservation organization was an obvious next step for me to ensure that natural open spaces will be enhanced and preserved.	In 1965, as a junior in high school, I learned many skills in my first of five summers working for the Appalachian Mountain Club's (AMC) high huts. It was a confidence building experience that reaped life-long benefits.	The enjoyment of meeting new people.
Melissa Baldwin Vice President	Knowing that my participation will allow others to enjoy the quiet of the trees, the splash of the water, and the wind through the field grasses, just as those who enjoyed and appreciated it before me have done.	The book <i>Joyful</i> , by Ingrid Fetell Lee, in which the author discusses how small changes in surroundings, through designs, colors, shapes, can change moods and lead to a fuller, happier, and more meaningful life.	I am passionate about swimming in the lake. It is almost the only place I swim anymore, and certainly the only body of water in which I will "swim wild." It's the only water I trust anymore!
Geoff Gill Treasurer	Chocorua is a special place and I want to help keep it that way.	Being exposed to Chocorua's natural beauty and quiet made me appreciate nature from a very young age.	Using whatever capabilities I have to help my family and humankind as a whole is my greatest passion.
Ruth Weld Secretary	I am motivated by the generations before me who have cared for and protected this land, and by the current dedicated staff and membership.	Leaving technology behind and walking in the woods makes me feel more present in the world and able to listen.	Needlepoint.
John Kumm	Having long visited and recently moved to Chocorua, I want to contribute more to an organization whose work I have long admired and appreciated.	<i>Happy People</i> , about life in Siberia, <i>A Sand County Almanac</i> , and <i>Desert Solitaire</i> teach powerful lessons about the beauty and complexity of the natural world.	Recognized in many cultures for its therapeutic benefits, forest bathing or immersing yourself in the woods, is one of my favorite pastimes.
David Kunhardt	I want to help the land trust that has done a great job in the Chocorua Lake Basin for over 50 years.	The book <i>An Inconvenient Truth</i> inspired me to change my career into solar, and volunteer in climate action.	I am a great dancer and a mediocre singer, and I enjoy both!
Jean McKinney	I have always felt that things worth appreciating are worth working to preserve. The Chocorua Lake Basin is high on that list.	Nature programs on Nova show the interaction between species and the effects of human-caused imbalance. Nature is beautiful when helped.	I speak for those who don't have a lot of money or degrees, but are equally committed to work to preserve this beautiful enclave for all.

Name	What motivates you to serve on the CLC Board?	What inspires you or has influenced your relationship to nature?	Share one of your skills, talents, or passions.
Michael Rich	Chocorua Lake and Mount Chocorua are one constant in a life where I constantly moved.	A short film called <i>Timelapse of the Future: A Journey to the End of Time</i> , available on YouTube, because it sees all we do with a different perspective.	SCUBA divemaster
Will Zehring	Working in my community is increasingly important to me. What CLC represents, and its commitment to conservation across generations and among families, is remarkable.	Way back when, I recognized the rejuvenating/centering experience of "a walk in the woods," and remain amazed about and grateful for that effect to this day.	I like to work with my hands, and with tools, to build or repair things. It is satisfying to see the results of my work develop before my eyes.



Stewardship Director Debra Marnich and Eric Marnich sashay down the center of the hall to the lively tunes of White Mountain Ceili Band at the (first ever) 2023 TOC/CLC Winter Fest. *Betsy Whitman Memishian*

SAVE THE DATE!

TOC & CLC Winter Fest • Saturday, February 10, 2024

In spite of way-below-zero temps, we had an amazing turnout for the 2023 Tamworth Outing Club & Chocorua Lake Conservancy Winter Fest at The Preserve at Chocorua. We look forward to co-hosting the 2024 Winter Fest, and hope for heaps of fluffy snow and crisp but tolerable temps. Who knows—whatever the weather, it's good to be together!

BOARD OF DIRECTORS

Sheldon Perry

President

Melissa Baldwin

Vice President

Geoff Gill

Treasurer

Ruth Weld

Secretary

John Kumm

David Kunhardt

Jean McKinney

Michael Rich

Will Zehring

Bruce Larson

Chair, Lake & Property Management Committee

Kit Morgan

Chair, Land Conservation Committee

STAFF

Alex Moot

Executive Director

Debra Marnich

Stewardship Director

Juno Lamb

Programming & Outreach Director

Troy Emerson

Lake Patrol (May to October)

Sherry Birth

Bookkeeper

Melissa Poirier

Office Manager

The Ongoing Work of a Land Trust

Dear Members,

This year has been busy. Over the past nine months, almost 1,000 individuals have attended CLC-sponsored walks, talks, and paddles, volunteered at trash pickups and Stewardship Mornings, attended member events, and participated in outreach events. Over 150 returning and new volunteers have generously contributed close to 1,500 hours in

myriad ways. Almost 400 households and local businesses have supported CLC financially so far this year. We greatly appreciate everyone's support of our work! Among important developments this year:

In March, the CLC board began work on a new Strategic Plan that we hope to complete and share with the community next summer. Melissa Baldwin and Penny Wheeler-Abbott

have been instrumental in moving this process forward.

In June, CLC completed the construction of a parking area at our Charlotte C. Browne Woods property on Washington Hill. Visitors and CLC event participants can now access safer, off-street parking in every season.

In August, CLC members unanimously approved the merger of the Chocorua Mountain Club into

LEGACY CIRCLE CHALLENGE

A \$1,000 gift will be donated when you sign up!

For the rest of this year, thanks to a challenge grant, you have a special opportunity to sustain the work of protecting and caring for the unique and beautiful Chocorua Lake Basin and all its inhabitants now and in the future when you join our Legacy Circle.

The Legacy Circle is a group of land conservation supporters who've made a lasting promise to the Chocorua Lake Basin through one or more estate-planning tools, including gifts in a will or trust, charitable gift annuities, charitable remainder trusts, IRA distributions, or gifts of life insurance or land.

Two generous families have created a grant of \$20,000 of which \$1,000 will be donated this year for every new Legacy Circle member. This means your future commitment to saving land will also help with current maintenance projects and land and water stewardship today.

Thanks to this challenge grant, if you join Chocorua Lake Conservancy's Legacy Circle by including CLC in your will or estate plan before December 31, 2023, a donation of \$1,000 will be made to Chocorua Lake Conservancy in your honor.

Learn more at chocorualake.org/legacy-circle-challenge or contact ED Alex Moot with questions.

Legacy Circle Spotlight: Peg Wheeler

Legacy Circle member Peg Wheeler's diverse skills and generosity with her time have been a great gift to the Chocorua Lake Conservation Foundation (CLCF) and CLC boards. She joined the CLCF board at a time when an understanding of conservation easement law was becoming increasingly critical to the work of the organization, and brought both a deep understanding of the community through her family connection to the Lake Basin and the robust skill set of a lawyer engaged in land conservation work. Her voice was an essential part of transforming the CLC's predecessor organizations, the CLCF and Chocorua Lake Association, into Chocorua Lake Conservancy, a modern land trust adhering to Land Trust Alliance standards.



Why I've included CLC in my planned giving:

“After seeing the beautiful gift of Chocorua vacation stays to my children, I was honored to be asked to serve as a Trustee of the Chocorua Lake Conservation Foundation (CLCF) in 1993, and to have a role in the preservation of this unique place. One thing led to another, and I served as a Trustee, and then as a member of the Board of the CLC, CLCF's successor, for 27 years. During that time I saw the evolution of the Basin's protector from a small, almost unknown volunteer group into its present incarnation as a financially sound, community-oriented steward, professionally managed according to the highest standards of land trust practices. I want to contribute to the continuation of that legacy in perpetuity.”

—Peg Wheeler

CLC. This is an important development for CLC and represents a significant expansion of our responsibilities. CLC staff and volunteers are now responsible for the annual maintenance of seven trails totaling 16 miles on Mount Chocorua and Mount Paugus, including the Brook Trail, Hammond Trail, Bee Line Trail, Weetamoo Trail, Old Paugus Trail, and Whitten Brook Trail, in addition to trails we have already been stewarding on CLC conservation land.

We also experienced substantial changes to our Board of Directors. Due to term limits, we lost four dedicated board members: our Board President Penny Wheeler-Abbott, our longtime Treasurer Bob Seston, Steve Lanou, and Bill Mayer. We are thrilled by the addition of four new individuals who've joined the CLC board: Geoffrey Gill (Chocorua & Newton, MA), John Kumm (Chocorua), David Kunhardt (Chocorua & Scarborough, ME), and Will Zehring (Silver Lake). Geoff has generously volunteered to serve as our new Treasurer.

Looking ahead, CLC will be tackling two important, capital-intensive projects over the next two years: the stabilization and restoration of the eastern shoreline in 2024, and repairs to the dam at the outflow of Chocorua Little Lake in 2024-2025. You can read more about these projects in this newsletter.

Lastly, I am delighted that Sheldon Perry has graciously accepted the board's invitation to serve as Board President for the next year. Sheldon has been one of CLC's most dedicated volunteers at Stewardship Mornings and many other events and is a wonderful ambassador for CLC.

I hope CLC members will support our work with a generous gift in response to our year-end appeal which you should receive in November. I look forward to seeing many of you at Winter Fest on February 10th.

Regards,

Alex

Alex Moot
Executive Director

Celebrating the Chocorua Mountain Club and Chocorua Lake Conservancy Merger

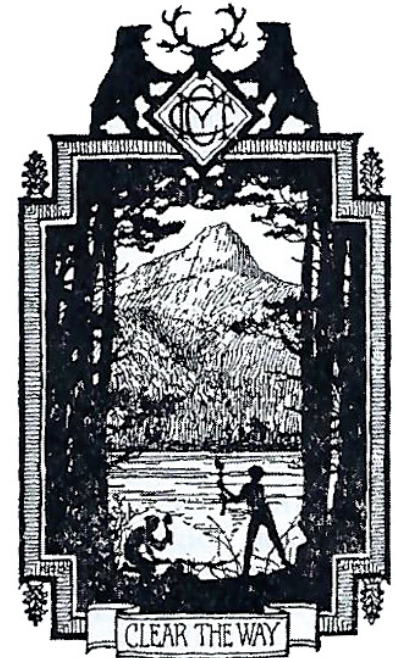
BY JUNO LAMB & DAVID KUNHARDT

It's all about timing. Long before Chocorua Lake Conservancy was a twinkle in its founders' eyes, and a whole decade before the founding of the White Mountain National Forest, the Chocorua Mountain Club (CMC) has been maintaining trails on Mount Chocorua. At the first meeting of the CMC in July of 1908, its new members described its purposes: "to explore and to make paths and camps in the White Mountains [and]...to acquire by purchase or gifts...land" that would improve and preserve the natural resources of the White Mountains. Much of the early history of the CMC is captured in CLC's 50th anniversary book *Timeless Chocorua*, including a note about membership, which "reached a record high of 418 in 1923, when special efforts were made to enlist support of all who made use of the huts and trails."

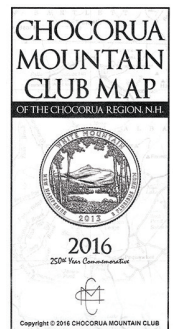
Fast forward to 2010, when the club's constitution was revised from its 1948 version to read: "The purpose of the Club shall be to work in cooperation with the U.S. Forest Service to maintain the trails on Mt. Chocorua, Mt. Paugus and other trails in the Chocorua basin."

Fast forward to...today. After nearly 120 years, the CMC reached a time when it was in need of evolution. For several years, the CMC and CLC have been in casual conversation about the possibility of merging the organizations, and in early 2023, several dedicated CMC members felt that the time was right to combine the avid mountain trails stewardship of the CMC with CLC's organizational strength, including a larger membership and structures in place to communicate with members of both CLC and the CMC.

Representatives from the two organizations met in the winter of 2023 and Ken Smith and Kate Lanou, recent



Above: Chocorua Mountain Club logo designed by Charles Howard Walker in 1924. The overlapping letter motif in the top diamond was designed by Fordham Kimball in 1908. At right: Chocorua Mountain Club maps are available for purchase at the Chocorua Lake Conservancy office in Chocorua.



leaders of the CMC, shared their criteria for a successful merger:

- that CLC would retain the history and art of the CMC,
- that CLC would retain as a separate matter the funds and fundraising ability of the CMC,
- that CLC would commit to careful stewardship of trail maintenance going forward,
- and that a board member of CLC would devote time to the CMC

arm of the merged organization, plus ongoing support of CMC merchandise including its popular Mount Chocorua trail map.

Representatives of the two organizations agreed that the merger would result in good outcomes and shared a desire to cultivate and support a new generation of stewards to care for all of the mountain trails and trails on CLC conservation lands. Their memberships agreed: CMC members approved the merger proposal at its Annual Meeting in May, and CLC members approved it unanimously at their August Annual Meeting.

CLC board member David Kunhardt agreed to coordinate the newly formed Chocorua Mountain Club Trails Committee. The number of trail users continues to grow, and we invite all of you hikers and climbers of all ages to be involved in caring for this magical, magnificent mountain by joining us on the second Saturday of May each year for our dedicated Trail Clearing Day, and year-round, if you are able, in stewardship of Mount Chocorua and its beautiful trails.

To learn more and be part of year-round monitoring, maintenance, and care for the trails, please contact David Kunhardt, dkunhardt@chocorualake.org.

Join us for the 2024 Trail Clearing Day! Saturday, May 11, 2024



Above: 2023 Trail Clearing Day volunteers awaiting assignments. **Left:** CMC Vice President with tenure Kate Lanou and President Ken Smith at the May 2023 Trail Clearing Day. Enormous thanks to Kate and Ken for their leadership of the CMC in recent years and through the merger process. | Alex Moot

STEWARDSHIP CORNER

Rehab of the Little Lake Dam

BY DEBRA MARNICH

You may never have seen the dam on the south end of Little Lake, but if you have swum in Chocorua Lake or kayaked under the Narrows Bridge, you have certainly felt its effects.

Early in the 20th century, Charles P. Bowditch built a wooden dam in the location of the current dam. The original intent of the dam was to raise the water level and improve the appearance of the shoreline, and to facilitate easy passage of boats under the bridge from Little Lake and Chocorua Lake. By the 1960s the

dam had severely deteriorated and was replaced with a concrete dam that has been repaired and rehabbed a few times over the years. The dam is small in size but mighty in function. Today we recognize many additional benefits from the Little Lake Dam. It has enhanced lake habitats, protected the watershed and the aquifer, provided flood water storage, and improved the wonderful outdoor recreation experiences of canoeing, kayaking, fishing, and swimming, contributing to the peace of mind that's available for all who cherish and enjoy the Chocorua Lake Basin.

Extreme winter weather with multiple cycles of freeze and thaw have eroded the concrete cap on the surface of the dam. The dam is still functional, but needs maintenance over the next couple of years to remain so. CLC is responsible for the dam and for managing the water levels on Chocorua Lake, and has been working through the process to move forward with the rehab project. To date, we have had multiple on-site meetings with contractors and engineers, obtained an engineering design, completed a wetlands delineation, and are currently navigating the DES wetland



Little Lake dam. | *Debra Marnich*

permitting system. We've also learned that the road to the dam will need improvements to allow concrete trucks access. All of these projects have taken considerable amounts of time and staff/contractor resources to complete. Over the past three years, CLC has spent about \$27,100 on this project, paid for in part by a generous \$11,250 grant from the Tamworth Foundation. We believe the road improvements and dam repairs will cost between \$100,000 and \$200,000.

CLC hopes to complete the necessary road improvement work in the summer and fall of 2024, solicit construction bids, secure a contractor, and implement the repairs in fall 2025 when the lake level is naturally low. This will be a major project. Please consider helping us out with a donation of time or financial resources to rehab the dam and maintain the beautiful resources we all enjoy in the Chocorua Lake Basin.



Top row: Exposed tree roots and erosion on the shore of the Grove in 2007, before restoration; the shoreline of the Grove today, 13 years after restoration. | *Zachary Berger*. **Bottom row:** Significant erosion along the eastern shoreline of Chocorua Lake; exposed tree roots along the eastern shore of the lake. | *Alex Moot*

Shoreline Erosion and Stabilization at Chocorua Lake

BY DWIGHT BALDWIN

The Chocorua Lake Basin at the end of the last ice age 12,000 to 15,000 years ago was a far different place than we enjoy today. Glacial ice sheets were melting northward and large volumes of melt water were draining to the south. Geologist Rick Allmendinger posits that an ice dam, perhaps located somewhere at the present location of the Little Lake, created a lake that was far wider and deeper than at present. And into this lake poured huge volumes of water carrying quantities of silt, sand, and gravel released from the melting glaciers to the north.

Today, of course, the setting is far different. The mountain and shoreline are covered in a verdant cloak of vegetation, and animals from chipmunks to moose call this place home. And it is the sediment deposited in this late glacial lake that provides the very foundation on which this rich

biota thrives.

This same sand and gravel also comprise the shoreline of the present day Chocorua Lake and therein lies the problem of its instability. Photographs taken over the years show how wave action and runoff from intense rain events erode the shore, causing the exposure of the roots of riparian trees, which ultimately leads to their death. Use of the lake by picnickers, walkers, swimmers, and fishermen adds to the rate of shoreline retreat. So how can this rapid erosion of the shoreline be slowed or, better still, halted?

CLC has done it before, when erosion and tree loss became a concern along the shore of the Grove public access area at the southern end of Chocorua Lake. From 2007 to 2010, CLC spent \$82,000 on shoreline restoration at the Grove to stabilize the shore, minimize soil compaction around tall pines, and replant shrubs and trees that had died.

The success of this project at the Grove is apparent to this day. The shoreline remains stable, pine roots are no longer exposed, and the white and red pines are looking far healthier. Not a single pine tree has died since the work was completed 13 years ago.

Now, similar problems have developed on the eastern shore. Heavy use by visitors, plus highway stormwater runoff generated during times of intense storm events, increasingly common as the climate changes, have caused dramatic soil erosion along the eastern shoreline

and compaction around tree roots. As a result, these trees are showing signs of stress, and several have died in recent years. CLC will address these issues through a variety of best management practices, including direct stabilization of the shore, dedicated pathways to protect trees and shrubs, and the planting of many more native plants, shrubs, and trees to support the shoreline in the face of heavy rain and to protect the larger trees, as was done in the Grove over a decade ago.

Shoreline erosion control has long been an issue and may continue to

be for future generations given the geologic makeup of the Lake Basin, but the recent work in the Grove has stabilized the shoreline there and protected the stately pines treasured by all. CLC plans to implement the eastern shoreline project in the fall of 2024 when lake levels are naturally low, making the work less disruptive to the ecosystem of the lake. Total costs are estimated at \$80,000 to \$100,000. We have started soliciting grant funding and hope to secure generous gifts from our membership toward the cost of this important work.



Enjoying the peaceful presence of the astonishing boulder at Charlotte C. Browne Woods. | *Juno Lamb*

LTA Standards and the Work of Land Trusts

BY KIT MORGAN

“**N**ature Needs Your Help.” I read that statement on the website of the Land Trust Alliance, and thought it summed up nicely the mission of conservation organizations like Chocorua Lake Conservancy. The Land Trust Alliance (LTA), an organization of over 900 land trusts around the country, is a key resource for CLC and other land trusts.

Why does nature need our help, and how are land trusts part of the solution to environmental problems? Simply put, land trusts exist to conserve open land and the benefits it provides, by acquiring either land or permanent easements that restrict development. Clean air and water, carbon storage, habitat for diverse wildlife and plant species—these are conservation values that are the basis for a land trust’s management of property it owns. In the case of conservation easements, specific conservation purposes reflecting those values are spelled out, and the land trust monitors the property to ensure the easement terms are honored. Often, easement purposes also include protecting scenic views and the opportunity for low-impact recreation.

Land trusts, as private nonprofits, play an important role in conservation. We are incredibly fortunate to have the 800,000 acres of the White Mountain National Forest in our backyard, but the government’s ability to protect land is limited. Land trusts can act quickly to protect smaller parcels of land, they have strong local ties that give them credibility with landowners, and they may be insulated from politics or budget fluctuations that affect the public sector. In fact, according to the LTA, land trusts have protected 61 million acres nationwide—more than all our beloved national parks combined. Of course, there are millions of acres of national forests and other federal and state lands, but the private land trusts’ role has been increasingly important in recent years.

What is happening to our climate (I think “climate emergency” is a



Above: Conservation land provides habitat connectivity and corridors for species such as wood turtles. | *Alex Moot*. **At right:** A protected lakeshore offers nesting opportunities for loons. | *Debra Marnich*

better term than “climate change,” which sounds too benign) makes land conservation more important than ever. Increasingly, land trusts are focusing on protecting areas that help offset the effects of extreme weather: wetlands that can absorb heavy rainfall, or waterfront areas to protect against polluting runoff, for example. The best defense against damaging floods is avoiding construction along waterways. Recreation and public access are a big and increasing part of land trusts’ missions. People need to cool off during heat waves, and access to lakes or rivers on conservation land gives them a place to do that.

CLC is unusual among land trusts in that the majority of its conservation work is caring for and monitoring land that has been protected for decades, rather than seeking out new acquisitions or easements. We can imagine what the shore of Chocorua Lake would



look like if the landowners had not acted collectively in the 1960s to place covenants on their land. These were legal agreements that predated the conservation easement, in which they voluntarily and as a group placed restrictions on their land permanently, to be overseen by the Chocorua Lake Conservation Foundation (now the CLC).

While the big steps were taken long ago to protect the lake and much of the surrounding area, there is more to be done. There are still areas that could be protected to mitigate the effects of severe storms we now experience, and other areas in the Chocorua Lake Basin worthy of the protections afforded by a modern conservation easement.

In its day-to-day work with the existing covenants as well as potential new easements, CLC is guided by the principles it agrees to honor as a member of the Land Trust Alliance. These 12 “Standards and Practices” cover areas of how the organization is run—the board of directors, finance and fundraising, the details of how it manages property transactions, and others—and also stewardship of properties CLC owns and of easements or covenants it monitors. In the case of an easement or covenant, this means annual monitoring to ensure the restrictions in the covenant are being honored, regular contact with the landowner, and a clear process to address any violations that may occur, among other things. A new easement includes a “baseline” document, prepared by CLC and signed by the landowner, that clearly spells out the resources and features on the property that are being protected, to be used to verify any changes in the future. For its own properties, CLC must have a clear management plan and goals, carry out any maintenance to meet the goals, and inspect the properties annually. We are fortunate to have had professional staff in Lynne Flaccus and now Deb Marnich—aided by dedicated volunteers—to handle this work.

To some, the LTA’s detailed practices may seem bureaucratic or excessively detailed. But following the LTA principles gives CLC credibility with its community of landowners, neighbors, and financial supporters. It makes for a much stronger position in the event of a challenge to a covenant or easement or a violation of their terms. Since these covenants and easements are permanent, it can’t be left to anyone’s recollection about what may have happened on the property. And it honors the commitment and the foresight of those landowners in the 1960s who, while they may not have known how complicated our world would be or how drastically different our climate would become, knew they needed to act to protect what they loved.

Kit Morgan chairs the CLC’s Land Conservation Committee. He is also a member of the Tamworth Conservation Commission.



Two Northern water snakes basking in the sun. Can you spot the second one!? | Debra Marnich

NATURE NOTES

SOS Save Our Snakes— Northern Water Snake

BY DEBRA MARNICH
Stewardship Director

It was a hot, hazy July summer day on one of the most glorious lakes in New Hampshire. My husband and I and the doggo were out for a canoe paddle and a leisurely swim to chill the summer heat. We pulled over to a small island and let the girl out to sniff about. Out of the corner of my eye, I noticed a blackish figure curled up near the water’s edge. Wow, I thought, a Northern water snake, *Nerodia sipedon*. What an astounding beauty it was! We swam and played in the lake off the island for most of the day, and gave the snake its space. The snake was, for the most part, completely unaffected by our presence, and vice versa. Together we all enjoyed the lake and island in peace and harmony in nature.

What a wonderful message in that story! Yet when I share this experience with others, it is frequently received with an alarming EEK, SHRIEK, SNAKES! Ophidiophobia is the extreme or overwhelming fear of snakes. This fear is common, leaving aside a few friends who are biologists and herpetologists. (These are people who dedicate their lives to the study, conservation, and identification of

snakes, and all types of reptile and amphibian wonderment.)

The Northern water snake occupies water habitats in most of New Hampshire and throughout the Eastern United States. Identification of Northern water snakes can be a challenge for the untrained eye. They can be heavily blotched or sometimes banded, and can be brown or black with buff, tan, gray, or even orangish markings. Young snakes often have more vibrant colors and patterns. However, snakes in general tend to be misidentified and assumed to be poisonous, even though 85 to 90 percent of all snakes are non-poisonous!

So why the common misidentification with snake species? Lack of technical training and personal experiences with snakes make accurate snake identification difficult. It’s rare to see snakes on a regular basis for good reason: they prefer to be safely concealed and protected in their natural habitat—though, like many species, if they are provoked they will defend themselves. Hence, the Northern water snake is commonly mistaken for a cottonmouth (*Agkistrodon piscivorus*) or a copperhead (*Agkistrodon contortrix*), neither of which occur in

New Hampshire. Water snakes are also sometimes mistaken for snakes native to New Hampshire including the milk snake (*Lampropeltis triangulum*) and the timber rattlesnake (*Crotalus horridus*).

The intricate connections in nature are both essential and consequential. All snakes provide a critical ecosystem service by keeping the natural food web in balance. Snakes are not only predators, but are also prey to some animals, defining them as mesopredators. This means that snakes are located right in the middle of the food web. They are not at the top of the food web as they fall prey to owls, hawks, eagles, skunks, otters, foxes, coyotes, and even other snake-eating species. However, they are also predators, hunting mice, fish, salamanders, and frogs. The loss of a snake species would affect all levels of the natural food web, both predator and prey, thus disrupting the entire balance. Snakes are also valuable secondary seed dispersers as they prey on many species of rodents that eat seed as a primary food source. Finally, snakes provide a valuable service of chemical-free pest control, eating rodents and keeping populations in check.

Threats to Northern water snakes include development pressures, loss of wetland habitats such as marshes, rivers, and streams, degradation of water quality and habitat in lakes and ponds, loss or degradation of vernal pools, habitat conversion, climate change, transportation systems such as roads, mining, pollution, illegal pet trade, misidentification, and unjust harm/pressure from humans.

My efforts in snake conservation are always focused on providing a real-life experience with a combination of safe exposure and education. Unconditional love of snakes may be a towering goal for many, but understanding the importance of species function in the ecosystem and its value is paramount and certainly achievable. The digital version of this article at chocorualake.org/news/water-snake, includes a list of websites where you can learn more about identifying, understanding, welcoming, appreciating, respecting, and honoring snakes in the environment.



Bracket fungus on a fallen birch log. | Juno Lamb

Fungi and Trees

BY SUSAN GOLDHOR

Fungi and plants have a long relationship; there's a theory that the first land plants didn't even have roots—just fungi.

Today's plants still have relationships with fungi, but those relationships have evolved. The human problem has always been that almost all fungi are invisible, so for a long time when we looked at fungi and plants what we saw was the effects of fungal pathogens on plants. Blights, rusts, and molds—that's what early mycologists saw. The Irish potato famine. The relationship of ergot in moldy rye to the witchcraft trials and the loss of livestock. Fungi were the harbingers of decay and death.

We're better at tracking what fungi are doing now, and it turns out that they're doing a lot and a lot of that is beneficial. If we look only at our forest, and limit ourselves to the relations between fungi and trees, it's pretty amazing. Fungi are invading the roots of trees and exchanging nutrients. Fungi are invading the leaves and needles of trees and offering protection. Fungi are invading the woody roots and trunks of trees and initiating infections, which sometimes lead to the deaths of trees,

after which fungi are major players in rotting them, which is why the forest floor isn't clogged with dead wood. In short, there are thousands and thousands of species of fungi in our forest, some underground and some above our heads, and they're playing out all the relationships with trees that we see in human marriages: nurturing, protective, hurtful, and murderous.

What's up and what's new with the forest fungi? What's the state of the wood-wide web? Are fungi running the forest? Join me for a talk this winter on trees and fungi in our temperate forests to find out. Plus, if we have time, we can answer some other questions like, What's the value of psychedelic constituents to the fungi themselves? Do those burial suits actually work? Trees have a pretty strong family resemblance—why don't mushrooms? And your burning questions, too!

Susan Goldhor is a biologist who got interested in fungi when she joined the Boston Mycological Club about 20 years ago. After twelve years as president of the BMC, she stepped down last fall, breathing a sigh of relief at having brought the oldest amateur mycological club in the world safely through the pandemic. She is a contributing editor and columnist for Fungi magazine. She's written many articles and also given many invited talks on fungal topics, especially her major interest: fungi in the forest ecosystem.

Chocorua Lake Conservancy publishes and distributes an educational newsletter twice a year, in the Spring/Summer and Fall/Winter. Current and past issues are posted online at chocorualake.org/newsletters.

Have an idea for a newsletter article? Let us know!

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Chocorua Lake Conservancy is a nonprofit land trust dedicated to its mission of protecting the natural beauty of the Chocorua Lake Basin and providing public access for present and future visitors.



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The Work of a Land Trust



We had a record turnout of 34 boats at this year's Parade of Lights. So many beautiful decorations, and the rain held off just long enough. | *Betsy Whitman Memishian*

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