

WATERSHED VIEWS

NEWSLETTER OF THE KEZAR LAKE WATERSHED ASSOCIATION

SUMMER 2017



Water Quality News

by HEINRICH WURM, MD

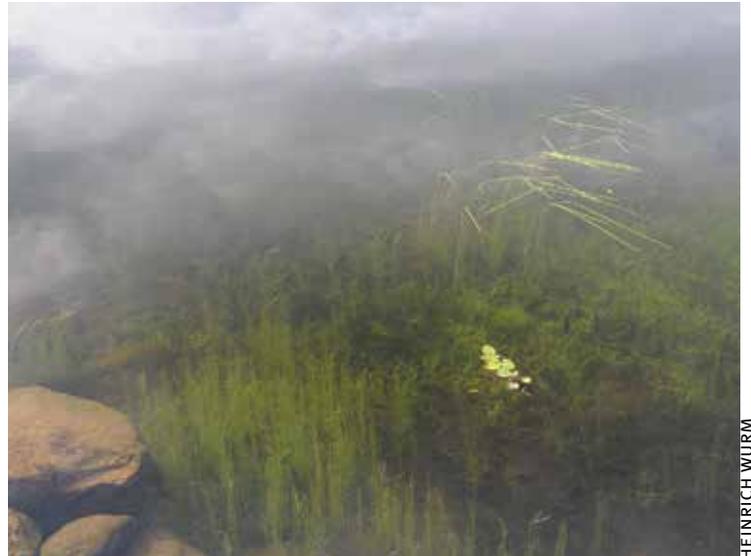
2016 Water Quality Report

Our annual report was published in late February and is available on our website. It's a well-illustrated booklet filled with excellent information, tutorials and statistics. I highly recommend you take a few minutes to study it. If you would like a printed report, leave a message at the office, (207) 925-8020.

In 2016, our water quality remained outstanding in almost all aspects. We had a dry summer with few violent downpours, resulting in little run-off, low phosphorus levels and excellent transparency in most waterbodies. It was a good year for three of our ponds but Bradley, Cushman and Farrington surprised us with lower transparency and higher phosphorus readings than historic averages.

A lingering concern was confirmed, however, when it became clear that acidity in all water bodies had risen causing pH levels to drop to 5.9 and 6.2. We prefer to see pH values of 6.5 or above, indicating the acidity has dropped.

Looking back, we noticed a decline in pH values starting in 2013 in all water bodies sampled. We have reached out to a num-



HEINRICH WURM

ber of scientists, including Stephen Norton, Emeritus Professor of Geology at the University of Maine, and an expert in geochemistry, to learn more about cause and effect of this phenomenon and believe that low precipitation and a decrease in snow cover over several years are responsible. In lieu of a written diatribe on the topic, we invite you to our Annual Meeting on July 8th for a detailed presentation and a full discussion.

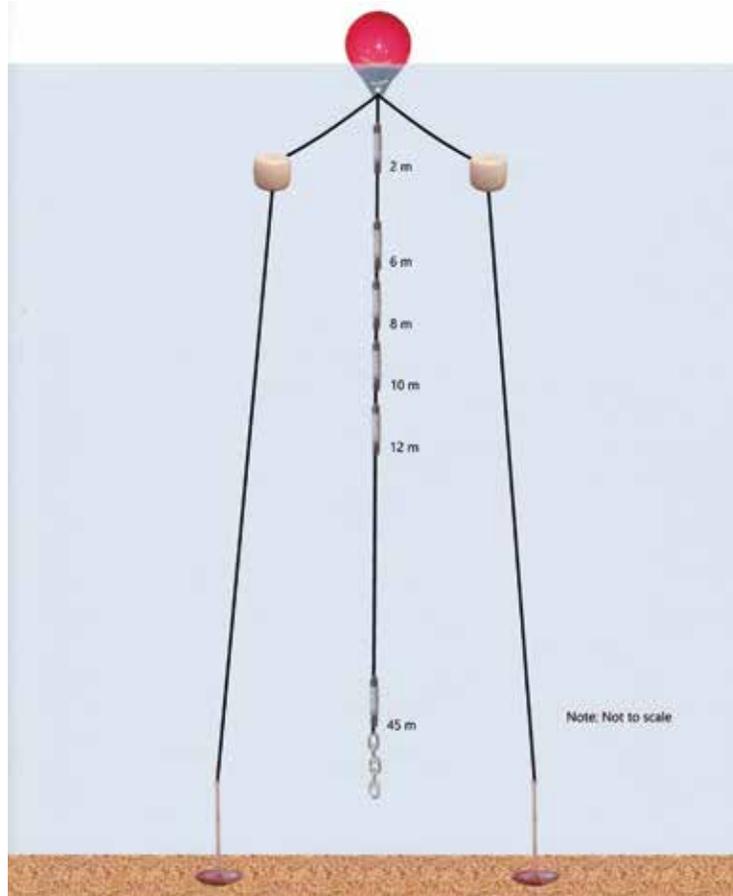
Monitoring Buoy Update

In 2016, our water quality remained outstanding in almost all aspects. We had a dry summer with few violent downpours, resulting in little run-off, low phosphorus levels and excellent transparency in most waterbodies.

Following up on last fall's announcement, the installation of measuring buoys for temperature and dissolved oxygen will take place this spring. Funded by a generous grant, this project is aimed at solidifying data collection using state-of-the-art technology. As illustrated to the left, a twelve-inch red rubber buoy is held in place by two submerged anchor lines and a central cable that carries temperature and dissolved oxygen

"loggers." These are battery-powered, micro-processing sensors capable of reading and storing data for a six-month period.

Measuring temperature and oxygen levels at varying depths throughout the season allows us to track timing and degree of lake stratification, a key variable for climate observation. Dissolved oxygen data is also vital in assessing lake health over time as low oxygen conditions are one of the key contributors to end-of-season algal blooms and could jeopardize cold-water fisheries. We plan to deploy the buoys in the Upper and Lower

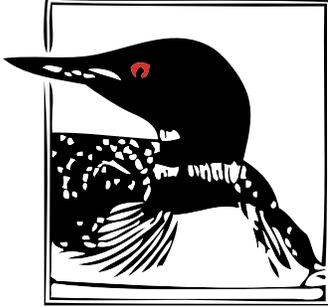


Measuring buoy for the Upper and Lower Bays.

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President's Message

by JIM STONE



KLWA Officers

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Jim Stone,
Pleasant Point

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Heinrich Wurm, *Lovell*

GLLT Representative

Ray Senecal, *Lower Bay*

Kezar Lake Watershed Association

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Lovell, Maine 04051
(207) 925-8020
www.klwa.us

I hope all of you enjoyed the winter, either in the snow or sun or both, and along with me, look forward to another summer in the magnificent Kezar Lake Watershed. As you will see in the articles written by our committee chairs, the KLWA has a lot going on. Those activities require higher levels of human and financial resources and I'd like to use this opportunity to ask for your support on both fronts.

Human Resources

Everything you read about our activities in this Newsletter is the result of the leadership and hard work of our small group of officers and trustees listed in the column to the left. If preserving and protecting this special place is important to you, we would welcome your involvement. We have a range of needs that include

water testing, website support, public relations and special events. Contact me at president@klwa.us if you can help.

Membership and Financial Resources

As you know, the KLWA operating budget is funded entirely by the annual contributions of its members and corporate sponsors. We spend every dollar we receive to fund our programs, which have grown, and correspondingly so have their costs. Please consider increasing your membership contribution to enable us to continue critical activities like our regular water testing and the Lake Patrol.

As we look at our membership list, it appears that only 32% of waterfront owners in Lovell are members of the KLWA. We are sending this Newsletter and our annual

membership appeal to all waterfront owners to better tap the potential of this "front-line" group. If you are a waterfront owner, please remember that no one else is testing the water quality of the lake and ponds, which enables us to identify any deterioration at an early stage and initiate appropriate responses.

Officers and Trustees

I want to acknowledge the work and commitment of our Trustees. It is a year-round responsibility and their commitment to our mission and to the watershed is unequalled. It is my honor to serve with them.

Annual Meeting

Please plan to attend our Annual Meeting on July 8, at the VFW Hall in Lovell beginning at 8:30am. We look forward to seeing you there. ♠



CECILY STONE

KLWA More Than Meets the Eye

by RICK PILSBURY

I've been coming to Lovell for about 53 years from various away places that I never really considered home. Our camp on Kezar Lake, however, is home, and it made frequent family and business moves a little less upsetting as we always knew there was a happy place to go.

Over the years, we worried development and pollution would change our special place for the worse and I was happy to learn there were many other folks with similar concerns. I knew the KLWA existed, but I figured it was just about keeping the lake clean. I wasn't sure how they did that, but so what, it was a good thing and our family supported it.

I joined the KLWA board recently and was surprised to learn how much I didn't know about the Association; how much more the Association does than I expected.

I joined the KLWA board recently and was surprised to learn how much I didn't know about the Association; how much more the Association does than I expected. I was impressed by what I learned and wanted to share it. You may know some of what KLWA does but maybe not the full roster. There's a lot going on. Maybe you'll be impressed too.

I found it useful to think of KLWA's activities as falling into two buckets: Gathering and Acting.

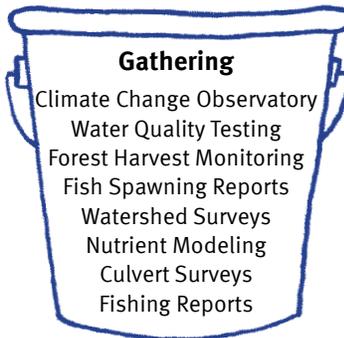
Gathering collects data for scientific analysis. Over time this data reveals trends on what's happening in our environment. Trends lead to conclusions and appropriate acts. Data and science are critical to everything we do.

Most of the data is collected by volunteers and analyzed by environmental professionals and various academic groups. KLWA data has become a respected and useful resource well beyond our 54-square miles, eight streams, six ponds and a lake.

The list at right is on-going activity. Keep in mind the KLWA is watchful for new threats to the ecosystem and is ready to act quickly if necessary.



The KLWA installed this loon platform on a Lower Bay island while a pair of loons watched.



The Acting bucket is probably more familiar as you see these programs around town and on the water.

Lake Patrol and the Loon Nesting Platforms are easily visible.

Make it a point to get to know our boat captain, Tyler Wilson. He's a friendly, young man (not a cop) who can answer questions and help you avoid getting stopped by the game warden.

There are several loon nesting platforms in the lake and ponds. Our loons are picky about where they nest and we hope for a higher occupancy this year. Best to give them a wide berth.

KLWA provides free handouts describing what we do

and simple steps to support our mission.

The Joan Irish Scholarship is awarded at our annual meeting to a resident who plans to study the environment in college. Last year it was awarded to Hannah Rousey who said "no thanks" to another scholarship from Nestlé due to concerns about their environmental practices.

Everything KLWA does is reported and preserved on our website: KLWA.us. And, of course, this newsletter comes out twice a year.

I can't take credit for any of the above, but I can say you can be assured this is a professional and active association working on behalf of our watershed. I'm proud to be part of it. 💧



Lake Patrol 2017

by DAN OUELLETTE

As another summer approaches we can't promise to repeat the spectacular weather of last year, but we can confirm that Tyler Wilson will return to the job of Lake Patrol. With a full season of winter activities completed, Tyler has confirmed that he's anxious to be back on Kezar Lake.

Some of you may have had the opportunity to meet Tyler on the water, at a lake association meeting or at another KLWA event. We thought he did a terrific job in his first season with us and wanted to share a little more of his background; and some of the experiences that contribute to his success as our Lake Patrol Officer.

Tyler grew up in Shapleigh, Maine, where his family owned and managed a landscape design and installation business. He often worked on these projects, assisting the crew and generally enjoying being outdoors as much as possible. In school, he was an accomplished athlete in traditional sports, but soon gravitated to more independent outdoor experiences. Eventually, he concentrated more exclusively on activities such as mountain biking, trail running and skiing. Tyler also became an avid fly fisherman. He confesses that he chose the University of Maine at Farmington almost as much for its access to skiing and fly fishing as for its strong academic programs. In college, he majored in Environmental Planning and Policy, with a concentration in Geospatial Information Systems.

Committed to a lifestyle that embraced outdoor recreational pursuits, Tyler stayed in Maine after graduation, lived on the coast for a while, and then returned to the mountains. He spent one winter as an instructor in the children's program at the Perfect Turn Ski School in Bethel, and then migrated to the Rangeley Lakes Region. While there, he served as ski instructor at Saddleback Mountain and worked for sport fishing camps in the summer.



DANIEL OUELLETTE

Eventually, Tyler was drawn to the Mount Washington Valley. For the past three years, he's taught Alpine skiing, along with both backcountry and Nordic ski touring, at Wildcat Mountain. In what he would characterize as the "off season," Tyler shares time working with the Appalachian Mountain Club (AMC) and as coach of Fryeburg Academy's mountain bike team.

Tyler has succeeded more than most in finding work that is not only rewarding, but also allows him to be in places that he truly loves. We are most pleased to welcome him back this season and hope you'll find the opportunity to meet him. We trust that you will find him a very interesting and impressive person. ♡

Volunteers Needed for this Summer's Brook Trout Survey in Great and Beaver Brooks

The survey will likely be in early August. For more information or to volunteer, please contact Lucy LaCasse: wnder@aol.com



LUCY LACASSE

Volunteers Shelley Pilsbury (left) and Judy Silva helped with the 2016 Brook Trout Survey

Climate Change Observatory in Action

by DON GRIGGS

Now entering its fourth year of activity, KLWA's Climate Change Observatory (CCO) had a busy winter. Our goal is to provide relevant information and guidance on how our climate is changing, its impact on people and wildlife, how we might adapt to or mitigate change, and what is likely to happen in the future.

Climate change is a real and imminent threat to our local, regional, and global ecosystems, most especially our treasured lakes. Lakes are recognized as "sentinels of climate change" because their physical, chemical, and biological responses can provide the first signal of the effects of a warming planet. In Maine, we can expect trends for warmer air temperatures, more intense/frequent precipitation and earlier lake ice-out.

More Trends from Lake Core Sampling

One of the most effective ways to understand the long-term effects of climate change on lake ecosystems is to compare past conditions with current ones. Since sediments that accumulate at the bottom of a lake are the result of the biological, geological, and climatological changes within each watershed, they provide a sequential record of past conditions in the lake. The sediment core study of Kezar Lake—done winter and summer 2015 — aimed to better link water quality with climate and land use, and to determine which stressors have put Kezar Lake water quality at greatest risk for future impairment.



Sediment captured in core sample.

The radiocarbon date range for the bottommost sample of the longest core dates to about A.D. 1020, giving us almost 1,000 years of water quality history for Kezar Lake. This photo shows a 55cm core sample immediately after it was taken from the lake.

All of the parameters that we measured were quite stable until the Europeans arrived, at which point the data started to change. The most dramatic changes, however, occurred in the last decade. This past winter, the CCO produced further analysis of the core sampling. These results allowed us not only to see quantifiable changes in the water quality of Kezar Lake, but also to identify when those changes occurred. Preliminary results, for ex-



RICK PILSBURY

Kezar Lake - Upper Bay

Climate change is a real and imminent threat to our local, regional, and global ecosystems, most especially our treasured lakes.

ample, indicate that a marked change in algae composition accompanied the increase in sediment accumulation rates after 2008. This evidence supports the idea that the lake is not currently as stable as it was just a decade ago. Other findings show that between 2000-2015, the sediment accumulation rate and organic

content increased dramatically, likely the result of intensified watershed runoff and erosion due to more frequent and more violent storms.

Threats and Accommodations

During the winter months, the CCO finalized its 2016 Annual Report, including a detailed report of the sediment analysis (available in its entirety online at klwa.us) and briefed the Lovell Selectmen and the Planning Board on its content. The Report lists a number of threats, along with recommendations to the community for their mitigation or accommodation.

Reaching Out to the Public

Last summer's popular flyer, "A Healthy Watershed Starts with You," is still available. It presents a graphic checklist of best practices for improving and safeguarding our surface waters and the fish and wildlife around them. Stop by the KLWA office if you didn't get a copy last year. This flyer is also on the KLWA website.

An important part of outreach is informing youngsters in our community about climate change. We expect to continue collaborating with Fryeburg Academy and Molly Ockett Middle School in an ongoing phenology project (i.e., the study of seasonal changes in plants and animals from year to year as they relate to climate change). In addition, we plan to assist the middle school in classroom activities related to our sediment core sampling and other climate change phenomena.

Welcoming Volunteers

To learn more and see how you can participate in the Climate Change Observatory activities, contact Don Griggs (griggsd@aol.com), Lucy LaCasse (wnder@aol.com) or Heinrich Wurm (whwurm@gmail.com).



Boulder brook, spring thaw

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Bays as early in the season as possible to catch spring stratification. Their low profile should minimize their visual impact and they can withstand a boat strike without damage to boat or instruments. FBE has a similar buoy in place at Watchic Lake in Standish, ME, and has experienced no problems with it to date.



KLWA on display at Lovell Old Home Days

LOVELL OLD HOME DAYS
Saturday, July 15
 KLWA will have a booth
 Stop by and say hi!



Look for KLWA loon platforms on the lake

Research

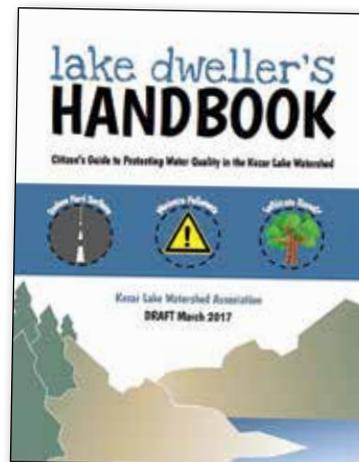
As part of the grant we received last year, we are continuing to study the chemistry of eight tributary streams under wet and dry weather conditions and hope to add another year to this project. The purpose is to achieve a better understanding of the pH, calcium and aluminum dynamics in these streams under varying conditions. Results will allow us to compare stream conditions both in and out of the Albany South timbering project at baseline and in years to come.

A Floating Classroom comes to Kezar Lake

On the educational front, the “Melinda Ann,” a pontoon boat set up and staffed by the Maine Lakes Association as a floating classroom, will visit us on June 14 and take two groups of fifteen students from the Molly Ockett Middle School in Fryeburg on a fun trip on Middle Bay. Students will learn about water testing instruments, collect and examine zooplankton under a flat screen microscope, dredge lake bottom samples and measure oxygen levels at different depths. There is also a remotely operated underwater vehicle equipped with a camera to explore and observe what lurks below. As of this writing, the Melinda Ann will add a second day for New Suncook School children with their teachers.

Lake Dweller’s Handbook

The handbook is an expanded version of last year’s flyer, “A Healthy Watershed Starts With You,” and currently under development for an early summer release. It’s been written with the conviction that educating people about the principles of responsible lake living is the most effective way to secure a healthy shoreline and minimize damage to the lake and ponds. The book will address many important aspects of lake living, as well as state and local ordinances and best management practices.



As you can see, it will be a busy and interesting summer. Be in touch if you are interested in up-to-date information on water quality or any of the other projects. For additional information, check out the KLWA website, give us a call or send us an e-mail.

SUMMER PROGRAM

August 23, 2017, 7:30pm
 Charlotte Hobbs Memorial Library

Evolution of Lake Environmental Association’s Maine Lake Science Center

In this talk co-sponsored by the GLLT and KLWA, Dr. Ben Peierls, research director of Lakes Environmental Association’s Maine Lake Science Center, will share the journey that brought him to the Center. He’ll also discuss the latest activities and research the Center is undertaking and how our local water resources compare to others in Maine and beyond.

News From GLLT

by TOM HENDERSON, EXECUTIVE DIRECTOR

Since its inception, the Greater Lovell Land Trust (GLLT) has considered advocating for sound public policy in regards to the environment as part of its mission. The GLLT has advocated at the local, state and federal level for ordinances, rules and policies that are based in science and address real potential threats to the natural world. In absence of such, the land preservation work that is core to our mission could be spoiled.

The GLLT has recently completed an analysis of population trends and development since 1968 for the Town of Lovell. The study is called a Build Out Analysis. It is normally a report that predicts future growth of a region based upon population trends, town ordinances governing development and buildable land. It is frequently used by towns to guide policies for smart growth, like limiting phosphorus loading. The GLLT went back in time to test the assumptions and therefore accuracy of the model used.



LEIGH MACMILLAN HAYES

GLLT docents, interns and families enjoy the viewing platform at Wilson Wing Moose Pond Bog Preserve

Then we used the model to estimate future growth potential. The results are compelling and currently being shared with Town officials. A full presentation for the public will be made at our Annual Meeting on the morning of August 12th. This is something you do not want to miss.

We would like to publicly thank those around the Lower Bay who contributed to our land acquisition project located there. In December 2016, the GLLT purchased a 143-acre property on the south end of the bay. The property does not include lake frontage but is highly developable back land running behind shorefront owners and has significant road frontage. The Lower Bay is a shallow body that is highly sensitive to over-development. KLWA studies have suggested its current healthy condition is primarily due to large scale “flushing events” that occur with relative frequency. For two decades, the GLLT has worked to reduce the development threats on these backlands and through the Sucker Brook system to help the Lower Bay retain its resiliency and to preserve its water quality. This project advances that mission. The final payment is due in December and contributions to the project are appreciated. Plans are to construct a trailhead and loop trail in the summer of 2018.

Land preservation in the GLLT’s “Western Wildlife Habitat & Corridor Focus Area,” that includes the lands west of Kezar Lake and the Lower Bay, was further advanced by this project and by the donation of a conservation easement by Peter and Megan Rohr. Their property is off West Lovell Road, including over 1,800 feet along it and “sandwiched” between Horseshoe Pond and the Upper Bay. In doing so, the Rohrs hope to inspire others in the vicinity and all the way to the National Forest to do the same.

And finally, the 2017 Environmental Education Program is our most robust ever. I encourage you to visit www.gllt.org and make your plans so you do not miss out on any of our wonderful offerings. ♡

News From Lovell Invasive Plant Prevention Committee

by DIANE CARACCILO, CHAIR

The great winter snow is but a memory—summer will soon be here. LIPPC has been busy over the winter putting our Courtesy Boat Inspection (CBI) plan in place and developing our education plans for this summer. CBI inspectors will continue the same seven-day-a-week coverage on the Kezar ramps and roving inspections at the ponds.

In addition, we hope to add an inspector to the town beach to help deter any motorized boat launches, and inspect and provide education to non-

motorized launches from the beach. The number of hours and days are yet to be determined.

Simultaneously, we have been developing a strategy to help spread awareness of invasive plants to non-motorized boaters. These are the kayaks and canoes that can easily be put in at any location and transferred from lake to lake. To date, Maine has been quite lucky in that invasive species are in less than 1% of the fresh waters, unlike surrounding states where the rate of infestation is much higher. We believe, however, that this

segment of boaters has gone unnoticed and represents a real risk to keeping our waters free of invasives.

Education is the best way to tap into this segment. It is virtually impossible to ensure that all canoes and kayaks would be inspected by a CBI. Instead, we are posting small signs at all the ramps in the Kezar Lake Watershed with the simple catchy message, “Clean, Drain, Dry.” The signs are in the shape of a paddle which we hope will draw attention to them. The message is already used by the Northern Forest

Canoe Trail and other places in the Northeast. In addition, numerous organizations in the state are on board to help spread the word throughout Maine. Our hope is that the sign will become a familiar reminder to boaters of the importance of self-inspection.

We would like to thank the town and all the members of the watershed for your continued support of our committee. Without you, this program would not be possible.

Best wishes for a wonderful summer and please continue to help spread the word! ♡

Corporate Sponsors

The KLWA has enjoyed a long tradition of partnership with local business. Each of these Corporate Sponsors has made a much-valued contribution to the financial stability of our organization and to the programs that we support. We are most grateful for their continued commitment and for their recognition of the many benefits that a vibrant and sustainable watershed brings to our community.

B&L OIL AND PROPANE

389 Portland Street
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Telephone: (207) 935.2064

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Lovell, ME 04051
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CROWELL CONSTRUCTION

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548 Main Street
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