

The Clary Lake Clarion

Volume 13 Issue 1

The Newsletter of the Clary Lake Association

Spring/Summer 2022

President's Message

Isn't it wonderful to be 'springing ahead?! Barring any discord that the world stage can sound upon our actions, we do have the power and will to hear the harmony of worthy efforts locally. May these reverberate far and wide; and may more people know the blessings that we do here in our lakeside community. All of our endeavors to 'preserve and protect' our shared treasure, Clary Lake, make a difference.

We have reason to believe that this year will find us able to reasonably resume many of our favorite activities with friends and families and with our Membership. As we await the many and much loved traditions and events in, on and around the lake, some of the 'under cover' happenings have been documented through the Winter months by our Dam Committee and Secretary by way of posts with charts and photos. Some of you have participated in webinars and will attend future gatherings to keep up to date with information regarding water quality, natural habitat changes and creating a healthy environment for our wildlife.

We now have a, perhaps more intentional and called out 'continuing education' component to our website to keep those interested, ever more informed about the wonders of Mother Nature and how Her moods affect all living things here on the Lake. It is my hope that we are all interested and that we stay engaged, working and playing together to keep our Lake healthy for generations to come.

Please let us know of your interests and what you hold most dear in your life on Clary Lake – participate in the content for the website; send us your pictures and your stories; sign up for Courtesy Boat Inspections; volunteer to help plan and orchestrate an Association event; send us your ideas for new ways to involve the community; take your Membership to a new level – get a friend to join. The Lake belongs to all of us.

Stay tuned for more details on upcoming events as we get them on the calendar, and consider getting involved in the Events Committee and help make this a fun and "eventful" year.

Respectfully, Dave Knight, President



There is now a dry hydrant over at the Clary Lake dam. Many thanks to David Boynton for donating his time!

2022 Annual Meeting Notice

This year's Annual Meeting of the Clary Lake Association will be held at 2 PM on Saturday, August 27, 2022. We will be meeting at the Clary Lake Dam. As in past years, we will setup some awning tents to provide shade and seating will be provided as well but as usual, it never hurts to bring a folding chair or two if you have them. The rain date will be the next day, Sunday August 28, same time, same place. We will have our traditional potluck supper after the Meeting so bring your favorite salad, casserole, side dish, or what have you and of course, bring an appetite! This year's meeting agenda includes the election of a couple of Board members. At the time of this writing we're still working on a program for the meeting. We're going to try and provide Zoom access to the meeting, if we can arrange for sufficiently fast wireless internet on site.

In addition to the Annual Meeting in August, we're planning several other events this summer including putting a float in the Whitefield 4th of July parade and an ice cream social probably sometime in July. Keep an eye on the website for more information about these events.

Included with this newsletter is a remittance envelope, and we encourage everyone to send in your Membership dues early! Annual dues are (still only!) \$25 per Member which entitles you to one vote; additional family members if they wish can also pay dues and be counted as a voting Member. You can also sign up or renew your Membership online using our secure PayPal payment (continued on pg 4)

Ice Berms and Pressure Ridges

by George Fergusson



I received a few inquiries about ice berms and pressure ridges in response to my website post about February water levels so I thought I'd provide a little more information about these interesting phenomena and the science behind them. Imagine the forces at work that were responsible for the buckled ice in the photo above! First we need to learn more about how water changes and what happens to it as its temperature changes.



Water becomes more dense (heavier) as its temperature drops, causing it to sink below warmer water: cold water sinks and warm water rises. We all know this much

from going swimming and encountering that cold layer of water 4-5 feet below the surface. As its temperature drops, water continues to become more dense and continues sinking below warmer water until it gets down to about 39° F. Then something

unexpected happens: as the water cools, the molecular motion continues to slow down and as the water starts to assume the crystalline lattice structure that is ice, the distance between the molecules actually increases. The freezing water, rather than continuing to become denser, actually begins to expand, becoming less dense, causing it to float (it is this expansion as it freezes that ends up breaking water pipes). By the time water reaches its freezing temperature of 32° F (0° C) and changes to ice, it has expanded approximately 9% from its maximum density and a complete inversion from the usual summertime temperature stratification takes place. In the winter when the lake is ice covered, the coldest water is right under the ice and the temperature rises as depth increases so the warmest (and densest) water is at the bottom of the lake. This is completely opposite of what we see in the summer time with the warmest water at the surface and the coldest water at the bottom.



Now here's where it gets interesting! Once ice is formed and its initial expansion has taken place, it doesn't continue to expand as it gets colder, the process reverses and it actually starts to shrink. The cracks

you see forming in the lake ice and the "belly aching" sound we hear on cold winter nights is not due to the release of built up pressure within the ice, but rather it is due to the release of tension within it: what you're seeing and hearing is the ice literally ripping itself apart as it shrinks. The colder ice gets, the more it shrinks. As the ice sheet shrinks, water is exposed around the edges which freezes, slowly making the ice sheet larger. Similarly, as ice warms up it will expand again until it reaches its melting point (0° C

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or 32° F). The rate at which ice shrinks (as it gets colder) or expands (as it gets warmer) is referred to as its coefficient of expansion: ice shrinks (or expands) 50 x 10⁻⁶ meters / ° C (i.e., 0.00005 meters per degree centigrade change in temperature). Let's plug some numbers into that using Clary Lake as an example.

Clary Lake is approximately 1.5 miles (2.42 Km or 2415 meters) long from the southeast end down by the boat launch to the northwest end where the outlet channel starts but only 0.23 miles (0.367 Km or 366 m) wide at its narrowest spot between the Hodsdon & Grant points. Let's say that after an extended period of crisp sub-zero nights the ice sheet on Clary is at a temperature of 0°F; over the course of the next week the daytime temperature rises to 40°F and overnight temperatures only drop to freezing. After a week of this the ice sheet on the lake has warmed up from 0°F to 25°F (a change of 25°F or 13.9°C): The overall length of the ice sheet is going to expand:

$$0.00005 \times 13.9^\circ \times 2415 \text{ m} = 1.67 \text{ m} = 5.50 \text{ ft.}$$

At its narrowest spot between the two points however it will expand much less:

$$0.00005 \times 13.9^\circ \times 366 \text{ m} = 0.25 \text{ m} = 0.83 \text{ ft.}$$

As you can see the expanse of ice in play has a big role in how much expansion we'll see which explains why we don't see evidence of ice expansion everywhere around the lake. Keep in mind that the ice sheet is going to expand in all directions (or at least it will exert expansive force in all directions) so you'd not necessarily see 5.5 feet of actual movement at one end of the lake or the other. In any case, even a couple of feet of lateral expansion of the ice sheet would be enough to account for the pressure ridge pictured at the top of the page! In the above example, between the Hodsdon & Grant points, overall expansion might be 0.83 feet but you'd probably only

see 1/2 of that (perhaps 4 or 5 inches) on either side of the lake.

Once the ice sheet starts warming up and expanding, it can no longer comfortably fit within the confines of the shore line that originally contained it, and it starts pushing back. If the ice is pushing solidly



against a shoreline, it can exert many tons of pressure per square inch, and something will have to give: if the ice is thin or honeycombed it might just buckle or crumble, but if it is thick and solid enough, it will be the shoreline that gets pushed around. This explains how every spring it seems like the rocks on our shoreline have been rearranged! Some areas are going to be more susceptible to ice damage than others because of their character, or location, and depending on the lake level at the time, evidence of this epic winter battle between ice and shoreline might or might not be noticeable come spring when the lake level is at its highest.

In conclusion: expanding and contracting ice over many decades, pushing and pulling on the shoreline around the lake, piling up rocks, knocking down trees, and scouring ledges has formed our current day shoreline. The evidence is everywhere if you know what to look for and know how to interpret what you're seeing. The existence of the ice berm pictured above is clear evidence in and of itself that historically high winter water levels over the years have been the norm, not the exception.

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(continued from pg. 1) processing system. Notice that we no longer ask for separate Summer and Winter addresses though we still keep multiple addresses on file where appropriate or when possible. Please provide us with your PRIMARY mailing address and also please include email addresses for you and your family as email makes contacting you fast, free, and easy!

We know a lot of you, for your own reasons, like to wait to renew your Memberships at the Annual Meeting, and that's fine! However, if you're going to renew at the Meeting please arrive a little early to sign up so you'll have some time to settle in before the Meeting starts. We'll have the registration desk set up and ready to go no later than 1:00 PM and we will start the Business Meeting at 2:00 PM sharp. Please remember, you have to be a paid up Member for the coming year in order to vote at the Annual Meeting.

And a final reminder! Full Membership in the Association is open to "all persons who support the purpose of the Association as stated in the bylaws and who pay annual dues to the Corporation." You need not be a Clary Lake shore owner to be a Member. We are especially interested in attracting Members from the wider Whitefield and Jefferson communities, and beyond.

There is strength in numbers, and we encourage you to invite your neighbors and friends of Clary Lake to come to the Meeting and join the Clary Lake Association. We hope to see you there!

CLARY LAKE BED AND BREAKFAST	
<p>Rick and Linda Gallion 777 Gardiner Rd. Jefferson, Maine 04348</p> <p>Reservations</p> <p>Phone: (207) 549-5961 Fax: (207) 549-9912 Email: lrgallion@roadrunner.com Web: clarylakebedandbreakfast.com</p>	<p><i>Mid-Coast Lake Region Between Rockland/Camden and Augusta</i></p>  <p>Continental Or Country Breakfast</p>

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Loon Nest Deployed on Clary Lake

By Mary Gingrow-Shaw



On April 30th, a cedar loon raft was successfully launched on Clary Lake as part of Maine Audubon's and Maine Lakes' Loon Restoration Project. Ellis Percy, with assistance from Mary Gingrow-Shaw, built the raft at a workshop in Bridgton early this Spring. All materials to build the raft were provided by Maine Audubon.

Originally the raft was going to have 2 planter boxes on it, one on either side, but they proved to be too heavy so we went with just one. Even that proved to be too heavy so we emptied it of plants and dirt and now it's just a box. With a little additional flotation, it's now floating nicely.

Clary Lake Association Members George Fergusson, Ellis Percy, Mary Gingrow-Shaw and Ernie Shaw were joined by Maine Lakes loon experts Susan Gallo and Drew Morris in deploying the raft. The raft is located in a cove on the northeast side of the lake. Hopefully the loons will like their new accommodations!



Ellis Percy (left), and Drew Morris and Susan Gallo from Maine Lakes discuss the finer points of loon raft building.

2021/2022 Association Members

Patricia & Rusty Althenn
Cheryl Smith & Charlene Andersen
Georgina & Gary Bergendoff
Gareth & Beverley Bowen
Jeffrey Brann
Terrie Jane Plummer Brann
Karren & Gregory Briggs
Daniel & Dorothy Burns
Malcolm C. Burson
David & Betty Chase
M. Jane Chase
Tim & Martha Chase
Alan G. & Linda J. Clark
Richard H. Cichalski
Debora A. Connell-Duncan
Steve & Julie Cowles
Randy & Gwen Creswell
James Croce
John R. Crosby
Karen Stutzer & Terry Crummett
Paul Devlin & Carolyn Curtis
Mark & Tara Doe
Ron Durgin
Cheryle & Peter Fasano
Colin S. Fergusson
Colin Caissie & Jean Fergusson
George & Margaret Fergusson
Elizabeth Fergusson
Des Fitzgerald
Jeffrey & Diana French
Kelsie L. French
Linda & Rick Gallion
Daniel H. Gatz
David & Carol Giampetruzzi
Steve & Ann Giampetruzzi
Roger Gilbert
Janina & Baxter Gillette
Leslie Gillette
Thomas & Delph Gillette
Ernie Shaw & Mary Gingrow-Shaw
Eleanor Goldberg
Lydia S. Grant
Dee Ann Grazioso
Victoria E. Grimaldi
Tim & Trish Harkins
David E. & Pamela J. Heath
Gladys Hewett
David S. & Gail A. Hillstrom
David & Janette Hodsdon
Nora Hoising
Juliana Hoffman
Jack & Ann Holland
Jaclyn & Jayson Holland
Joseph Holland
Taylor Holland
Bambi Jones
Wynne & Michael Keller
David & Gayle Knight
Stephen E. & Tina J. Laskey
Ellen Dolce, Thomas Lawton
June Lordi
Megan Pratt-Luisi & Richard Luisi
Anthony & Marianne Marple
David & Fran Marsh
Ray & Judi Martin
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April St Pierre
Christopher & Karen Stultz
Randy & Jody Thivierge
Joann Tribby & Ellis Percy
Thomas & Linda Vigue
Thomas Vigue
Todd & Stephanie Vincentsen
Ned & Brenda Vitalis
Stephen Viti
Brian Vogel
John S. & Darleen A. Williams
Arlene & Randy Wing
Totals: 168 Woohoo!

The Clary Lake Association Needs You!

The Clary Lake Association is a membership organization and depends entirely on volunteers to get our work done and getting our work done involves having people step up to serve on our Board or on one or more of our various committees, or participating in one of our standing programs such as our Courtesy Boat Inspection Program. Like most volunteer organizations, a small number of people do most of the work and the CLA is no different. However, our ability to meet our goals of protecting and preserving Clary Lake and serving our Membership depends entirely on having enough people step up to do the work. It's that simple! If you'd like to get involved and help out please send an email to volunteer@clarylake.org and let us know how you think you could contribute to the Clary Lake Association. Helping out need not involve spending a lot of time but it does require a commitment. Whether it's helping keep invasive plants out of our lake, serving on our Board, or planning social events, it's all important! Reach out and we'll put you in touch with the right people.

You'll find a list of committees on the CLA website under the Membership menu along with descriptions, members, and contact information. We're currently looking for people interested in helping out with our Events Committee. Are you a good writer? We currently send out one newsletter a year and we'd really like to increase that to 2 or more newsletters a year, perhaps with digital versions being sent as well. We're also looking for people interested in helping out with our website. Are you from out of town and only here on Clary Lake for a little while each summer? No problem! All of our committees offer Zoom meeting attendance and do much of their work by email. Get involved. You'll be glad you did!

The Clary Lake Association is a 501C(3) nonprofit corporation duly registered in the State of Maine, dedicated to preserving, protecting, and enhancing the natural beauty and quality of Clary Lake and its watershed. Membership in the Association is open to anyone and costs \$25 per year per person. The CLA has owned the Clary Lake dam since October 2018. Donations to the Association are tax deductible.

Current Association Officers:

President: David Knight	president@clarylake.org
Vice President: Steven Relyea	vicepresident@clarylake.org
Treasurer: Mary GingrowShaw	treasurer@clarylake.org
Secretary: George Fergusson	secretary@clarylake.org
Newsletter: George Fergusson	editor@clarylake.org
Association Board Address:	board@clarylake.org

Current Board Members are: Kelsie French, Jack Holland, Malcolm Burson, Steve Cowles, and Gareth Bowen (5/2022)

Ode to a Lake

by Margaret Fergusson

Lying prone upon your basin, the calendar of
days unfolds to cover you,
and even as Mother scolds, you answer back in
birdsong and wind song.

Never a forgiveness or regret;
as you flow and you freeze, and you crack and
you quake.

Welcomed always in all ways in our human heart
of home;
you, in all your costumes; and however you have
acted.

In the mystery of your depths and the light of
your shallows
lies the soul of your beauty, the answer to the
question.

Your full cup rejoicing and the stream of your
measuring out,
name and shape the days we share with you.

Your flourishing is our joy
and your challenge our call to help.

We are your creatures at your shores;
looking out upon your many moods.

We are listening and watching;
Never stop speaking to us.

You give willingly what we take from you
and in this exchange, the heart is renewed.