

THE IPA NEWSLETTER

Mystic Lake, Middle Pond, and Hamblin Pond in Marstons Mills, MA

Spring 2023

A quarterly publication of the Indian Ponds Association, Inc.

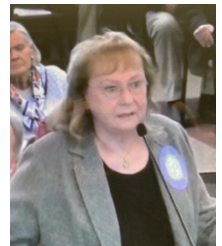
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WELL ORGANIZED SHOW OF SUPPORT SECURES FUNDING FOR ALUM TREATMENT



The Indian Ponds Association (IPA) has secured funding for an alum treatment for Mystic Lake. The treatment aims to reduce the harmful effects of phosphorous, which threaten fisheries and wildlife. The problem is attributed to the Hord dairy farm, where phosphorous from farm fertilizer and cow manure leached into the lake, leading to algal blooms including cyanobacteria.

At a Barnstable Town Council meeting on April 27, IPA representatives, including board members and concerned residents, spoke about the urgent need for an alum treatment. Retired fisheries scientist Dr Emory Anderson supported the IPA's case, stating that a treatment is the most cost-effective way to control the phosphorous. Geri Anderson, in an impassioned plea, emphasized that a treatment is necessary to prevent a catastrophic mussel die-off, citing the previous instance where an estimated 24 million mussels,



Geri Anderson

some endangered species, died in 2009 and 2010 because of a delay in the previous treatment in 2010. Retired fisheries biologist Dr Bill Hearn also spoke in support of a treatment, pointing out that Mystic Lake supports many species of wildlife, including rare and endangered mussels, the largest run of herring in the Town, and the only breeding pair of bald eagles on Cape Cod.



Carol Sim

IPA President Butch Roberts reminded the councilors that the IPA has collaborated with the Town for many years, monitoring and advocating for the health of the lakes and ponds in its jurisdiction. He pointed out that the health of the lake has a direct correlation with economic factors that influence the Town's wealth. An alum treatment is less expensive and more proactive than more costly measures to fix unhealthy ponds. Carol Sim, retired RN, hospital CEO, avid kayaker, and IPA director, commented on the health impacts of cyanobacteria exposure to humans and animals. She stressed that an alum treatment can help to keep Mystic Lake safe for recreation for many years. Director of Public Works Dan Santos presented the rationale for permitting, treatment, and post-treatment monitoring and tracking. Town Councilors Jeffrey Mendes and Paula Schnepf voiced support for the treatment requesting that details of the treatment be examined to maximize the best results.

After hearing all the comments, the Town Council voted unanimously in favor of the alum treatment. However, additional permitting from the Conservation Commission is still required to consider the effects that the treatment would have on natural species. Nonetheless, the IPA's success in securing funding for the treatment was a significant milestone in their efforts to protect the health of Mystic Lake and the connecting Middle Pond.

Sandy Leo-Clark

IPA ANNOUNCES ANDERSON AWARD RECIPIENT FOR 2023

The Indian Ponds Association (IPA) is excited to announce our new intern partnerships with local environmental organizations. These intern partnerships were established in honor of Dr Emory Anderson and his wife Geri for their long-term dedication and service to the IPA. The first recipient of the IPA's 2023 Anderson Award is the Barnstable Clean Water Coalition (BCWC) which will receive a \$1500 donation to support their intern program.

The IPA's intern partnership with the BCWC will focus on invasive plant surveys and water quality monitoring at Mystic Lake, Middle Pond, and Hamblin Pond. Interns will be responsible for conducting shoreline surveys for invasive species such as European gray willow (*Salix cinerea*), purple loosestrife (*Lythrum salicaria*), and common reed (*Phragmites australis*) as well as water surveys for invasive Hydrilla (*Hydrilla verticillate*). These specific in-

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MESSAGE FROM YOUR PRESIDENT

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The IPA is a 501(c)(3) organization and a registered public charity. All dues and contributions are tax deductible. This newsletter, with a circulation of over 800, is a forum for the exchange of ideas on matters concerning the IPA mission, and the views expressed by authors of articles do not necessarily represent official IPA policy.



It has been a very active and productive year for the Indian Ponds Association's Board of Directors. We established links between IPA board members and local organizations and homeowner's associations to increase communication regarding a healthy lake environment. This intentional liaison relationship resulted in an impressive and persuasive showing at the April 27 Town Council meeting at which the Town Council unanimously approved the funding of the needed alum treatment for Mystic Lake. We should see that treatment happening in late fall or early spring of next year.

We are using the Emory and Geri Anderson scholarship to fund a summer intern with the Barnstable Clean Water Coalition. This internship will allow us to support the development of local youths in the field of environmental science while also providing us with greater insight into the water quality and vegetation in and around our ponds.

As the effects of climate change increase and the septic systems around the ponds on Cape Cod grow older, we are seeing the increasing prevalence of cyanobacteria blooms and their harmful effects. While the current threat to our three Indian Ponds is in the phosphorus-laden sediments at the bottom of our ponds, we are not exempt from the natural course of events caused by intense development without an adequate wastewater infrastructure. The proposed changes to the Massachusetts Department of Environmental Protection's Title 5 Septic System Regulations will have an impact on everyone living on Cape Cod. While these changes are decades too late and will be financially challenging, they are necessary to maintain and improve the quality of all the freshwater ponds on Cape Cod, including our three Indian Ponds. Our speakers at this year's annual meeting will discuss some of the tools we have at our disposal to confront this growing problem as well as providing some insight into the proposed regulations.

As an organization, we are also building relationships with other pond associations. We have joined the informal network of Cape Cod Pond Associations created by the Cape Cod Commission and APCC, focusing on the needs of preserving and protecting our water bodies.

Most importantly, however, without your support, the efforts of our Board are wasted. With your support this year, we made great progress, for which we are extremely grateful! We need your continued support and that of your neighbors to successfully meet the upcoming challenges to the health and preservation of our three ponds.

Butch Roberts

REMINDER TO PAY YOUR DUES

If you haven't already done so, please take the time now to renew your membership in the IPA; or if you are not a member, please take this opportunity to join. A remittance envelope for this purpose was included in the winter issue of this newsletter, but you can also join or pay dues and contributions by logging onto our website (<https://www.indianponds.org/>) and clicking "MEMBERSHIP" at the top of the homepage where you will find instructions for joining, paying dues, and so on. Your membership and financial contributions are vital for the important work of this organization.

WHAT ABOUT ARTIFICIAL BEACHES ON OUR PONDS?

Have you ever seen a waterfront lawn that extends right down to the edge of a pond or lake? How about a beach created by the placement of sand near or at the water's edge? Such amenities may "improve" the experience of owning lake-front property, but what effect do they have on the long-term health of the pond?

Throughout our country, many pond and lakefront property owners have cleared the native vegetation bordering their water body. In places where the pond bottom is muddy or rocky, some will dump cubic yards of sand to promote better wading. Others place sand, not in the pond, but close to the pond, thereby creating an artificial beach for tanning or other leisure activities. The replacement of natural riparian vegetation with lawn or the placement of sand near or at the water's edge are practices that we now know are detrimental to the long-term well-being of our ponds.

In its Lake and Pond Guide, the Massachusetts Department of Conservation and Recreation (DCR) states, "Do not add sand to your beach area; introduced sand is a major source of sediments and phosphorus."

The New Hampshire Department of Environmental Services says, "placing sand in water for beach construction for private residential use is not permitted as these are environmentally damaging activities". When discussing the permitting of non-tidal beaches, it further states,

- "Periodically adding sand to beaches greatly accelerates lake aging. If one cubic yard of sand erodes from a beach into the water each year, the equivalent of an entire dump truck load of sand is added to the lake over a decade. When one considers the cumulative effects of sand being added to several properties around a lake and over the years, the quantities add up quickly. For this reason, beach sand replenishment is regulated."
- "If a shoreline does not have a natural beach, this is a clear indication that natural erosive forces, such as wind and water, will work to destroy any beach constructed on site. The eroded sand will either be carried along the shoreline until deposited on someone else's frontage or will settle out along the frontage it was placed upon. The sand may disappear from view, but it does not leave the system. It is added to the natural sediment load in the lake and accelerates the lake aging process. Compounding this problem, it often accumulates in channels or coves where it disrupts boat navigation and renders some frontages inaccessible by boat."
- "The physical process of accelerated lake aging has major biological impacts. When sand builds up in lakes, lakes become shallower. Shallower lakes then have less water to dilute and process incoming contaminants, such as phosphorus, which easily attaches it-

self to sand particles. In turn, increases in phosphorous, combined with shallower lakes, often result in accelerated growth of aquatic vegetation and algae. In some circumstances, this rapid growth can cause water oxygen levels to decrease, which can suffocate aquatic animals such as fish. In addition, as lakes become shallower, lakebeds are exposed to greater sunlight, which results in increased water temperatures. In turn, warmer waters become even less capable of holding oxygen. Oxygen depletion combined with increased nutrients reaching the water, results in increased aquatic plant growth and may exacerbate exotic species growth, such as milfoil. Although many owners want to spread sand below the water level, depositing sand in the lakebed can smother bottom dwelling algae, invertebrates, and critical habitats, causing a disruption in the food chain of higher organisms that depend on them, including fish. Also, rather than sandy bottoms, many fish species rely on stony bed habitats for nesting and spawning purposes, which may be lost due to sand build-up into the lake. Finally, an increase in turbidity (reduced water clarity) caused by the addition of sand rich in fine sediments may also interfere with normal fish behavior by clogging gills and impairing vision. Depositing sand in the lakebed is therefore prohibited."

Likewise, the state of Maine, under its Natural Resources Protection Act, finds that sand is a pollutant for aquatic systems and is, therefore, restricted from being placed in ponds and lakes. Maine's York County Soil and Water Conservation District warns, "It is illegal to add sand to a beach area. Landowners would be forced to remove any added sand and may be subject to fines and other enforcement action by the Maine DEP or Town."

Inorganic sand is inherently the least biologically productive substrate in aquatic systems because it is physically unstable, and thus generally limits colonization of important beneficial algae (e.g. diatoms). Sand substrates also provide poor conditions for most benthic invertebrates important to fish production.

The Minnesota Department of Natural Resources discourages the practice of placing and maintaining sand for the formation of lakefront beaches. It concludes that, "**if owning lakeshore property with a sandy beach is a high priority for you, look for lakeshore property where sandy beaches occur naturally before you make that important purchase.**" Nevertheless, they do provide a stringent permitting process for it.

The adverse cumulative effects of ongoing maintenance of multiple artificial sand beaches are a less obvious but valid concern. The placement of one or two cubic yards of sand may seem innocuous, but over several decades, the main-

tenance of several beaches can appreciably diminish a pond's volume and cause the degradation of its water quality and habitats for aquatic species.

Beach maintenance in uplands near water's edge and loss of riparian vegetation

The placement and maintenance of sand within the 0–50 ft buffer zone to inland lakes and ponds also has the potential to adversely affect the adjacent water body. The 2019 Massachusetts Association of Conservation Commissioners Wetlands Buffer Zone Guide Book states that buffer zones are important for abating pollution runoff into wetland resource areas. It provides substantial technical information including the following:

- *“Vegetated buffers, sometimes referred to as “buffer strips”, act as natural filters that adsorb and trap nutrients such as nitrogen and phosphorus, toxic pollutants, biological pathogens such as coliform bacteria (E. coli and fecal coliform), sediment, organic material, and debris before it enters a wetland resource area.”*
- *“Vegetated buffer strips work by slowing the velocity of surface water flow, which has the effect of allowing sediments to drop out of the flowing water, increasing recharge to groundwater, and increasing the ability to filter pollutants from flowing water.”*
- *“Both phosphorus and nitrogen can be taken up by vegetation or absorbed into the soil.”*
- *“Rates of removal for both nitrogen and phosphorus depend on complex processes and interactions within the buffer. Factors that determine removal rates include soil type, pH, soil saturation, the type and structure of vegetation, ...”*
- *“Sediment removal is highly dependent on site-specific factors such as vegetation structure and density, soil saturation, and surface runoff contact with the buffer area.”*

- *“Shallow overland flows that do not fully submerge vegetation provide the greatest exposure to plants and soils, thus enhancing filtration capacity.”*
- *“Most studies find that buffers dominated by trees or a mix of vegetative cover types (e.g. trees, shrubs and grasses), structure and age classes are most effective in removing nutrients and sediment pollution.”*
- The Massachusetts DCR states, *“If you reside on lake-front property, use environmentally friendly landscaping techniques to prevent sedimentation and pollution.”* It encourages creating *“the largest possible buffer along the shoreline (a minimum of 30’ is recommended) by leaving existing vegetation and rocks and planting small shrubs. This buffer will reduce the effects of storm water runoff and erosion from waves and deter geese from the lawn, while still providing a view of the lake.”*

When landowners of shorefront property create artificial beaches within bordering vegetated buffers, they diminish the capacity of that buffer to assimilate nutrients (nitrogen and phosphorus) and filter sediments and other pollutants. Although a sand substrate does allow some infiltration of precipitation and runoff, an unvegetated sand surface has much less capacity to filter and assimilate sediments, nutrients, and other pollutants than a vegetated buffer, especially during high runoff events.

Here in Barnstable, our Conservation Commission generally opposes the placement of sand directly in or at the very edge of our ponds. However, they “grandfather” the placement of sand close to the water's edge, but only if it can be shown that the property had historically done so. Nevertheless, keeping sediments from eroding into our streams and ponds is fundamental to environmental protection, and placing sand in or adjacent to our ponds is the antithesis of erosion control.

Bill Hearn, PhD

IPA ANNOUNCES ANDERSON AWARD RECIPIENT FOR 2023

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vasive species are a threat to fisheries, wildlife, and water quality. In addition, water sampling will be analyzed for nitrogen and phosphorus, the elements responsible for algal growth. All survey data will be shared with the IPA and entered into the BCWC database. The IPA is thrilled to be networking with the BCWC, an organization with over twenty years of restoring and protecting clean water in Barnstable.

Through this intern partnership with the BCWC, the IPA hopes to gain valuable insight that will further our mission *to preserve and protect the natural environment and ecological systems of the Indian Ponds and surrounding parcels of lands and watershed.* What a great way to exemplify the legacy of the Andersons!

Sandy Leo-Clark

SUPPORT THE WORK OF THE INDIAN PONDS ASSOCIATION

Be a good steward of our environment

Enjoy all the benefits provided by our ponds

Keep the ponds free of litter, hazardous materials, and harmful fertilizers

WHO IS EDWARD SCHWARM?



The present has a way of fading the memories of past generations. But, if you've ever looked into the sky over Marstons Mills and enjoyed the whoops of laughter from skydivers or the roar of an historic DC3, you've given thanks to Edward Schwarm. If you've sighed with pleasure as you floated on your back gazing at summer clouds from Middle Pond, you've given thanks to Edward Schwarm. You might not recognize his name, but you know his accomplishments. And that's why the Indian Ponds Association honors him with the Edward Schwarm Memorial Scholarship.

Edward Schwarm, a retired electrical engineer who piloted B-24 bombers in World War II, maintained an avid interest in flying. His passion for aviation led him to support the Town of Barnstable's purchase of the Danforth property in 2003, and to help oversee the reactivation of the Cape Cod Airfield in 2004. The little grass airfield and its 88 acres of daisy-filled meadows are an amazing testimony to his community service. If you're super lucky, you may even experience a prop plane parade overhead in the sky. We locals refer to this as a flyover.

As an IPA board member, he was instrumental in protecting the lakes by ardently opposing lowering Middle Pond herring run in 2001. Not only did Mr. Schwarm initiate a successful campaign, he also assisted in developing a management plan for the operation of the herring run. He took it one step further by securing a grant and donations to help rebuild the herring run. The concrete structure that was erected in 2004 remains today and is visited by herring counters and enthusiasts each spring.

Not only did Mr. Schwarm serve on the Board, but he also held positions as clerk and treasurer during his stint, writing articles for the IPA newsletter and serving as IPA liaison to the Marstons Mills River Committee. This placed him in a position to work with stakeholders to protect our lakes and ponds, as well as the alewife.

After his passing in 2005, the IPA Board formed the memorial scholarship in Edward Schwarm's name so his environmental legacy could be honored and remembered. This scholarship continues to remind new generations that problems, no matter how difficult and daunting, can be solved in a cooperative, meaningful way. May the recipients of this award have lives as impactful as that of Edward Schwarm.

Sandy Leo-Clark

SCHWARM SCHOLARSHIP RECIPIENT



The Indian Ponds Association is happy to announce the Edward Schwarm Scholarship winner for 2023: Ryan Christensen, a graduating senior from Barnstable High School's Environmental Science & Technology Program. A high-honors student with a passion for the environment, Ryan understands IPA's mission, and his future goals will be beneficial to the ecology of Cape Cod and beyond.

As a steward of the environment, Ryan has been interning with the Barnstable Clean Water Coalition for the past two summers performing water quality sampling, surveying invasives, monitoring wildlife, and managing database findings. He also volunteers with the Cape Cod Sea Level Rise Art Installation Project as a project collaborator to spread awareness of the impacts of climate change.

During his years at BHS, Ryan was involved in a multitude of activities. He participated in many programs such as Treeplish, which helped to greatly reduce paper use at BHS; the BHS Community Serviced Agriculture Project, focusing on local, sustainable food practices; the Peer Leader Program, tutoring classmates; the BHS Model UN

Team; and the Cape Cod Climate Coalition. As senior class president, Ryan sought to beautify the school by introducing a very popular *Paint the Parking Lot* fundraising event. He also helped to launch an extremely successful *Spring Jam* event for the entire school, which helped to combat the post-Covid doldrums. While on the BHS varsity golf team, Ryan was able to participate in the Massachusetts State Tournament.

Including his induction into the Nation Honors Society, Ryan also achieved memberships in the National Math Honors Society, the National Chinese Honors Society, and the BHS Tri-M Music Honors Society. His classical guitar skills landed him lead guitar roles in the BHS Jazz Band and in the BHS Drama Club Orchestra Pit. Ryan's accolades include the JCI Senate Award and the MIT Professor Jae S. Lim Foundation Award as well as the Bausch & Lomb Honorary Science Award and the Daughter of the American Revolution Good Citizens Award.

Ryan will be attending Northeastern University this fall. After college, he would like to continue his environmental stewardship as an environmental engineer and eventually a consulting EPA field manager.

Sandy Leo-Clark

NOTICE

Indian Ponds Association Annual Meeting

Sunday July 30, 2023
4:00 to 6:00 PM



The Michael R. Kramer Center
at
Fuller Farm, 995 Route 149

Business meeting
followed by
presentations from guest speakers

Bruce Walton
New England Water Environment Association
and

Brian Baumgaertel
Mass Alternative Septic System Test Center

on

- Economics of alternative/innovative septic systems vs municipal central systems
 - Update on proposed Title 5 regulation changes
 - Status of phosphorus innovative/alternative systems

Traditional social hour after the meeting

BIRD HUNTING ON CAPE COD

Regardless what some of us may think about the subject, the fact remains that there is a large population of hunters on Cape Cod and at least seven species of birds to be hunted. The most common of these are the pheasant, quail, woodcock, coot and several waterfowl species including Canada goose, merganser, and northern pintail.



Pheasant

There are also those of us to whom the term "hunting" means looking to observe the various species.

There is a long list of rules and regulations that must be complied with in order for the hunt to be legal. All of Cape Cod is included in the waterfowl zone. All migratory game bird hunters must register with the

Harvest Information Program each calendar year and must complete an HIP survey on line with the State or anywhere hunting licenses are sold. These include online at a Mass-FishHunt license agent or MassWildlife office. A 2023 hunting license for a resident, which includes two deer tags and is valid statewide will cost you \$29.50. A resident minor license is \$6.50, and a senior license is \$14.75. A non-resident over 15 must pay \$101.50.

Hunting in the Upper Cape may be accomplished in several areas. The Francis A. Crane Wildlife Management Area in Falmouth along Route 151 is stocked with pheasant in the northern section and bobwhite quail in the southern section. American woodcock and ruffed grouse are also present. The woodlands and grasslands shelter the eastern whip-poor-will, grasshopper sparrow, eastern



Woodcock

meadowlark, upland sandpiper, northern harrier, short-eared owl, American kestrels, eastern bluebirds, and blue grosbeaks. While these are not all birds that hunters would be interested in shooting, they are some of the many birds available for birders to observe.

The airfield in Marstons Mills is also a good place to observe bird life. The taxiways set off large areas of grassland which all seem to have some bird life present. Many of the species previously listed can be found with patient observation and caution for approaching and departing airplanes.

If you are inclined to stray a little further afield, the Mass Audubon Wellfleet Bay Wildlife Sanctuary in South Wellfleet is a super place to wander the pathways and observe many different species going about their daily chores. Make sure to go all the way in to get the best viewing.



Quail

Closer to home and a spot that we will be going today is the Long Pasture Sanctuary off Route 6A in Barnstable. It is a good place to get a view of that most elusive bird: the woodcock.

Dave Reid

NEWSLETTER EDITOR STEPS DOWN



Kathy Bryan, who has served as editor of the IPA newsletter for the past eight years, has decided to step down. Her long-term service to the IPA began when she was appointed associate director in 2014. The following year she was elected director and vice president and took on the job of editor as well. Following the resignation of the president in late 2015, she served as acting president until the 2016 annual meeting. Kathy subsequently served three two-year terms as director until 2021 when she was no longer eligible for re-election. Still willing to be of service, however, she agreed to continue as newsletter editor, which she did for two more years.

Those of us who have had the pleasure of interacting with Kathy over the past nine years are truly appreciative of her dedicated service to the IPA and thank her very much. We wish her well and know that she is looking forward to devoting more time to grandmotherly duties.

The IPA newsletter was started by Geri Anderson in summer 2001 and served as editor for twelve years before turning over the reins to Holly Hobart in summer 2012. Holly, in turn, handled the newsletter until spring 2015 when Kathy took over. Effective with this issue, Emory Anderson, former director and president, will assume the duties of newsletter editor.

**TO VIEW THIS NEWSLETTER IN FULL COLOR,
GO TO THE IPA WEBSITE: www.indianponds.org**

"To preserve and protect the natural environment and ecological systems of the Indian Ponds and surrounding parcels of land and watershed and to participate in studies and work with other agencies, individuals, and groups to educate the public, serve the community, and promote and preserve the Indian Ponds and surrounding areas." IPA Mission Statement

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FORWARDING SERVICE REQUESTED

