THE IPA NEWSLETTER

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

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EVERYTHING IS GO FOR MYSTIC LAKE ALUM TREATMENT

The alum treatment for Mystic Lake is now scheduled to be done in September beginning after Labor Day (September 6, 2010). The Town of Barnstable has awarded a contract to Aquatic Control Technology, Inc. of Sutton, MA and AECOM (the same company which conducted the design and permitting phase in 2008) to do the actual treatment as well as all required pre-, during-, and post-treatment monitoring, assays, and reports. Preliminary testing is expected to begin in early June.

As reported in the Winter 2010 issue of this newsletter, the MA Natural Heritage & Endangered Species Program (NHESP) has agreed to fund a pre-treatment mussel survey of Mystic Lake. This survey will be conducted in mid-May (see article on page 5).

Also reported in the Winter 2010 issue of this newsletter, at the time the alum treatment was approved by the Town of Barnstable Conservation Commission (CONCOMM) on February 2, 2010, NHESP had only authorized half of the dosage originally recommended, or 25 grams (g) of aluminum (Al^{+}) per square meter (m^{-2}) of the lake surface to be treated.

However, a review this winter by Bob Nichols of the original dosage calculations by ENSR/ AECOM versus the amount of phosphorus found in the lake's sediments reinforced the need for a dosage of about 50 g $Al^{+}\,m^{-2}$. At the February 2 CONCOMM meeting, Ken Wagner of AECOM had indicated that a dosage of only 25 g $Al^{+}\,m^{-2}$ would most likely be effective in inactivating the phosphorus for only 5–7 years, whereas a dosage of about 50 g $Al^{+}\,m^{-2}$ should neutralize the phosphorus for 15–20 years or longer. *(Continued on page 2)*

IPA ANNUAL MEETING ON SUNDAY, JULY 11

Circle the date on your calendar and jot down "4:00 pm – IPA". Be sure not to miss this opportunity to meet with other IPA members and guests, learn more about the organization, and enjoy a delightful social occasion in a beautiful place. IPA Director Jon Halpert and his family have once again made their lovely waterfront home available for this annual IPA event. As before, the business meeting will include presentation of the Edward Schwarm Scholarship to an outstanding high school senior, election of directors, and a brief overview of key events of the past year. Status reports will be given on all three ponds. This year, instead of a guest speaker, we will be inviting the Alum Working Group to answer your questions about the up-coming alum treatment of Mystic Lake. The Alum Working Group consists of IPA Vice President Carl Thut, Past President Emory Anderson, Bob Nichols, President Holly Hobart, and Town of Barnstable Conservation Director Rob Gatewood. Following the business meeting, we will gather under the trees for wine, tasty things to eat, and conversation with our neighbors. We look forward to seeing you there!

Jon and Debby Halpert's house is at 470 Turtleback Road, Marstons Mills. Look for the "IPA" signs and balloons at the corner of Old Mill Road and Turtleback Road. Follow the signs to the parking area at the end of Turtleback. In case of rain, we will meet indoors at the home of IPA Director Lewis and Nancy Solomon at 28 Heath Row, Marstons Mills, off of Regency Drive.

DERELICT BOAT AND DEBRIS CLEANUP of Mystic Lake and Middle Pond will be held on Saturday, June 5. Meet at Bob Kohl's dock, 1153 Race Lane, at 9:00 am. If you come by car, you can park at the Town landing next door. If you have a boat with a motor, please come in your boat, along with a coil of line for hauling debris. Wear old clothes and pond shoes or boots. If you don't have a boat, you can crew with someone who does. After coffee and donuts, each boat will patrol a section of coastline and remove any debris they find, towing it to the Town beaches for pickup by DPW. **IF YOU HAVE LOST A BOAT OR RAFT**, please call Carl Thut, IPA Vice President at 508-420-0756 and give him the description. If we find it, we will return it to you.

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EVERYTHING IS GO FOR MYSTIC LAKE ALUM TREATMENT

(Cont'd from page 1)

Rob Gatewood Town Conservation Division Director had cautioned that a low dosage would shorten the treatment's life expectancy and necessitate a repeat treatment in a few years, which would probably be unaffordable. The CONCOMM had approved a dosage of 20–25 g $Al^{+}m^{-2}$, but had stipulated that a dosage up to 50 g $Al^{+}m^{-2}$ would be allowed if NHESP should conclude, based upon recommendations, that a higher dose is better for improving the pond.

A meeting was held March 9, 2010 at NHESP headquarters in Westborough, MA to present all relevant information for justifying a higher dosage. Attending were Rob Gatewood (Town), Emory Anderson (IPA), Holly Hobart (IPA), Bob Nichols (IPA), Ken Wagner (AECOM), Thomas French (Director, NHESP), Marea Gabriel (NHESP), Tim Simmons (NHESP), Steve Hurley (MA DFW), and Richard Hartley (MA DFW). Bob Nichols and Holly Hobart gave a detailed presentation explaining the sources of phosphorus in Mystic Lake, sediment concentrations of phosphorus determined from sampling in recent years, temperature and dissolved oxygen conditions in 2009, the revised bathymetric map and proposed alum treatment areas, the sediment dosage testing done by ENSR/AECOM in 2008, and various arguments for the higher dosage. Ken Wagner provided excellent technical information based on his experience with other alum treatments and clarified a number of apparent misconceptions by NHESP staff on the impact of alum on phosphorus. It was explained that alum concentrations could be applied selectively, according to the amount of phosphorus in particular locations, which is quite variable from place to place in the sediment. Further pre-treatment testing would be done to determine phosphorus concentrations at various locations within the treatment footprint. The ability to use up to 50 g $Al^{+}m^{-2}$ would enable the treatment to achieve a long-lasting result and make best use of the alum, which is costly.

Following the 2½-hour presentation and discussion, NHESP approved a dosage ranging between 20 and 50 g $Al^{+}m^{-2}$ depending on the amount of phosphorus determined to be in the sediment in each small treatment area. it was clear that the NHESP staff was satisfied that the amount of total phosphorus reduction achieved from alum dosages (between 20 and 50 g $Al^{+}m^{-2}$) would target and reduce blue-green algae, but would not result in changes to plankton communities (species diversity, biomass, and mussel food resources) that could, over the long-term, ultimately lead to trophic level changes in Mystic Lake. NHESP noted that long-term monitoring (i.e. of water quality, sensitive species such as mussels, and plankton) of such treatments is imperative for both the ecology of the lake and the success of the treatment. NHESP indicated that it values the Town's and the IPA's commitment to protect Mystic Lake and the Indian Ponds, and encouraged the continued long-term monitoring of the water quality, plankton communities, and mussels and hoped to work together to expand upon and implement such a monitoring plan.

PONDS IN PERIL WORKSHOP

The tenth Ponds in Peril Workshop was held April 14, 2010 at the Cape Cod & Islands Association of Realtors Conference Center in West Yarmouth, MA. These annual workshops, co-sponsored by the Cape Cod Commission's PALS (Pond and Lake Stewards) program and the Association to Preserve Cape Cod and attended by scientists, volunteers involved in the PALS program, and other concerned citizens, are an opportunity to hear about the environmental health of the Cape's freshwater ponds and lakes. This year's workshop was attended by well over 100 people.

IPA President Holly Hobart gave one of the best presentations entitled "Saving Mystic Lake". Her PowerPoint slides can be seen at www.indianponds.org/alum.htm or apcc.org/content/2010-ponds-peril-workshop-0.

Other talks were given by **Ed Eichner**, Senior Water Scientist, Coastal Systems Program, SMAST, UMass Dartmouth on "Sampling and assessments: Lessons learned and what's next for PALS?"; **Bob Cook**, Wildlife Biologist, Cape Cod National Seashore on "Amphibians and reptiles of Cape Cod freshwater wetlands"; **Annie Curtis**, Natural Resource Planner, Massachusetts Army National Guard on "Emerging threats to isolated ponds"; and **Brian Howes**, Director of Coastal Systems Program, SMAST, UMass Dartmouth on "Use of AUV technology in ponds for assessment of spatial patterns in physical and biological parameters".

2010 SCHWARM SCHOLARSHIP AWARDED TO BHS SENIOR

The IPA is pleased to announce that this year's recipient of the Edward Schwarm Memorial Scholarship is Nicholas Atcheson, son of Peter and Michelle Atcheson of 384 Lakeside Drive in Marstons Mills. Nicholas was selected by the IPA Scholarship Committee based on his academic achievement, extracurricular activities, and his community service related to the mission of the IPA. He will receive a $1000 award at the annual meeting on July 11.

Nicholas Atcheson

The Schwarm Memorial Scholarship was established in 2005 in memory of Edward Schwarm, a former IPA Director and Officer who died in May 2005. Due to the generosity of IPA members and the Schwarm family, the scholarship has increased from $500 to $1000.

Nicholas is a member of the National Honor Society and an Eagle Scout in the Boy Scouts of America. He has received the Bronze, Silver, and Gold Eagle Palms. As an Eagle Scout, he worked on summer projects to keep the Indian Ponds beaches clean. In addition, Nicholas attended and completed the Student State Trooper and Barnstable Sheriff's Police Academies and received the U.S. Air Force Recognition Award for his speech on veterans. He has been very active in both school and town sports programs.

Next year, Nicholas will be attending Westfield State College and will participate in the Honors Program while majoring in criminal justice. He has aspirations of returning to Barnstable as a local police officer and eventually finishing his career with the FBI.

We wish Nicholas great success in college and in his career pursuits.

Gay Rhue
Chair, IPA Scholarship Committee

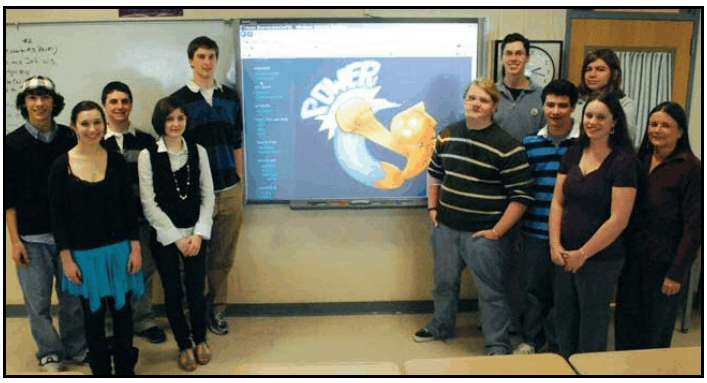
BHS STUDENTS: FIRST IN STATE, ON TO INTERNATIONALS

The Barnstable Community Problem Solving Team's POWER project (https://sites.google.com/site/barnstablecmps/home) has placed first in a statewide competition in the Future Problem Solving Program and will be proceeding to international competition in La Crosse, WI. Participants at the international competition come from 40 states and 10 countries, including Australia, Canada, Hong Kong, Japan, Korea, Malaysia, New Zealand, Russia, and Singapore.

Emergent contaminants are levels of primarily chemical contamination present in our water supply that are only identifiable with advanced measurement techniques. These contaminants are often chemical compounds found in pharmaceuticals and personal-care products (PPCPs). Recent research conducted by Silent Springs Institute and an AP investigation has determined that "active ingredients in prescription drugs and over-the-counter remedies are finding their way into Cape ponds as well as drinking supplies across the nation" (AP Investigation: McCormick). Although the presence of pharmaceuticals in the local watershed may be tiny, long-term exposure to these chemicals has shown alarming physiological effects among aquatic species. A study conducted by Silent Springs revealed samples with higher concentrations of contaminants in areas with higher residential densities, indicating that contaminants are leeching into the water through septic systems. The nature of Cape Cod's geography makes it particularly vulnerable to groundwater contamination, so not only are these medications negatively affecting aquatic organisms, but they could have a detrimental affect on humans as well.

Federal guidelines issued in 2009 instruct citizens to avoid flushing prescription drugs down the toilet or drain, unless the label or accompanying patient information specifically instructs them to do so. Through the **POWER** (Protect Our Waters and Environmental Resources) Project, the Barnstable High School Community Problem Solving team has been advocating a safe, three-step disposal method: first, crush up any tablets; second, combine them with any liquid medications and an undesirable substance such as coffee grounds or kitty litter; and third, place the mixture in a container and dispose of in the trash. Simply said, **Crush, Combine, Dispose**. All our trash is sent for incineration at SEMASS, so these pharmaceuticals have no opportunity to end up in our water supply. The only way to halt the cycle of contamination is to halt it at the source: the millions of households in America improperly disposing of medications.

Katrina Malakhoff



Barnstable High School Community Problem Solving team (left to right): Drew Gorin, Meg Driscoll, Dan Pipe-Mazo, Talya Perper, Blake Blaze, Dan Normand, Dan Anthony, Aaron Kanzer, Luke Starr, and Katrina Malakhoff, with teacher Nancy Aborn. Photo by Kathleen Szmit.

HIGH WATER LEVELS IN INDIAN PONDS

This spring, the Indian Ponds were at the highest water levels in recent memory. During a mid-March storm, significant beach erosion occurred on the northwest shore of Mystic Lake, due to the high water level and strong wave action. As of late April, the water level in Mystic and Middle has dropped about 4 inches from its highest level in mid-March, which was over 20 inches higher than in September 2008, the lowest lake level of the past two years.

Beach erosion at Lynxholm beach on Mystic Lake during storm on March 14, 2010. Note the exposed roots of trees and bushes.

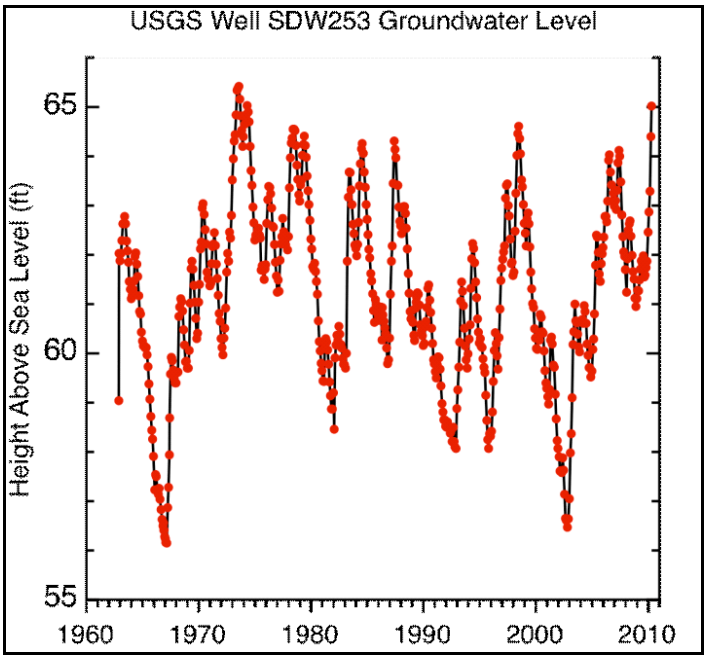
The lake levels in the Indian Ponds represent the intersection of the water table (i.e. groundwater level) with the ground surface. In the ponds' watershed upgradient from the ponds, the ground water level is considerably higher than the surface of the ponds, and this drives the flow of groundwater into the ponds.

The groundwater level in the Indian Ponds watershed is observed in United States Geological Survey (USGS) monitoring well SDW253, which is located off Farmersville Road, about 1.7 miles west–northwest of Mystic Lake. The water level in this well is measured monthly, with records dating back to 1962 (see figure).

The most recent well measurement, taken April 20, showed a water level of 65.02 ft above sea level. This is the highest level recorded since April 1974 and near the record high level of 65.42 ft in July 1973. The normal elevation of the surface of Mystic Lake and Middle Pond is about 44 ft above sea level, and Hamblin Pond is a foot or two lower.

The lowest level recorded in well SDW253 during recent times was 56.47 ft in October 2002. This was the culmination of a 4-year drop in groundwater level, during which time Mystic Lake and Middle Pond reached very low levels, even cutting off the flow to the herring run. This was the lowest recorded groundwater level since the record low of 56.15 ft in February 1967.

Since 1962, the water level in well SDW253 has fluctuated over a total range of almost 9.3 ft. Generally, the pond levels vary in tandem with the groundwater level in this well, but over a much lower total range of less than 3 ft. This disparity in the magnitude of the water level fluctuations between the well and the ponds is due to several factors, including the topography, the slow flow of groundwater (around 1 ft/day), the more efficient storage of water in the pond relative to the ground (about 1/4 of a given volume of saturated sand is flowable groundwater), and groundwater removal by pumping for public water supply.



The present very high groundwater level will likely insure relatively high pond levels for some months to come. It is not clear what affect this high water will have on pond water quality this summer, in particular whether it will influence another major algal bloom. If nothing else, it should make it easier for the herring to come and go and improve the largemouth bass fishing by providing deeper water around shore vegetation.

Robert Nichols

HAVE YOU FORGOTTEN SOMETHING?

If you haven't already done so, please renew your IPA family membership for 2010 for only $20. Use the remittance envelope sent to you earlier or download a form from the IPA website at www.indianponds.org.

MYSTIC LAKE MUSSEL SURVEY IN MAY

The Massachusetts Natural Heritage & Endangered Species Program (NHESP) has contracted with Biodrawversity LLC to perform a mussel survey of Mystic Lake in May to assess the mussel population following last summer's major die-off. This same consultant performed mussel surveys of both Mystic Lake and Middle Pond in 2007.

Surveying for mussels with SCUBA gear.

The 2007 survey of Mystic Lake involved counting the three mussel species listed by the NHESP as of special concern in 30-minute timed searches in each of seventeen 25-m^2 quadrats. Refer to the Fall 2008 IPA Newsletter (www.indianponds.org) for information on the state-listed and common mussel species in Mystic Lake. The survey quadrats were in nine locations around the lake, with eight deep water (5–17 ft) quadrats each paired with a nearby shallow water (<4 ft) quadrat. One additional shallow-water quadrat was also surveyed. The shallow areas were surveyed by snorkeling and the deeper areas by SCUBA diving.

The overall abundance of mussels (both state-listed and common species) was assessed for each site on a 5-point scale from low to high. Overall abundance of mussels was rated med-high or high in all but two of the seventeen quadrats. Up to 89 of the state-listed mussels were recorded in a single quadrat,

Our understanding from NHESP is that the 2010 survey will be performed following the same procedure as the 2007 survey, which was performed in a single day. We encouraged them to at least take a look in Middle Pond, since our own cursory survey has shown significant mussel mortality in Middle Pond near the cut from Mystic.

Robert NIchols

UPDATE ON WAR AGAINST INVASIVE GRAY WILLOW

The IPA and Bartlett Tree Experts will conduct their third annual gray willow campaign this summer. Beginning immediately, Bartlett will contract with owners of properties that have gray willow trees to cut the trees, treat the stumps with herbicide to prevent regrowth, and remove and dispose of all the cuttings. The actual work will be done in June.

During the first year (2008) of gray willow eradication, 66 property owners signed up. Last year, only 7 signed up. So, 53% of the pondside properties are now free of this invasive pest. There are 65 properties still to be done. **If you haven't had your gray willows removed, you are urged to contact Bartlett Tree Experts at (508) 428-2397 right away to get an estimate.** Owners with large infestations of gray willow may arrange to have some removed one year and some the next year

Mature gray willow on the shores of the Indian Ponds.

The European gray willow (*Salix atrocineria*) is a shrub-like tree with blue-green or gray-green leaves. On the banks of the ponds, these trees look like gray-green shrubby balls. They eat up beaches, shade out native plants, and offer little hospitality to birds and other wildlife. They spread rapidly by seeds and also in a far more sinister way. As the tree ages, its trunk breaks apart so that the branches touch the water. Each branch tip then grows roots down into the water, thus propagating a new plant. In this way, the trees invade both the water and the beach area. The oldest gray willows growing around the Indian Ponds are more than 70 years old. Except on the properties where these trees have been removed and treated, they now encircle all three ponds.

Because gray willow trees resemble certain species of native pussy willow, identification must be made by an expert. Properly treating the cut stumps so the trees won't resprout requires a licensed herbicide operator. Also, the cuttings must be disposed of properly or they will sprout and reroot. For these reasons, **it is illegal for property owners to remove gray willows themselves.**

Bartlett's licensed operators paint the stumps with the herbicide glyphosate, also sold as Rodeo, which is safe to use near water. The stumps must be cut to a certain height before they are treated. Only vegetable oil is used in the chainsaws to prevent polluting the ponds. All cuttings are taken to a chipper, and the chips are taken away for disposal.

Help us rid our ponds of these pernicious trees! Sign up with Bartlett today!

THE HERRING BROOK

The 1,100-foot long man-made structure that connects the Marstons Mills River with Middle Pond has provided passage for the herring each spring for the past 130 years. While originally called a brook, some now refer to it as the sluiceway or the herring run, but the most accurate term is a flume.

River herring are anadromous, meaning they live in the ocean most of the year, migrate up into freshwater in April–May to spawn, and then return to the ocean soon after. The offspring, called juveniles, will leave in late summer/ early fall to return as adults 3–4 years later. Herring will live 8+ years and return several times in their lifetime to spawn.

The flume was first built in 1880 when the Town purchased land from David Jones for $125 (about $2,700 today) and then for another $350 (about $7,500 today), contracted with Howard Marston, who owned a famous Boston restaurant and summered on the Cape, and A. D. Makepeace for the “opening of a herring brook”.

While it’s hard to know what Makepeace’s motivation was (maybe to keep the herring out of the cranberry bogs that are upstream from the flume), Marston’s plan was clear –- he also leased the herring run from the Town and wanted to serve the herring “ala mode” in his restaurant. His stated goal at the time was to get the harvest up to 1,000 barrels a year.

There wasn’t much recorded about the flume for the next 100 or so years until the early 1990s when members of the Liberty Hall Club embarked in a tremendous volunteer effort to rebuild it with a like structure, lined with wooden planks. Now, those planks are rotting, and the sides are caving in. Emergency repairs were made in the spring of 2009 to allow the herring to pass. While those repairs have held up fairly well this year, a permanent solution must soon be found.

The flume is managed by the Town of Barnstable Natural Resources Division, and a project is underway now to look at various solutions. It’s something that must be resolved in the next year or so, and we’ll keep you posted on the progress as this moves forward — and it will probably cost more than $7,500!

For those of you who are still wondering about Mr. Marston’s herring ala mode — then (and still now, actually) ala mode means “according to the prevailing style or fashion”, whereas most folks think of it as being topped with ice cream. While I have no idea how people liked their herring in the 1880s, those today who have tried it would probably agree that even ice cream wouldn’t be quite enough to win them over...

Kevin Galvin
Marstons Mills River Watershed Association

Town of Barnstable Natural Resources Division personnel making repairs to the Middle Pond herring run flume in March 2009.

WARTS AND ALL: PRESENTING THE UBIQUITOUS MR. TOAD

If you have a toad in your garden, you should consider yourself fortunate! A toad can consume 1,000 insects a day, and will also gladly chomp up snails, slugs, and caterpillars. Although it's not especially handsome, the humble toad is helpful and will try to keep out of your way.

Bufo americanus, the common American toad, starts life as a small black tadpole, hatching from a long string of gelatinous eggs that are laid in fresh water. The eggs are black on top and white on the bottom to make them less apparent to fish. Tadpole siblings swarm tightly together in schools for protection during the 40–70 days before they metamorphose into the warty creatures that colonize our gardens.

One of the things that makes toads different from frogs is that toads walk, while frogs leap. Like frogs, toads have poison glands in their skin. The poison isn't dangerous to people, but after you pick up a toad, it's a good idea to wash your hands. Another reason to do this is that a captured toad will urinate on its captor to make itself less desirable as a snack. Toads also puff themselves up to frighten off predators such as garter snakes, which are immune to their poison.

American toad (Bufo americanus)

A toad's skin is permeable to water, so it can drink by simply standing out in the rain. It sloughs off its skin about every two weeks and grows a new one. Despite their lumpy appearance, toads do not cause warts.

A toad in the wild usually lives only a year or two in its habitat of gardens, woods, or farmers' fields before being run over, damaged by agricultural implements, or devoured by a predator. They are capable of living much longer, though. One lived 36 years in captivity and might have lived even longer had it not been killed by mistake.

When the weather gets cold, *Bufo americanus* finds a cozy spot such as under a log, stone, or wood pile, where he digs in and spends the winter. As soon as spring comes, all toads migrate to the closest fresh water, typically a vernal pool, cranberry bog, or pond. Here, the males, which are smaller than the females, expand their throat sacs and sing their mating song. To hear it, click on: www.biokids.umich.edu/critters/Bufo_americanus/sounds/.

On Cape Cod, there are three species of toad. The American and Fowler's look similar and sometimes interbreed. The spadefoot toad of the outer Cape is considered rare and endangered, and traffic is sometimes halted on rainy nights in spring to allow it to migrate safely.

Holly Hobart

CELEBRATE THE FOURTH OF JULY: JOIN THE BOAT PARADE

Here's another pond event to put on your calendar: the annual Fourth of July Boat Parade. Whether your boat is a pontoon boat, skiff, canoe, or kayak, you're invited to participate. Decorate your boat with flags, bunting, ribbons, balloons. Wear an appropriate costume. Use your imagination. Have fun and celebrate the nation's birthday!

The annual boat parade continues a tradition started by Ted Eliott, IPA member and Director, who died in 2007. Every Fourth of July, Ted would travel around Mystic Lake and Middle Pond in his boat, stopping at every beach to present small US flags to all children.

This year's boat parade will be organized by Grand Marshals Don and Jude Houghton. Participants will meet near the Houghton's dock at 3:00 pm on Sunday, July 4. The parade will proceed counterclockwise around Mystic Lake, stopping at each beach to present flags, and then continue through the cut into Middle Pond to do the same.

This event is not sponsored by the IPA, nor can the IPA be responsible for any accidents. Individuals will be responsible for their own safety.

TURKEY IN THE STRAW

Pine straw, that is, as on Cape Cod.

Wild turkeys are native to North America. There are five sub-species within the species. Here on Cape Cod and, in fact, in the whole eastern part of the United States, we see the Eastern subspecies. When you snowbirds go to Florida, you see the Osceola sub-species. For those of you fortunate enough to go out to Texas, you have the Rio Grande type. The Merriam's ranges along the Rocky Mountains, and for the luckiest of all, who go to southern New Mexico and Arizona, you have the Gould's. Can you guess my preference for a place to spend the winter? So far, I have seen the Eastern and the Rio Grande sub-species.

Male wild turkey displaying ruffled tail feathers.

European explorers to Mexico took turkeys back with them when they returned to Spain and Portugal. They were so successfully domesticated in Europe that the English colonists brought them back to the New World when they came to settle here. The Gould's has a wide, white band on its tail feathers and because of this reintroduction, all of the other sub-species retain some trace of this white band, although their other colors vary significantly.

In the 1930s, turkeys had almost disappeared in the United States. Nowadays, with resettlement programs wildly successful, Alaska is the only state without wild turkeys. In the 1930s, there were only about 30,000, but now, there are around 7 million.

Turkeys are not what you would call the most spectacular parents. The male has nothing to do with the poults, and the female very little more. The newly hatched chicks must be ready to follow the mother within 12–24 hours of hatching. They tag along with her, and she feeds them for the first few days, but they soon learn to feed themselves, although they continue to follow her around through the first season. The mini-flock may join up with other mothers and their chicks and form large flocks for overwintering.

Wild turkeys require a habitat known as open woodland, that is, a hardwood forest with occasional openings. They use the open areas for feeding and mating, the fringe areas for nesting, the forest area to escape predators, and the limbs of trees in the forested areas as roosts for sleeping at night. The Cape, with its oak forests, provides the perfect habitat to sustain the wild turkey.

Mating usually occurs from February to April, while the birds are still flocked together for the winter. During the mating ritual, the male spreads his tail and lowers his wings so that the tips drag on the ground. He throws his head back, sticks his beak forward, and then proceeds to circle the female until she accepts his offer. The female lays 10–12 eggs over a 2-week period and then incubates them for about 28 days.

Dave Reid

Editor's Note: "Wild turkeys are mating on my chimney!" This was the comment by one of our IPA members that led to this article about the recent population explosion of wild turkeys on Cape Cod. In fact, it seems that everyone we talked to this spring has had their story to tell about the wild turkeys they have seen in their neighborhoods. Cape Cod natives have indicated that they either have never seen a wild turkey until this year or have never seen so many of them as they have this year. Reports have come in about scores of turkeys roosting at night in the pine trees on or near their property or about the turkeys' appetite for garden flowers. One lonely male turkey was observed courting his own reflection on the side of a metal truck. Yesterday, we were surprised to see a turkey at our front door when we returned home, but not as surprised as he was as he took off in a fast run to the neighbor's house.

Male turkey investigating the porch at the home of John and Betsey Godley. Photo by Robert W. Kelley.

Wild turkeys are here to stay. So, our advice is to enjoy this new addition to our remarkably varied environment.

SOME TURKEY TRIVIA

The wild turkey was designated the Massachusetts State Game Bird in 1991. It was Benjamin Franklin's choice as the national bird. The sound of a turkey's gobble can be heard a mile away.