THE IPA NEWSLETTER

Mystic Lake, Middle Pond, and Hamblin Pond

Spring 2006 A quarterly publication of the Indian Ponds Association, Inc. Vol. 6 No.2

IPA ANNUAL MEETING SET FOR SUNDAY JULY 16

The 49th Annual Meeting of the Indian Ponds Association will be held Sunday, July 16 from 4:00 to 6:00 pm at the home of Lewis and Nancy Solomon at 28 Heath Row located in the Lynxholm residential area in Marstons Mills (entrance off Old Mill Road). This is the same venue as for the 2005 Annual Meeting, where a record 50-plus members attended a very interesting meeting that featured a presentation of the results of the Pond Study. The business portion of the meeting will be from 4:00 to 5:00 pm, with a social hour following.

Business will include various reports, election of several new Directors, adoption of two amendments to the IPA By-laws (see page 3), and the introduction of the first recipient of the Schwarm Memorial Scholarship. In lieu of a guest speaker, tentative plans are being formulated to organize a panel of invited Town officials for an in-depth **question-and-answer session** addressing the results of the recent Pond Study, the response by the Town to the report's recommendations for remedial action to Mystic Lake (with positive consequences for Middle Pond), and other issues related to water quality problems facing the Town.

Continued on page 3

Left to right: John Jacobson, Rob Gatewood, Lindsey Counsell, and John Klimm listening attentively to Ed Eichner's presentation in Town Hall.

POND STUDY REPORT PRESENTED TO TOWN OFFICIALS

The final report of the IPA Pond Study was presented to Town officials at a meeting in the Town Hall on March 21. Town officials present included John Klimm, Town Manager; Rob Gatewood, Director, Conservation Division; Lindsey Counsell, Director of Environmental Services and Executive Director of Three Bays Preservation; Dale Saad, Health Division Coastal Health Resource Coordinator, and John Jacobson, Special Project Manager, Embayment Nutrient Studies, Department of Public Works. Others in attendance were Tom Cambareri and Ed Eichner of the Cape Cod Commission's Water Resources Office, Alex Frazee, one of the IPA volunteer water samplers, IPA Newsletter Editor Geri Anderson, and IPA President Emory Anderson.

Emory Anderson opened the 1½-hour meeting by expressing thanks to the various Town officials and departments for their support and participation in the study, to the IPA volunteer water samplers, and to the staff of the Commission's Water Resources Office for their work on the study and report. Eichner gave a PowerPoint presentation of the study, its results and conclusions, and the Commission's recommendations. This was followed by a general discussion and consideration of various remedial actions, particularly for Mystic Lake which has been determined to be impacted by high levels of phosphorus.

No decisions were made at the March 21 meeting, but a follow-up meeting is scheduled for sometime in May to further consider actions to be taken by the Town for Mystic Lake.

– IN THIS ISSUE –

IPA JOINS COLAP

At its May 4 meeting, the IPA Board of Directors voted to join the Massachusetts Congress of Lakes and Ponds Associations, Inc. (COLAP). The purpose of COLAP is to preserve, protect, maintain, and enhance the environmental, aesthetic, recreational, and economic values of lakes and ponds, and to promote watershed management, within the Commonwealth of Massachusetts. COLAP is a non-profit organization whose voting members are lake and pond associations such as the IPA. Water-oriented conservation organizations, private corporations, government agencies, and individuals may also belong as non-voting members. COLAP annual dues are $50.

GOOD RELATIONSHIP WITH WEQUAQUET LAKE PROTECTIVE ASSOCIATION

Last fall, the IPA entered into a collaborative relationship with the Wequaquet Lake Protective Association (WLPA) to facilitate closer working relations and a better exchange of ideas and information owing to the fact that both organizations share similar interests and concerns.

Since the start of the collaboration, the WLPA has been represented at meetings of the IPA Board of Directors by Hid Welch, past president of the WLPA, Gail Klun, WLPA secretary, and Gail Maguire, WLPA vice president. IPA President Emory Anderson will attend the WLPA Board's May 20 meeting.

IPA PRESENTATION AT PONDS IN PERIL WORKSHOP

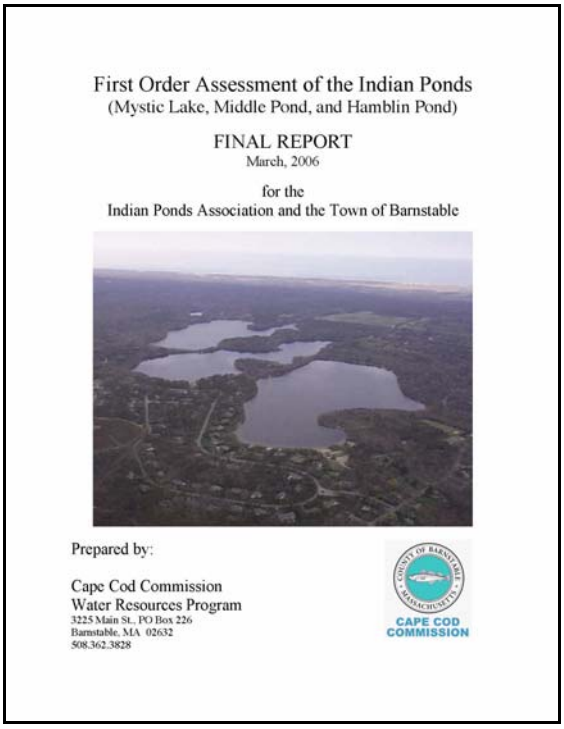
IPA President Emory Anderson gave an invited presentation on the IPA Pond Study at the March 15 Ponds in Peril Workshop. The half-day workshop, the sixth in the series of such workshops organized by the Cape Cod Pond and Lake Stewardship (PALS) Program, was sponsored by the Association to Preserve Cape Cod in cooperation with the Massachusetts Department of Conservation and Recreation and the Cape Cod Commission. It was held at the West Barnstable Community Center and attended by about 75 people. A variety of talks were given by local and Commonwealth individuals, and the IPA had a poster display.

POND STUDY REPORT AVAILABLE ON IPA WEBSITE

The final report of the IPA's Pond Study was published in March by the Cape Cod Commission's Water Resources Office. Only a minimal number of paper copies were printed, mainly for distribution to relevant Town officials and councilors. However, the full 64-page report is now available on the IPA's website [www.indianponds.org] in five sub-sections where it can be read or downloaded and printed.

The report, organized into eight chapters, includes a three-page Executive Summary, 17 color or black and white figures, seven tables, and three appendices, one of which is a helpful glossary of pond and lake terms and a list of acronyms used in the report.

WE NEED YOUR HELP! JOIN THE IPA. IF YOU HAVE BEEN A PAST MEMBER, DON'T FORGET TO RENEW. IF YOU'VE NEVER BEEN A MEMBER, NOW IS THE TIME TO JOIN. ANNUAL MEMBERSHIP DUES ARE ONLY $20.


First Order Assessment of the Indian Ponds
(Mystic Lake, Middle Pond, and Hamblin Pond)

FINAL REPORT
March, 2006

for the
Indian Ponds Association and the Town of Barnstable

Prepared by:

Cape Cod Commission
Water Resources Program
3225 Main St., PO Box 226
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508.362.3828

CAPE COD COMMISSION

SCHWARM MEMORIAL SCHOLARSHIP RECIPIENT SELECTED

A Barnstable High School graduating senior living in Marstons Mills has been chosen as the first recipient of the IPA's Schwarm Memorial Scholarship. The selection was made from a group of seven applications by a committee of three members of the Board of Directors. The recipient, to be announced at the High School's Awards Banquet on May 15, will receive a check for $500. The winner will be asked to attend the IPA Annual Meeting on July 16 to be recognized and congratulated.

The Schwarm Memorial Scholarship was established last year in memory of Edward Schwarm, a former IPA Director and officer who died in May 2005.

PURPLE LOOSESTRIFE REMOVAL

As reported in the Fall 2005 issue of this newsletter, the invasive plant, purple loosestrife, was discovered last summer in Middle Pond, Hamblin Pond, and Mill Pond. In September, the Town Conservation Commission issued a three-year permit authorizing the removal of these plants by means of pulling or digging. Removal efforts this summer will be coordinated by the Town Conservation Division under the direction of Rob Gatewood. The exact time for this has not yet been scheduled, but will ideally be on a warm weekend day. Individuals wishing to participate in this activity should contact IPA President Emory Anderson (tel: 508-420-2303, e-mail: info@indianponds.org). Arrangements have been made with the Town's Solid Waste Transfer Station for disposal of the plants.

DERELICT BOAT AND DEBRIS REMOVAL

If you have had occasion to boat, sail, kayak, fish, or swim in any of the Indian Ponds over the past several years, you could not have helped but notice the considerable number of abandoned or derelict boats or boat parts, wooden docks or dock parts, rafts, plastic floats, and other assorted items washed up along the shore. With the growing unsightliness of these items, the IPA Board of Directors has decided to organize their clean-up and removal. This has been scheduled for Saturday, May 27 (Memorial Day weekend) and is being organized by Bob Kohl. Unless retrieved or otherwise claimed by owners prior to this date, all items collected will be disposed of. Individuals wishing to participate in this clean-up should contact Bob (tel: 508-428-1667) or Emory Anderson (tel: 508-420-2303; e-mail: info@indianponds.org).

IPA ANNUAL MEETING *(Cont'd from page 1)*

As mentioned on page 1, the Board of Directors is recommending the approval of two changes to the By-laws. **The first recommended change is to Article IV – Terms of Officers and Directors.** Owing to the difficulty each year of obtaining willing and able candidates for the Board of Directors, a change is deemed necessary to increase the number of consecutive terms a Director may serve from two to three. The current wording of Article IV is as follows:

> *1. Terms of the Board. Each director shall be elected for a two-year term unless otherwise noted in the By-laws. No director shall serve more than two consecutive terms. In order to prevent the possible expiration of terms of all directors at one time, terms will be staggered. Accordingly, at the first election of directors following the adoption of these By-laws, five of the eleven directors shall be elected for one-year terms [and eligible for re-election for a two-year term the following year], and six of the eleven directors shall be elected for two-year terms [and eligible for re-election for a second two-year term in two years].*

The wording of the recommended amended Article IV is as follows:

> *1. Terms of the Board. Each director shall be elected for a two-year term unless otherwise noted in the By-laws. No director shall serve more than three consecutive terms.*

The second recommended change is to Item 1 of Article VII – Committees. The change would give the president, when appointing members of the nominating committee, the flexibility to select either a past president or a past director in addition to a current director and a member at large. The current wording of Item 1 is as follows:

> *1. Nominating Committee. The president will appoint a nominating committee annually. The committee will be comprised of a past president, a current director, and a member at large. The committee will prepare a slate of proposed directors to be voted on at the annual meeting. The proposed slate will have broad geographical representation of the area covered by the Indian Ponds Association, Inc.*

The wording of the recommended amended Item 1 is as follows:

> *1. Nominating Committee. The president will appoint a nominating committee annually. The committee will be comprised of a past president or past director, a current director, and a member at large. The committee will prepare a slate of proposed directors to be voted on at the annual meeting. The proposed slate will have broad geographical representation of the area covered by the Indian Ponds Association, Inc.*

HOW DID PHOSPHORUS GET INTO MYSTIC LAKE?

The recently completed Pond Study concluded that Mystic Lake "is clearly impaired" because of excessive amounts of phosphorus. Obvious questions arise from this conclusion. **Where did this phosphorus come from? What harm does it cause? What are we going to do about it?**

PHOSPHORUS SOURCES

According to the phosphorus budget for Mystic Lake, the present load of total phosphorus is from the following sources:

Source	% of total phosphorus
Internal regeneration	77
Waterfowl	8
Septic load	8
Direct precipitation	4
Roads	2
Roof	1
Lawn fertilizer	<1

Why is the internal regeneration component so large? This is from slow accumulation over the years from multiple sources entering the lake via groundwater or the lake's surface and ultimately finding its way to the lake's bottom sediments. Based on Pond Study findings, observations of area residents, and historical information, the following are likely sources:

- Fecal waste from about 150 dairy cows on the former 92-acre Mystic Lake Farm (west side of Cape Cod airfield) from 1919 to 1962 who frequently waded in the lake.
- Superphosphate fertilizer (600 lb/acre/year) and manure applied to the Mystic Lake Farm fields.
- Fertilizer applied to cranberry bogs north of Mystic Lake.
- Fecal waste from pig farm north of Mystic Lake.
- Garbage dumped into Mystic Lake.
- Fecal waste from waterfowl, particularly large flocks of seagulls following feeding excursions to the Town's landfill off Flint Street prior to its capping in 1997.
- Organic detritus from tree leaves, plants, and algae.
- Wastewater from residential septic systems.

Just as the Clear Lake Duck Farm (1920–1955) heavily impacted Hamblin Pond from fecal waste, so the above sources have impacted Mystic Lake and led to the excessive phosphorus now in the lake sediments.

Since phosphorus moves at only 3 ft/year in groundwater, most leaching from residential septic systems has yet to reach Mystic Lake. According to the Pond Study report, the average age of homes within 300 ft of Mystic Lake is 35 years and the average distance from their septic systems to the lake is 196 ft. Given its slow travel time in groundwater, phosphorus from these septic systems will take about 25 more years to reach the lake.

HARMFUL EFFECTS OF PHOSPHORUS

In healthy ponds and lakes, nutrients are needed to grow algae that form the base of a complex food web supporting the entire aquatic ecosystem. With nitrogen and carbon being naturally very abundant, it is the amount of phosphorus in the water that determines how much algae and other plants can grow. So, in the presence of too much phosphorus, there are adverse consequences.

- Unsightly algal blooms and rampant growth of rooted aquatic plants are promoted.
- Excess algae and plants die, bacteria break them down, consuming dissolved oxygen from the water.
- Bottom waters lose oxygen in the summer.
- Fish habitat is reduced because of low oxygen.
- Fish and other aquatic organisms die from lack of oxygen.
- Pond and lake waters can assume unpleasant odors.
- Water clarity is reduced.
- Swimming, boating, and fishing are impaired.
- Property values decline.

WHAT YOU CAN DO

In the short-term, Mystic Lake will require some type of treatment, such as alum, to bind the internal phosphorus load in the sediments. In the long-term, a public sewer system will be needed. To help promote both actions, you can:

- Contact Town Councilor (Janice Barton in Precinct 10, tel: 508-862-4602, e-mail: jlbartonletters@aol.com; Leah Curtis in Precinct 12, tel: 508-420-9868, e-mail: leah-curtis@comcast.net) and urge their support for Town action.
- Contact Town Manager John Klimm (tel: 508-862-4610, e-mail: john.klimm@town.barnstable.ma.us) and urge Town action.
- Contact Rob Gatewood, Director, Town Conservation Division (tel: 508-862-4093, e-mail: rob.gatewood@town.barnstable.ma.us,) and urge Town action.
- Continue to support the work of the IPA through your membership dues and donations.

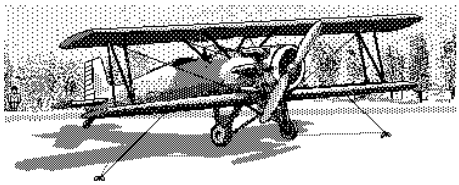
BALD EAGLES IN INDIAN PONDS

Have you ever seen a bald eagle in flight? An adult has a wing span between 5 and 8 feet. A very impressive sight! Mystic Lake and Middle Pond were home to at least one of these magnificent birds for most of February into early March. During that time, while walking on Wheeler Road, one flew over me at treetop height. Later that morning, it was perched on a nearby branch and I was able to make a positive identification. Many crows had gathered, were quite agitated and noisily voiced their displeasure with the eagle's presence. Neighbors Tom and Debbie Bouche were able to take the accompanying photo at one of their multiple sightings. Keep an eye out; perhaps it will return.

Alex Frazee

Photo by Tom Bouche

CAPE COD AIRFIELD NEWS



Cape Cod Airfield, Barnstable's beautiful and historic "Field of Dreams" situated just south of the West Barnstable Conservation Area along the West Barnstable/Marstons Mills "border", is about to begin its third year since reopening in 2004 under Town Ownership and the management of Chris Siderwicz, owner of Mills Air Service, Inc. Chris, working alongside his 21-year-old son, Chris Jr., is engaged in what most recognize as a "labor of love"…operating one of the last grass airfields in our region – the last on Cape Cod – despite the many daunting challenges presented by modern times such as rising costs for fuel and insurance. This local family business and treasured setting combine to offer today's small aircraft owners a friendly, informal atmosphere and exquisite location to call their home field. Light mechanical service, fuel, and tie-downs are available with space still open for the coming season. If you have friends who might be interested in becoming "regulars" at Cape Cod Airfield, please have them call the Mills Air Service Office at 508-428-8732.

Bob Frazee

SMEDLEY **by Gordon Nelson**

HERRING RUN UPDATE

With a three-year ban in place on the capture and possession of river herring (alewives and blueback herring) because of their low numbers, there is no netting at the popular Mill Pond herring run. However, this closure has led to another activity undertaken by the Marstons Mills River Day Committee. A program conducted under the direction of the MA Division of Marine Fisheries began this spring to count the number of herring migrating up the Marstons Mills River first to Mill Pond and then to Middle Pond and Mystic Lake where they spawn. Volunteers count herring entering Mill Pond at nine 10-minute intervals each day for the duration of the run (April-June). Data from these counts will be used in scientific sampling formulas to estimate the total number of herring migrating into the pond. Information to date suggests that this year's run is small compared to those of the previous two years. However, warmer water temperatures are likely to increase the numbers of herring appearing.

As many of you have observed, 140 ft of the deteriorating wooden sides of the Middle Pond herring run directly below the new concrete ladder constructed in 2003 were replaced last summer with plastic FastDitch lining. Untested in cold, northern climes and installed, to some extent, on an experimental basis, the FastDitch appears to have survived the relatively mild winter. Plans for the further renovation of the 1,000-ft run remain under consideration.

PHOSPHORUS IN HOUSEHOLD CLEANING PRODUCTS

As we all know, excessive phosphorus in surface waters stimulates the growth of algae and weeds, which can degrade the health, safety, and beauty of our ponds. Phosphorus can enter pond water through runoff, as from fertilizers and animal manure, or can travel beneath the ground in seepage from septic tanks. In the latter category, household detergents that contain phosphorus are major contributors to eutrophication (enrichment by nutrients) in freshwater lakes and streams. One pound of phosphorus can produce 350-700 pounds of algae[1].

Detergents first entered the household market right after World War II. Phosphorus, in the form of phosphates, was originally added to detergents to make them work better in hard water, to suspend particulate matter, and to help kill germs. By the 1960s, many of the nation's lakes and rivers had become so badly choked by mats of weed that many people felt that something had to be done. In particular, the degraded condition of Lake Erie drew national attention. Its surface and shoreline were covered with slippery, decomposing mats of algae and several species of valuable fish had disappeared from its waters. Over the succeeding 30 years, in the face of intense opposition from detergent manufacturers, and with widespread grass-roots public involvement, about one-third of all states passed laws restricting the sale of detergents containing phosphates[2].

Today, **dishwashing liquids** such as Joy and Dawn and **liquid laundry detergents** such as All, contain no phosphates, and are so labeled. Phosphates aren't soluble or stable enough to be used in liquid detergents[3]. **Powdered laundry detergents** may contain phosphates, but most don't. A recent search through a local Stop and Shop found only one – Arm and Hammer laundry powder – with 0.5% phosphates by weight. The rest proudly proclaimed themselves to be phosphorus-free. Non-phosphate laundry detergents have been shown to clean as well as detergents containing phosphates. The principal remaining culprit is **automatic dishwasher detergent**. Many popular dishwasher detergents contain as much as 6-9% phosphates by weight, as shown on the label.

Consider this. If your dishwasher detergent contains 4.5% phosphate, this translates to one gram of phosphate per tablespoon. If you use 4 tablespoons of detergent to do a load of dishes, you're adding 4 grams of phosphate to the groundwater each time you run your dishwasher. Multiply this by the number of times each year you run your dishwasher and then consider the number of dishwashers in the IPA area. You will soon see that the amount of phosphorus added to the groundwater around the Indian Ponds – by dishwashers alone – is potentially very large.

Fortunately, not all dishwasher detergents contain phosphorus, and some popular brands contain much less than others. Liquids and gels tend to contain less than powders or tablets. Here is a list of products showing the percentage of phosphates each contains:

Product	% Phosphates
Palmolive Gel	1.6
Cascade Complete Liquid or Gel	4.0
Sunlight Gel	4.3
Cascade PureRinse	4.4
Electra-Sol Gel	4.9
Sunlight Powder	5.6
Electra-Sol Powder	6.1
Spot-Free (Wal-Mart) Powder	7.0
Stop and Shop Powder	7.5
Cascade Complete Powder	7.7
Cascade Complete Tablets	8.5
Sunlight Tablets	8.7
Electra-Sol Tablets	8.7
Palmolive Tablets	8.7

Many companies are now producing **high performance, phosphate-free automatic dishwasher detergents** with names such as Seventh Generation, President's Choice, Bi-Kleen, Shaklee, Ecover, Life Tree, Ultra Citra-Dish, Country Save, Enviro-Links, Ecos, and Trader Joe's Auto Dish Soap. An independent study conducted in Massachusetts tested Seventh Generation and found it to be equally effective as Cascade at stain removal and prevention of spotting and filming. Dishwasher rinse additives, such as Jet-Dry, do not contain phosphates.

Household products for cleaning windows, sinks, counters, stoves, and other food-preparation surfaces are not usually covered by existing laws controlling phosphates in laundry and dishwashing liquids, so it makes sense to check labels before buying.

Why not eliminate phosphates from your household cleaners completely, and save money as well? Complete recipes for many effective, environmentally friendly cleaning products that you can brew at home can be found at the following website: www.klickitatcounty.org/solidwaste. Click on Household Hazardous Waste > Alternatives: Household Cleaning Products.

[1] www.serconline.org,/phosphorus;fact.html
[2] www.colorado.edu/conflict/full_text_search/AllCRCDocs/94054.htm
[3] www.agctr.lsu.edu/NR/rdonlyres/17D8C1D8-D4B9-4F76-94BF-D0836F257D57/3751/pub2532aphosphates.pdf

Holly Hobart