

THE IPA NEWSLETTER

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

Winter 2011

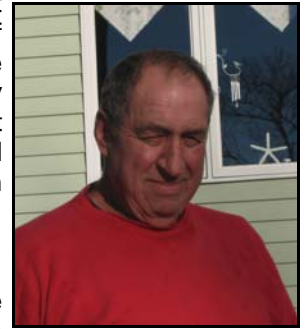
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WATER AND CRANBERRIES An Interview with John Hamblin

John Hamblin and his son Eric farm the large tract of cranberry bogs west of the Indian Ponds. With the exception of two bogs immediately west of Bog Road that are operated by a different farmer, John and Eric operate all of the bogs between River Road and the Indian Ponds, approximately 100 acres in total. John has been in the cranberry business for the past 20 years. The Hamblin family is one of the oldest in the area, descended from James Hamblin, who moved to Barnstable from Plymouth Colony in the early 1600s.



John Hamblin

Holly Hobart and Bob Nichols talked at length with John on January 21 and learned many interesting things about the cranberry business and the history and hydrology of the bogs. The map on pages 4–5 shows all the

bogs that John operates, labeled with their historic names.

For a bit of background, it is worth noting that cranberries have grown wild on Cape Cod for at least the past 10,000 years, since the last glacier receded. Wild cranberries were an important food for Native Americans long before the Pilgrims arrived. They began to be cultivated on the Cape in the early 1800s. The bogs farmed by John and Eric Hamblin date back to the 1850s and were originally planted by families with names such as Jones, Crocker, Hallett, Makepeace, and Hamblin.

(Continued on page 3)

PRESENTATION ON MYSTIC LAKE AT NEAPMS CONFERENCE



Ken Wagner (left) and Bob Nichols (right) at the NEAPMS conference in New Castle, NH.

Ken Wagner (the consultant involved with the alum treatment) and Bob Nichols (IPA Vice President) made a presentation on Mystic Lake at the Northeast Aquatic Plant Management Society (NEAPMS) conference held in New Castle, NH on January 18–20. Ken discussed the alum treatment and the cyanobacteria blooms, mussel kills, and regulatory issues leading up to it, and credited the actions of the IPA for pushing through the treatment approval. Bob covered the *Hydrilla* discovery and remediation effort. During the question-and-answer session following the presentation, **Jim Straub of Mass DCR, who assisted the IPA with the *Hydrilla* removal, stated how thankful and impressed he was with the dedication and efforts of the IPA volunteers in performing the removal.**

The conference had over 140 attendees primarily from New England, NY, NJ, and PA and consisting of lake management consultants, state agency personnel, treatment applicators, herbicide manufacturers, university professors and researchers, and a few lake association representatives. There were many interesting presentations on the control of aquatic invasives and algae. The general sense from the conference is that invasive aquatic plants are a rapidly spreading problem in spite of the continuing development of new selective herbicides and management techniques. This is a growing expense for states and municipalities with already overburdened budgets. Human activities ranging from unintentional addition of nutrients to waterways, inadvertently transporting plant material between water bodies, and even dumping aquarium contents into water bodies are a primary cause of the spread.

Additional information on aquatic plant management is available on the NEAPMS web site (<http://www.neapms.net>). Also highly recommended is the Maine Field Guide to Invasive Aquatic Plants, available in pdf (free) or spiral bound waterproof paper (\$19.95) at <http://www.mainevolunteerlakemonitors.org/publications/FieldGuide/>.

Bob Nichols

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IPA, Inc., P.O. Box 383
Marstons Mills, MA 02648

E-mail: info@indianponds.org

<http://www.indianponds.org>
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This newsletter, with a circulation of over 650, is a forum for the exchange of ideas on matters germane to the IPA mission and, as such, the views expressed by authors of articles do not necessarily represent official IPA policy.

“EMERGING CONTAMINANTS” IN DRINKING WATER

We have to keep saying it because there's always somebody who hasn't heard yet. ***The substances we put into our septic systems end up in our drinking water (as well as in our ponds)!***

In late 2009, the Silent Sprint Institute tested nine of Cape Cod's public water supplies, including the one serving Centerville, Osterville, and Marstons Mills, for the presence of 92 exotic substances that are not normally disclosed by testing that water departments are legally obligated to perform. Among the substances they tested for were pharmaceuticals, hormones, herbicides, flame retardants, alkylphenols, and perfluorinated chemicals. The reason for this testing is that some of these emerging contaminants have been found in water systems off-Cape. Many, though not all, of these man-made chemicals occur in common household products, personal care products, prescription drugs, herbicides, or flame retardants used in clothing and household fabrics.

The Silent Spring report, “Emerging Contaminants in Cape Cod Drinking Water,” published in May 2010, can be found at the Centerville-Osterville-Marstons Mills Water Dept. website: <http://www.commwater.com/Silent%20Springs/silentspringreport2010.pdf>. It is a thought-provoking and highly recommended read.

Several of these emerging contaminants were found in Cape water supplies at parts per trillion concentrations, which, while extremely low, clearly indicate that they are finding their way into our drinking water. Of the 92 contaminants tested for, 18 were detected in at least one water sample from the 9 Cape water systems tested. Samples that tested high for nitrogen and boron, elements indicative of higher population densities, were more likely to test positive for and contain higher concentrations of emerging contaminants. Among the substances detected in the Cape wells were pharmaceuticals, an insect repellent, and flame retardants. In wells near the Barnstable Municipal Airport, perfluorinated chemicals used in fire-fighting foams and aviation fluids were also found. Two chemicals (sulfamethoxazole, an antibiotic, and PFOS, a consumer product additive used in nonstick coatings) tested higher in one sample than the maximum found in two off-Cape studies. Two samples contained dilantin, an epilepsy medication, in higher concentrations than in 19 other US water supplies.

The discovery of these exotic chemicals in water supplies is fairly recent. There are no legal standards yet established for any of them, and little is known about their effects in the relatively low concentrations that have been found in water supplies. Worse still, nothing is known about the effects of mixtures of such chemicals, or of their effects on children or the unborn, whose sensitivity to such substances may be much higher than that of adults. The

EPA is considering some of these emergent contaminants for inclusion in future regulations.

What You Can Do

Lest you consider switching to bottled water, be aware that it may also contain contaminants. Bottled water is not monitored as thoroughly as public water systems, and the plastic bottle may also be a source of contamination. The report suggests that you can make your drinking water safer by filtering it through a carbon filter (which should be changed frequently) such as found in filter pitchers. Additionally, the report made the following recommendations:

- Don't dispose of unused and expired medications in the toilet or down the drain.
- Consider purchasing household products, clothing, and furnishings made from natural materials free of chemical additives. This is not easy to do, because in many cases, labeling is inadequate to determine what is in the things you buy.
- If you don't want it in your drinking water, don't put it on your lawn!
- Have your septic system pumped regularly every 1–3 years, depending on how heavily it is used.
- Support land conservation efforts and oppose detrimental land uses near public well recharge areas. Support sewerage in areas that impact public wells.
- Support improved testing and labeling of chemicals that go into consumer products.

The report also noted that private wells may be at even greater risk of harboring emerging contaminants than public systems, and that hormones and pharmaceuticals had already been found in Cape ponds in a previous study. The Silent Sprint report is replete with references and a list of sources of additional information.

WATER AND CRANBERRIES

(Cont'd from page 1)

Cranberries do not grow in water, but in a mixture of decomposed peat and sand. The plant itself is a slow-growing, woody vine that produces a flower shaped like the head of a crane, hence "craneberry", which became "cranberry". Cranberry bogs are usually planted in the floodplains of streams or in swampy areas near a river or pond. The reason for this is that cranberry bogs need to be flooded with water at certain times of the year. The individual bogs are interconnected by a system of canals and gates which allow water to flow from one to the next. During the coldest days of winter, the bogs are flooded to prevent the wind from drying out and killing the vines. During harvesting, in October, the bogs are again flooded so that the berries, which float, can be gathered. Not all cranberries are "wet picked", but a large percentage are, as this is an efficient method of harvesting. Water is also required to irrigate the cranberries during the growing season and for spraying on the vines to reduce damage during frosty nights in spring and fall.



John Hamblin (left) and helper pumping cranberries from of his bogs east of Bog Road during harvest time in October 2008.

The Hamblins' bogs have an underground irrigation system installed, with detachable sprinkler heads. **The water for irrigating is pumped out of storage ponds in the bogs.** The water table in this part of Marstons Mills is close to the surface, and there are many natural springs in and around the bogs and the ponds. The Marstons Mills River meanders through the middle of the Hamblin bogs, descending from springs located west of Bog Road. **Middle Pond is not the source of the Marstons Mills River,** although the herring run does connect the pond to the river downstream of the bog area. **When John wants to accumulate water in the bogs, he uses drop boards to interrupt the river's flow in several places,** causing the water to back up and the bogs to flood.

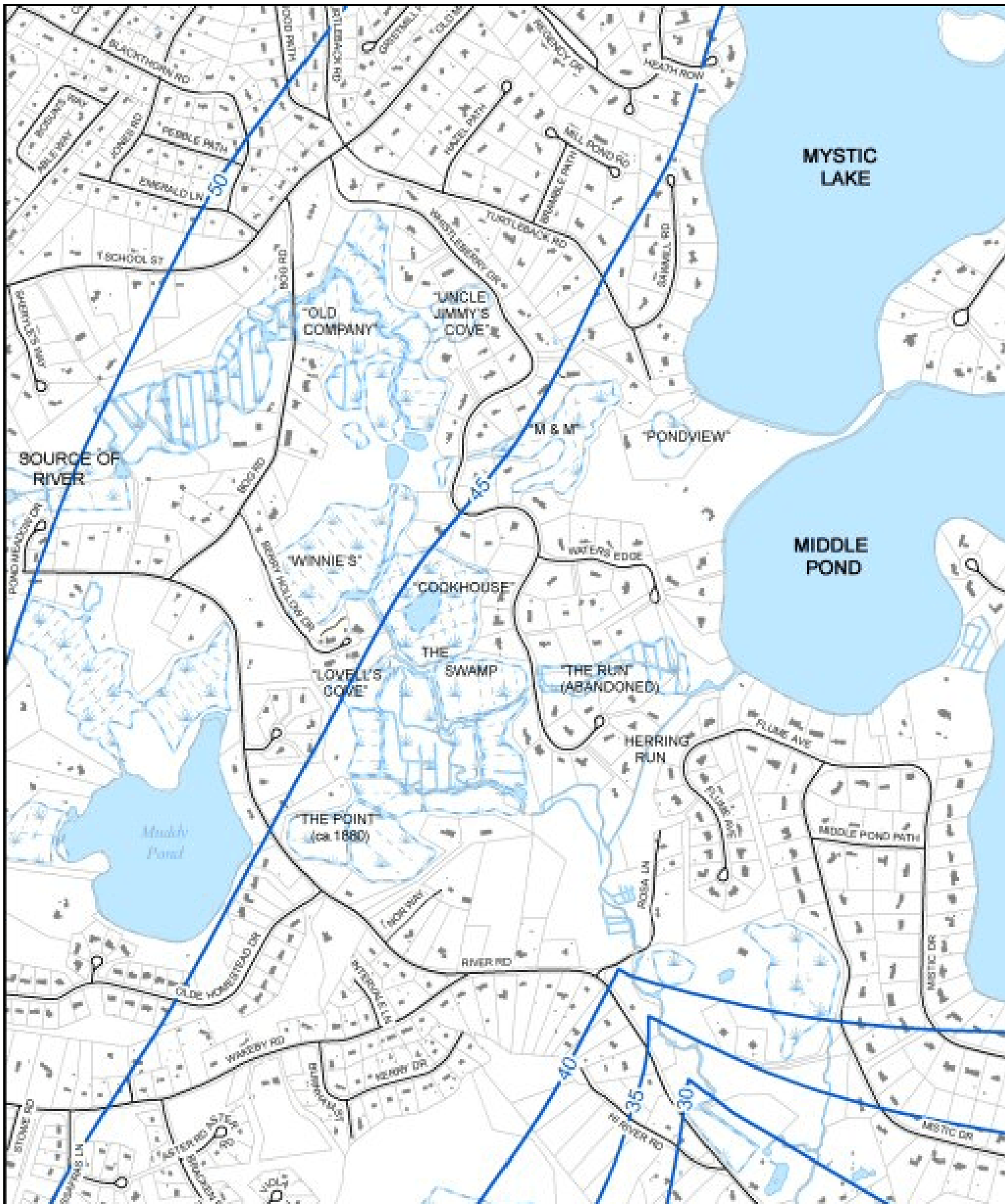
Mystic Lake's water is usually used to flood only the "Pondview" and "M and M" bogs near the pump house at the southern end of Mystic. However, in dry years, when the river water is not sufficient, Mystic's water may be used to augment the water from the river in flooding the large bogs. **There is a net deployed at the pump intake on Mystic Lake to keep young herring from being swept into the bogs.** The water from the "Pondview" and "M and M" bogs is returned to Mystic Lake. (There are also two bogs at the north end of Mystic which also release water back into the pond, but they are not run by the Hamblins and were not operated in 2010.)

Water from Middle Pond has not been used to flood cranberry bogs for the past seven years, although there is a pipe that runs from the pond to an outlet in the bogs. The bogs are now flooded principally from the waters of the river, with occasional help from Mystic. John's method of harvesting is to dam the river by means of drop boards and flood the upstream bogs first. When they have been harvested, he then moves the water along to the next few bogs downstream. Working in this way, he re-uses the same water over and over until all the bogs have been harvested. The water is then routed into a large area of natural swamp, where suspended particles settle out, after which it is released back into the river and allowed to flow downstream.

John does not operate any of the bogs around Hamblin Pond, although there are two areas of bog still being worked, one between Alpine and Hollidge Hill roads, and the other off of Rosa Lane. The Alpine/Hollidge Hill bogs draw from and return water to Hamblin Pond. The river is the source of the water for the Rosa Lane bogs.

John is licensed by the Massachusetts Department of Environmental Protection (DEP) to draw water from the ponds and must report the height of water in the ponds to the DEP once a month.

John Hamblin's bogs provide wetland habitats for many types of plants and animals. Frogs, from peepers to bullfrogs, are abundant, sharing the bog ditches with shy muskrats and water voles. Turtles inhabit the storage ponds. In early spring, bluebirds nest in the wooded borders that surround the bogs. The swamp, with its secluded pond and native shrubs, attracts red-winged blackbirds, swans, Canada geese, and mallard ducks, which in turn attract coyotes and foxes. During July and August, the bogs display a dazzling array of native wildflowers, and in October, the flooded bogs attract great blue herons and other wading birds as well as large flocks of ducks. John says that fish from the surrounding ponds often get into the bogs. He has seen horned pout, largemouth bass, pickerel, and eels in the bog ponds, where they sometimes attract river otters and osprey.

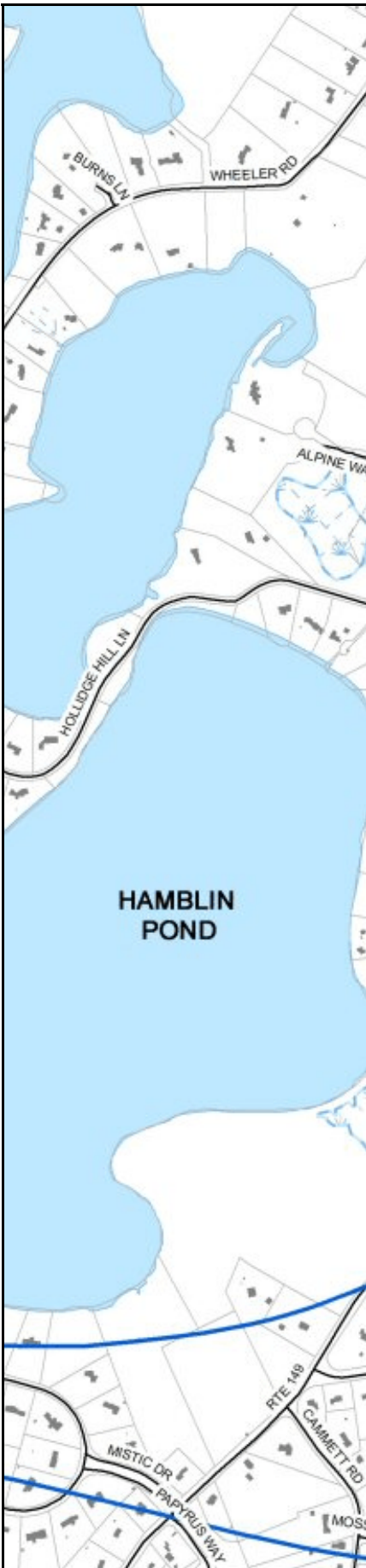


MAP OF INDIAN PONDS AND ADJACENT LAND SHOWING CRANBERRY BOGS FARMED BY JOHN AND ERIC HAMBLIN

This map of the Indian Ponds and the adjacent land, prepared by Jim Benoit of the Town of Barnstable GIS Unit, shows the location of the various cranberry bogs operated by John Hamblin and his son Eric. The bogs are labeled with their historic names.

In addition to the functional bogs, there are several other sites of interest shown on the map. **The source of the Marstons Mills River, as mentioned in the article "Water and Cranberries", is springs located west of Bog Road.** "The Swamp" is a bog area not used for farming cranberries where water used for flooding the working bogs is routed so that suspended particles can settle out. The water is later released back into the Marstons Mills River and allowed to flow downstream.

Another site worth noting is **the herring run between Middle Pond and the Marstons Mills River. This man-made run is approximately 1000 ft long and is generally opened for about 6 weeks each spring and fall to allow the movement of river herring in and out of Middle Pond and adjoining Mystic Lake.**





John Hamblin operating a water-reel cranberry harvesting machine in October 2008, with cranberries loosened from their vines floating in the flooded bog.

CAN YOU FIND THESE BOGS?


- Cookhouse
- Lovell's Cove
- M & M
- Old Company
- Pondview
- The Point
- The Run
- Uncle Jimmy's Cove
- Winnie's

Legend

- Groundwater Contours (elevation in feet above sea level) Based on 1992 Groundwater Model.
- Parcels
- Buildings
- Streams
- Drainage Ditches
- Marsh Areas
- Water Bodies

Feet



0 200 400 800 1,200 1,500

IndianPonds_gdwtr_11/17/2011 J.A.B. 2/3/2011

**Town of Barnstable
GIS Unit**

<http://www.town.barnstable.ma.us>
 367 Main Street, Hyannis, MA 02601
 (508) 862-4524

THE AMAZING AMERICAN EEL

The eel has been described as “not an easy fish to like”. Snaky, covered with slime, twisting, and writhing, it is the fish that anglers least like to catch. Yet this little-known fish, called “repulsive” by some, has a mysterious life story and some astounding abilities.



Of the 800 species of eel now in existence, only one lives in the Indian Ponds: the American eel, *Anguilla rostrata*. We may think of it as a freshwater species, yet every American eel is born far at sea, in the tropical Atlantic south of Bermuda, in the area known as the Sargasso Sea. Newly-hatched eels by the millions, flat, tiny, leaf-like larvae, begin their first long migration at birth, drifting with the currents, hiding in the abundant *Sargassum* weed and swimming westward. As they approach the coast of the Caribbean and North America, they metamorphose into a minute version of an adult eel, about six inches long, completely transparent except for two black dots of eyes. At this stage, they are called “glass eels”.



The Sargasso Sea, the birthplace of American eels.

How this annual throng of young eels distributes itself along the coast is still a mystery. Some begin entering streams and estuaries in the Caribbean in November. The others continue along the east and Gulf coasts of the United States. At each bay and river, some head inland, while the rest keep swim-

ming north and east as far as Maine and the St. Lawrence River. These delicate creatures reach southern New England about mid-March, when ice still rims the creeks. The females swim in at night on a rising tide, working their way through the watersheds and far upcountry, while the males remain in the tidal bays and estuaries of the coast. If their way is blocked, the determined little eels “swim” over obstacles, including such things as dams, in a braided mass. Within days after entering coastal waters, the eels develop a yellow-brown pigment, at which time they are called “elvers”. For the next 10–50 years, they will feed and grow in their chosen pond, swamp, or creek. The record weight for an American eel is 9.25 pounds.¹

Eels are predatory feeders, active at night and resting during the day in holes or under logs. During rainy nights, eels have been observed traveling over land from one body of water to another. When researchers fitted eels with radio transmitters and transported them 10 kilometers (about 6 miles) from their home range, unbelievably, they found their way home.²

At some point in their adult lives, but not all at the same age, eels undergo transformations that prepare them for their second long migration, including a color change from yellow-brown to steel gray or black. On a night in autumn, usually after heavy rain, when the rivers levels rise, the eels of that year’s migration begin their run to the sea. When they get there, they simply disappear. It is believed that they all congregate in the Sargasso Sea to breed and die, but no one has ever observed eels mating or caught a mature eel in the Sargasso. Despite many research expeditions, the only evidence of their life cycle is that newly-hatched larval eels are found there.

Sadly, these interesting and mysterious fish are rapidly declining. Dams on every stream make migrations difficult and hazardous. Hydropower turbine blades chop up and kill thousands of adult eels every year on their downstream migration. Pollution and development destroy habitat and food sources. In the 1970s, the Japanese figured out how to raise glass eels to marketable size, and a commercial fishery developed in the United States to export them to Japan by the thousands of metric tons. The glass eel fishery has since been shut down and currently only Maine allows baby eels to be exported. But much damage has been done, and American eels now occupy only a fraction of their previous range, and their numbers are still dwindling. It is hard to generate enthusiasm for conserving a fish that turns a lot of people off.

At one time, eels were thought to have made up 25% of the fish biomass of East coast rivers and streams.³ They populated virtually every river and stream east of the Rockies. Old-timers in New England speak of “slicks” of glass eels so thick in the water that they formed mats on the surface. Like herring and cod, eels were believed to be so numerous as to be inexhaustible. The decline of a resource once so abun-

dant creates problems for many other creatures in the freshwater web of life. Ospreys, herons, raccoons, and many species of fish feed on eels. The most common species of mussel in Middle Pond and Mystic Lake, the Eastern Elliptio, employs eels as hosts for its glochidia.



American eel caught in Mystic Lake by Gordon Swanson in 2004.

Although the Wampanoag taught the Pilgrims to catch eels, they are not widely eaten in the United States today. Perhaps that is why the eel is not valued by Americans. "Unagi", broiled freshwater eel, is an important food in Japan

and at sushi restaurants everywhere. It is also very delicious! Eel is considered a delicacy throughout Europe and Asia, where some local species have been fished to commercial extinction.

Eels also figure prominently in myth and folklore around the world. Huge eels live in New Zealand, where they are eaten, but also revered as a guardian spirit—animal that warns people of danger. The largest eels in the world live on one Micronesian island, Pohnpei, where they are kept as pets and are the subject of many legends and stories.

The eel is an animal that navigates thousands of miles of ocean, can find its way in the trackless sea or over land, can live in fresh or salt water, is undeterred by obstacles, is profoundly vital and resilient, and is good to eat. It is truly an amazing creature, one that deserves a better reputation and better protection.

Holly Hobart

¹ http://en.wikipedia.org/wiki/American_eel

² <http://www.tpwd.state.tx.us/huntwild/wild/species/ameel/> Texas Parks and Wildlife article on *Anguilla rostrata*

³ Prosek, James. Eels, An Exploration, from New Zealand to the Sargasso, of the World's Most Amazing and Mysterious Fish. HarperCollins e-books, Ch. 10.

UPDATE ON FULLER FARM PURCHASE

Frequent nasty winter weather did not slow the ongoing negotiations concerning the Fuller Farm. The Barnstable Land Trust continues to be committed to protecting the farm and is working hard on this high priority acquisition. Like many previous successful negotiations, this one has a number of parties at the table, and it is critical that the puzzle be assembled in a way that meets the needs of everyone involved. Slow and steady gets the job accomplished and the open space preserved to the benefit of all.

Alex Frazee



A trio of wild turkeys perched on the roof of a garage.
Photo by Lynne Bishopric.

COLD BIRDS



Male cardinal

The subjects for these articles come from questions or inquiries from the readers. The other day I received a question that caused my brain to freeze solid. **How do birds stay warm in the winter when it is freezing cold?** That shut me right up and that's saying something. When I went to investigate the question and its answer, I had what has become known lately as a

face-palm moment or a "well, duh" moment. Now it's your turn.

First, birds, like us, are warm blooded and must maintain a body temperature within a certain range, usually around 100–107°F. Some birds do this by leaving for the winter, going south to Florida, Texas, or Mexico, just like some of us.



Chickadee

Other birds used to migrate, but now, due to the large number of winter residents of the human variety who are willing to put out feed for them, no longer migrate at all. Among these are the **cardinal**, the **chickadee**, **titmouse**, and, surprisingly, the **robin**, although no one is truly



Titmouse

certain if that chickadee or titmouse is "ours" or if "our" population has moved farther south and a population from Montreal has moved in. While you are putting out sunflower seeds for all of these, don't forget to put out a suet block for the four

woodpeckers that no longer migrate, the **downy**, **hairy**, **red-bellied**, and **flicker**. It is important to fill feeders late in the afternoon so that the smaller birds may find enough to eat to burn (metabolize) during the night.



Robin

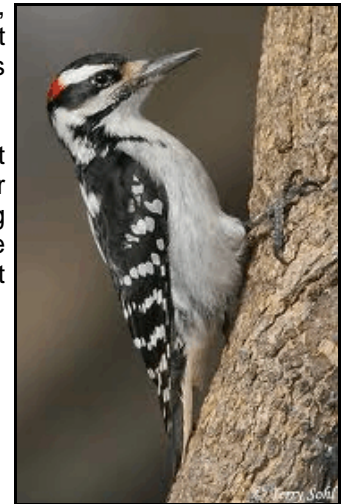


Downy woodpecker

Bird metabolism is very high and they spend all day either eating or looking for food. Their metabolism becomes even higher in the winter when they are trying to keep warm. They also have a faster heart rate, higher blood pressure, and a faster respiratory system.

Some birds, like the chickadee, go into a state of hypothermia at night where their body just shuts down to save energy.

But the single most important tool that birds have going for them is exactly the same thing that we do to keep warm in the winter. We put on a down coat



Hairy woodpecker



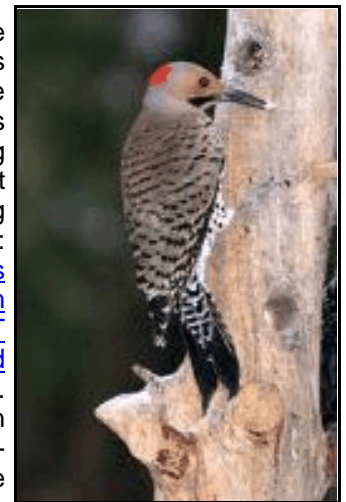
Red-bellied woodpecker

before we go out. Birds live in a down coat and may put on 25–30% more feathers for the cold weather. There are tiny air spaces over and under the overlapping feathers. You may even see them fluff up their feathers to conserve heat within these air spaces. You may also see them standing first on one leg and

then the other while they draw the opposite leg up to their chest, or tucking their bills under their wings while they nap.

Some birds huddle and cuddle together to keep warm. Others roost together in groups to share heat. You can get specifications off the internet to build roosting boxes for those species that prefer this method of spending the night. One such website is: <http://yardener.com/YardenersPlantHelper/MakingForAHealthyYardEcology/AttractingBirdsToTheYard/HousingForSongbirds/DontForgetRoostingBoxes>.

There are also instructions on the internet for how to grow bird-friendly yards to help provide food for birds. This would include growing sunflowers and thistle and leaving the seeds for the birds.



Flicker

Keep warm.

Dave Reid

To see this newsletter in color, go to the IPA website at: www.indianponds.org.