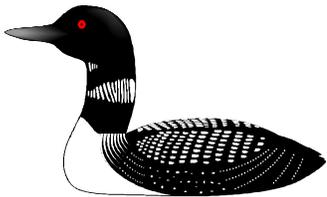

Taylor Pond Association News

*Summer
2002*



Association News

Many of you are justifiably wondering what happened to TPA during the past year and a half. Lack of volunteers to run the association nearly killed us. I am happy to announce that several individuals have volunteered to help out which is the beginning of a rebuilding effort. Bud Large continues to serve in the role of treasurer while Betty Anne Sheats and Dana Little have agreed to help as well. We need more help, however. At a recent board meeting we talked about several prerogatives in the future including a web site to disseminate information, a summer pond cleanup and of course an annual meeting. We can't do this without more help. We desperately need volunteers and dues. Don't let your neighbors slide without

Annual Meeting Notice

Sunday August 27 7:00 PM *Taylor Pond Yacht Club*

contributing to TPA. If TPA ceases to be financially solvent there will be no further water quality monitoring and no advocacy.

The Milfoil Menace

Blyxa echinosperma



So what is the milfoil menace? Milfoil is a species of aquatic plant that is not indigenous to our area of the northeast. However, this invasive plant has "hitchhiked" to the area attaching itself to propellers of visiting boats, fishing tackle, boat trailers and/or personal watercraft. This hearty

plant has no natural predators and typically "invades" new habitats. The plant invasion has rendered several local ponds and streams virtually unusable for boating, swimming, or recreation. Prevention is the only answer. Once established there is no "high tech" solution regardless of the cost. Prevention entails understanding and vigilance on the part of every pond resident, guest and interested party.

Last year the State passed new laws making it illegal to knowingly or unknowingly transport aquatic vegetation. A new sticker program was commenced to help promote the awareness and understanding of the seriousness and scope of the problem. The revenue from the stickers helps defray the State's costs to educate boaters and perform voluntary boat and trailer inspections. Experts advise that

the first signs of plant invasion starts at boat ramps. Last year I experienced first hand the impact of milfoil invasion. While competing in a canoe race in Massachusetts it was immediately evident that something was wrong. The thick blanket of vegetation two feet below the water's surface was nearly impenetrable to a paddle! The particular pond was 25% of the size of Taylor Pond and they had two floating harvesters working nearly full time to keep the top 24 inches of water open. I can't imagine the cost to maintain this program. It wouldn't even be remotely feasible for our pond.

The best and almost only defense is prevention. A one-inch piece of milfoil kept in a freezer for a year is still hearty and robust once submerged in water again.

Beaver Troubles

The beaver population in Taylor Pond appears to have grown the last two years. In my travels around the pond I have seen at least 3 sites of beaver activity. There are at least two houses on the perimeter of the pond. Their tunnels cut into the dense buttonbush swamps and lead to their homes. Beavers mate for life and usually have 2 to 4 young each year. After 2 years in the family the young are chased out and establish a new home. A typical family may have 6-8 living in one home suggesting we have at least 12 beaver in the pond. For an animal trapped nearly to extinction in the 1800's, they have done well lately.

Beaver are most often seen in the evening swimming, their head leaving a long v-shaped wake. If you approach them too close or startle them they make a tremendous slap on the water with their tail, which has surprised me many times when canoeing in the evening. They feed on a variety of plants including water lily tubers, clover, pond algae, leaves and the inner bark of fast growing trees including poplar, birch, willow and red maple.

The trouble with beavers on the pond lies in their large appetite for trees that we may love. They can fell a 4-inch willow in 5 minutes. In two days they removed a three-inch red maple from my lakeside yard, cutting it up into 6-foot sections and hauling it off to their winter larder. Beavers do not hibernate and store up food in underwater areas for eating during the winter. We called the game warden in Gray to find out how to control beavers. They offered to give us names of people who would live trap the beaver for a fee and remove them if they were a nuisance. There are three problems with this strategy: 1. You have to trap all of the beavers from each lodge 2. New beavers move in from other areas quickly (they have been known to travel 150 miles in search of new territory) and 3. When beaver are trapped they respond by having larger litters that quickly replace the removed beavers. A better strategy is to learn to live with them and protect your plants. Most of the trees that they consume are small and quickly grow back from the chewed off stump. They tend not to eat

spruce or venture further than 15 feet of water.

To protect your valuable trees several strategies have been suggested:

1. Trees 15 feet from shore are usually safe. A low fence between the trees and water, not necessarily surrounding the trees, will deter them.
2. A wire cage of turkey wire, hardware cloth or 2x4 inch welded wire fencing, or less reliably chicken wire, four feet high encircling the trunk of the tree can be effective. Leave 6 inches between the wire and tree and anchor firmly to the ground.
3. A mixture of 2/3 cup masonry grade sand to one quart of oil or latex paint painted on the trunk to a height of four feet. Do not use on trees less than 6 feet tall as it may harm the tree.

Dana Little

Water Quality Status

The following is a summary of the report recently prepared and delivered by biologist Scott Williams.

Taylor Pond Water Quality Monitoring and Assessment Report 2001 **By: Scott Williams**

Introduction:

Taylor Pond water quality has been monitored through the combined efforts of volunteers

and professionals for nearly three decades. The Taylor Pond Association has played a major role in the recruitment of volunteers, and the support of a professional lake monitoring program. As a result, the water quality database for this lake is among the most complete in the State of Maine.

During the historical monitoring period, the issues and concerns for the lake have varied, and sampling strategies and methodologies have changed. The primary goal of the present monitoring program is to assess existing conditions and ensure that the data are of sufficient quantity and quality to be suitable for use in detecting long-term water quality trends.

There are many threats to lakes. The most pervasive is cultural eutrophication, which is the greening of a lake due to nutrient and sediment enriched runoff from developed areas of the watershed. This phenomenon is also potentially the most manageable because its cause is geographically local (the watershed), and the solutions are relatively simple and inexpensive, especially when compared to the prohibitive cost of lake restoration.

Weather Factors during the 2001 Monitoring Season:

The weather has an important influence on the indicators used to assess lake water quality. Variations in precipitation, sunlight and wind, combined with the natural rhythms of biological processes in the lake ecosystem, causes seasonal and annual

fluctuations in lake data. It is for this reason that many seasons of information are generally required before it is possible to detect trends in lake water quality.

The weather during the 2001 monitoring season was extreme. Maine experienced the most severe drought in over a century in 2001. From July through September, there was virtually no precipitation in the area of the Taylor Pond watershed. Without precipitation there is no Stormwater runoff. Runoff is the primary means by which pollutants like phosphorus and sediment are carried to the lake from the watershed.

Maine experienced a similar, but less extreme drought in 1999. That summer Taylor Pond was exceptionally clear. The results of the 2001 drought were even more dramatic. During the nearly three decades that Taylor has been monitored, the lake has never been as clear as it was in 2001!

2001 Lake Monitoring Results:

Transparency:

Transparency, or clarity is the distance that one can see down into the lake. Transparency is an important indicator of lake water quality. Clear water is highly valued by the public. A recent study by the University of Maine showed a relationship between lake water clarity and shoreline property values. Declining water clarity has a negative impact on property values, according to the study, and lakes with clear water support

higher shoreline property values than those that are less clear.

Historically, the clarity of Taylor Pond has been somewhat below the average for Maine lakes. Transparency has varied from year to year, and, as indicated above, the weather has been shown to be an influence on water clarity in this lake. Transparency readings were taken by Certified Volunteer Lake Monitor Ralph Gould and Scott Williams. In 2001, transparency averaged 5.2 meters, more than one meter (~3 feet) clearer than in 2000. The difference is noteworthy for a number of reasons. A one-meter improvement or decline in water clarity is perceptible by most people. A one-meter difference in transparency also represents a substantial difference in algal growth in the lake. The lowest reading of 4.82 meters occurred on September 2, and the highest reading of 5.9 meters occurred on September 12. The September 12 reading is one of the highest (best) single readings ever recorded for this lake! The long-term average transparency for Taylor Pond is approximately 4.5 meters. Figure 1 illustrates transparency readings taken by LWRMA throughout the summer, including the average for the season and the historical average (LTA).

Total Phosphorus:

Phosphorus is the nutrient that is most responsible for the growth of algae in Maine lakes. Total phosphorus in the water column (integrated epilimnetic core sample) ranged from a low concentration of 10 parts per

billion (ppb) in July and September, to a high of 13 ppb in June. The average for the season was 11 ppb. The historical average phosphorus concentration for this lake is 11 ppb. Total phosphorus average concentrations over 10 ppb are considered to be moderately high for Maine lakes. Lakes with sustained phosphorus concentrations of 15 ppb, or more have experienced significant algal blooms.

Phosphorus samples were also taken from the bottom of the lake to determine whether or not this critical nutrient was being released from the bottom sediments when oxygen levels were low. Phosphorus concentrations of 12 ppb were measured in August and 15 ppb in September.

Chlorophyll-a:

Chlorophyll-a is a pigment contained in algal cells. Its concentration in lake water reflects the amount of algae growing in the water. Chlorophyll-a concentrations ranged from a low of 2.7 ppb in June to a high of 4.9 ppb in September. The average for the season was 3.6 ppb, compared to 6 ppb in 1999. The 2001 average is lower than the historical average for the lake. Figure 2 illustrates monthly readings and concentrations for the 3 indicators of biological productivity, or trophic state indicators (transparency, total phosphorus and chlorophyll-a) in 2000. Included in the graph are the data for color, because color can influence transparency.

Apparent Color:

Color (apparent) is a natural phenomenon caused by the relative abundance of dissolved organic acids from the watershed in the water. These “humic acids” leach from vegetation in the watershed. The availability of color in lake water is influenced by watershed geochemistry and by wetland drainage. Humic acids can raise phosphorus concentrations and lower transparency. Color levels in lake water often vary with precipitation and runoff levels. The average apparent color concentration in 2001 was 12 SPU, compared to 25 SPU in 2000. Reduced runoff during the monitoring period probably resulted in less wetland flushing, thereby reducing color levels in the lake. Color levels of 25 SPU, or more, can reduce transparency readings.

Dissolved Oxygen:

One of the most critical indicators of lake water quality that has consistently demonstrated the extent to which Taylor Pond is stressed, and vulnerable to a decline in water quality is the loss of dissolved oxygen in the deepest region of the lake during the late summer. Oxygen loss in lake water is typically the result of excess algae growth in the water. The decomposition of algal cells by anaerobic bacteria results in the consumption of oxygen.

Dissolved oxygen depression and depletion was documented from July through September. Oxygen depletion was extreme in September, as indicated in Figure 3. Low oxygen concentrations

near the bottom of the lake can facilitate the release of phosphorus from the bottom sediments. This, in turn can accelerate an overall decline in water quality for the lake. Total phosphorus concentrations near the bottom of Taylor Pond in September were moderately high.

Taylor Pond has experienced several short-term algal blooms during the late summer – early fall period in the past several years. The introduction of high concentrations of phosphorus from the bottom of the lake to the water near the surface when the lake “turns over” in August or September is the most likely cause of the blooms. This phenomenon may worsen over time unless serious attempts to reduce phosphorus loading from the watershed takes place.

Total Alkalinity and pH:

Total alkalinity and pH were monitored throughout the five month period. Values for both indicators were within the “normal” historical range for Taylor Pond and Maine lakes.

Summary:

Taylor Pond water quality reports for the past three years have shown dramatic examples of the way in which the weather can influence indicators of lake water quality. Taylor pond was the clearest ever in 2001. The extreme drought and calm weather undoubtedly influenced the conditions that were documented. In 2000 nearly opposite conditions were observed in the lake. We cannot control the weather, but the influences of the weather on

this lake certainly can be used to emphasize the fact that the management of runoff is an effective way to insure a clear lake for the future. Conditions during the past three years have shown the following:

1. Stormwater runoff is the primary means by which Phosphorus enters Taylor Pond.
2. If runoff from existing development in the watershed can be diverted from streams, road ditches and other pathways to the lake into vegetated buffers – there is evidence that water quality might not only be maintained – but quite possibly improved.
3. Stormwater runoff from future development in the watershed must be minimized to the greatest extent possible if Taylor Pond is to be protected from a significant decline in water quality, and if shoreline property values are to remain stable. The review of all new development in the Taylor Pond watershed should include stringent phosphorus and stormwater controls.

Efforts of private landowners, the City of Auburn and Town of Minot to reduce sources of phosphorus and sediment to Taylor Pond will be critical in determining the fate of this lake during the next decade. The 15 square mile watershed continues to be developed. With each new house, driveway, and lawn, there is

some increase in stormwater runoff from the watershed, and an increase in the amount of phosphorus that may reach the lake. For this reason, it is important that everyone continues to do as much as possible to protect the lake. One of the most effective measures that any individual property owner can take is to increase the area of vegetative buffer on their property, especially in areas where runoff from rooftops, driveways, and other disturbed areas runs to drainage ditches and streams.

Taylor Pond Wildlife

The pond did not freeze over completely this year until January 10. As a result a large number of Common Mergansers and Hooded Mergansers were seen fishing in the open water. The skaters on the pond gave wide berth to the open water and enjoyed some good ice. In early February a coyote was spotted on two separate occasions crossing the ice at a fast lope. By March 23 a large area of open water appeared and by March 31 there was only a 1/2 mile stretch of ice that first filled the cove on the southwest side and then blew up to the north end of the pond and disappeared a few days later.

A large variety of ducks stopped over on migration as a result of the water opening up early. We spotted Green-winged Teal, Hooded Mergansers, Ring-neck Duck, Blue-winged Teal, a single Canvasback Duck, many Buffleheads and Pied-billed Grebes. We saw many Canada

Geese, mostly flying over, Mallard and Black Duck. We have many Wood Ducks nesting around the pond. Unfortunately, one of the nests on our land was raided and we found all the eggs eaten on April 26 (we think by a raccoon).

We have spotted Bald Eagles regularly over the pond. I have never seen them catch a fish nor do I know where they nest. This winter I watched while one sat out front eating the dead fish an ice-fisherman left on the ice. The Ospreys returned April 17. On one day I saw three ospreys flying together over the pond. Usually the osprey appears alone, fishing with a high degree of success. I often see them scoop up 6-10 inch perch within minutes of appearing overhead. A surprise and rare visitor to the pond in early May were 3 Red-shouldered Hawks. They circled around above the pond for days and I think are nesting off to the west on Mount Apatite. A Sparrow Hawk appeared this May catching some of the smaller birds at our bird feeder - not exactly the kind of feeding I had in mind.

The Spring Peepers started calling April 3 along with Wood Frogs. By April 9 we could hear 100's of Spring Peepers calling along with dozens of Wood Frogs. By mid-April the Leopard Frogs and toads were chiming in. The Grey Tree frogs did not start calling until early May and the Green Frog in early June. If abundant frogs are a sign of health, as scientists are beginning to think, Taylor Pond is in great shape.

Now in mid-June we have had many snapping turtles cruising across our lawn. As I look out the window yet another is laboriously making her way to the mulch pile. Early this morning two females were atop my mulch pile laying eggs. Last summer we had many painted turtles lay their eggs along our road but have yet to see any young emerge. We often see the dried eggs scattered about, probably that same raccoon that helped himself to the Wood Duck eggs.

Dana Little

Volunteers

The Taylor Pond Association is recruiting the help of volunteers to help with the operation of the association. Over the years our association has had the benefit of many interested property owners who have stepped forward to take their turn at the helm. There are a lot of things happening and we would like your help. There are immediate needs for several positions.

Information

For more information on anything covered in this newsletter contact Pond Association President Dan Thayer at 783-3504 or dthayer@thayer-corp.com.

**Your Dues Keep Our
Pond Association
Strong And Viable.**

----- Detach here and return with dues payment -----

Taylor Pond Association

Charles Large, Treasurer
148 Everett Road
Auburn, Maine 04210

Please return this notice with you dues of **\$25.00** for the period June 1, 2002 to June 1, 2003.

We also respectfully request an additional **\$25.00** for the last year, which was not billed.

Thank You