WATERWORKS

NYSFOLA

New York State Federation of Lake Associations, Inc. $1.50 per copy October 2000

What's Phosphorus Got to Do with It?.

by M. Elizabeth Conners

What is Phosphorus, Where Does It Come From., and Why Is It So Important?

Phosphorus is important because it is a plant nutrient, or fertilizer. Aquatic weeds and algae, like land plants, require minerals from the soil to grow. just like land plants, aquatic plants respond to additions of fertilizer by growing thicker, taller, bushier, and more widespread. When the plant growth in a lake (the symptom) gets to be a problem, one of the most effective responses is to limit growth by reducing the amount of fertilizers (the cause). Garden fertilizers contain nitrogen, phosphorus, potassium, and sometimes other minerals. For fertilizing land plants, nitrogen is the mineral needed in largest quantities and is generally the largest fraction of the fertilizer. Aquatic plants also need nitrogen and other trace minerals, and additions of nitrogen to lakes can also increase plant growth. The main factor controlling aquatic plant growth in most lakes, however, is phosphorus. This is because phosphorus is usually (though not always) the mineral that is in shortest supply relative to the plant's needs; even if other minerals are available in large quantities, if there is not enough phosphorus, growth will be slowed. Reduction in phosphorus input to a lake is often the target of a lake or watershed management program.

Sources of Phosphorus

There are two principal pathways that supply phosphorus to lakes. The first is from external sources, including runoff from the watershed, point sources such as sewage treatment plants, and atmospheric input. Controlling the external nutrient sources is the main reason why lake management programs include and emphasize proper management of the lake's watershed. Runoff from fertilized fields or lawns, livestock areas, urban and paved areas, and areas of soil erosion all carry phosphorus into the tributaries and eventually into the lake. Additional phosphorus is added from septic tanks, as well as municipal or industrial discharges. Some phosphorus is also carried from distant sources in rain and snow, and enters the lake directly through precipitation.

The internal supply of phosphorus to the plants in a lake is much harder to measure and control the phosphorus from external sources. Nearly all lakes have at least part of the bottom covered by soft mud or silt, which is usually very rich in phosphorus. In shallow water, these sediments encourage the growth of rooted plants such as milfoil or pond lilies. in deep water, phosphorus-rich sediments are at risk of becoming anoxic (lacking oxygen) and setting up a cycle of internal loading or internal cycling that can result in extreme algae blooms and water-quality problems.

Phosphorus compounds are part of a special chemical cycle in lake bottoms that is mediated by dissolved oxygen. Under most circumstances, phosphorus compounds are strongly associated (adsorbed) with soil or other particles. As long as dissolved oxygen is available, chemical attractions (primarily to iron oxides) bind most of the phosphorus to the sediment. If the lake begins to lose oxygen near the bottom sediments, however, a chemical shift occurs that releases the bound phosphorus back into the water and makes it available for plant growth. Once a cycle of anoxia and internal phosphorus loading from the sediments is underway, this internal supply can quickly become the controlling factor in the lake's rooted plant and algae growth.

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NYSFOLA's mission is to protect the water resources of New York State by assisting local organizations and individuals through public dialogue, education, information exchange and collaborative efforts.

from the President

Dear Members,

Fall is here. Soon our beloved New York State lakes with be ringed with autumnal colors. The clear waters will reflect natures beauty on their placid surfaces. It soon will time for the lakes to rest from their heavy use of the summer. However, now more than ever we must be vigilant in our protection efforts. Yes, the amount of boat traffic, the summer recreational uses, the improper fertilization efforts of lakefront owners, the "abuse" of tourist activities and other demands on the waters will decrease. But our lakes do not get the winter off to recuperate in the old-fashioned way.

Acid rain continues to fall on the Adirondack lakes. Waterfront congestion continues to increase as more "camps" are converted to full-time use. Urban sprawl continues to encroach on lakeshores. Mechanical access to once isolated lakes and ponds continues its attack on their fragile nature. A longer boating season continues to impact lake bottoms and shorelines. Mechanical vehicle use on frozen surfaces continues to increase pollutant contamination. Unsupervised ice fishing continues to provide opportunity for debris to unintentionally be left behind and thus further despoil the water quality.

All of the above doesn't sound like "rest" to me. However, it does sound like a challenge to be met by those of us who care for New York State waters. We must spread the word that our lakes, ponds and streams are fragile. We must make our citizens aware that Man continues to be the most harmful element in the degradation process. We must insist that we are careful in our use of nature's gifts.

How can we do this? We must speak out on behalf of New York State waters whenever and wherever possible. We must talk to fellow lake users, both as individuals and as group members, that their help is needed in the fight to keep our waters healthy. We must appear before our village, town, country and state boards and organizations to enlist their help in the battle. We must make them aware of the economic value lakes and ponds bring to their areas. We must not leave the fight to others but join in as fellow combatants striving to preserve them for this and the following generations. We cannot lose sight of the fact that life goes on even when we don't and we want those who follow to enjoy the lakes and ponds like we have.

In summary, we are all important in preservation efforts. Act responsibly, encourage others to do the same, speak out on behalf of our lakes and encourage others to do the same.

Thanks for "listening."

Lewis N. Stone, President

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Grass Carp—— What the Textbooks Say:

Grass carp is a fish that eats certain varieties of vegetation and can reduce the levels of nuisance vegetation in lakes.

PRINCIPLE:

Grass carp (Ctenopharyngodon idella, or white amur) physically remove vegetation from lakes. Beyond removing the nutrients entrapped within the plant, the grass carp does not reduce nutrient levels, or afford any control of the source of these nutrients.

Grass carp are an exotic species and are seldom permitted in New York State; originally, they were imported to Arkansas and Alabama from Malaysia in 1963. The carp, less than one half a pound in weight and 8' to I I " in length (although less than one foot may be preyed upon by largemouth bass), are stocked at a rate of about 15-40 per acre of surface area. They can grow up to 6 pounds per year, and may ultimately consume 20-100 % of their body weight each day in vegetation. Grass carp have been reported weighing over 100 pounds in intensive culture operations in Europe. However, the largest fish ever reported in the United States has been closer to 50 pounds.

The fish will selectively feed on particular types of plants; although the carp are reported to have particular favorites among the plant species, these preferences may be a function of specific lake conditions, and eating habits may not be reproducible from lake to lake. In general, most grass carp prefer species of Hydrilla, Potamogeton, Ceratophyllum, Najas, Elodea and some filamentous algae, while some specific plants, such as Myriophyllum spicatum. and Potarnogeton natans, are considered less palatable. However, in many cases, the grass carp will consume these less desired plant species in the absence of their favorites.

APPLICABILITY:

As of 1987, 22 states allow triploid (sterile) carp only, with three states (including New York) allowing triploid carp on an experimental basis only. Five states allow either triploid or diploid (non-sterile) carp, and 23 states have banned the use of sterile and non-sterile carp for any purpose.

Grass carp have the potential to eradicate all vegetation in lakes, and can escape downstream to other waterbodies and induce unwanted vegetation control or eradication. Grass carp have a strong tendency to follow flowing water, and can reproduce in inlet and outlet streams. Unless these streams are adequately screened, the fish are likely to move out of the lake. Not only is the investment in fish lost, but the nuisance weeds remain in the lake, and the carp may destroy desirable aquatic plants in the streams.

In states which allow their use, grass carp are restricted to lakes with no sustainable outflow, to reduce the possibility of escape, and to maximize the control of vegetation within the target lake. However, fish cannot be expected to control weeds at a specific part of a lake, such as a beach or an individual dock. Since fish have access to the entire lake, grass carp treatment is necessarily a full-lake treatment.

Vegetation control with grass carp is necessarily slow, but could be effective over a long period of time. If only sterile carp are used, the time required for the carp to effectively control vegetation will depend on the density of vegetation, stocking rate, and growth rate of the carp.

POTENTIAL SIDE EFFECTS:

Grass carp do not meet any of the criteria for an "ideal" candidate for introduction to an aquatic system (Li and Moyle, 1981): they do not coadapt with other aquatic species, do not have a narrow niche, are not easily controlled after escape, and are not free from exotic diseases and parasites. These claims, however, can be disputed in experiments conducted in New York State, where it has been found that properly stocked grass carp may coexist with other fish species and have not been shown to carry any diseases or parasites problematic to native fish populations.

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What's Phosphorus Got to Do with it? Continued from page one

It is important to note that there are several different chemical forms of phosphorus, not all of which are available to plants. Most phosphorus carried in watershed runoff and present in lake sediments is tied up with soil particles (particulate phosphorus) and cannot be used by plants. Several different forms of phosphorus are dissolved in lake water (soluble, dissolved, or ortho-phosphorus); these forms are available for plant uptake in varying degrees. All of the various forms of phosphorus interreact, however, and particulate phosphorus can become dissolved phosphorus and vice versa, depending on the surrounding chemistry,

Phosphorus Budgets

Because there are many different possible sources of phosphorus within a lake and its watershed, it is important to determine which sources are actually supplying most of the phosphorus in a particular situation. This is one of the reasons why lakes are so different from each other, and why a lake management plan has to be tailored to the individual lake. While one lake may be controlled mainly by external phosphorus sources through soil erosion and agricultural runoff, another lake nearby may be driven almost entirely by internal loading. When the goal is to reduce plant growth by reducing phosphorus supply, it is critical to make sure that management efforts are focused on the major sources that give the best chance for phosphorus control. If a lake has a steady supply of phosphorus from internal cycling, for example, intensive measures to control external nutrient sources are likely to have little effect.

On a volunteer level, tributary sampling can be used to give some indications of which parts of the watershed contain the largest external phosphorus sources. To get an accurate overall picture of phosphorus dynamics within a lake, however, more detailed study is required. The professional tool most widely used in managing phosphorus is called a nutrient budget.

In order to construct a nutrient budget, all of the possible sources are evaluated and their relative contribution is determined. in order to "balance the budget", the amount of phosphorus lost through the lake's outflow and deposited into bottom sediments is also measured or estimated. The concentration, or amount of phosphorus present in a given place at a given time, is measured by collecting a water sample for careful laboratory analysis. In order to construct a nutrient budget and determine the long-term rate of supply of phosphorus from different sources, concen
tration measurements must be collected from several locations (tributary inflows, lake outflow, surface water, deepwater) overtime. Constructing the nutrient budget for a lake is the central part of a lake diagnostic study, and should always be part of the planning process prior to launching a major management or restoration effort.

How do we tell if we have a phosphorus problem?

Phosphorus by itself is not a problem, but if you have algae blooms, low transparency (secchi disk), or heavy weed growth in your lake, then phosphorus supplies may be excessive. Spring and summer algae blooms that follow periods of heavy rainfall and runoff often indicate high external phosphorus sources. Algae blooms that occur after wind storms in late summer or in the fall at lake turnover, in particular, are an indication of internal phosphorus loading. Point-sources of phosphorus, such as septic tanks, can often be spotted by a localized patch of filamentous algae growth.

How do we control Phosphorus in our lake?

For external phosphorus sources, watershed management is the key to phosphorus control. Measures to reduce runoff and soil erosion, reduce or contain fertilizers, and route storm drains away from lakes and streams all pay off in reduced phosphorus loading. Control of internal phosphorus loading is more difficult and is usually based on controlling dissolved oxygen levels. Methods for controlling phosphorus loading are an almost continual topic of publications and discussions on lake management, and many resources are available that address both smallscale and lakewide efforts at phosphorus control. if you've been confused about phosphorus, it's for good reason. Phosphorus is one of the many invisible links in the complex web of lake and watershed dynamics that result in the visible problem (excess weeds and algae). While it is far from the only factor, phosphorus' important role in nourishing plant growth makes it a key player in the overall balance, or imbalance, in the lake.

Reprinted from July 1993 issue of WATERWORKS

Grass Carp-

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The most significant drawback of using grass carp is the potential for complete eradication of vegetation. A complete removal of all types of vegetation may occur after the grass carp have exhausted the supply of target plants, and would have severe detrimental effects on the plant community and entire ecosystem. At the other extreme, understocking or insufficient consumption of vegetation may result in the control or eradication of non-target plants, since the eating habits of grass carp are not completely predictable. In the absence of competitive native species, this could allow the exotic target plants to dominate the plant community. Destruction of either native or exotic species could also have significant effects on the aquatic animals whose habitat (niche) is based on these plants. Altering fish habitats could have severe effects on zooplankton and phytoplankton populations.

Eutrophic conditions could be enhanced through a number of mechanisms. More than 50 % of the ingested plant material could be reintroduced through excretion by the carp, primarily as particulate organic matter and urinary nitrogen. This nutrient recycling could stimulate algae blooms and oxygen depletion. Algae blooms may also result from the actual removal of rooted plants, since these plants may compete with algae for available nutrients. Even if the nutrient levels remain constant, algae populations may be enhanced due to the greater availability of these nutrients.

As an exotic, non-native fish species, grass carp may also introduce exotic diseases or parasites to a lake. Cestodes, a type of parasitic tapeworm, or flatworm, has been found in lakes in which grass carp were introduced. With the use of praziquantel ($C_{19}H_{24}N_2O_2$), a compound used to treat parasitic worms in both aquatic and terrestrial animals, infestation can be minimized. However, since cestodes (also carried by golden shiners and mosquito fish) have not been reported to cause any problems for native fish species in New York, praziquantel has not been used outside of fish hatcheries. It is unclear what affect praziquantel may have on humans or other aquatic animals or organisms if either the small carp are consumed by predatory fish or humans, or if any byproducts of the praziquantel are excreted.

Grass carp offer one of the least expensive lake management techniques for controlling nuisance aquatic vegetation. Costs are a function of vegetation density and stocking rate, and usually run from $50 to $100 per acre. These costs can be amortized over several years, since the grass carp application requires only capital expenses.

WHAT ELSE THERE IS TO KNOW:

As discussed in Chapter 1, **Diēt for a Small Lake**, physical control techniques, for the most part, can be considered Type A systems, designed by humans and following man-made laws. The ultimate fate of the ecosystem is determined by the effect the technique has on the ecosystem, and the operation of the control technique and, to a certain extent, the effect of the technique can be easily predicted.

Chemical control methods can be considered Type B systems, designed by humans and conforming to natural law. Although the chemical and, therefore, its characteristics are man-made, the fate of the chemicals, and the resulting ecosystem changes, cannot be controlled by man.

Biological control techniques are most like Type C systems, neither designed by, nor conforming to, man-made laws. Once grass carp are introduced into a lake, the fate of the carp, the target vegetation, and the entire ecosystem are outside the influence of man. By and large, Type C systems are much more difficult to understand and control than Type B systems, which are more difficult to control than Type A systems.

Physical methods for controlling nuisance vegetation, such as harvesting, are fairly well understood. For the most part, effectiveness and side effects are well known and can be predicted for many different applications. Chemical control methods, such as herbicide treatment, are less well understood, but have been investigated extensively for many years. While there may not be a complete understanding of the long-term effects of chemical treatments, cause-and-effect relationships can be predicted in many circumstances.

Ask Dr. Lake

Dear Dr. Lake:

What happened to my pond this year? I spent a lot of time and moved a lot of dirt to assure that my septic system isn't polluting my pond (much), stopped putting lawn fertilizer on my Astroturf, and even cut my (pond) bathing down to once a month. But the pond seemed greener and sometimes browner or redder than ever. Do I need to do something else to make it better again?

Roger Moore, James Pond, NY

Dear Mr. Moore,

Diagnosing a lake problem without visiting the lake and/or collecting and analyzing samples is a bit like picking the winners in a South American youth rugby tournament. Without knowing any of the contestants, the best bet is to go with the odds, or at least the home team.

I don't know what specifically is happening in James Pond. However, many lakes and ponds in NYS, at least in the mid-eastern part of the state, suffered similar ailments in the spring and summer of 2000. And like physicians who blame all unknown ailments on allergies, I will take the easy way out and blame it on the weather (this is going with the odds…).

In many parts of the state, 2000 has been a very wet, windy, and cold year, kicked off by the remnants of Hurricane Floyd last fall. For many lakes, this has resulted in the following phenomena:

(1) increased precipitation has meant increased runoff, since the rain has to go somewhere besides my basement, which has resulted in higher nutrient loadings to many lakes

(2) high winds and cooler spring temperatures have caused unstable thermal layers, delaying the onset of stable thermal conditions in lakes (warm water on top, cool water on the bottom). This has caused the lake to keep "working" later into the summer.

(3) spring diatom and other algal blooms associated with the higher nutrient loading probably resulted in an early depletion of deepwater oxygen, which caused an increase in nutrient loading from bottom sediments.

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(4) these nutrient-enriched bottom waters continued to mix with surface waters later into the spring and summer, resulting in some lakes suffering a rare "perpetual" bloom. This has triggered a nutrients-to-algae-to-oxygen depletion-to-more nutrients cycle that has persisted until these lakes finally developed stable thermal layers later in the summer.

What about the colors?

The ecological palatte of watercolors enjoyed by the visually creative but cursed by the lake user is probably the result of different kinds of algae. Blue green algae (*Myxophycaea*, also broadly referred to as blue-green bacteria, or *Cyanophyta*) in particularly strive well beyond their names to emit shades of red (some species of *Oscillatoria*, as well as the less common *Rhodophycaea*, or red alga) and brown (some other species of *Oscillatoria*, some species of *Microcystis*, and many types of diatoms), as well as the paint can streaks of green and blue-green. In fact, the names of most major groups of algae, such as golden-brown algae (*Chrysophyta*), green algae (*Chrysophyta*) and yellow-green algae (*Heterokontae*) can be sketched with a mostly full box of Crayolas.

The presence of a particular color, while perhaps alarming, may simply signal a shift from one common or innocuous algal species to another, although it may also be triggered by an "unhealthy" shift in algal communities due to increasing nutrient loads or loss of some microscopic animals (zooplankton). In many NYS lakes in 2000, the appearance and abundance of many of these colors is likely temporary, and lake residents will likely enjoy the return to full (if aesthetically colorless) transparency later in the year or early next year.

So I don't need to do anything?

As I indicated above, it is likely that these brilliant colors will start to fade with the browning of the leaves this fall, regardless of what we do. However, since stormy weather may not be culpable for the explosion of colors in all lakes, each lake resident should continue to be vigilant in pumping and otherwise maintaining his or her septic system, minimizing the use of lawn fertilizers, planting near-shore vegetation to reduce erosion, and working with neighbors to do the same.

Dr Lake's Prescription to "A New Yorker Ex-Vermonter": Although the Lake Champlain Management Conference did recommend reciprocal licensing for fishing the lake, at present separate licenses are required for both Vermont and New York. Fish maintain neither residency nor the right to vote (at least in NY... can't say for sure in Vermont...). As with all of these large-scale, large-lake management plans, the individual recommendations often take many years to implement....

Please Don't Feed the Ducks

Ducks and other waterfowl are common inhabitants of parks and lakes. They certainly add an aesthetic appeal to these natural settings, and duck feeding is a favorite activity, especially for families with small children. However, when people feed ducks or when they become overpopulated, ducks can create adverse ecological conditions.

Overpopulated domestic and hybrid ducks can develop avian diseases that can be passed on to the wild, migratory waterfowl.

The amount of fecal matter produced by an abundance of overfed ducks can add sufficient nutrients to cause severe eutrophic conditions in small lakes. The waste also contributes directly to the biological oxygen demand of the lake. Anaerobic conditions can develop with all the attendant symptoms such as unsightly water and obnoxious odors Some lakes have developed into what is essentially a poultry waste lagoon.

Some nutrient input cannot be helped and must be accepted. However, the excessive waste produced by man-fed ducks needs to be controlled if the management goal for the lake is to maintain an aesthetically pleasing environment. There is usually plenty of natural food for the ducks in the water, including insects and plants. Moreover, bread, the food of choice, is not part of a duck's natural diet. It actually does more harm than good, adding calories with minimal nutrients. Ducks that are not fed by man eat their natural diet and help keep the lake clean, but ducks that can get an easy meal of bread, no longer forage. Ducks are greedy and will consume great quantities of handouts and still feign hunger to encourage people to feed them even more.

Another very serious problem caused by feeding bread to ducks is avian botulism. Bread and other food missed by the ducks sink to the bottom of the lake, rot and collect botulism bacteria. The botulism bacteria may than spread to flies and maggots, which the ducks eat. In turn the ducks may become infected. Avian botulism is commonly known as limberneck disease because it literally causes a bird's neck to go limp.

People love to feed ducks, but if they knew of the problems they were causing, they might reconsider. Signs prohibiting the feeding of waterfowl are not always effective. Education through the newspaper,and community flyers may be the answer. The town or other lake management board may consider implementing a substantial fine policy for the feeding of waterfowl in situations that warrant it.

Lake owners with an existing duck overpopulation problems should attempt to remove the waterfowl by all legal means but not without first contacting the local game warden.

Reprinted and extracated from *Lake Line* written by C.J. Eccher

An ounce of prevention is worth a pound of cure. With Nature, we only have one chance, and time is running out!

CSLAPpenings

While I would rather be happily looking at fall orange, yellow and magenta leaf hues reflected onto a lake palette, I am instead working - but not unhappily! - through the pile of "raked-up" Sampling Records and Observation Forms which indicates an abundant summer of CSLAP sampling! The "piles" exemplify the dedication, stewardship of volunteers and abundance of great data for this season. Over 770 CSLAP samples taken -- so far-- what a year you CSLAPpers have put in! And credit too, for the State DEC and NYSFOLA - financial and administrative support for this volunteer stewardship program of Lake monitoring in New York. Pat yourselves on the back!! Lets do some counting and measure to see what you have offered.

In this new millenium, the CSLAP has now enfolded some 174 participating lake associations, from Chautauqua County to Thousand Islands to Staten Island lakes. Of these, this summer your lake was a part of the larger population of 102 lake associations actively sampling throughout the summer. The associations may make good use of this CSLAP monitoring data to assist with Management Plans, control strategies, or use for other general information gathering - for assessing some possible changes in your lake water quality. In 2000, 225 CSLAP volunteers are out actively assisting, using CSLAP Protocol, and submitting those water samples to the State Wadsworth Lab for analysis. And this represents *(roughly)* 1200 volunteer hours for CSLAP this summer! Worthy of Olympic caliber mention, I think!

You also participate by sending us your plant specimens, for us to help you identify and monitor the plant growth you are experiencing. Keep those plants coming!! We have received well over one hundred plant specimens from at least 30 participating CSLAP lakes this year. And not all of them are milfoil!

You are also very responsive for our otherwise tiresome, but of course, necessary "bureaucratic" requests, such as those Management Questionnaires which can assist us in delineating your lake "problems" and options. Please respond, if you haven't already. Also, the CSLAP Field Observation Forms done with your sampling are a *very vital* part of the database here, and we use these for work with new EPA protection strategies, so please don't forget those with each water sample.

A year of abundance, too with the rain! On these Sampling Records, most volunteers are exclaiming about "The rain!!" this year. In the Albany area, we are over 11 inches above the "normal". You should hear more about all the rain in your individual report, or in the article *Ask Dr Lake* in this issue. And while the water chemistry results are still being analyzed, most of the volunteers were able to see what happens when rain, lots of rain, passes through our watersheds into our lakes. For many, this resulted in noted loss of clarity with increased algae blooms, more turbidity from the added silt, sediments and nutrients entering the lakes, as seen in the Secchi disk readings and your observations.

Thanks for your work. We all contribute to an important long-term stewardship program for our New York lakes. So, from us at the CSLAP Central Office, we hope you enjoy the colors and chill of the fall, and the promise of some quiet splendor at your lake.

Interested? To participate in CSLAP, your lake association must be a NYSFOLA member in good standing, and submit a CSLAP application, including names of committed volunteers, mailed to NYSFOLA. Questions, comments, request for application, or suggestions, please call DEC's Scott or Betsy at 518-457-0734 or 3345, or the NYSFOLA toll free number 1- (800)-796-3652.
Address: Betsy Hohenstein, DEC, 50 Wolf Road, Room 305, Albany, NY 12233-3508. Email bxhohens@gw.dec.state.ny.us

Web Pages and E-Mail addresses

WATERWORKS requests that you send in your e-mail addresses and your lake association homepage URL's. We will place your homepage in a new listing with other NY lakes and we will only use the e-mail when we have important legislation or other requests of that nature. Thank you

Water Conservation in your Home

Why should homeowners in New York be concerned about water conservation? Even in years when there is an abundant water supply, limited water usage in your household can save money, reduce pollution, and conserve energy.

Water conservation. measures can be especially helpful in a lake community by reducing unnecessary stress on septic systems or on-site wastewater disposal systems By conserving water, you minimize the likelihood of unwanted nutrients flowing into the lake, thereby reducing the rate of eutrophication. Conserving water also saves money in areas with a municipal water supply and sewage disposal. If less water is used in homes throughout the community, fewer chemicals are needed for purification, and operating costs are lower in the long-run for both water distribution systems and sewage treatment plants.

The following list from the EPA/NALMSLake *and Reservoir Restoration Guidance Manual,* outlines some simple steps you can take to help conserve water. Many of these practical conservation tips can be comfortably incorporated into your daily activities without causing a significant change in lifestyle. When you think about maintaining the beauty of New York lakes, these relatively simple, straightforward changes are well worth the effort!

Water Conservation Techniques

Inspect the plumbing system for leaks.

Install flow control devices in showers.

Turn off all water during vacations or long periods of absence.

Check the frequency with which home water softening equipment regenerates and backwashes. It can use as much as 100 gallons of water each time it does this.

Insulate hot water pipes to avoid having to clear the "hot" line of cold water during use.

Check all faucets, inside and out, for drips. Make repairs promptly. These problem get worse-never better.

Reduce the volume of water in the toilet flush tank with a quart plastic bottle filled with water (bricks lose particles, which can damage the valve).

Never use the toilet as a trash basket for facial tissues, etc. Each flush can use 5 to 7 gallons of water. Items carelessly thrown in could clog the sewage disposal system.

Accumulate a full load of laundry before washing, or use a lower level setting.

Internet and You!

We are in the process of modifying our homepage on the internet and in the near future you will see many changes to our look. Part of the reasons for change is that we want to make the site more interactive with the public's request for information. Many times here at the office we receive e-mail asking about a lake. Possibly about the fishing, cottage rentals, is it good swimming and a multitude of possible questions as you can imagine.

In this issue of WATERWORKS there is a survey asking a lot of these questions. We are going to distribute these surveys not only to our present members but to all lakes that we can possibly reach. NYSDEC has promised to help in this endeavor and from this info we will have a data base relative to many lakes. Also if homepages are included they will go to a page on our homepage listing the URL so that other folks can reach you without going through our office.

Some of our associations have very interesting Web sites and the info they furnish is readily available to the world. Now it is your turn to help. Return the survey with complete info and in the near future your homepage will be on a listing of New York Lakes at our webpage. Some lake names are the same so the listing will have to include the county of location to assist others, please be sure this is included.

Thank you for your assistance in this endeavor of unknown proportions.

"WATERWORKS" would appreciate information about your Lake Association and it's activities. Periodically I would like to have a page about your lakes. Just send to the office a page or so about your accomplishments (or failures) and other information about your lake. If you have a picture that you would like included this is also possible. I can convert digital pictures or if it is a photo it can be placed in the article as presented.

Also, the homepage address is; www.nysfola.org and the e-mail is ; fola@nysfola.org we have had other e-mail connections and if we all change our address file to this, I see no reason for any changes in the future as this is a registered website and furnishes the e-mail connection.

Available at the office of NYSFOLA!!!

"DIET for a Small Lake"; Joint Publication of NYSFOLA and NYSDEC relative to watersheds and lakes. Detailed instructions for preparing a Lake Management Plan; complete descriptions of Lake Restoration and Watershed Management Techniques; Comprehensive discussion of Lake Ecology.
Cost:- $20.00, includes s & h

"Managing Lakes Through Community Participation"; 25 minute video, Why Associations are formed, how they get started, tackling priority issues, case study, ties with local government and lake community.
Cost:- $15.00, plus $2.00 s & h

"Water Quality Monitoring in Lakes and Tributaries"; video; demonstrates the techniques used for water quality monitoring, based on procedures used for CSLAP. Useful for starting a monitoring program.
Cost:- $15.00, plus $2.00 s & h

"Through the Looking Glass"; A Wisconsin Lakes Partnership publication containing information on nearly all aquatic plants. For information contact the office.

Are your dues paid? Services can only be maintained with your help. Please stay current!

2001 Membership Fees- (computed on calendar year)

Lake, Watershed and other Associations;

Small Association, 10-74 members	$35.00
Medium Association, 75-149 members	$75.00
Large Association, 150 or more members	$150.00
Park Districts (Town, County etc.)	$200.00
Individual Membership	$20.00
Member of Lake Assn. **in good standing**	$10.00
Corporate Membership	$200.00
Student	$10.00

Member Information:-
Lake Association _____
Contact Name _____
Address _____
City, State, Zip _____
Telephone _____

Fee$_____
Donation $_____
Enclosed $_____

Lake location (county) _____

Send payment to NYSFOLA office ;
Phone/fax- 1-800-796-FOLA
E-mail— fola@nysfola.org

NYSFOLA
2701 Shadyside Rd. PO Box 342
Findley Lake, NY 14736

Calendar of Events

NALMS Symposium; The 20th annual NALMS Symposium will be held in Miami, Florida. This will convene on November 8 and finish November 10. With both pre-conference and post– conference sessions this will be a very fulfilling get-together. The beautiful Wyndham Hotel, Miami-Biscayne is the host location. For up to date info please contact NALMS at; www.nalms.org

NYS Wetlands Forum & Nature Conservancy; November 2, 2000, Peek 'n Peak Resort, Findley Lake, NY. Contact Diane Kozlowski 716-879-4433

10th Annual Southeastern Lakes Management Conference
March 21 – 23, 2001, Knoxville Tennessee
More info; ww.don-anderson.com/senalms2001

NYSFOLA's 18th Annual Conference; White Eagle Conference Center, Hamilton, NY on May 4-6, 2001. Information will be updated on the web page as well as in future issues of WATERWORKS.

Membership Fees

In order for all of us to have information as to our standing in the membership of NYSFOLA we have included a digit on your mailing label. This digit is relative your standing in our organization. Your membership fees are based on the calendar year and we appreciate that some associations cannot submit fees until mid summer. This is no problem.

If the digit is a "0" you are current for 2000, if by chance it is a "1" this means you are all set for 2001. If by chance the digit is a"7", "8", "9" or some other digit you will know when your organization last paid their fees. If you need an application to become current remove this cover and send with the appropriate fee.

This may not agree with your books and if so please contact the office so that it can be clarified. We have had organizations ask if we would send a bill each year. With a restrictive budget this only adds expense and if it can be avoided it is for the betterment of all our efforts.

Possibly we can send billings with the March-April newsletter as a reminder. The organization thanks you for your continued support.

WATERWORKS

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Please notify office if not,
Thank you