

Integrating aquatic pesticides with other strategies: Building on the terrestrial experience

Steve McComas

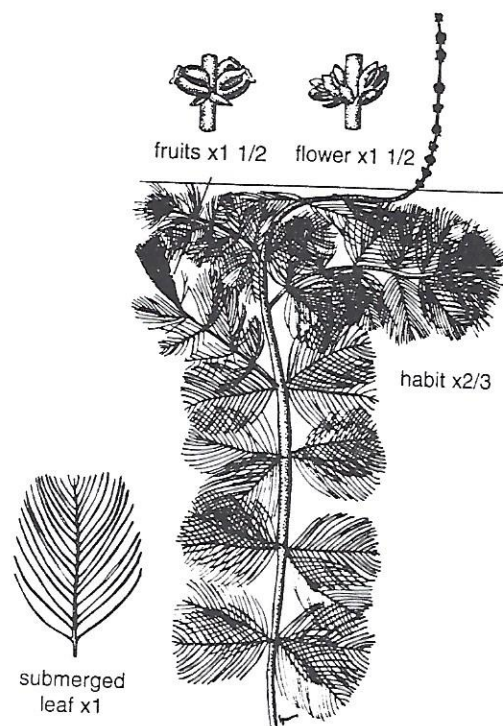
Aquatic pesticides have a place in aquatic plant management. When and where they're used is the subject of ongoing discussion among lake users, lake managers, chemical companies, and others. Because much more experience and application history is available from terrestrial settings than in aquatic settings, it's informative to look at the terrestrial experience. In addition, there is overlapping ecology between terrestrial and aquatic plants. After all, aquatic angiosperms apparently migrated from land to the water in the first place (Cook 1990 cited in Philbrick and Les 1996).

Weed control has a history going back to the beginning of agriculture. Food crops were selected from weedy-type species and have always done best in fertile soils. However, other weed species continued to do well in fertile soils and competed with food crops. The first type of weed control probably was handpulling, and is still used today in the garden (and in lakes). Eventually we developed various types of cultivators, which were either pushed or pulled, by us, an animal, or a machine.

Before the use of herbicides, we had devised some interesting cultivating methods. In the 1930s some farmers were planting 'check' fields using a planter wire. Planter wires were about 80 rods long and staked out on a field. The wire had 'knots' or splices spaced at 42 inches. When a horse drawn planter hit a knot on the planter wire it would drop seeds. When the planter made it to the end of the field, the wire would be moved over to the next row. When the corn came up it was in a checkerboard pattern. A farmer could cultivate up and down to get weeds between rows and then go crossways to get weeds within a row (cross cultivating). This was weed control without herbicides. However, there was a drawback. It was found that this spacing led to severe erosion on slopes. By the late 1930s, the newly formed Soil Conservation Service was discouraging this planting method.

We have adopted cultivating approaches as well as modifying agricultural equipment for use in lakes. The best example may be the scissors action of the McCormick reaper that was transferred to the mechanical harvesters still in use today. Most of the agricultural methods transferred to the aquatic environment are not perfect and they may have some short term acute impacts, but they play a role in aquatic plant management.

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Eurasian Watermilfoil

from the President

I would like to take a moment to congratulate our "Pilot Lakes" who are participating in NYSFOLA's Watershed Planning Program - as well as our Watershed Planning Committee. Some lake associations will have their formal plans completed in 1998. During the planning process, specific watershed problems are identified and prioritized. Once a plan is completed, implementation to address the problems can commence. Where necessary, sources of funding for specific projects can also be sought.

There is a possibility the Federation can expand the watershed planning program to additional member lakes in 1998. Accordingly, your association should contact the NYSFOLA office if you have an interest in the program.

The Federation is also taking a leadership role to address the problem of exotic aquatic vegetation such as Eurasian Watermilfoil. Currently we are seeking funding to further efforts to control Eurasian Milfoil and also to re-establish a Statewide Aquatic Plant Management Program. Our vision is to work with the scientific community to develop an organized plant remediation program for all nuisance species.

Promoting the passage of NYS Senate bill 3990 and Assembly bill A8206 is another important Federation initiative. The passage of these bills would amend the NYS Navigation Law by extending the "slow speed zone" from 100' to 200' from any shoreline, dock, or moored vessel.

Water safety which has been compromised by heavier motorized boating activity is the obvious rationale for extending the slow speed zone. There are, however, fundamental environmental reasons which include: reduction of sediment churning which causes water turbidity and the release of heavy metals into the water column, the reduction in shore-line erosion caused by boat wakes, the reduction in noise pollution, and an extended buffer zone for native wildlife.

Momentum for the above mentioned bills continues to grow. Lake organizations representing 8 to 9 thousand members have currently sent endorsement letters to NYSFOLA. Other organizations and respected professionals have also recorded their support. NYSFOLA will be sending a packet of endorsement letters to all NYS Senators and members of the Assembly in the near future. We would like to include your association's support letter and ask that members contact their representative in support of S3990 and A8206.

In closing, let me welcome sixteen new lake associations to the Federation. Be assured that we are ready to assist your organizations in any way possible to improve your lake environment.

Sincerely,

John V. Miller, President



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Cooperative Watershed Planning Project *by George Kelley*

Pilot projects have been established with six NYSFOLA lakes to develop watershed management plans which contain strategies designed to address water quality and stakeholder conflicts in each watershed. Seven eligible lakes in New York state were originally selected to participate in this pilot project. These lakes were Owasco, Queechey, Cossayuna, Silver, Findley, Oscawana, and Chateaugay. Key people with each of the NYSFOLA lakes attended the annual NYSFOLA meeting at Hamilton and participated in informational workshops outlining the steps which would be required of them in order to develop a useful watershed management plan.

Discussions about the watershed management projects during the May NYSFOLA Directors meeting raised many questions and concerns. This led to the appointment of an ad hoc Oversight Committee. Members selected were George Kelley, Chair; Polly Renckens; Rebecca Schneider; Lyle Raymond Jr.; Nancy Mueller; and John Miller, President of NYSFOLA. The committee was charged with maintaining contact with each project's personnel and facilitating their work as needed. To this end:

- ♦ 1. Polly Renckens became liaison to Queechey and Oscawana lakes.
- ♦ 2. Rebecca Schneider became liaison to Chateaugay and Cossayuna lakes.
- ♦ 3. Lyle Raymond became liaison to Owasco and Findley lakes.
- ♦ 4. George Kelley became liaison to Silver lake.

Each watershed project required a Mentor, a Lake Manager and a Scientist to provide leadership, compile existing information and establish communication links and dialogue with all stakeholder groups involved. The Project Leaders assessed their overall budgetary needs and submitted budget proposals and work plans to both NYSDEC and NYSFOLA. The EPA funding for these pilot projects had to be funneled through NYSDEC to the Central New York Regional Planning & Development Board and to Lake Champlain-Lake George Regional Planning Board, and ultimately to NYSFOLA and its projects.

As events evolved during this past summer, several changes occurred.

1. Owasco's pilot project received outside EPA funding, but our NYSFOLA Watershed Committee member, Lyle Raymond, continues to use his expertise and area-wide contacts to contribute to Owasco's management planning process.
2. The Silver Lake watershed commissioners elected to withdraw from our program. An up-to-date stakeholder survey to assess the current needs of all the Silver Lake watershed users will be developed.
3. The Cossayuna Lake project will be funded through the Lake Champlain-Lake George Planning Board.

In August, Don Keppel agreed to serve as the manager of funds and reports for the remaining NYSFOLA projects (i.e. Queechey, Oscawana, Chateaugay, and Findley lakes). The Oversight Committee will maintain liaison contacts with both Owasco and Cossayuna lakes as their watershed projects proceed.

All of the watershed projects have now submitted their budgets and work plans. Most have, or are developing, their State of the Lake Reports and surveys and are collecting other relative data. All the lakes seem to be supported by their county's Water Quality Commission. Each lake group expressed relief after the initial short-date deadlines were removed.

I am optimistic that these pilot projects will be completed in a timely fashion. These initial projects, hopefully, will serve as models to aid other NYSFOLA member lakes in developing their own management plans. Future funding may become available to assist other lakes and expand the NYSFOLA base of lakes which have management plans. Opportunities for grant moneys are already occurring, often with short-date deadlines. Watersheds which have management plans in place have an improved chance of success in receiving grants for which they apply.

Travel the Internet with us!!!

For all the computer buffs it is now possible to contact the NYSFOLA Office by E-Mail. We try to check the mail box every evening for messages or questions that you have. We can be reached at ;-

fola@epix.net

or check-out the NYSFOLA homepage at ;-

http://ourworld.compuserve.com/homepages/nys_lakes

Integrating pesticides- (continued)

Pesticides, in one form or another, have been used in North America for at least 140 years. In 1853, Mr. I.A. Petton from Mankato, Minnesota, told of the farmers' approach for controlling blackbirds that were devastating their cornfields, oatfields, and wheat fields. He said there were millions of the birds around night and day. Farmers soaked wheat and oats in a solution of strychnine and spread the mixture on their fields. Mr. Petton said it took ten years before bird numbers were reduced to make farming profitable (Leavenworth Wilder Morris 1976, p. 171-172). I don't think strychnine was used in lakes, but arsenic was. Arsenic was used for grasshopper control into the 1940s and was found effective for aquatic weed control as sodium arsenite (Surber 1931). Sodium arsenite was used to control coontail and Potamogeton species, but was not as effective on Elodea (Surber 1931). Even in 1931, there were questions about herbicide impacts on the lake environment. In a discussion with Dr. Surber, Dr. Carl Hubb stressed the importance of aquatic plants to a lake and was wondering if biological controls would be a better solution than arsenite (Surber 1931).

However, a new generation of herbicides was being formulated for agricultural use that replaced arsenic. The herbicide 2,4-D was developed in the 1940s and is still used on dicots (broadleaf plants), including dandelions, cocklebur, and smartweed. It is also used today for controlling dicots in lakes, especially Eurasian water milfoil.

With herbicide use on land there have been stops and starts. Even though some new herbicides were less acutely toxic than arsenic, not all were found fit for the environment. Rachel Carson's book *"Silent Spring"* in 1962 was an eye opener. In the last 30 years, the most damaging herbicides have been removed from the marketplace. However, in a recent review, Freemark and Bouten (1995) concluded that herbicide use continues to alter habitat patterns and produces adverse impacts on insects, arthropods, and birds. Nonetheless, we still use herbicides on crops knowing there is a chronic risk. In fact, several new formulations have just come out in 1997 and include Command 3ME (clomazone), Roundup Ultra (glyphosate), Raptor (imazamox), Stellar (flumiclorac and lactofen), Steel (three-way premix) and Touch-down (sulfosate).

**"we have just
poisoned a whole
world"**

Terrestrial herbicide use is more readily accepted than aquatic herbicide use. As a gage, look how it is regulated. For example, I don't need a permit to treat my yard with 2,4-D. A number of factors contribute to the acceptance or nonacceptance of herbicide usage on land and lakes. Terrestrial applications are often single-purpose and it is easier to get a consensus. With food crops, the purpose is to enhance corn growth and reduce all other plant competition. Farmers and consumers are pretty much in agreement that this is a good deal. For roadside ditches, the woody growth needs to be kept down for safety reasons, and for golf courses, you want to be sure there are no dandelions on the 18th green at Augusta National during the Master's Tournament. Herbicides often are the cheapest way to get this done.

Lakes have multiple uses and some lake uses present conflicts. The ski club that maintains a championship slalom course in the littoral zone has a different view of weed control than the bass club that wants to maintain weedlines. A conservation agency that also has regulatory powers has to accommodate a wide variety of interests, and typically they take a long-term, conservative approach for managing lakes.

However, there may be other considerations in addition to the single use, multiple use factors. We value lakes over other types of ecosystems maybe because they are rare and mysterious. Seldom on a tract of land, do we drain a 600-acre lake to build houses and save the adjacent 600-acre pasture. It is usually the other way around. Also lakes are mysterious, representing a habitat we can visit, but can't live in - a self-contained and a small world unto itself. If we use herbicides on 100 acres of soybeans, the field abuts thousands of acres of other lands. The soybean treatment is only a "spot" treatment. With an herbicide treatment in a 100-acre lake, we have just "poisoned" a whole world.

That strikes a nerve with many. Part of it may have to do with what scientist Abe Lehrman has referred to as "man's limnetic drive," which is the need to be near water, knowing that water is essential for survival. Cities have always had

Table 1. Tools in the tool kit for aquatic plant management.

	Large-scale efforts (multiple species as well)	Small-scale efforts
Herbicides	X	X
Mechanical harvesting	X	X
Drawdown	X	-
Grass carp	X	-
Weed cutters, drags, etc.	X	X
Bottom barriers	-	X
Aquatic insect controls	X	-

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to be near water, but how many parks can you think of that aren't near lakes or rivers? If the park doesn't have water, we bring it in and build fountains, swimming pools, or other water features. Perhaps our perception is that using herbicides in lakes threatens our life-giving water source. Through the years "media" science, which is influential in shaping public perceptions, has often over-emphasized the real dangers of aquatic herbicide use.

Nonetheless, aquatic herbicides are still legal to use and are one of the tools in the tool box. My preference is to minimize potential chronic adverse impacts from herbicide use, and look to other options, leaving the use of herbicides as a "last resort" option. Some of the tools in the aquatic weed control tool box are summarized in Table 1.

Generally, aquatic plant management, much like terrestrial plant management, consists of control and enhancement. In a lake with nuisance vegetation it is probably only one or two plant species that are causing recreational problems. Large-scale efforts which are non-selective and take out the unobtrusive native plants to get the exotics may be "overkill," but sometimes acceptable. For example, for exotic plant control I've supported a lake draw down rather than a whole-lake herbicide treatment. I thought catastrophic damage was better than chronic risk, although in this case it was cheaper too.

But the trend is to be selective when you can. The way to do that is to obtain a better understanding of the nuisance species. Basically "know your foe."

Because the aquatic herbicide market is smaller than the terrestrial market, companies do not have the money to bring to market herbicide formulations are available as compared to terrestrial choices. We are stretching the existing registered aquatic herbicides to work for a variety of nuisance plant species.

"know your foe"

smaller than the terrestrial market, companies do not have the money to bring to market herbicide formulations are available as compared to terrestrial choices. We are stretching the existing registered aquatic herbicides to work for a variety of nuisance plant species.

So if new herbicides can't be brought to bear on selected species, we should continue to actively pursue other control options. The better we know the ecology of plants the better we can manage them. Nitrogen management is a case in point. After taking away the influences of bed slope, temperature, photoperiod, alleopathy, light-penetration, inorganic carbon distribution, an important influence on the plant community is nitrogen. Within the littoral zone of a lake, sediment nitrogen concentrations are probably a major influence on community structure, not always dictating species presence or absence, but rather which species dominates.

This is supported from evidence that nitrogen exerts a strong influence on the terrestrial side. For single species ecology

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Table 2. Similarities and differences between terrestrial and aquatic settings (taking some liberties).

	Terrestrial Setting	Aquatic Setting
Number of angiosperm species	370,000	7,400
Examples of slow growing C-4 plants	prairie grasses	Potamogeton pondweeds
Examples of fast growing, high nitrogen needs, weedy, plants (C-3 plants)	dicots - shrubs	dicots - EWM
Typical limiting nutrient	nitrogen	nitrogen
Plant Management Objective	control & enhancement	control & enhancement
Weed control setting	single-use	multiple-use
Common herbicide for weedy dicots	2, 4-D (dandelions)	2, 4-D (Eurasian water milfoil)
Herbicide experience	wide experience	less experience
Herbicide impacts	benefits with some adverse impacts	benefits with some adverse impacts
Mechanical harvesting technique	McCormick Reaper	Hockney Weed Cutter
Cultivation impacts	erosion	nutrient resuspension
Insect impacts	substantial - often a pest	learning - trying to use them to control weeds

"WATERWORKS" would appreciate information on your Lake Association. I plan to have a page set aside each issue for a different Association. Let's make your's next! Forward your write-up to the office by mail, fax, E-mail or pony express, but start now. Pictures can be included.

Thank you, Editor



Ask Dr. Lake

In this issue, Dr. Lake wanders away from his main area of expertise in the aquatic sciences and answers questions on "The Watershed Approach to Lake Management"

Dr. Lake, I keep hearing about "The Watershed Approach to Lake Management". What is it and what does it have to do with watersheds?

Long ago, in a not-so-distant galaxy (ours), most experts thought that lake problems could be solved just with good science. If we studied the lake carefully enough and took enough samples, the condition of the lake would lead us all to the ultimate enlightenment of what to do next. Then, as the limitations of this approach became apparent, someone suggested that there also needed to be a certain degree of engineering which had to be thrown into the mix. Together the science and the engineering led to a clean-up of many of our nation's lakes.

Why wasn't that good enough?

Well, my guess is that after the relatively easy lake management problems were solved, such as too much phosphorus entering lakes from big sewage treatment plants, the problems that were left over couldn't be solved by traditional data collection and civil engineering approaches. Lake Managers began to realize two things: **1.** There is more to life than science and technology, and **2.** not only is the public not stupid, but in fact, people other than experts can contribute in solving lake management problems. Legal, social, political and economic aspects also need to be considered to solving lake management problems. Thus the "Watershed Approach" was born.

What's a watershed?

As a strict technical definition, a lake's watershed is defined as the land area that contributes water to the lake. It can be drawn on a map by connecting the high points on the terrain that surrounds the lake with a line. One can think of the watershed as the lake's "neighborhood", in which the human inhabitants make use of the lake's water and its surrounding land. The problem in defining the lake's watershed as its neighborhood is that the watershed boundary overlaps political boundaries and the watershed may encompass many towns, villages, cities, counties, states and sometimes even countries.

So that means that to develop a plan to manage the lake and surrounding land, it is necessary to work with elected officials from each local community?

Right. New York State has a lot of local governments, each with their own jobs to do. It is important to find out who each elected official in your watershed is and what their views on lakes issues are.

continued next page

What about other groups that use the land and water? Don't all these uses of the lake conflict?

Yes. The trick is to minimize conflicts among lake users. The common uses of the water are as a drinking water supply, swimming, boating and fishing. Industrial, residential, agricultural and commercial use of the land and water generate pollutants which eventually find their way to the lake. All these uses of the land and water conflict with each other. In developing a plan it is necessary to involve as many individuals and watershed groups as possible, from lake associations and fish and game clubs to chambers of commerce and government officials. A diverse lake management team is needed to "play the game".

What's the best way to minimize use conflicts?

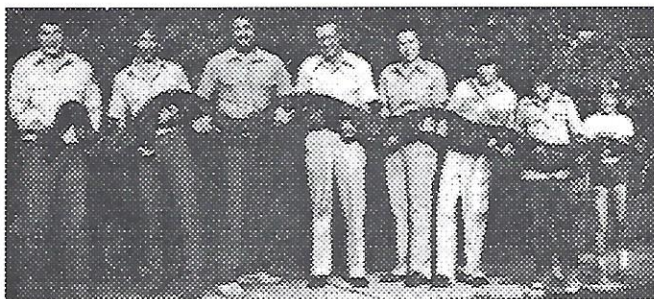
First, get the facts. The scientific facts about such things as nutrient levels and the condition of the fishery need to be collected in a consistent fashion and documented, so that both scientists and other users of the land and water can understand the technical facts. You can't come to much agreement on how to manage the lake, unless everyone agrees to the facts.

Are technical facts the only basis for making decisions?

No. It is just as important to find out what various individuals and groups that use the lake think about such issues as water quality, boating safety, etc. Interviews, public opinion surveys and public meetings are good tools to use to gauge user perception. Economic, legal and political information also make up the factual base for lake management decision-making.

Once you've completed the "fact-finding" stage, what's next?

Well, now that you have both technical and other factual information and all the user groups in the watershed have agreed to collection of facts, it is time to ask them the following question: Based on your use and perception of the lake, what do you recommend? This preliminary list of recommendations is then combined and shared with the various watershed groups. By trading recommendations, the groups can develop a lake management plan.



This all sounds so simple. What's the catch?

It sounds much simpler than it is in practice. The process is tedious and can be very frustrating. The trading process only works, if every group gets some of its recommendations into the final plan. Also, there can be no recommendations that of-

fend any group or the group will withdraw its support from the entire package. It is like one of those photos of the people in the zoo all holding the big boa constrictor. If any of the "snakeholders" let go, the snake will escape, disrupt the zoo and possibly eat one or more of the human handlers.

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Integrating pesticides- continued from page 5

(largely in the agricultural sector) and for community ecology (forests and prairies), nitrogen seems to rule. For example, prairie grasses, which are monocots, are characterized as slow growing, low nitrogen users. However, a number of dicots, which are fast growing, but with higher nitrogen requirements, become important when nitrogen is added to test plots (Chapin 1980, Turner and Knapp 1996, Wedin and Tilman 1996).

On the aquatic side, the pondweeds, (*Potamogeton* species), are monocots, and many of these pondweed species seem to have slow growing, low nitrogen requirements. However, Eurasian water milfoil is a dicot, and apparently has a high nitrogen requirement (Wakeman and Les 1994 a and b). In fact, when nitrogen is added to test plots, Eurasian water milfoil growth increases (Anderson and Kalff 1986). Maybe nitrogen reduction is a tool for the tool box and could reduce nuisance growth characteristics of some exotic plants. It's been brought up in the past (Barko and Smart 1986, Barko et al 1986, Barko et al 1991). Watershed BMPs should look at nitrogen as well as phosphorus reduction. Because there are similarities between terrestrial and aquatic experience (Table 2), we should continue to pursue findings that may lead to selective aquatic plant species management

In summary, the tools in the tool box are needed to control only one or two nuisance species in a lake. If we could keep the problem plants from matting at the lake surface, we would solve a big component of nuisance plant problems. Tools that address that part of the problem will be helpful. Aquatic plant management is generally being conducted on a lake-by-lake basis. Infertile (mesotrophic) lakes respond differently to control methods than fertile (hypereutrophic) lakes. We need to use the right tools for the job, and not rely on just one method. As the old(modified) saying goes ... if the only tool in the toolbox is a hammer, then every plant species looks like a nail.

Editors note: This article is reprinted from the NALMS "LAKELINE" magazine, May 1997 issue. The literature referenced to, and the pictures that were in the original article have been deleted. Anyone wishing this information, please contact NYSFOLA office for a copy.

NYSFOLA Membership

Do you know of a lake association or individual that is not a member of NYSFOLA? The possibility exists that a neighboring lake association is not presently a member. The organization can not grow and be of more service to your lakes without an increase in the membership. Presently with the volunteer help and reduced expenses the organization is viable.

With more activity in CSLAP and the Watershed Programs we now are focusing on the potential of more lake associations being able to participate. NYSFOLA has been able to publish this newsletter quarterly, operate the office, answer your many questions and forward information to your requests. Please assist us in recruiting new members.

INTERNET CONNECTIONS

Does your Lake Association have a web-site? NYSFOLA will include your home-page address and some information on our homepage if you will forward information to the office. Please include all pertinent address configurations and a short biography of your lake and association. Hopefully in the near future you will find connections from our web-site to other associations in our organization. If there is an e-mail address and you are willing to network with other associations please include this also. Information to grass carp use, chemicals, boating laws etc. are excellent connections with all lakes. Forward your info by e-mail to the office and we will build a large network of New York State Associations. There is already connections between NALMS and NYSFOLA, why not join-up world-wide.

*Enjoy what Mother Nature gives us,
Before Father Time takes it away!!*

CSLAPpennings

Tired of not knowing anything about the water quality of your lake...?

Tired of wondering what kind of fish you can catch with a Secchi disk?

Tired of not being part of one of the most successfully volunteer monitoring programs in the world?

Just plain **Tired**?

If these apply to you (except for the last one), then

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Each year the Federation of Lake Associations and the NYS Department of Environmental Conservation expand the Citizens Statewide Lake Assessment Program (CSLAP) by bringing more lake associations into the big tent. While we don't yet know how many additional lakes will be sampled in 1998, we are now building a waiting list of interested lake associations. So if your lake association is a member of NYSFOLA*, has never participated in CSLAP, and would like to join the more than 150 participating lake associations, call Don Keppel at 1-800-796-FOLA to complete an application form over the phone! New participants are invited into CSLAP on a first-come, first-added basis, so don't delay! Don't be the last lake association on your block to join CSLAP! **Hurry now!**

*- as of January 1, 1998.



Dr. Lake, (continued from page 7)

What's the final product of this process?

The final product is a written lake management plan. It can be viewed as a locally-derived document, which can be used to justify both local and outside funding for lake management activities. It is, in essence, a marketing tool and grant application. Today, with expanded sources of State funding for environmental protection and restoration, having a lake management plan can be quite beneficial. In fact, much of the New York Clean Water/Clean Air Bond Act is based on implementing watershed management plans for water bodies, like Lake Champlain, Long Island Sound and the Hudson River.

These water bodies are large. What about small to mid-sized lakes that FOLA members live around and care about?

NYSFOLA, in cooperation with NYSDEC has initiated a pilot project to develop watershed management plans for these types of lakes. At present, the project is developing plans for six lakes: Owasco Lake, Queechy Lake, Findley Lake, Cossayuna Lake, Oscawana Lake and Chateaugay Lake. The status of this project is covered elsewhere in this issue of *Waterworks*.

For more information on the material covered in this article, contact NYSFOLA or NYSDEC Lake Services Section at 50 Wolf Road, Albany, NY 12233

or: Gena Gallinger- 518-457-0736

Jay Bloomfield- 518-457-0731



Annual Conference

Is this your home away from home? Come join others at the White Eagle Conference Center, Hamilton, NY on **May 1-3, 1998**. The CSLAP training will be expanded and renewed this coming year as well as information from the Watershed Pilot Project Lakes. Plans are now just underway as to the balance of the program.

This cottage is one of the many used by NYSFOLA. All units self contained and heated!!!

Picture courtesy of Elaine Cook, Silver Lake Association

Available at the office of NYSFOLA!!!

"DIET for a Small Lake"; Joint Publication of NYSFOLA and NYSDEC relative to watershed and lake.

Detailed instructions for preparing a Lake Management Plan; complete descriptions of Lake Restoration and Watershed Management Techniques; Comprehensive discussion of Lake Ecology.

Cost:- \$10.00, plus \$2.00 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

"NYSFOLA 1995 Conference Proceedings"; attend the 95 Conference at Cooperstown from your armchair.

Cost:- \$3.00 includes s&h

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(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@epix.net

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

Calendar of Events

NALMS 17th Annual International Symposium
to be held at Houston, Texas December 3-6, 1997 .
For information call 303-781-8287

NYSFOLA 1998 Annual Conference-
White Eagle Conference Center, Hamilton, NY
May 1,2,3, 1998

Regional Volunteer Monitoring Conference-
Nov. 14-16, Wilson College, Chambersburg, PA
Contact- Judy Taggart, 703-548-5473

" Team Wetlands" Conference
April 15-17, Hyatt Crystal City, Arlington, VA
Contact- Judy Taggart, 703-548-5473

Applications of Wetland Science in NY State
April 9-10, Empire State Plaza, Albany, NY
Contact- Barbara Bell at 518-587-8100

Home*A*Syst

In the spring of 1997 Cornell Cooperative Extension launched an education program aimed at homeowners in the Skaneateles and Otisco Lake Watersheds. The Home*A*Syst program, as its' called, offers property owners the opportunity to conduct environmental risk assessment on their property. Through the process, the homeowner becomes aware of and remediates any potential pollution on their property. The Home*A*Syst guidebook was developed by the USDA Cooperative Extension Service and the Natural Resources Conservation Service, and the Environmental Protection Agency. It is a national program and other counties in the state as well as other states are conducting their own version of Home*A*Syst assessment.

The Home*A*Syst program offers free, technical assistance to non-agricultural watershed residents. Residents call for an appointment explaining their concerns (if they have any) and we go to their property to conduct a site assessment. Quite often the issues revolve around erosion control on shorelines or streambanks or water quality of their drinking water well.

Plans for expansion are under way, For more information contact Sheila Myers at Cornell Cooperative Extension of Onondaga County at 315-424-9485

WATERWORKS

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