



Massachusetts  
Congress of  
Lake and Pond  
Associations, Inc.  
[www.macolap.org](http://www.macolap.org)

Winter 2009

# Water Wisdom

## President's Message

Winter 2008 - 2009

By Al Collings, MA COLAP President

Dear members and friends of MACOLAP, welcome to this second MA COLAP Water Wisdom newsletter and thanks to Frank Lyons for undertaking the coordinator's role to get this letter completed. Thanks also to those who contributed articles.

The 22nd MA COLAP Annual Winter Workshop is scheduled for Saturday, January 24, 2009 and again is under the

capable direction of Carol Hildreth. This will also be the time for our annual meeting and you can read the notices elsewhere in this newsletter.

One of the MA COLAP Board of Directors' objectives this year was to seek financial support for the activities of the organization by distributing a dues request for the fiscal year beginning October 1, 2008

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## Managing Dams for Natural Streamflow

By Joanna Carey, Instream Flow Specialist  
Riverways Program, Dept of Fish & Game

Many readers may be familiar with efforts by the Massachusetts Riverways Program (a division of the Department of Fish & Game) to remove unwanted and deteriorating dams for ecological benefit, including fish habitat improvement. While dam removal is highly ben-

power. Most, if not all, COLAP members are associated with these latter types of impoundments. In these instances where dam removal is not feasible, proper flow releases, or "dam management", can significantly mitigate the negative impacts of dams on downstream river health.



eficial to rivers, there are some dams that will never be removed because they serve important societal functions, such as recreation, water supply, flood control, or hydro-

Releasing appropriate amounts of water from dams is one of the most important actions a community can take to protect the ecological integrity of their rivers and streams.

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## Aquatic Plant Surveys

How to Perform the Right Survey for Your Lake

By Gerry Smith & Marc Bellaud, Aquatic Control Technology, Inc.

Along with water quality testing, aquatic plant surveys are one of the most important and fundamental aspects of pond or lake monitoring. All waterbodies, regardless of their existing condition or use, should have a plant survey performed at some regular interval. A baseline survey performed annually can provide early warning of a

new invasive plant infestation and is a relatively simple and low cost effort to avoid a potentially widespread infestation and costly management program in the future. If, on the other hand, your pond or lake has a new or recent infestation of an invasive plant, then multiple and thorough surveys may be needed

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## Aquatic Plant Surveys

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during the summer. Generally, two or more plant surveys during any given year – “before and after” management – are necessary to gauge effectiveness and potential impacts on non-target plants. This holds true whether management is chemical (herbicide) treatment, drawdown, mechanical harvesting, hydro-raking or another management technique.

A number of lake associations and volunteer groups are already performing their own plant surveys, thanks in large part to valuable guidance provided through MA DCR's Weed Watcher Program and the technical support provided through that program. Regardless of the survey detail and field methods employed, there are a number of simple steps that should be employed to provide a quality survey. These steps include:

- **Use good base maps that are drawn to scale**

Suitable base maps include; USGS quadrangle maps, Town assessors or topographic maps and orthophotos

- **Repeat annual surveys at the same time of year** - If resources and time only allow for one survey per year, typically mid/late summer is best, seeing how most plants will be present and at their maximum abundance.

- **Pick the best weather days** - Sunny days and a calm water surface allow for maximum visibility in order to see plants that may be well below the surface. Wearing polarized sunglasses can also help in that regard.

- **Establish benchmarks for water levels, water clarity and extent of plant growth** - Changes in clarity perhaps due to increased algal abundance or low water (drought) conditions may help to explain differences in the depth/area in which plants are growing and their abundance and height throughout the water column from year to year.

Plant identification is critical, especially so for the more dominant plants and to identify non-native and invasive plants. There are many good and “user friendly” plant guides now available, including those from MA DCR and other sources on the internet cited below. Remember to take lots of pictures, including close-up photographs of individual plants as well as the overall plant infestation as viewed from the survey boat. When retaining specimen plants be sure to collect the entire plant including stems, foliage, growing tips of the plants and seed-heads and flowers, if they exist. You might also collect a few specimen plants and loosely wrap them in a moist paper towel and keep refrigerated

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# MA COLAP's 22<sup>nd</sup> Annual Lake and Pond Management Workshop

Student Center, Worcester State College



Saturday, January 24, 2009

8:00 AM to 3:00 PM

(Snow Date: Sunday, January 25)

Call 508-429-5085 for message

## Stormwater, Dams, Wildlife & Lake Partners

Sen. Stephen Brewer & Rep. Jennifer Callahan (invited)  
– Legislative Issues

*Peter Coffin, Blackstone River Coalition -  
Lakes & Ponds and Stormwater Planning*

## BEAVER ISSUES

### A Panel of Experts Seeks Your Input

*Herb Bergquist - Comm. for Responsible Wildlife Management (CRWM)*

*Chris Dwyer- USF Wildlife Service*

*Malcom Speicher-Spencer Beaver Manager*

*Laura Hajduk-Mass DFW Furbearer Wildlife Biologist*

*Ken Wagner, Ph.D., AECOM*

*North American Lake Management Society  
(NALMS) Update*

*Anne Monnelly, Acting Director, Office of Water Resources  
Mass DCR Lakes and Ponds Update*

### Exhibits and Workshops Include:

Integrated Lake Management (Lake and Pond Restoration Techniques for the Novice)

STREAMFLOW ISSUES AND DAMS

Using the **GEIR and DEP Guidance Documents** for Lake & Pond Management Permitting (2 hours)

**An educational mock ConCom Meeting** on Lake Projects

HAND-PULLING VARIOUS AQUATIC WEEDS, including Milfoil, Purple Loosestrife, Phragmites

BEAVER ISSUES: A Panel of Experts!

DAM REPAIR, OWNERSHIP & Other ISSUES

STORMWATER MANAGEMENT PLANNING (EPA Phase 2 Plan Development at the Local Level)

Lake Management Results, including Deep DRAWDOWN with PUMPING, CANADA GEESE, Efficiency results for Pollution Removal BMPs AND LIDS

The RIGHT AQUATIC PLANT SURVEY FOR YOUR LAKE

The Ultimate GREEN LAWN without Fertilizers, Pinpointing Leaking Septic Systems, and Solving these problems and FUNDING SOURCES!

AQUACLEAN - A New pond cleaning technique

**The Inserted Flyer has a detailed Agenda, Driving Directions and Registration Form**

**You may also find this information and Register on the Internet at [www.macolap.org](http://www.macolap.org)**

## Whitin Reservoir Watershed District Created June 2008

At their organizational meeting on June 16th 2008, the property owners of Whitin Reservoir, Douglas, Mass., voted by a large majority to form the Watershed District.

The process involved an Act of the Legislature, specifically enabling the property owners to go forward with the necessary steps to vote at the June 16th organizational meeting. The Enabling Act of the Legislature was filed in September 2007 and finally signed by the governor in May 2008 (after slight modifications).

Creation of the Watershed District, a subdivision of the Douglas town government, with taxing authority, gives its members the mechanism to acquire the dam and the water rights at a later date by eminent domain taking

or by direct purchase.

At the June organizational meeting, property owners voted to appropriate the sum of \$30,000.00 for an appraisal of the dam (currently underway), for possible engineering costs and for miscellaneous other expenses such as mailings. Although none of this money is earmarked for the expense of owning a dam, the Board of Directors of the Watershed District has estimated that the cost to run the dam once it is acquired is approximately \$30,000.00 a year.

The estimated cost to each property owner is about 60 cents per thousand dollars of valuation. In other words if your property is valued by the Town at \$300,000.00, the additional tax for being part of the Watershed District would be \$180.00 per year.



# Managing Dams for Natural Streamflow

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In fact, streamflow is considered the 'master variable' (Poff et al. 1997) that controls many other aspects of river health, including water quality, habitat, and biological community structure. Historically, efforts to protect rivers have focused on only one aspect of water quantity: maintaining minimum streamflow levels. Today, we know that providing a range of flow conditions – described as a 'natural flow regime' – is essential to river health. In the Northeast, the natural flow regime is typically represented by high spring flows (driven by snowmelt and storm) and low summer flows, with considerable variability throughout the year and between different years. The alteration of the natural flow regime is often cited as the most serious and continuing threat to ecological sustainability of rivers (Bunn and Arthington 2002).

Current lake management practices, specifically drawdowns and refills, significantly alter the flow regime of the rivers located below dams. Contrary to a 'natural' flow regime, this practice reverses the seasonal timing of high

and low flows in these rivers and streams. Drawdowns increase the flow of rivers in the fall when the lake level is lowered and refills decrease down-



stream flow in the spring when the lake is refilled. In addition, releases from dams are often not managed for seasonally appropriate flows between the drawdown and refill, as most dam managers release a 'minimum flow' from April until November. Releasing minimum flows results in relatively constant streamflow, an unnatural situation that is disadvantageous to aquatic organisms, as they depend on seasonally appropriate and variable flow patterns for survival.

Currently, lake drawdowns are implemented using the Eutrophication and Aquatic Plant Management Generic Environmental Impact Report (GEIR), section 4.2. At the time of its creation, the GEIR used the best available science, but streamflow science has since evolved

and many advances have been made in Massachusetts in particular.

In order to mitigate the effects of inadequate or poorly timed dam releases on downstream river health, the Riverways Program has developed site-specific dam management plans in the form of monthly flow range recommendations using the 2008 Index Streamflow Methodology for Massachusetts (MA DCR 2008). The goal of these plans is to improve ecosystem health downstream of impoundments by restoring a more natural flow regime. Currently we are working with local partners on four impoundments in the Housatonic Valley to implement these flow recommendations.

Our flow recommendations expand on the GEIR

than the current requirements. We hope that lake associations and Conservation Commissions throughout the Commonwealth will use these flow recommendations in crafting and implementing management plans so that streams below managed lakes experience more natural streamflows and improved river health. Conservation Commissions may also incorporate these recommendations into Orders of Conditions for drawdowns and other dam-related activities.

If you are interested in learning more about Riverways Dam Management Plans, please call or email Joanna Carey at (617) 626-1541 and [joanna.carey@state.ma.us](mailto:joanna.carey@state.ma.us). Joanna will present this information in further detail at the January COLAP meeting.



## References:

Bunn, Stuart E., and Angela H. Arthington (2002). Basic Principles and Ecological Consequences of Altered Flow Regimes for Aquatic Biodiversity. *Environmental Management*, Vol. 30, No. 4, pp 492-507.

Massachusetts Department of Conservation and Recreation (MADCR) Office of Water Resources (2008). 2008 Index Streamflows for Massachusetts.

Poff, N. LeRoy, J. David Allan, Mark B. Bain, James R. Karr, Karen L. Prestegard, Brian D. Richter, Richard E. Sparks, and Julie C. Stromberg (1997). The Natural Flow Regime; a paradigm for river conservation and restoration. *BioScience*, Vol 47, No. 11, pp 769-784.

by providing a range of recommended flows on a monthly basis. In order to meet these recommendations, extended periods for drawdowns and refills are often required. The flow recommendations also include drought considerations and in most cases, the July and August flow recommendations are slightly lower

## Aquatic Plant Surveys

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for identification at a later date. Most professionals are generally receptive to look at a few photos that have been e-mailed to them or identify an occasional plant specimen that has been sent overnight mail.

### Visual or Qualitative Surveys:

These surveys can be performed by trained volunteers or professionals. They can be used to 1) characterize noticeable changes in dominant aquatic plant assemblages, 2) map invasive species infestations and/or 3) provide a "generalized record of the aquatic plant community. Plants are noted visually and are also collected with a "throw-rake" or examined sub-surface with the use of an "Aqua-Vu" type of underwater camera system, available from suppliers like Cabela's or Bass Pro stores. In some cases, plant inventory requirements may require use of SCUBA Divers, especially in deeper waters or where accurate estimates of plant density and cover are needed along with bottom substrate composition to determine whether certain techniques such as hand-pulling or suction harvesting are feasible.

These surveys are commonly performed from a boat by traveling around the entire shore-

line being sure to check for plants in water depths up to the maximum depth to which plants can be found growing. In this regard a bathymetric (depth) map is helpful. The depth to which plants may grow is limited primarily by the availability of light. Rooted plants are generally found to a maximum depth of 15-20 feet in very clear water and 10 feet or less in more turbid or darker colored waters. Where water depths drop off sharply and plants are confined to a narrow band along the shoreline, a single pass in a "zig-zag" pattern may suffice to obtain a representative look at the plant community and the dominant species found there. If the waterbody contains large, shallow coves and expansive areas are capable of supporting plants, then multiple passes at various intervals/depths from shore may be required. Most commonly this type of survey approach can provide adequate data and

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## Notice of MA COLAP's 2009 Annual Meeting

The 2009 Annual Meeting of the Massachusetts Congress of Lake and Pond Associations, Inc. will be held as part of the 2009 Annual Workshop beginning at approximately 9:00 am on Saturday, January 24, 2009 (snow date January 25, 2009) at the Student Center at Worcester State College in Worcester, MA. In addition to various reports and proposed by-laws changes, the following officers and directors will be proposed for election:

Al Collings, President - Lake Wickaboag  
afc@charter.net

Frank Lyons, Vice President - Hop Brook P.A.  
franktlyons@verizon.net

Carol Hildreth, Acting Secretary - Whitins Reservoir  
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Jeanne Lepage, Treasurer - Lake Wickaboag  
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Mark Briggs, Director- Lake Singletary  
markbriggs@yahoo.com

Dan Dick, Director - Tatnuck Brook WA  
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Jack Hickey, Director - Pontoosuc Lake  
jhickey@jhrccs.com

Jackson Madnick, Director - Wayland SWQC & Dudley Pond, jacksonmadnick@msn.com

Judi Peters, Director - Lake Samoset  
olivia@facelady.com

John Reed, Director - Tatnuck Brook WA  
johnreed3@hotmail.com

## CONTRIBUTIONS TO OUR NEWSLETTER AND WEBSITE ARE WELCOME

**If you or your association have any material that you feel would be of interest or value to others, then please send it to our Newsletter Editor, Frank Lyons at [franktlyons@verizon.net](mailto:franktlyons@verizon.net).**

**Please be advised: There is no guarantee of publication; all submissions are subject to editing for content and or length. Do not send valuable, one of a kind, original, sentimental or legally important photos, slides, or documents by mail as there can be no guarantee of their safe return.**



## President's Message

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and ending September 30, 2009. Membership categories are: Chapter Member Association (Voting) (\$40.00); Individual Member (Non-Voting) (\$20.00); and Student (Non-Voting) (10.00). As of the date of this writing, sixty-four responses have been received for a total of \$2,020.00. Thanks to those who already have sent their checks. The dues request is our only source of financial support. If we are to continue this newsletter, the website and the monitoring and reporting of regulatory activities, we need everyone to contribute. There is still time to participate by sending a check to our post office box or by bringing a check to the January Workshop.

I mentioned at the 2008 January workshop our desire to support additional chapters of MA COLAP in the eastern, northeastern and Cape Cod areas of the state as well as revive the Central MA COLAP chapter. The model for a successful chapter continues to be LAPA West in Western Mass. Local chapters can create a local forum for exchanging ideas to solve lake and pond management issues. To do this we need volunteers. Contact any member of

the board of directors or me if you are interested in a chapter in your area. Please feel free to contact me with any comments or questions. Al Collings, President  
Tel: 508-867-7165  
E-Mail: [afc@charter.net](mailto:afc@charter.net)

### Proposed By-Law Changes Annual Meeting January 24, 2009

#### Article VII

Officers and Board; Section 2. Officers: Enumeration, Election and Term of Office

As Stated: The officers of COLAP shall be a President, Vice-President, Secretary, and Treasurer. These officers shall be members in good standing of their respective member associations and will be elected for a term of one year at the Annual Meeting and shall serve until the next Annual Meeting of COLAP.

Suggested Revision: The officers of COLAP shall be a President, Vice-President, Secretary, and Treasurer. These officers shall be members in good standing of their respective member associations and will be elected for a term of two years at the Annual Meeting and shall serve until the

next election of officers and directors at an Annual Meeting of COLAP.

Reason for the change: Since serving as an officer of COLAP is a volunteer commitment and finding qualified and willing individuals is a very great challenge, a longer term should ensure continuity of leadership.

#### Article VII

Officers and Board; Section 3. Duties of Officers - third paragraph

As Stated: The President and Vice President shall

not serve more than two consecutive one year terms in the same office. Suggested Revision: The President and Vice President shall not serve more than two consecutive two year terms in the same office.

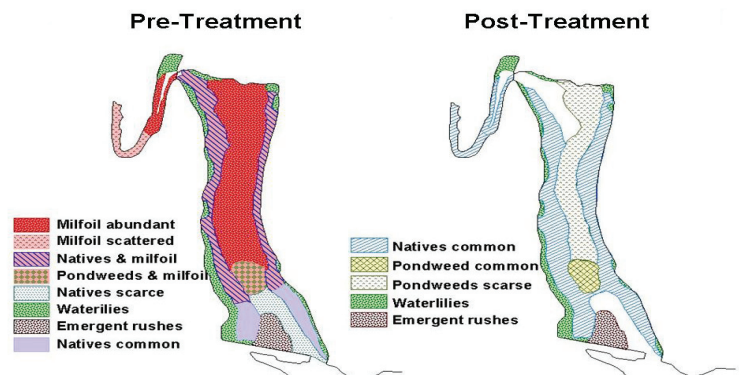
Reason for the change: Since serving as an officer of COLAP is a volunteer commitment and finding qualified and willing individuals is a very great challenge, a longer term should ensure continuity of leadership.

## Aquatic Plant Surveys

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information to produce a "generalized plant assemblage map" as shown.

re-growth rates of managed species.



### Transect and Data Point Surveys:

These more quantitative surveys may be used for 1) regulatory compliance, 2) establish a meaningful data set that can be replicated, 3) track changes in plant community following management actions and 4) document

### Point Intercept Surveys:

This is the most objective quantitative approach for large scale plant surveys. Data point survey locations are randomly generated throughout the littoral zone using grids and GIS computer soft-

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# Aquatic Plant Surveys

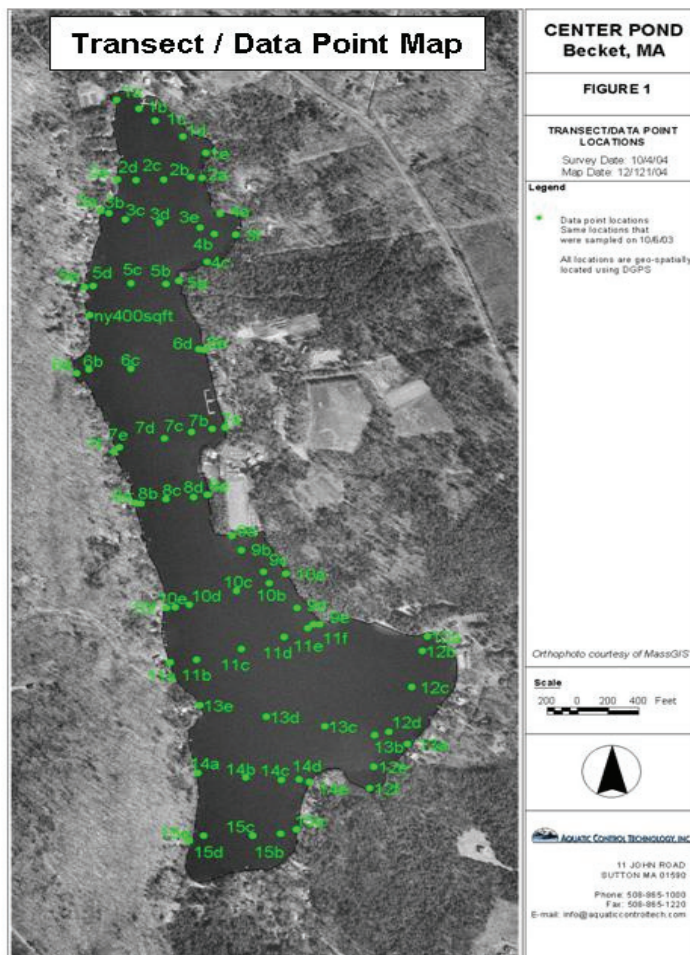
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ware. The data points are then transferred to GPS units that are used to locate each data point on the lake. Presence/absence data can be rapidly collected yielding data sets that can be used for statistical comparisons and to create plant distribution maps. Cover and biomass values can also be assigned to document relative abundance of the plant community.

survey methods allows for the analysis and comparison of data sets collected during annual or semi-annual surveys. Indices often evaluated include: frequency of occurrence, species richness, percent cover and biomass. These quantitative measures of the plant community can accurately document changes to the plant community following management efforts.

of technology more affordable, user-friendly and worth considering for aquatic plant surveys. Most professionals now consider these standard survey tools.

eral other computer mapping programs available (e.g. DeLorme XMap, 3-D TopoQuads, MapTech, Google Earth, MapSource) that can be used to generate survey maps.

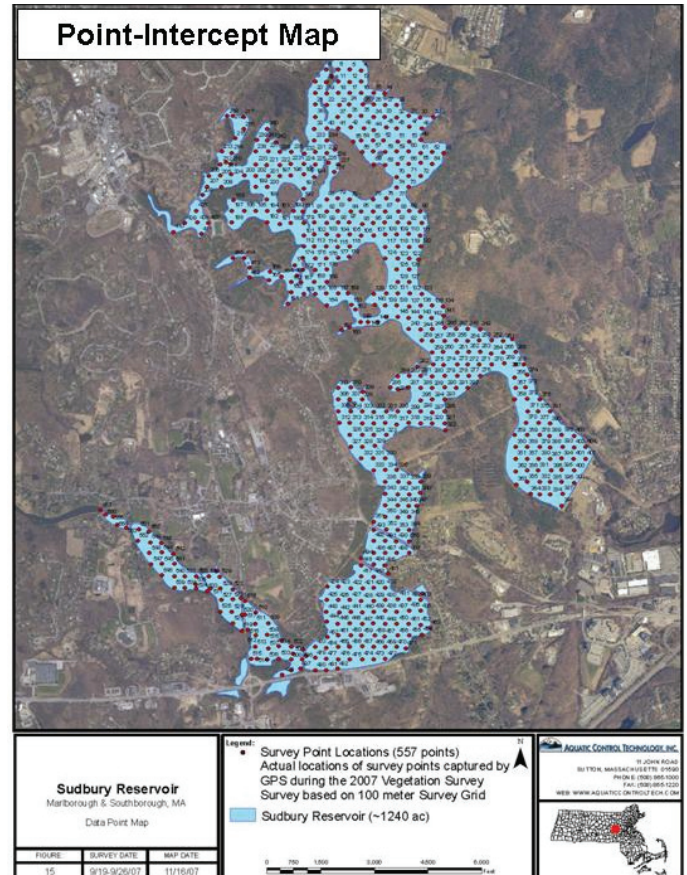


## Data Analyses:

Collecting quantitative data using Transect/Data Point or Point Intercept

## Technology You Can Use:

Recent advancements have made several types



• GPS – Handheld GPS units are now available for \$100-\$200. They can be used to replicate survey point locations from year to year, and to reference a potentially new infestation.

• GIS – Geographic Information Systems (GIS) based computer software is more available than ever and can be used to create survey maps. MassGIS (<http://www.mass.gov/mgis/>) is an excellent resource.

• Other Mapping Programs – There are sev-

• Underwater Camera Systems – Several different systems (e.g. Aqua Vu) are now available that help you see what is on the bottom without using a SCUBA diver.

• Digital Cameras – Photographs can provide an important annual record of visual conditions and can help aid in the identification of new invasive species infestations.

\*Please see the back page of this newsletter for additional resources brought to you by Aquatic Control Technology, Inc.





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Return Service Requested

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## **SPECIAL ANNOUNCEMENTS**

**SAVE THESE DATES! WRITE THEM DOWN! DON'T MISS OUT !!!**

### **MA COLAP**

would like to announce their

### **22nd Annual Lake & Pond Management Workshop**

**Saturday, January 24, 2009**

**at the Student Center,  
Worcester State College,  
Worcester, MA**

**You won't want to miss it!**

Snow date January 25 - Call 508-429-5085 for  
message. You may register and pay online at  
[www.macolap.org](http://www.macolap.org)

### **Additional Resources**

**brought to you by**

### **Aquatic Control Technology, Inc.**

Regional and national resources to assist with  
your aquatic plant survey efforts....

- DCR Lakes and Ponds Program ([www.mass.gov/dcr/waterSupply/lakepond/lakepond.htm](http://www.mass.gov/dcr/waterSupply/lakepond/lakepond.htm))
- Center for Aquatic & Invasive Plants - University of FL (<http://plants.ifas.ufl.edu/ie6/index.html>)
- USDA Plants Database (<http://plants.usda.gov/>)
  - Aquatic Ecosystem Restoration Foundation (<http://www.aquatics.org/>)
  - North American Lake Management Society (<http://www.nalms.org/>)
  - Aquatic Plant Management Society (<http://www.apms.org/>)
- Invasive Plant Atlas of New England (<http://nbii-nin.ciesin.columbia.edu/ipane/>)