

AquaticsⁱⁿBrief

WINTER 2013



Volume 7, Issue 1

Inside:

Page 2

Walking on Thin Ice

Page 3

Winter Waterfowl

Page 4

**We Are Part of
The SÖLution**

**The SÖLution
Stats for 2012**

**The SÖLution
Has a New Look**

Page 5

**New SÖL Volunteer
Volunteer of the Quarter**

Page 6

**Mapping, Dredging,
and Reserve Factor**

Page 7

**Why Winter Time is
the Right Time for an
Aerator**

Check Us Out...

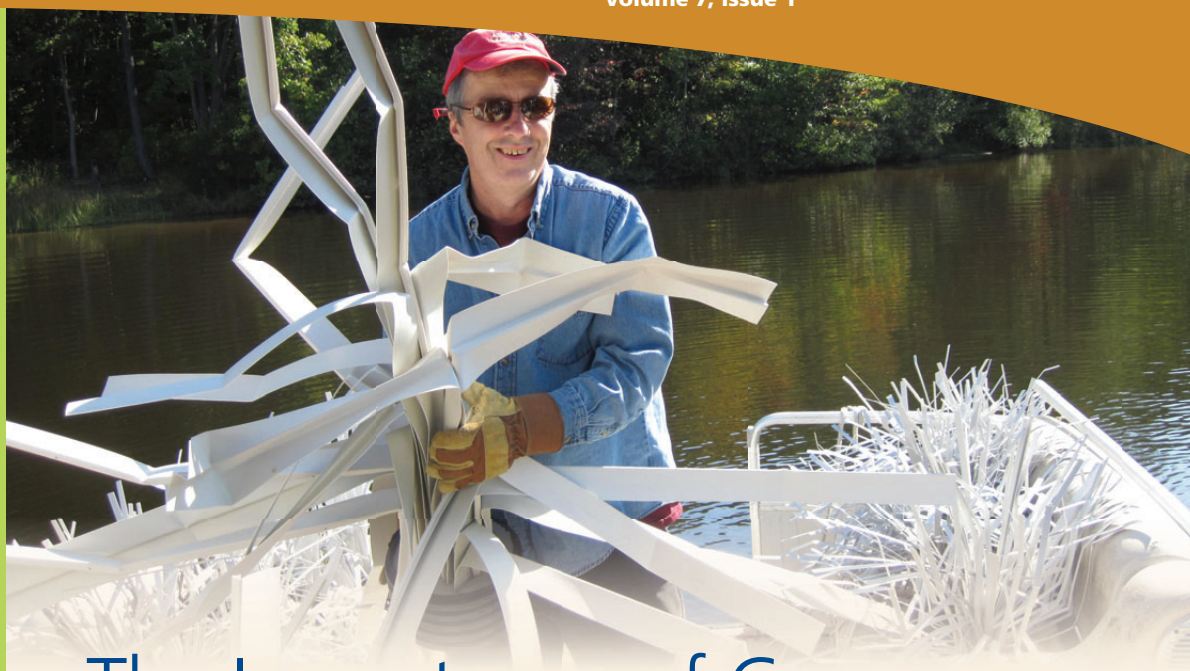
**SÖLitude Knows
Fountains**

Page 8

Ponder These Thoughts

SÖLITUDE
LAKE MANAGEMENT

*A Full Service
Lake, Pond, and Fisheries
Management Company*

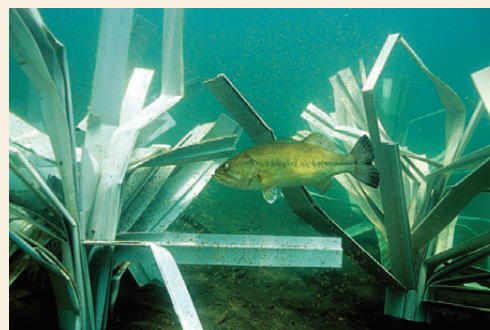


The Importance of Cover

By **David Beasley, Fisheries Biologist**

As an avid fisherman, I know it is common to have variable success when fishing. Many fishermen and women notice that fishing can vary greatly depending on the individual pond or lake. Though it is hard to determine what is really going on under the water, understanding why fishing is better in certain areas helps fishermen understand how to catch more fish.

Fish prefer to congregate around underwater cover. This is because cover provides fish with a focal point to either seek refuge or ambush prey. Size, density and water depth all play a role in the function of the cover. Fish cover can be natural or man-made and falls within two general categories, dense cover and structural cover. Dense cover serves as a refuge for smaller fish. This cover is often found in the form of aquatic vegetation or submerged brush piles. Dense cover provides small fish with proper



hiding places, improving survival rates and improving recruitment. This cover is most beneficial to small fish when it is located in shallow water since larger fish cannot access these areas very easily. Structural cover serves as a point of attraction where larger fish tend to assemble. Fish often hang out within viewing distance of this structure and you will also find that they will hug up against a

Continued on page 2

Walking On Thin Ice By Matthew Phillips, Aquatic Biologist and Environmental Scientist

I remember a few years ago when I first stepped foot onto a frozen lake. Having lived my entire life in the south, a frozen body of water may as well have been a mythological creature, but there I found myself, on the edge of an 11 square mile frozen lake. My friends all assured me that it was OK as they effortlessly walked across the ice, but I was still cautious, even as I gazed into the distance and saw cars driving on the ice. I finally did proceed, one baby step at a time, followed by a complete wipeout, much to the enjoyment of my friends. As the winter and following years progressed, I became quite accustomed to not only walking on the ice, but also driving my truck out on it. It took some time, but I was able to “read” the ice and determine when it was safe to walk on.

That all took place in Northern Minnesota, where learning to walk on ice comes right after learning to walk and right before learning to ride a bike. While in Minnesota, I was taught the various thicknesses of ice and what it could and could not support. I was also taught to look at the color and shape of the cracks, know the depth of the water underneath the ice, remember the previous week’s weather temperatures and precipitation, and observe animal activity, undesired



Be safe as the colder weather approaches and remember to stay off the ice no matter how thick you think it is.

water current and flow underneath the ice. All of these factors, and many more, determine the overall thickness of ice and how safe or unsafe it might be. As you can imagine, ice changes constantly. What was safe to walk on one day is unsafe the next and just because it is safe on one lake, doesn’t mean that it is safe on all lakes. Here in the mid-Atlantic states, things are very different when it comes to ice on ponds.

In most of our service areas, iced-over ponds can be unsafe for the simple fact

that it does not get cold enough or stay cold enough for sufficient ice to form. Other factors can lead to unsafe ice. Most of the ponds in our area are for storm water retention purposes and are very susceptible to heavy flows. While there might be ice on a pond, a little bit of rain or even snow can weaken the ice. The runoff also will contain salts and sand from the road treatments that will weaken the ice once it is in your pond. Also, many ponds have fountains or submerged aeration systems which cause movement along the surface of the water. This can cause weakened or very thin ice. However, as mentioned, it does not get cold or stay cold long enough in the mid-Atlantic states for safe ice to form.

Be safe as the colder weather approaches and remember to stay off the ice no matter how thick you think it is. There can be several hidden weak areas that will instantly break sending you down. I should know. While in Minnesota, I foolishly walked too close to a muskrat house and in an instant, down I went. I was extremely fortunate that I was only in waist deep water and we were near my truck so I was able to warm up, but it was an experience I never want to repeat or see happen to anybody else. ■

The Importance of Cover Continued from front cover

structure in the process of ambushing prey. The shadows created by the cover serve as camouflage and provide larger fish with the ability to feed more efficiently.

If your lake or pond is lacking cover then it is likely that your fish are spread out. Adding cover to key areas will gather the fish and set the stage for more successful fishing.

Some man-made product lines that provide great coverage are the Fishhiding

and MossBack products. The type of cover used to meet your needs will depend on your budget and goals. For example, if reducing mosquito larvae is more important than fishing, then dense cover should be the primary focus. A balance between dense cover and larger cover is often the best approach. Contact your lake management provider to discuss your goals and what is recommended for your lake or pond. Happy fishing! ■



Winter Waterfowl

By **Shannon Junior, Aquatic Ecologist**

Most of us pay close attention to our ponds and lakes during the summer months. Whether we are fishing, boating, or simply walking the dog along the shoreline, it is usually during the warm part of the year that we spend time appreciating our aquatic resources. As the weather turns colder, most of us move indoors and enjoy our ponds from afar. While some of us do truly appreciate the simple beauty of an ice-covered pond, even if only admired from the window, there are many opportunities for winter excitement as well. There are certain species of waterfowl that can only be seen in our area during the winter, and your pond may be a stopping point along their journey.

Everyone is used to seeing Canada geese and mallard ducks – they are all over our ponds throughout the year. Maybe you have even been lucky enough to see a wood duck or a hooded merganser. Those birds live here year-round and breed in ponds in the mid-Atlantic. However, many ducks and geese are only temporary visitors to our area. Historically, migratory waterfowl relied on rivers and estuaries for aquatic habitat along their travel route. But with the widespread creation of inland recreational lakes and stormwater ponds, there are many more options for migration stopovers and wintering habitat to get the birds through the coldest, darkest days of the year. This gives us increased opportunities to view migratory waterfowl in our own backyards.

One such bird that most people are familiar with is the common loon. Although you would need to go pretty far north in the U.S. or up into Canada to see the birds in their gorgeous tuxedoed breeding plumage, they can be seen during migration throughout most of the country wearing their drabber non-breeding feathers. In winter, they have a gray patterned back with a plain white throat

and chest, and even their bills fade to gray. They sit very low in the water, and frequently dive beneath the surface to hunt for fish. Because they need a long “runway” for takeoff, they are typically only found on larger water bodies. Loons are quite beautiful no matter when you see them, but it’s really their haunting song that makes them one of my favorite birds.

The snow goose is another bird that you might be lucky to spot during the winter. The birds are white with black wing tips, which are much more visible when they are in flight. While there is also a dark morph of the species, the white form is what is most commonly seen in our area. Snow geese form large flocks that can sometimes be seen in our area foraging in plowed cornfields and wetland habitats. They roost in ponds and lakes for safety, so keep an eye out for them early in the morning or later in the evening.

More experienced bird enthusiasts may even be able to pick out a cackling goose. Cackling geese look nearly identical to Canada geese, but they are smaller and have a proportionally smaller bill. To make it even more challenging to identify

them, they are often found together in mixed flocks with the Canada geese. It is uncommon, but definitely not unheard of for these birds to be spotted in our area. My husband once spent over an hour looking through his telescope at a large flock of Canada geese, and was finally able to pick out the lone cackling goose that had been spotted in the flock by other birders. I will freely admit that my dedication waned after about 15 minutes, but it was pretty exciting to see when he pointed it out to me!

None of these birds are extremely common in our area, but you will definitely have a better chance of viewing them if your pond or lake is not completely frozen over. All of them rely on open water for hunting or foraging as well as for safe roosting areas away from predators. Ponds with fountains or aeration systems will not be able to freeze completely, which provides valuable winter habitat for migrating and overwintering waterfowl. Believe it or not, aeration is good for more than just water quality. Maybe the chance to view an unusual bird will encourage us to grab our binoculars and venture out of our warm living rooms to enjoy some winter excitement! ■



Common Loon non-breeding plumage



Common Loon breeding plumage

With the widespread creation of inland recreational lakes and stormwater ponds, there are many more options for migration stopovers and wintering habitat to get the birds through the coldest, darkest days of the year.

We Are Part of The SÖLution Making "A Splash" in 2012

SÖLitude Lake Management completed the first formalized year of our community outreach program, named The SÖLution. We had many success stories and helped several individuals and organizations through our donations and volunteerism. There were many new initiatives for The SÖLution throughout the year that were well-regarded and successful, and we plan to carry these initiatives into 2013 and create an even bigger "splash" as our company and fan base grows. Here is a brief look at our achievements and impact on our local communities.

Little GÖBBLERS:

Our Little GÖBBLERS program helps school age children, in the markets we service, bring home a Thanksgiving turkey or grocery store gift card to purchase holiday or other needed supplies. In 2012, we found five schools that connected us with families needing a little extra help during the holidays. We donated to elementary and middle schools in PA, DE, VA and NC. In total, we helped over 60 children and their families put food on the table this Thanksgiving.

HÖLiday Cheer:

Through our Social Media fans and followers and the B-Strong Foundation, www.b-strongfoundation.org, we connected with families that needed some extra cheer during the holiday season. We received a holiday wish list of several children affected with cancer, many who spent their holiday on the Oncology floor of the Children's Hospital of Philadelphia. For every new follower on our social media pages in November and December, we added \$10 to our total budget for gift-giving to the children. Our employees got in the spirit and donated additional items as well.

Company SÖLutions:

Although geographically we have a large footprint, we are still a local company that has local connections. Each office plans volunteering several times a year. Here are some event snapshots from this year's adventures.

Shannon, Matt, David, Dave and Chuck, from the Fredericksburg office, volunteered in Watershed Day for the William Monroe Middle School. They set up physical, chemical, and biological stream monitoring stations along with soils, forestry, and wildlife stations.

Ellen, Cyd, Dustin, Kevin, Kim, Tracy, Trina, Kyle and Jessica, from our Virginia Beach and Newport News offices, spent two mornings at the Virginia Peninsula Foodbank preparing bags for the Backpack program and helping with holiday food donation organization.

Recycling:

Each office took the time to clean out, shred, and recycle large plastic pesticide containers throughout the year. We care about the environment and want to keep all of these bulky containers and other recyclable items from filling up our landfills! ■

Join Us and Become Part of The SÖLution by lending a hand to your favorite cause and letting us know about your endeavors. Please email how you or your company is part of The SÖLution and we may just post it on Facebook or in our next newsletter. Email Tracy at tking@solitudelake.com. Be sure to include photos too!

The SÖLution Stats for 2012:

Dollars Donated: Over \$16,500

(through our charitable contributions and donations to foundations like the National Forest Foundation, Wounded Warriors, SPCA, Children's Hospital of Philadelphia, and more!)

Hours Volunteered: Over 350

(of total volunteer time amongst our staff)

Plastic Pesticide Containers Recycled: 8,508

Recycled Cardboard, Plastics & Paper: 16,380 lbs.

Good Feelings Created: Immeasurable!

The SÖLution Has a New Look!

We wanted to extend our brand while creating a program that can be larger than the sum of its parts. We looked to our core values and current company logo for inspiration in creating The SÖLution logo.

The SÖLution
creating a better world

Our goal is to always be a part of The SÖLution while striving to create a better world around us. The programs we created, volunteering we did, and dollars we donated all were instrumental in giving the entire company a sense of pride and accomplishment.



New SÖL

In each issue, staff members from SLM will be highlighted. It is our pleasure to introduce the incredibly talented members of our staff and give you insight into the vast array of knowledge and experience they offer.

Q At what point of your life did you decide that you wanted to pursue a biology degree in fisheries and wildlife and why?

A When I was in 9th grade, my father and I decided to volunteer at a wildlife rescue facility. Every week we spent several hours doing everything from bottle feeding squirrels to taking ducklings for a swim in kid pools. I fell in love with working with wildlife and was exposed to a whole new line of work I didn't know existed!

Q Where did you grow up and what brought you to where you are today?

A I grew up in Michigan and studied fisheries and wildlife at the University of Missouri. I worked on several fish research projects for the U.S. Geological Survey and learned multiple aspects of fish culture. After graduating with a biology degree, I moved to Kentucky where I worked on a U.S. Army Corp of Engineer's dam remediation project. I was responsible for monitoring the water quality around the intake valves for the local national fish hatchery. Kentucky gave my husband and me the work experience we needed, and he earned an excellent job as an engineer in Virginia.

Since moving to VA, I gained extensive experience in mosquito and tick control working for a national mosquito control firm. I was then recruited to work at a U.S. Air Force base as a Wildlife

Biologist controlling nuisance birds and improving wildlife management on the airfield before coming to SÖLitude Lake Management in the fall of 2012.

Q What are you most passionate about professionally? What excites you most about your work and the contribution you can make?

A I am most passionate about the culture of fish and learning the diets of each species. The thing that excites me the most about work is the ability to learn new things and gain new experiences in order to challenge myself and make an impact on my company, clients and the environment.

Q What was the most interesting thing you have seen or done throughout your schooling or career?

A I took a study abroad trip to South Africa while attending school. Through this wildlife management program, my classmates and I followed biologists and wildlife professionals in the bush. The program gave me hands on experience working with exotic animals and veterinary techniques used in that environment.

Q What would be impossible for you to give up?

A I simply could not give up working outdoors! I've had some jobs that



Lisa Richards,
Fisheries and Wildlife Biologist

required me to only work indoors and I was not very content sitting at a desk.

Q Where can we find you when you are not working?

A When I am not working you can normally find me hiking with my dog, Lyota. She is a 2-year-old Catahoula Leopard dog that we adopted from a rescue in Tennessee. You can also find me exploring the east coast, since I have only lived here for a year. So far, my favorite places to visit are the Shenandoah Mountains and Assateague Island on the Eastern Shore. ■

Volunteer of the Quarter:

Congratulations to our Volunteer of the Third Quarter, Trina Duncan!

When our Business Manager is not crunching numbers in the office, she "accounts" for the well being and happiness of the animals at the Virginia Beach SPCA. Besides providing these animals with love and attention, Trina spends many weekends transporting adoptable dogs and puppies to adoption events all over Virginia Beach. Her goal is to introduce animals to their "forever homes" and see a love connection happen between a sweet dog and a loving owner.



Congratulations to our Volunteer of the Fourth Quarter, Shannon Junior!

Shannon's time spent volunteering in October and November was an astounding 42.5 hours. She spent many weekends at "meet and greet" adoption events at pet stores for animals from the Madison County Animal Shelter. She also spent time working one on one with animals whose confidence had been affected by previous living situations. She's very proud of the adoption of two sweet young male pitbull mixes named Shelby and Drake who spent several adoption events with her. Her enthusiasm and relentless efforts to find these animals their "forever homes" were also factors in her award.



Mapping, Dredging, and Reserve Factor By Kevin Tucker, President

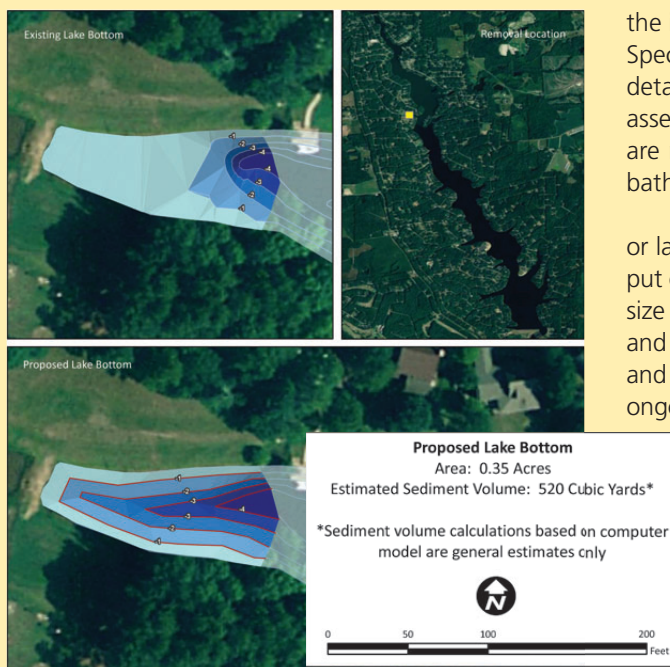
If you live in a community governed by a Homeowners Association (HOA), or you are a community manager tasked with managing an HOA, I am sure you are familiar with the statutory requirements placed on you to maintain budget reserves and to complete formal Reserve Studies for your community in most states every 3-5 years.

So many important issues are addressed by these studies, all of which help to prepare communities for significant future repair and replacement expenses. In most cases, the Reserve Specialist preparing the report is able to identify very accurate estimates for the expected life of the community assets, and the corresponding specific costs for making significant repairs or replacing those assets as their expected life comes to an end. As valuable as these studies are for communities, we find they are typically missing one key piece of information that will, in many cases, affect the accurate planning and budgeting for the single most expensive expenditure a community will ever face...DREDGING.

All communities have stormwater management facilities incorporated into their overall development designs. In many cases, these BMPs take the form of ponds or lakes. These stormwater ponds and lakes are designed to collect all stormwater flowing in from the community's impervious surfaces such as roofs, sidewalks, driveways, and streets. In doing so, all of the sediment, grass clippings, leaves, fertilizer, other organic matter, and pollutants contained in this storm water will settle to the bottom of the pond in between rain events so that the next time it rains, clean water flows out of the outflow as new contaminated water comes in through the inflows.

This is good news for our streams, rivers, bays, and oceans, as these ponds and lakes filter runoff water and make sure that only clean water is discharged into our natural waterways. However, if these stormwater ponds and lakes are left unmanaged, what is a dream for Mother Nature can be a nightmare for the community. The biggest of these nightmares comes when a community realizes their pond or lake has enough accumulated sediment and organic matter that it needs to be dredged in order to continue to function properly and as designed.

Although Reserve Studies will typically address the potential need for dredging, and maybe even go so far as to give you some data on the typical life expectancy of the BMPs and cost to dredge them, these are rarely accurate or specific to your particular site. These numbers are averages, and mostly educated guesses, as



the information required for Reserve Specialists to be able to provide you detailed and up-to-date accurate assessments and costs for dredging are not available to anyone without bathymetry having been performed.

As you might imagine, every pond or lake is different, and the demands put on these BMPs vary based on the size of the overall watershed, climate and weather conditions, landscaping and fertilization practices, level of ongoing annual lake and pond management activities, etc.

If you want to accurately evaluate the current sediment accumulation in your lake or pond, and project forward to when it will need to be dredged, and how much it will cost to do so, there is only one choice...BATHYMETRY.

Bathymetry is the process whereby the surface of the lake or pond is plotted using GPS technology, and each of the GPS points recorded is correlated to the corresponding depth of the lake or pond at that specific point. After collecting thousands of surface points with their associated depths, a three dimensional model of the bottom of the lake can be developed. With this information, the current maximum storage capacity (volume of water) of the pond can be quantified, and compared to original design plans to determine how much of the original storage capacity has been displaced by the accumulation of sediment and organic matter at the bottom of the pond.

Once this information is known, it is very easy to get specific cost estimates for dredging, as you will know the exact amount of material that needs to be removed. If you find that dredging is not needed now, which is what everyone hopes, you will then be able to use the bathymetric data to plan for future dredging. Also, now that you know the current amount of sediment accumulation, and you know how old the lake or pond is based on original construction plans, you can figure out the annual sedimentation rate from the time the lake or pond was originally constructed to now, and then project that rate forward to compute how many years from now dredging will in fact be required.

Bathymetry provides community managers and boards with powerful information with which to manage their stormwater lakes and ponds, and most importantly, provides them with the tool they need to quantify and plan for what will in many cases be the single most costly expense the community will ever face. No budget or replacement reserve planning is ever complete for those communities with lakes or ponds if they do not perform bathymetry on a periodic basis. ■

Why Winter Time is the Right Time for an Aerator

By **Greg Blackham, Aquatic Specialist**

If you follow our newsletters, you should already understand why proper aeration and circulation is paramount to the health of your pond. While many people are aware of this, they do not necessarily realize that it is just as important to keep the pond aerated in the winter as it is in the summer. Running an aeration system in the summer usually achieves noticeable results rather quickly. Algae and scum build up on the surface tend to decrease proportionate to the amount of time the aerator is running. In the winter, however, these benefits are not immediately noticeable and the positive changes are much more subtle.



Depending on the design and purpose of your pond, preventing a fish kill may be your number one concern. Keeping an ample amount of dissolved oxygen in all layers of your pond should be a priority, especially if your pond contains bass and other large fish. As the days grow shorter, certain types of algae and plants that rely on photosynthesis produce less oxygen; this can be compounded exponentially with layers of ice. As the layers of cooler and warmer water separate (stratification), dead zones present themselves, trapping the fish and removing their access to oxygen. There are many types of aerating methods and the most common and economical are bottom diffused aeration and surface spray aeration. Both types decrease fish kill probability by adding oxygen, circulating the layers, and thinning the ice for sunlight penetration.

Another benefit of winter aeration is to stimulate natural bacteria that are breaking down organic material and contaminants. Autumn loads up the pond with organic material more than any other season. Leaf litter and fertilizer account for a large portion of this. Although the symptoms of this loading do not usually appear until spring and summer, the pond is already attempting to digest all of this. A healthy amount of oxygen and circulation will dramatically enhance this process. Ponds that aerate all year long have fewer problems come spring and summer; there are simply fewer nutrients immediately available when the temperature warms up.

There are a few other benefits for winter aeration worth noting. When the aeration disrupts the formation of ice, it can lead to open water that attract waterfowl and other wildlife that break up the sometimes bleakness of winter, breathing moments of life back into the season. These open areas of water also serve as an escape path for bursts of toxic gases that would otherwise be trapped under the ice. In shallower ponds this is even more important. Any pond with aeration running throughout the winter should have signs posted warning people to stay off of the ice, as it may not be noticeable that the ice is thinner than it looks.

The added electrical costs throughout the winter months will more than pay for itself throughout the year as the pond is noticeably healthier and less herbicides and algacides are needed. If you are running surface spray type aeration, remember to run it 24/7 so that ice does not build up in the chamber and obstruct the motor impeller. Sleep well this winter, knowing that you will not wake up to a pond full of dead fish! ■

Check Us Out...

SOLitude Lake Management® will be participating in the following events over the next few of months. We encourage you to come see us! If you need information on attending any of these events, please call our office.

January 22-24

14th Annual Northeast Aquatic Plant Management Society Conference
Water's Edge Resort, Westbrook, CT

January 25-27

Richmond Fishing Expo
Meadow Event Park — State Fairgrounds of Virginia, Doswell, Va

January 28-31

53rd Annual Turf and Landscape Conference and Trade Show
Fredericksburg Conference and Expo, Fredericksburg, VA

March 3-5

The Virginia Water Conference — Virginia Lakes and Watersheds Association
Holiday Inn Select Koger Conference Center, Richmond, VA

March 6

Central Virginia Chapter of Community Associations Institute Annual CA Day and Trade Show
Holiday Inn Select Koger Conference Center, Richmond, VA

March 9

27th Annual Southeastern Virginia Chapter of Community Associations Institute's Annual CA Day Trade Show and Education Expo
Virginia Beach Conference Center, Virginia Beach, VA

March 23

Washington Metro Chapter of Community Associations Institute's Annual Conference and Expo
Washington Convention Center, Washington, DC

SOLitude Knows Fountains!

For the third consecutive year SOLitude Lake Management ranked as the 2nd largest distributor of AquaMaster Fountains and Aerators, both in the United States

and Internationally. Fountains and aerators are an envi-



ronmentally-sound water management tool for lakes and ponds that address issues such as algae accumulation, aquatic weeds, bottom sludge, foul odors, insect infestation, and water stagnation.

Ponder These Thoughts

Sōlitude Lake Management® wants to be certain that your pond is prepared for 2013. With this in mind, we recommend that you consider the following during the winter months:

- Evaluate your pond and determine if you need to add aeration to meet your management goals and objectives for 2013
- If you have not been maintaining the vegetative buffer along the shoreline and the sloped areas adjacent to your pond, schedule thinning of the vegetation in these areas
- Failure of your stormwater pond is never an option. Schedule a structural inspection to ensure your pond is functioning properly
- Review your lake/pond budget and Replacement Reserve funds to ensure that funds are available for bathymetry to determine if and when you will have a need for dredging. If bathymetry or dredging is needed, schedule early!
- Consult with a Fisheries Biologist to determine a plan to properly stock your pond with fish this spring
- Most importantly, implement an annual maintenance program for your lake or pond



Want helpful pond and fisheries management tips all of the time?



TOLL FREE: 888.480.LAKE (5253)
www.solitudelakemanagement.com
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