BIG SAUK LAKE ASSOCIATION

INFORMER

FALL EDITION 2011

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From the President

Dear Fellow Members:

As this report is being written, a cool WNW wind is a harbinger of the autumn season to come. Actually, it was refreshing to be outdoors in comparison to the 5-day "heat wave" just ended! We shall see if the prediction of frost rings true. One event we all hope to experience soon would be a nice soaking rain.

So, what has transpired on our lake in the interval since our last newsletter? For certain, no earthquakes roiled our shores no major fires consumed our lake homes. We did witness the effects of a powerful wind/rain storm which struck primarily the South end of the lake bringing down hundreds of trees in its wake. Our late spring finally morphed into summer. The early and continuous abundance of rain seemed to spur the growth of lawns to new heights.

What of the lake itself? Here are a few brief comments.

1. Apparently water clarity has not changed appreciably from a year ago. Readers should compare secchi readings taken by Vern Beckermann and Tim Weir and compare them to a year ago. Water levels did rise significantly in July as witnessed by waves lapping over our docks. We hope that no major damage occurred.

2. What of carp? Board members have received reports of carp swimming along the shoreline. Of course, we do not know actual numbers. Later on this fall we will be contacting Tim Adams to determine his interest in pursuing an underwater survey. If he is not interested, we will discuss whether to seek another "carp harvester". 3. Aquatic invasive species continue to be repressed in Sauk Lake. No reports of a general increase of curly leaf pondweed(clp) have been received. The weed harvester has been on the lake only a few days. I received just one phone call reporting a mat of vegetation which had floated up to or very near a shoreline. This was in the extreme North end of the lake. 4. The DNR regional office of fisheries in Little Falls continued to stock our lake and conduct surveys. Earlier this year, we were informed that an additional 2.1 million walleye fry were released. Special sampling using trap nets was conducted from June 6 through June 8th. Lastly, DNR staff were on the lake September 7th conducting electro fishing at 4 stations. They came up with a total of 162 walleye of which 140 were from the 2011 stocking. Fisheries manager Eric Altena reported that "This is great news for Sauk Lake. We had representation from the 2009, 2010 and obviously 2011 classes from our fry stocking efforts. We have discussed switching our stocking strategy to annual fry stocking with the levels of success we are seeing. Regardless, the future looks bright for a nice walleye fishery in Sauk Lake." The sample ranged from 5" to 15". The following data represents the number of fish caught and the length corresponding to that number. 5" - 6; 6" - 68; 7" - 61; 8" - 6; 9" - 0; 10" - 0; 11" - 2; 12" - 8; 13" - 5; 14" - 8; 15" - 3

Editor's note: The number of fish corresponding to their respective lengths were estimated from a bar graph supplied by the fisheries office. Actual numbers may vary slightly from these estimates.

5. Zebra mussels have not been detected in Sauk Lake - at least not yet. At a COLA meeting of lake representatives held earlier in August, the rep from Big Birch lake commented on a presentation dealing with mussels given at a summer convention of Minnesota Waters held in St. Cloud. The speaker emphasized that once this species enters a lake, it will continue to multiply indefinitely. There is no known chemical treatment which will kill the invasive animals. Perhaps readers have seen underwater photos of mussels literally covering the bottom of a lake- hundreds and even thousands per square meter. Recently, I have become aware of two methods of control. The first reference was found in a Fox21News blog out of Wisconsin. This story revealed that the Wisconsin DNR is using a new piece of technology to prevent the spread of aquatic invasive species. The U.S. Fish and Wildlife Service provided a $15,000 in funds for the Mobile Decontamination Machine. It skips the chemicals and instead uses a 140-degree high pressured hot water rinse. When the stream of hot water strikes a cluster of mussels, they are literally cooked. At least 5 seconds of contact is needed resulting in release of the mussels from a boat. Mussels are known to attach themselves to aquatic plants allowing for easy transport from one lake to another. It takes just one bunch of a lake"weed" to transfer a colony of the invaders. "As the average zebra mussel continues to lay up to 1 million eggs each year, it is this ..awareness the DNR hopes anglers and recreational boaters will reel in." A very recent report featured a discovery by Dr. David Mallory who has isolated a bacterial strain that kills zebra mussels by disrupting the animal's digestive system. A specific product has now been developed. Readers are encouraged to stay tuned for further information on these efforts.

Very recently a presentation was given in Pequot Lakes by Dr. Molloy to a property owners association. His biological control method is being marketed under the name Zequanox (trademark) . It holds significant promise as a environmentally safe control of zebra/quagga mussels.

President's letter continued on page 2

BIG SAUK LAKE
2011 WATER QUALITY REPORTS

LAKE WATCH SOUTH BASIN

There were few weeds in the South Basin again this year, and the clarity of the water was poor. Following are the readings taken to date in 2011.

DATE	DEPTH (IN FEET)	COLOR	WATER TEMP.(F)
5-26	6.0	Brown	60
6- 5	6.0	Brown	69
6-11	7.0	Brown	69
6-19	6.0	Brown	
6-25	5.5	Brown	67
7-03	5.0	Brown	74
7-07	8.0	Brown	77
7-16	6.5	Brown	75
7-21	4.0	Brown	78
7-28	4.0	Brown	80
8-03	3.5	Brown	80
8-10	3.0	Brown	75
8-17	3.0	Brown	74
8-29	2.0	Brown	72
9-5	2.5	Brown	72

The lake elevation on May 4th was 1226.64 feet or 3/4 inches below the summer target elevation of 1226.70 feet. The lake elevation remained slightly below the target elevation until mid-July when heavy rains resulted in a peak reading of 1227.86 feet or approximately 14" above the summer target elevation of 1226.70' . The elevation remained high until the 17th of August when the reading was down to 1226.66 feet or 1/2" below the target elevation. On September 5th the lake was down 1 1/2" below the target elevation.

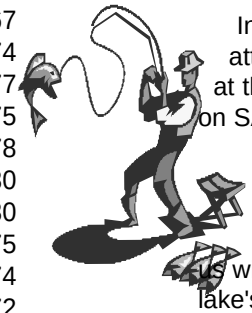
The South Basin depth was 18 feet.
Data submitted by Vern Beckermann

NEWSLETTER NEWS ITEMS

Members, you are our best source for events, issues, and information. Our "collective" eyes and ears come across many tidbits of information in the months between newsletters. If you would like this newsletter to mention these topics, please give me a call at 320.351.2513.

(continued from page 1)

A major thank-you is extended to Board members Mike Blenkush (and his wife Betty) and Rick Jennissen for their labors in completing the necessary paperwork to make the BSLA a truly 501c3 organization. Final approval has not been received at this writing but we expect to receive it soon. Upon final recognition, all contributions to the Organization will be fully deductible under the law and we will be eligible to receive grants , This is a major accomplishment. Our County Fair booth continues to be an excellent way for us to reach out to the community. We had an unofficial count of 655 visitors with the majority visiting on Saturday. We continue to seek members photos to complement our displays.



In closing, I strongly urge our members and friends to attend our ANNUAL PORK ROAST DINNER to be held at the SAUK CENTRE COUNTRY CLUB from 5-7 P.M. on SATURDAY, SEPTEMBER 24th.The food is great and the opportunity to meet with fellow members can be a pleasant experience! A final thank-you is extended to all individuals and businesses that have supported our activities with your membership. Please contact us with your concerns and ideas to further the improve our lake's value to our members and the community.

Pres. Bob Bjork

Received as an e-mail last February:
There was a Norwegian immigrant man who had worked all his life on his North Dakota farm and had saved all his money, and was a real "miser" when it came to his money. Just before he died, he said to his beautiful Norwegian wife..."When I die, I want you to take all money and put it in the casket with me. I want to take my money to the afterlife with me." And so he got his wife to promise him, with all her heart, that when he died, she would put all of the money into the casket with him. Well, he died. He was stretched out in the casket, his wife was sitting there - dressed in black and her best friend was sitting next to her. When they finished the ceremony, and just before the undertaker got ready to close the casket, the wife said, "Wait just a moment!" She had a small metal box with her; she came over with the box and put it in the casket. After the casket was closed and rolled away, her friend said, "Girl, I know you were not fool enough to put all that money in there with your husband." The loyal wife replied, "Listen, I'm a Norwegian Lutheran and I cannot go back on my word, I promised him that I was going to put that money in the casket with him." "You mean to tell me you put that money in the casket with him??" "I sure did," said the wife, "I got it all together, put it into my account, I wrote him a check...If he can cash it, then he can spend it." 'AMEN!'"

Minnesota Ecoregions and Water Quality

Editors Note: Major information for this article is credited to a UM publication "From Shore to Shore, May-June 2011 Issue: Author - Moriya Rufer, RMB Environmental Laboratories.

As one travels throughout Minnesota, it is quite apparent that the quantity and quality of lakes varies greatly from North to South. Thousands of our citizens flock to Central, North Central and Northeast Minnesota to experience the pristine quality of the "lake country" and its resorts and the cabin retreat. Conversely, Southern Minnesota lakes are often greener and shallower.

These differences have resulted in the division of Minnesota's land area into seven ecoregions. By definition, an ecoregion is "a geographical area where land use (agriculture, forest, prairie, etc.), underlying geology, potential native plant community and soils are relatively similar." "Many of these differences in soil fertility and underlying geology reflect glacial activity, such as where they advanced and where they scraped and deposited till." The last glacial advance (some 10,000 years ago) removed the soil overlay in Northern Minnesota. As the climate warmed, the glaciers retreated, gouging out the thousands of lakes and leaving sand, clay, rocks and boulders. Such deposition led to the hardwood and coniferous forests characteristic of the region. "The glaciers of the last Ice Age did not advance into Southern Minnesota where the land remains covered by rich, fine prairie soil." - the basis for the tremendous productivity of this ecoregion. The so-called "Driftless Area" in extreme Southeastern Minnesota has been spared numerous glacial advances. It is the smallest of the 7 ecosystems.

Many readers may have seen a map of the 7 regions. If not, the remaining 6 may begin with the Red River Valley and directly South of it is the Northern Glaciated Plains extending to the Iowa border. Covering roughly the Southern 1/4 of the state is the Western Corn Belt Plains System. The Central Hardwood Forest begins at the Eastern border of the state, covers much of Central Minnesota and trends to the Northwest. The largest by far is the is the Northern Lakes and Forest System trending from the North Central area and all the way through the Arrowhead region. The last region is the Northern Minnesota Wetlands Region existing in the extreme Northern area of the state extending to the Canadian border.

Comparing lakes within and between ecoregions includes "watershed characteristics, land use, and water quality of reference lakes in each of the ecoregions." MPCA researchers use these studies to derive an average range of water quality for each ecoregion. "For example, the lakes in the Northern Lakes and Forest Ecoregion have characteristically low phosphorus and algae concentrations due to an abundance of forests and sandy, relatively infertile soils. Lakes in the Corn Belt Plains tend to have higher concentrations due to the fertile, black soil, agriculture and the Minnesota River Valley."

Currently, there are ecoregion criteria for phosphorus, which have helped to clarify expectations and goals for protecting lakes in Minnesota. "A person needs to know the average phosphorus, chlorophyll-a and secchi disk readings" for a specific lake and then a comparison can be made to other lakes in the ecoregion. Should the reader want to know how Sauk Lake compares to other lakes in the Central Hardwood Forest Ecoregion, it can be found online at the RMB Environmental Website. Use:

http://rmbel.info/Reports/ReportsQuery.aspx or the DNR Lakefinder site:
www.dnr.state.mn.us/lakefind/index.html

Common carp *Cyprinus carpio* are a fish species that were not originally native to North America. Also known commonly as just "carp", these large members of the minnow family are native to Europe and Asia (Werner 2004). Carp were introduced to North America in the 1870's when they were of such high value that their brood stock were protected by fences and guarded. Today, common carp are one of the most widely distributed fish found in North America (Texas Parks).

Grass carp *Ctenopharyngodon idealla* (OH DNR) are another member of the minnow family that are presently found in North America but were not native to the continent. Originally native to China, grass carp were introduced to North America to control aquatic vegetation. Triploid grass carp have become a popular method of controlling aquatic vegetation. Grass carp have been known to reach large sizes and consume massive amounts of vegetation on a daily basis, making them a prime candidate for an economical source of vegetation control.

Despite being such a prized and prestigious trophy in European countries, both grass carp and common carp do not have the same popularity in North America. In fact, many regard these fish as a nuisance, and studies are finding that these non-native fish could be impacting our ecosystems in a negative way. Throughout the duration of this paper, I will discuss what studies have shown regarding the ecological effect of carp within North American waterways.

IMPACT OF GRASS CARP AND COMMON CARP ON NATIVE FISH POPULATIONS

Common carp and grass carp have been said to be a threat to native species of fish. Reasons that lead people to believe carp are a threat to native fish range from general competition of resources and habitat, the destruction of substrate, to interfering with aquatic ecosystems from the depletion of resources such as vegetation.

A study conducted in 1997 compared turbidity levels and catch rates of large mouth bass *Micropterus salmoides* (Werner 2004) in experimental ponds where common carp were present. Turbidity levels were found to be significantly higher in ponds with common carp, as opposed to ponds without a presence of common carp. Carp create turbidity by a few different mechanisms, including resuspension of sediments while bottom feeding, excretion of nutrients and the consequential spike of phytoplankton biomass, and through vegetation destruction which can result in resuspension of sediment by the wind (Dibble1997).

The study found that ponds with the presence of common carp yielded a lower angler catch rate than ponds without the presence of common carp. Two different hypotheses were put into consideration to explain the decrease in catch rates with the presence of carp. One hypothesis considered was that the increased turbidity was the factor that accounted for the decreased catchability of large mouth bass. The other hypothesis considered that common carp population densities reduced large mouth bass population densities which lead to decreased angler catch rates (Dibble 1997).

Population density comparisons of large mouth bass in ponds containing carp and ponds devoid of carp showed little difference. However, angler catch rates differed significantly in ponds with a carp population and ponds without a carp population. Therefore, the study concluded that turbidity created by common carp was ultimately the reason for the lower angler catch rate due to the decreased visibility and low light conditions. Low light and low visibility, both caused by high turbidity, conditions have been proven in the past to decrease the reactive distance between visually feeding fish and their forage (Dibble 1997).

IMPACT OF VEGETATION CONSUMPTION BY GRASS CARP

As previously noted, grass carp were originally introduced to North America for aquatic vegetation control. A triploid carp, which is sterile, is the popular choice for aquatic vegetation control. The grass carp is practical for such an application because it is an economical choice, as opposed to chemical vegetation control. Grass carp are also effective for the duration of their lives, as opposed to annually applying herbicides.

Grass carp can pose an ecological threat. A study conducted on various lakes in Washington state revealed varying levels of effectiveness regarding vegetation control by grass carp. 19 months prior to stocking the lakes with grass carp, submersed macrophytes were found to be completely eradicated in 39% of the lakes, 42% of the lakes showed no vegetation control, and 18% of lakes showed an intermediate level of vegetation control. In the lakes where submersed macrophytes were eradicated, a higher turbidity level was found than in the lakes with intermediately controlled and uncontrolled submersed macrophyte levels (Bolding 2002).

The study concludes that it is a risky procedure to use grass carp as an aquatic vegetation controller due to the difficulty of establishing an intermediate level of vegetation control. Water bodies that cannot withstand complete vegetation eradication should not utilize grass carp as a means to control aquatic vegetation. Larger lakes are even more at risk when utilizing grass carp for vegetation control due to the potential for vegetation eradication, increased abiotic turbidity, and the difficulty of manipulating the grass carp population (Bolding 2002).

Grass carp utilized for aquatic vegetation control would be a more safe and practical application for privately owned ponds or small lakes. Population control is much more feasible and the potential for environmental harm through migration is eliminated if only utilized in private and isolated waters (Bolding 2002).

CONTROLLING COMMON CARP POPULATIONS

Common carp are increasingly becoming more of a threat to North American aquatic ecosystems due to their increasing population number. Numerous ways have been tested to control the populations of the common carp, in order to ensure native and more desirable species are able to thrive, and resources and habitat are sustained.

An effective method for capturing common carp has been established using an instrument known as a big-M trap. Features that make the trap so effective are ability for one person to set the trap and its unique design of floating netting that increases vertical fishing height to over 2 meters. The big-M trap was shown to be most effective when baited with cotton seed soaked in molasses. This trap is effective at both night and day time, with no major differences between catches at either time (Schwartz 1986).

Another means for controlling carp populations can be achieved through Antimycin-impregnated bait. Antimycin-impregnated bait is a poison that attracts carp to consume it, which later results in the mortality of the fish. Amounts of the poison must be consumed by carp accordingly to their weight. If the carp do not obtain enough of the poison, mortality will not occur. This method is most effective when the water body is drawn down to a lower level to concentrate the fish to increase the likelihood of consumption (Luoma 1994).

Other methods for population control of common carp include electric barriers, lake drawdown to induce winter kill (Berry 1995), and selective traps made specifically for carp (Holt 2006). It is difficult to establish a flawless means to control common carp populations due to the effects on other species, migratory routes to different water bodies, and large areas to manage, but many methods are being established to attempt to control populations.

CONCLUSION

Many people fear the effects common carp and grass carp may have on our aquatic ecosystems and our fisheries. Fisheries managers have taken action in controlling their populations. If left uncontrolled, they truly do present a formidable threat to our fisheries and ecosystems. Not only can carp damage aquatic ecosystems, they can alter waterfowl habitat which will ultimately lead to more environmental damage.

Something that does trouble me is the fact that other introduced species that could also alter our fisheries and ecosystem have gained popularity and have taken a higher priority than our established and native species. An example of this can be found in Pennsylvania. Long nose suckers *Catostomus catostomus* (Werner 2004) have been considered for addition to the endangered species list (U.S. EPA). The same waters that these endangered fish inhabit, a trophy trout program has been established (PA DNR). Neither brown trout *Salmo trutta* (Werner 2004) or rainbow trout *Oncorhyncus mykiss* (Werner 2004) are native to the northeastern United States, yet the Pennsylvania Department of Natural Resources still have established a program where they allow trout to inhabit the same environment as the native and weaning Long nose sucker population.

Instead of establishing sustainable populations of introduced fish, currently existing populations of introduced fish that pose a threat to the ecosystem should be managed in order to attempt to maintain equilibrium within our natural ecosystems. Trout may be a popular sportfish and regarded as a table delicacy, but establishing their populations for the simple satisfaction of humans should be a priority that finishes second to maintaining our natural ecosystems.

MEMBERSHIP

The following is a listing of BSLA Residential and Business members who have paid dues for calendar year 2011 as of September 1, 2011. **THANK YOU** for your support of Big Sauk Lake and the Sauk Centre community!

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Big Sauk Lake Association
($25 per Year: Jan. 1—Dec. 31)

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Mailing Address:_____

Lake Address (if different)_____

Phone No:_____

E-mail Address:

Please cut out and include with your payment to:
BSLA, Box 282, Sauk Centre, MN 56378

THANK YOU for your support of Big Sauk Lake!

WHY THE DNR IS INSPECTING BOATS AT THE LAUNCHES:

New law aimed at slowing the spread of aquatic invasive species (Released June 3, 2011)
Legislation aimed at strengthening Minnesota's ability to prevent the spread of aquatic invasive species was signed into law May 27 by Gov. Mark Dayton. Among the results will be more thorough watercraft inspections and stronger regulations to prohibit the transportation of invasive species. The new law, which received bipartisan support in the Legislature, is the product of a year-long effort by the Department of Natural Resources (DNR) to gather input from stakeholders, including lake associations, angler groups, conservation organizations, businesses, counties and local units of government. That input was the key to developing legislative support, according to DNR Commissioner Tom Landwehr.

PSA:

STOP AQUATIC HITCHHIKERS!

Prevent the transport of nuisance species.
Clean all recreational equipment.

If you are a water recreationist-boater, angler, water-skier, sailor, or canoeist-there are some important things you can do to prevent the transport of invasive species from one lake or river to another. In Minnesota it is illegal to transport prohibited invasive species. View a short video about what you can do to stop the spread of aquatic hitchhikers.

MINNESOTA LAWS

It is unlawful to:

*transport aquatic plants (see: exceptions in statute), round goby, zebra mussels, or other prohibited species
*launch a watercraft with aquatic plants, zebra mussels, or prohibited/regulated invasive species attached
*transport water from designated infested waters
*transport water from lakes or rivers in boats, live wells, and bait containers
*transport watercraft and water-related equipment that hold water from a water access site or riparian property without draining them by removing the drain plug and opening water-draining devices

REQUIRED ACTIONS

Inspect all watercraft, trailers, and water-related equipment; remove any visible aquatic plants, zebra mussels, and other prohibited invasives species before leaving any water access.

Drain water from boat, livewell, bilge, impellor, bait containers and other equipment holding water before leaving any water access.

If you want to keep your live bait after draining bait containers, you must replace water in bait containers with tap or spring water.

Dispose of unwanted bait in the trash. It is illegal to release live bait into a water body or release aquatic animals from one water body into another.

RECOMMENDED ACTIONS

Some species are small and difficult to see at the access, so to remove or kill them before transporting your watercraft to other waters, either:
*Rinse your boat and boating equipment with hot tap water (over 120º F); or
*Spray your boat and trailer with a high pressure sprayer. (The hot water sprayers at a car wash can be used); or
*Dry your boat and equipment for at least 5 days.
REPORT new sightings of aquatic invasive species. If you suspect a new infestation of an invasive plant or animal, save a specimen and report it to a local natural resource office.

ADDITIONAL STEPS

Recommended for the following activities:
*Shore and fly-fishing: Remove aquatic plants, animals, and mud from waders and hip boots. Drain water from bait containers.
*Personal watercraft: Avoid running engine through aquatic plants. Run engine for 5-10 seconds on the trailer to blow out excess water and vegetation from internal drive, then turn off engine. Remove aquatic plants and animals from water intake grate, steering nozzle, watercraft hull, and trailer.
*Sailing: Remove aquatic plants and animals from hull, centerboard or bilgeboard wells, rudderpost area, and trailer.
*Scuba diving: Remove aquatic plants, animals, and mud from equipment. Drain water from buoyancy compensator (bc), regulator, tank boot, and other containers. Rinse suit and inside of bc with hot water.
*Waterfowl hunting: Remove aquatic plants, animals, and mud from boat, motor, trailer, waders or hip boots, decoy lines, and anchors (elliptical and bulb-shaped anchors can help reduce snagging aquatic plants). Cut cattails or other plants above the waterline when they are used for camouflage or blinds.

MORE INFORMATION

More information is available at Protect Your Waters and in the brochure Help Stop Aquatic Hitchhikers .
DNR Invasive Species Program
500 Lafayette Road, St. Paul, MN 55155-4025
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Antibacterial Soaps and Your Lakes and Streams: Too Much of a Good Thing

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In recent decades, monitoring of our lakes and streams has focused on both physical and chemical analysis. We have often been reminded of the secchi disk to measure clarity of water. Concentrations of phosphorus, nitrogen (as nitrates) and chlorophyll-a have been used to derive the Trophic State Index (TSI) for lake waters. This index have an important role in expressing the state of water quality.

In recent years, environmental scientists have begun to look at identification, concentrations and biological effects of pharmaceutical drugs and o.t.c. household chemicals upon entering our lakes and streams. Since their concentrations are very low, it has been necessary to invent instruments capable of measuring in parts per billion and even parts per trillion. For example, if one were dissolve and uniformly mix , 1 tsp. of pure table salt into 1 trillion teaspoons of water (equivalent to1,302,000,000 gallons), then withdraw one teaspoon of the mixture, it would be necessary to analyze the concentration of salt in the teaspoon volume. Now substitute a water sample and attempt to measure unknown chemicals and one has an idea of the magnitude of the problem. The specific compounds now under intense scrutiny are the endocrine active drugs (EDA's) and certain "antibacterial soaps." "Recent research is telling us that these same antimicrobacterial soaps harm more than the disease - causing microorganisms that we worry about picking up from our friends, family and co-workers. They also harm the natural environment and can affect human and wildlife health." In this article the compound called triclosan is targeted.

"Health experts tell us that antimicrobial soaps are no more effective than plain old soap and water in most cases. It is certainly important to wash your hands after coughing or sneezing, but colds and influenza are caused by viruses , so antibacterial soaps have no impact on them." "Roughly 75% of the triclosan we use ends up being washed down sinks and showers and into wastewater treatment facilities or septic tanks. Because treatment plants are not designed to eliminate organic compounds - like pharmaceuticals, detergents or personal care products - triclosan can remain intact and enters rivers and lakes with the treated wastewater."

"Antimicrobial compounds that are washed down the drain and make it into the environment can interfere with algae and bacteria needed for healthy ecosystems. The release of "triclosan from waste water plants continues to kill bacteria but starts interfering with photosynthesis in algae."

Published studies have documented that photosynthesis is reduced in one beneficial type of algae known as diatoms. They are the basis for food webs in lakes and streams. Why? Because they release oxygen and food that other that other organisms higher in the food chain rely upon.

Research has shown that triclosan may change the numbers and types of bacteria and algae in natural aquatic systems leading to harmful alterations in delicate balance of ecosystems in our lakes and streams. It has been shown that when triclosan is released, it breaks down in sunlight into dioxins. Dioxins are "powerfully toxic compounds known to cause reproductive damage and developmental damage to wildlife and humans."

As stewards of water quality, it behooves us to read the labels on household products like soap which will be flushed down the drain. "Consider going back to the old-fashioned approach - a good scrubbing with plain old soap and water."

For further information on this issue, see the "Aquat ic Toxicology" website:
http://dx.doi.org/10.1016/j.aquatox.2010.08.010

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