

## Song Lake Water Budget

A lake water budget is basically a way to characterize and measure water input and output. In March, Water Quality Specialist, Patrick Reidy from the Cortland County Soil and Water Department, developed a model to calculate the daily changes in the water volume of Song Lake. "SWCD developed a water budget in order to quantify the inflows and outflows, provide a better understanding of lake dynamics, and to ultimately help better understand water quality issues."

According to the report, "Song is a seepage lake, having no natural surface inlets or outlets. Groundwater inflow and direct precipitation are the main sources of water to the lake. Overland runoff from areas immediately surrounding the lake are a relatively small source of water. Water outflow from the lake occurs as evaporation and losses to groundwater."

Because Song Lake is largely dependent on groundwater, SWCD place three piezometers in the lake in 2010. These are basically mini-wells that go through bottom sediments to reach the underlying sand and gravel aquifer. (see map.)

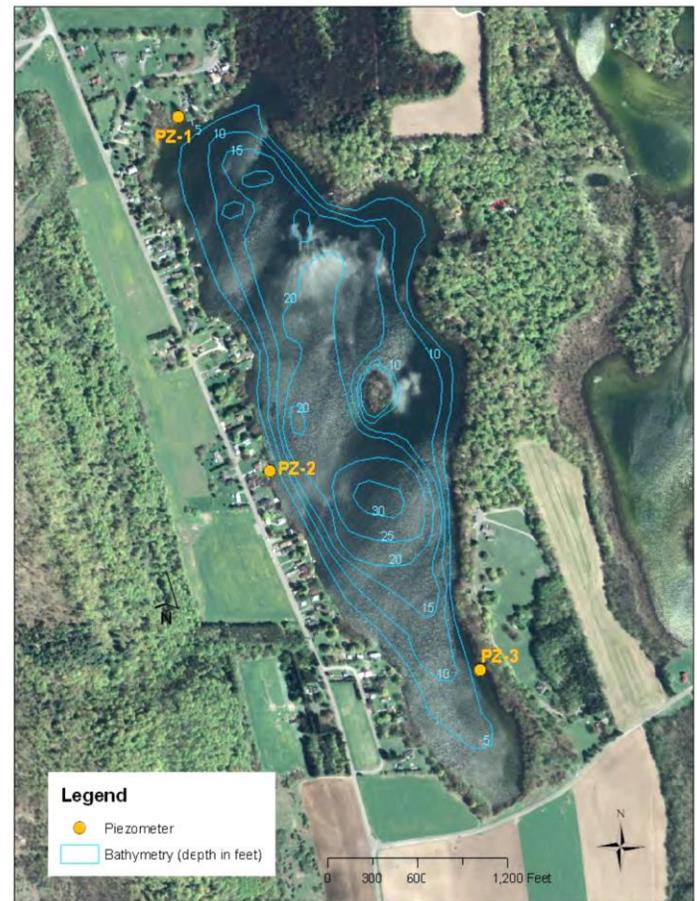
The report concludes: "Direct precipitation and groundwater inflow are the largest water sources, with each making up about half the total inflow. Overland runoff is a relatively small part of the water budget. Losses to groundwater make up about 2/3 of total outflow, with evaporation accounting for the other third."

The two conceptual models below show the lake flow during two different seasonal cycles. The first represents flow during the summer and fall, while the second shows water flow during the winter and spring. The full report is available on our website: [www.songlakewatershed.org](http://www.songlakewatershed.org)

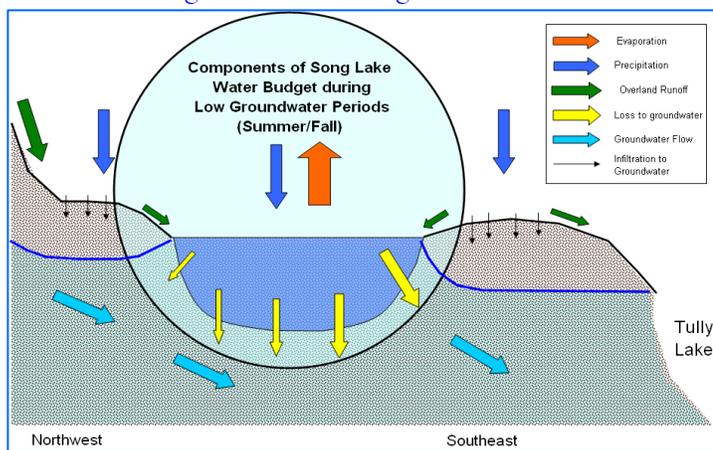
## Our Song Lake Watershed

Volume 13

[www.songlakewatershed.org](http://www.songlakewatershed.org)



Piezometer Locations and Bathymetry for Song Lake  
From Cortland County Soil and Water District, Song Lake Water Budget



### Summer / Fall

Orange arrows - Lake evaporation increases, and is greater than precipitation in some months.

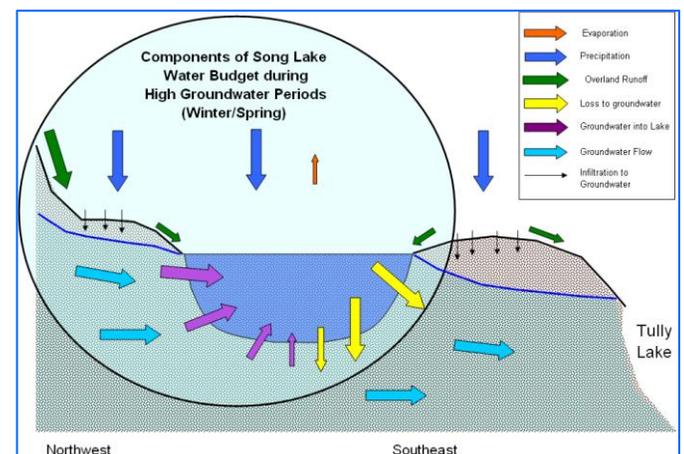
Green arrows - There is less overland runoff from the area immediately surrounding the lake.

Black arrows - Regionally, infiltration to groundwater decreases, largely because of evapotranspiration.

Yellow arrows - The groundwater table generally drops below the lake level across the entire lake, and it loses large amounts of water to groundwater.

Groundwater inflow may occur occasionally in response to a large rain event, but lasts a short time..

**The net effect is that the lake level typically drops about 3 to 4 feet between May and October/November.**



### Winter/ Spring

Orange arrows - Evaporation from the lake decreases to near zero.

Black arrows - Infiltration to groundwater increases due to snowmelt and decreased evapotranspiration

Purple arrows - Groundwater flows into the lake from the west because the groundwater has risen above the lake level.

Yellow arrows - The lake continues to lose water to the aquifer to the south and east, because groundwater remains below the lake level

Green arrows - There is increased runoff to the lake from the land immediately surrounding the lake.

**The net effect is that the lake level typically rises about 3 to 4 feet between December and May.**

## C-OFOKLA Review

Song Lake is a founding member of the The Cortland-Onondaga Federation of Kettle Lake Associations, Inc. The work of C-OFOKLA continues to gain momentum and the speakers' series is going strong.

We have had two great speakers already this year. The first, in March, was Justin Gansowski, a Wildlife Disease Biologist with USDA - APHIS, Wildlife Services. He presented enlightening information on feral swine in Onondaga and Cortland Counties. If you missed that talk, you can find out more by reading the Feral Swine Management report linked on our website.

Our second speaker was Professor Tony Ingraffea, the Dwight C. Baum Professor of Engineering and a Weiss Presidential Teaching Fellow at Cornell University. Prof. Ingraffea performed research & development at Cornell for the oil and gas industry for 25 years, specializing in hydraulic fracture simulation and pipeline safety, and twice won the National Research Council/U.S. National Committee for Rock Mechanics Award for Research in Rock Mechanics. His presentation on Slickwater, High-volume, Horizontal Hydraulic Fracturing (fracking) was exceptional. If you missed that presentation, you may be able to obtain a dvd at Encore Video, in Tully or the Tully Free Library.

Our next meeting will be June 24<sup>th</sup> at the Tully Town Hall - 7PM. Our speaker, Scott Kishbaugh has been the Director of the New York Department of Environmental Conservation Citizens Statewide Lake Assessment Program since 1985. He is Bureau Chief of the Lakes Monitoring and Assessment Section of the Bureau of Water Assessment Management. His talk will focus on water quality assessments in New York State. For a full list of speakers, go to the website at [www.cofokla.org](http://www.cofokla.org) If you would like to find out more about C-OFOKLA, call Tarki at 315-696-5262 or Karen Lang at 607- 423-4653.

### **The Song Lake Watershed & Environment Committee**

Please consider making a donation to the watershed fund. These funds provide the money needed for these newsletters, water quality testing and many other projects. We will continue to work on issues of importance to all those living on the lake and truly appreciate your support.

To find out more about our work and that of the association please go to the website at, [www.songlakewatershed.org](http://www.songlakewatershed.org) . We would love to hear from you with your ideas and insights. To provide feedback about our work, give us a call, or email your comments to [Songlakeassociation@gmail.com](mailto:Songlakeassociation@gmail.com)

We meet the second Saturday of each month.

**Members:** Tony George -696-8045, Marjie Grillo -696-5963, Tarki Heath -696-5262, Peter Tague - 696-5612, Gloria Wright -696-5524

## **BOATING REVIEW**

**NYS Certification** New York State requires that any person operating a jet ski (PWC, personal water craft) must be at least fourteen years of age and possess a boater safety certificate. This certificate can be obtained by taking a N.Y.S. approved eight hour boater safety course.

You must be at least 18 years of age to operate a boat. Youth between the ages of 10 and 18 years of age must take the course and earn a safety certificate before they may lawfully operate a powerboat alone in New York State. New York State requires a NYS Boater Safety Certificate and it is illegal for the owner or person in control of a motorboat to allow someone who does not meet the age or boating education requirements to operate the vessel.

**Improper distance** For safety, it is illegal to operate a vessel at greater than five miles per hour when within 100 feet from the shore, a dock or pier, a raft or float or an anchored or moored vessel. Some examples of **reckless operation** are other acts which disregard the safety of yourself and others, jumping the wake of another vessel too close to that vessel, weaving through congested traffic and overloading a vessel beyond the manufacturer recommended capacity.

**Personal Floatation Devices** All vessels must be equipped with US Coast Guard approved life jackets, one for every passenger. Children under 12 years of age must wear a life jacket at all times. Any person riding a PWC, regardless of age, must wear a life jacket at all times.

**Spotters** NYS law requires that any vessel pulling either a skier, tuber, wake boarder etc. must have on board, in addition to the operator, an observer specifically charged with watching out for the person being towed. This spotter must be at least 10 years of age.

**Common Courtesy** In addition to the many laws that govern our use of watercraft, it is important that we all exercise common courtesy when operating a vessel on Song Lake.

- Stay as far away as possible from a fishing boat or any non-powered vessels such as kayaks, row boats, canoes and sail boats.
- Try not to run your vessel in one area for too long a period of time as not to annoy your neighbors.
- Keep your wake to a minimum as this will protect our shoreline from erosion.

If we all follow just a few simple guidelines, we can all enjoy Song Lake in a safe and courteous manner.

<http://nysparks.com/recreation/boating/documents/NYSBoatersGuide.pdf>

~THANK YOU ~  
**HAVE A SAFE AND ENJOYABLE  
BOATING SEASON!**

## **NEWS FLASH!**

### **SONG LAKE CURRENTLY HAS NO INVASIVE AQUATIC PLANTS OR ANIMALS**

The invasion of harmful aquatic plants and animals are on the move in New York State at a rapid pace. All of our neighboring lakes have invasive species; from zebra mussels to water chestnuts.

It is up to us to prevent the spread of invasive plants, animals and other organisms from entering Song Lake. One careless act can have dreadful results.

Can you imagine swimmers having to always wear water shoes to prevent slicing their feet on zebra mussels or not being able to even walk the shoreline because of excessive plant growth from hydrilla?

Do your part. Be sure that if you take your boat or fishing gear to another lake, follow the listed precautions before reentering Song Lake.

If you have a friend or relative who would like to use the lake, don't hesitate to require that they follow the same precautions.

## **AN OUNCE OF PREVENTION= A POUND OF CURE**

Let's Keep Them Out!

### **Zebra Mussels**



Crayfish covered with zebra mussels.  
[http://www.nationalatlas.gov/articles/bioloav/a\\_zm.html](http://www.nationalatlas.gov/articles/bioloav/a_zm.html)



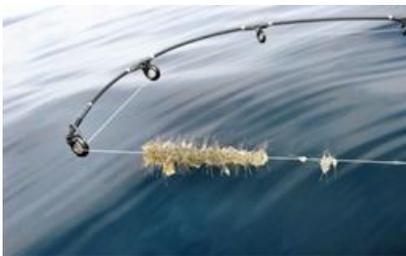
**Water Chestnuts** - The "nut" has sharp spines. The plant strangles everything in its path.  
[www.unionparkpress.com/the-massachusetts-invasive-species-war-is-justified/](http://www.unionparkpress.com/the-massachusetts-invasive-species-war-is-justified/)



**Viral Hemorrhagic Septicemia** - Fish kill in the Great Lakes  
[http://www.mdinvasivesp.org/archived\\_invaders/archived\\_invaders\\_2011\\_04.html](http://www.mdinvasivesp.org/archived_invaders/archived_invaders_2011_04.html)



**Didimo** - Rock Snot - Yuck!  
<http://kierran.blogspot.com/2011/03/troubled-waters.html>



**Spiny Water Flea** - on fishing gear  
[http://www.lakegeorgemirror.com/2012/08/30/spiny-water-flea-a-new-invasive-found-in-lake-george/Spiny Water Flea](http://www.lakegeorgemirror.com/2012/08/30/spiny-water-flea-a-new-invasive-found-in-lake-george/Spiny-Water-Flea)



**Hydrilla** - on the Erie Canal  
<http://wibx950.com/66769/>



## **STOP AQUATIC HITCHHIKERS!™**

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

[www.ProtectYourWaters.net](http://www.ProtectYourWaters.net)

## It's Not Too Late for Spring Planting!

Spring is here and we still have some great shrubs and trees available for planting in your yards. Ken & Deb Brock have been so generous with their space to let the little sprigs grow for the past three years. This year they are planning on moving them from their present location as they are going to be planting hay. Deb said the hardwoods need permanent homes soon before the tap roots get too deep. It would be very helpful to them if you could select yours before they need to be moved in late spring.

Several residents have taken plants for their yards and Tony George and Tarki Heath's son Ken planted about 40 plants at the south end of the lake last fall near the culvert pipe to provide a buffer zone. Thanks again, to both of them, for their time and hard work. The plants we have left are: Sandbar Willow, Wetland Rose, High Bush Cranberry, Red Osier Dogwood, Mountain Ash, Pussy Willow, Red Maple, Red Oak, and Witch Hazel. Deb counted those left and I have the exact numbers of each if you would like to know, Marjorie Grillo, 696-5963. The smallest number available of any variety is 2 of the Mountain Ash. Deb has posted pictures of the plants in the field and labeled them to make selection easier for us.

We hope you find a special tree or shrub for your yard-let's get planting!!!!

### Wetland Rose

A native shrub; up to 7' tall.



### Sandbar Willow

A small tree up to 20'



### Red Maple

Average mature trees are 60 to 90 ft.



### Red Osier Dogwood

A shrub grows 5 to 20 ft.



### Red Oak

Trees often reaching 65 to 98 ft.



## Invasive Species REMINDER!

The transfer of invasive species increases during the summer.

Please be sure to follow all these best practices to keep invasive species out of our lake.

### STOP AQUATIC HITCHHIKERS!

IF A BOAT HAS BEEN ON ANY OTHER WATERBODY~ DO THESE THINGS BEFORE LAUNCHING ....

 BE SURE ALL MUD, PLANTS, FISH AND ANIMALS ARE REMOVED FROM BOAT

 DRAIN WATER FROM ALL EQUIPMENT

 THOROUGHLY WASH AND DRY ALL PARTS THAT CONTACT THE WATER

### PROTECT SONG LAKE FROM INVASIVE SPECIES

### Certified Bait

It is important to only purchase "certified bait." Bait that is not certified can introduce harmful bacteria and organisms into our lake. Any bait that originates from a body of water other than Song Lake should not be used. Certified bait is farmed bait, which is free from contaminants and can be safely used in our lake.

Worms do not have to be certified.