

Lakewatch

A Publication of Seneca Lake Pure Waters Association, Inc. Serving the Seneca Lake Watershed Region

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PRESIDENT'S MESSAGE

As we were preparing our comments on the high volume hydraulic fracturing (HVHF) regulations, members of the Marcellus Shale Committee were concerned that the State DEC dismissed the significant impacts on local governments and rural areas. SLPWA had made similar comments on the original regulations, but nothing had changed. We felt we had a responsibility to warn the local governments.

In a letter sent to all the counties, towns and cities in the Seneca Lake watershed, the Seneca Lake Pure Waters Association (SLPWA) warned that there are potential serious and costly impacts, especially to rural areas, that are not addressed or mitigated in the recently published revised state regulations.

Many local governments have decided to wait to see what the state would do, before taking action on a local level. It is clear from the recent regulations, that the state will do nothing to mitigate the costs that will be incurred on the public and private sectors in the watershed.

In the past, the SLPWA has largely focused its efforts on the potential impacts of high volume hydraulic fracturing (HVHF) on future water quality of Seneca Lake and its watershed. Such impact would be a result of both direct contamination of the waters through for example, chemical spills, runoff, accidents as well as indirect contamination through the increase in air pollution, truck traffic, etc.

However the recently published revised rules contain provisions that will impact, not only the water quality, but the capacity of public and private sector interests in rural areas to respond to and finance the changes HVHF may present. There is nothing in the regulations to protect rural interests.

Damage to infrastructure, agriculture and tourism from increased truck traffic and noise is not assessed. Increased crime and social pressures are not mentioned. There is no discussion on how local governments, school districts, emergency services (fire, ambulance, police), hospitals that serve the region will pay for the expected increased demand for services, or even what the demand will be.

Costs to county health departments to respond to complaints about drinking water

(Continued next page)

BREAKING NEWS!

As LakeWatch was ready to go to the printers, the State announced that the public health review of the HVHF environmental impact statement was going to take more time than anticipated. The actual time frame for the review and the next steps in the process are unclear at this time.

Please watch the SLPWA website at www.senecalake.org for additional developments.

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(PRESIDENT'S MESSAGE continued from front)

source contamination (wells, streams, lakes) are not quantified. There is no requirement for bonding for road damage, taxes or impact fees to support local governments and emergency responders, or even local approval as a condition for a State drilling permit. The letter, which details the extensive impacts identified in other states is on the SLPWA website www.senecalake.org.

Of particular concern to SLPWA is that most of the municipal governments in the watershed have not taken the steps to assure that if HVHF is approved that the community is protected. The only thing DEC requires in the proposed regulations is that the drilling applicants file a "transportation plan," so that the counties and towns will know what roads will be used and potentially damaged by the heavy truck traffic.

SLPWA suggests that counties, towns and villages consider the following actions:

- *Immediately put in place a temporary moratorium on such activities to allow the municipality time to discuss and consider its longer term options, including a permanent ban.*
- *Amend the municipality's road use laws to protect those roads that are at risk of damage from significant, heavy truck traffic.*
- *Put in place a comprehensive zoning plan for the municipality with details consistent with State Law on the kinds of industrial activities and areas in which such activities are permissible, or not permissible.*
- *Designate local aquifers and other sensitive areas in the municipality as Critical Environmental Areas pursuant to State Law (see <http://www.dec.ny.gov/permits/6184.html>) See Sole Source Aquifer designations from the EPA for qualifying aquifers.*

We urge SLPWA members and other concerned residents and property owners to contact their municipal governments to take actions appropriate to each community now, before any state decision is made on whether to permit HVHF to be carried out in New York State.

By actions taken or not taken within its boundaries, each municipality within the Seneca Lake watershed has an influence over the ecology and water quality of Seneca Lake and its tributaries. We believe that a partnership across all municipalities in the watershed dedicated to "enhancing and preserving the quality of Seneca Lake" would be in the long term interests of our communities and the Finger Lakes.

Valuable time is being lost NOW through inaction. It is time for the municipalities in the Finger Lakes to learn what the issues are from the experience in other states and act.



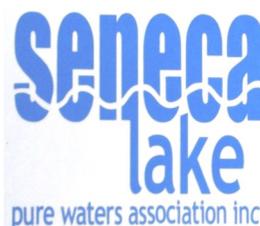
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SLPWA Third Fiscal Quarter Financial Report Bob Kayser, Treasurer

Growing membership and continued generous contributions have helped SLPWA remain financially strong. At the end of January SLPWA showed total assets of \$25,330 with no outstanding liabilities.

Do We Have Your Email Address?

Make sure to update your email when you send in your membership check so we can keep you posted on important events!



A Calendar of Events and news about updated information is posted on our website at www.senecalake.org. Stay connected!

High Volume Hydraulic Fracturing for Natural Gas in NY: February 2013 Update

Ed Przybylowicz, Chairman, Marcellus Shale Committee



It has been a hectic time on the Marcellus Shale front for SLPWA since our last newsletter of 2012. Realizing that time was running out on establishing regulations for high volume hydraulic fracturing (HVHF) of tight shales (e.g., Marcellus and Utica Shales), the New York Department of Environmental Conservation (DEC) decided to legally request an extension of time by releasing some incomplete draft regulations for public comment before the November 29, 2012 deadline. This deadline was the date by which DEC had to show some action, or they would have to restart the entire public comment process for these regulations again. The upshot of this hurried release of partially completed regulations resulted in a lot of work for your association Board and organizations like it across the state. Public comments had to be filed by January 11, 2013 (30-day public comment period) on material that was poorly written, incomplete in its protections, not based on scientific evidence and difficult to understand.

In addition to the poorly drafted proposed regulations, SLPWA believes that the State Administrative Procedures Act (SAPA) was not followed by the DEC and so they are in violation of the SAPA laws in not allowing the public to first review the environmental and health impacts of HVHF before the proposed regulations are issued for public comment. The SAPA law specifies the process by which regulations are to be promulgated by all New York state agencies. The SLPWA Board sent a 17-page letter on January 9, 2013 critiquing the regulations that had been proposed. This can be seen on our website.

Earlier, in a letter to Governor Cuomo dated November 28, 2012, SLPWA urged the Governor (for the third time) not to make a decision on allowing high volume hydraulic fracturing (HVHF) for natural gas in New York State until a comprehensive health impact assessment (HIA) has been carried out. The current review of the health impact of HVHF by the New York State Department of Health (DOH) including bringing in three public health experts from outside New York State does not fulfill the need for a HIA carried out according to the process recommended by the National Research Council and World Health Organization. New Yorkers deserve nothing less.

A National Research Council (NRC) report in 2011 recommended an HIA process that is characterized by the following attributes: transparency, inclusive of all stake holders, uses a recognized process that includes several public health tools, is conducted by an entity with public health expertise and includes public participation throughout the process. The health impact review of HVHF process carried out by Albany has not followed any of the recommendations of the National Academies and Institute of Medicine in the NRC report. In fact the process is highly secretive and little is known about what elements of public health are being considered. A Freedom of Information Law (FOIL) request by SLPWA revealed the fact that the NRC report with these recommendations for an impact analysis was shared by DOH with the New York State Department of Environmental Conservation (DEC) in their information exchange. However, the recommended process apparently was not followed.

In early November, over 90 health and science professionals across the state signed a letter to the Governor urging that a comprehensive HIA according to the process recommended by NRC be carried out in New York state to protect our residents and our environment.

The SLPWA letter emphasized that the health impact concerns have not been thoroughly and comprehensively addressed in the review process. SLPWA further believes that regulations and control processes for HVHF should be based on the best scientific information available and should be open to public comment before any decision is made regarding the use of this process in New York State. SLPWA filed a Freedom of Information Law (FOIL #12-11-341) request again in November, 2012 to learn what input the NYSDOH had provided the NYSDEC in drafting the dSGEIS and regulations.

As we write this newsletter in late January, Albany seems ominously quiet on the issue of HVHF with issues of the budget and gun control dominating the headlines. It is reported that over 200,000 anti-drilling comments were delivered to the DEC on January 11, 2013. At this time, all indications are that a decision on HVHF in New York State will be made by the Governor by the end of February, 2013.

THE DEMISE OF THE ZEBRA MUSSELS

EXCERPTS TAKEN FROM:

**FINAL REPORT: SENECA LAKE WATER TESTING PROGRAM SOUTHERN EXPANSION
DECEMBER 31, 2012**

John D Halfman

Finger Lakes Institute Endowed Chair of Environmental Studies.

Funding from **Seneca Lake Pure Waters Association (SLPWA)**, underwritten by **SLPWA**, external foundation and county funds enabled a one-year expansion of the routine monitoring of the northern end of the lake into the southern portion of the watershed by the Finger Lakes Institute at Hobart and William Smith Colleges, under the direction of Professor John Halfman.

Two issues highlighted water quality concerns at the southern end. Salt has been mined at the southern end of the watershed over the past century. Seneca Lake has significantly larger sodium and chloride concentrations compared to neighboring Finger Lakes, and the mining activities may have induced the extra groundwater source to Seneca Lake.

Drilling for gas from the Marcellus Shale could also impact the southern portion of the watershed, the only part of the watershed where the shale underlies enough bedrock to make hydrofracking economically feasible. This southern push would provide baseline water quality data for impact assessment if needed in the future. All of these issues are potential threats to the current Class AA status of Seneca Lake and its continued ability to provide drinking water to approximately 100,000 people.

A third issue impacts the entire lake. Nutrient loading, especially the addition of the limiting nutrient phosphorus, is stimulating an increase in algal blooms in the lake. It has also stimulated blooms of blue green algae (cyanobacteria). The blooms are critical because it increases the cost to deliver drinking water to the nearby residents in the watershed, the algae are not an ideal source of food (they're yucky) for organisms higher in the food chain, and, like red tides, some species of blue greens are toxic to warm blooded animals, including humans.

SLPWA's funding supported the expansion of the existing monitoring program at four sites in the northern portion of the lake, an inclusion of spring and fall tributary samples to investigate seasonal variability in water quality parameters, and Catharine Creek, the southernmost tributary to the lake.

PHOSPHATE BUDGET FOR SENECA LAKE:

Phosphorus is critical to the health and water quality of Seneca Lake because it limits algal growth. The stream concentrations and fluxes suggest that a nutrient loading problem exists. However, stream inputs are only one part of the equation, and all inputs and outputs must be tallied. The budget must include additional inputs like atmospheric loading, lakeshore lawn care fertilizers, lakeshore septic systems and municipal wastewater treatment facilities. It must also estimate outputs like the outflow of phosphorus-bearing, dissolved and particulate materials through the outlet, Seneca River, and burial of organic matter into the sediments (Fig. 8). The net flow (inputs – outputs) dictates if the lake gains phosphorus (positive answer), loses (negative answer) phosphorus or is in equilibrium (zero answer) with phosphorus.

Budget: The total inputs were much larger than the total outputs, thus Seneca Lake has a significant nutrient loading problem, and it is probably the cause for the degradation in water quality over the past decade. The lake is destined to degrade further and eventually become a eutrophic system over time, if the nutrient loading issue is not reversed.

FULL-LAKE SURVEY SUMMARY

The full-lake surveys did not reveal many new and interesting findings. Most of the parameters revealed minimal change along the axis of the lake on each survey date. The lake is apparently well mixed through the entire epilimnion. It suggests that water quality observations and trends based on the four site monitoring effort in the northern end are representative of the lake. Thus the lake is borderline oligotrophic-mesotrophic, and water quality has degraded over the past century. The southern expansion did discover more saline water in the deepest portions of the lake that may be related to the seepage of saline groundwater and/or the release of saline wastes from the mining activities into the lake. The monitoring should continue into the future to discern future changes to the lake.

The inclusion of Catharine Creek and for the first time a seasonal investigation of the stream hydrochemistry as a result of this funding opportunity added new insights to watershed/lake interactions. Stream discharge is proportional to basin area as expected. Nutrient concentrations in Catharine Creek were on par with or smaller than other tributaries. However, Catharine's stream discharge is much larger, and thus its flux of materials was significant. Seasonally, larger concentrations and fluxes were observed in the spring compared to the other months of the year, and refined earlier phosphorus budget estimates. The fluvial sources of phosphate are very significant in the nutrient loading issues, providing over 70% of the phosphorus load to the lake, and highlight the need to remediate the runoff from agricultural lands into the future to reduce the nutrient loading problems prevalent over the last decade.

The study and reports listed below highlighted the demise of the zebra mussel. Zebra mussel populations have decreased over the past decade despite an increasing crop of algae (their food). One reason for the decline is their replacement through competition with their cousin, the quagga mussel, which now make up ~90% of the mussel population. However, even quagga mussel numbers have declined over the last 5 years. The reason for the quagga decline is unknown but it is surprising because the lake has plenty of algae for the mussels to eat. Perhaps other organisms are using mussels as a food source, or the algae populations are shifting to less favorable forms.

The data gathered by this monitoring was instrumental to many of the observations and recommendations presented in the following reports, including the Seneca Lake Watershed Plan, Characterization and Watershed Evaluation.

See:

Halfman, J.D., <http://www.youtube.com/watch?v=pd2un1HQtlw&feature=youtu.be>

Halfman, J.D., D. Zorn, C. Roberson, L. Cleckner and S. Meyer, 2012. Seneca Lake Watershed Management Plan: Characterization and Evaluation. 139 pg.

http://www.stcplanning.org/usr/Program_Areas/Water_Resources/Seneca_Lake_Plan/SenecaCharacterizationSubwatershedEval.pdf

Halfman, J.D., 2011. Water quality of Seneca Lake, New York: A 2011 Update. Finger Lakes Institute, Hobart and William Smith Colleges. 40 pg.

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No Decision from the DEC Regarding LPG Storage

By Phil Cianciotto

There has been no decision or additional information from the NYS Department of Environmental Conservation regarding Inergy LP's permit application to store Liquefied Petroleum Gas in unused salt Caverns north of Watkins Glen in the western shore of Seneca Lake at the US Salt Facility.

A well written article by Peter Mantius of the DC Bureau was published in early January that points out concerns with the stability of those caverns and potential stability issues with storing LPG in them. You can read the article at: <http://www.dcbureau.org/201301078183/natural-resources-news-service/inergy-seeks-approval-for-gas-storage-in-once-deemed-unusable-salt-caverns.html#more-8183>

In response to this article, NYS Senator Michael F. Nozzolio of the 54th District reiterated his opposition to the proposed LPD Storage Facility and requested the DEC work with Inergy so that an alternative site can be found. SLPWA has voiced our concerns with stability of these caverns to the DEC since news surfaced of Inergy's plans and submission of a permit to the DEC.

SLPWA's concern with cavern stability is based on reports of roof collapses within the caverns and the higher salt concentrations in Seneca Lake. As we have reported previously, the 3-4 times higher salt concentration in Seneca Lake compared to the other Finger Lakes is a major concern. The higher salt concentrations date back to the late 1800's when commercial salt production first began in the southern end of Seneca Lake. Three possible explanations exist for the higher salt concentration of the lake; discharges of salt by the salt mining operations, erosion and seepage into the lake through the original glacial lake bed, and leakage from the existing salt caverns. Discharges by the salt mining operations to bring the salt content of Seneca Lake to 100-120 ppm would require large quantities of salt beyond those allowed by current DEC permits. The more likely explanations involve erosion of the salt layer through the lake bed and/or leakage from existing caverns. Both erosion and leakage are the basis for our concerns regarding the stability of these caverns for storage of LPG.



SAVE THE DATE

Friday, April 5th

**Wild and Scenic
Film Festival**

Friday, April 5th at 7:00 pm

Hobart and William Smith Colleges

Albright Auditorium, Lansing Hall

The **Wild and Scenic Film Festival**, the largest environmental film festival in the United States, is a way to reach into communities and bring together an audience of diverse affiliations. The 3-hour program will include a variety of short films, chosen to appeal to the Finger Lakes community, showing how national and global issues affect everyone.

The purpose of the Film Festival is to increase the groundswell for the environmental movement by using film to inspire activism, and motivate people to take action.

Details and agenda of films included in the festival will be announced shortly. This event is hosted by the Finger Lakes Institute and the Finger Lakes Regional Watershed Alliance and co-sponsored with Patagonia, Clif Bar and Company, Mother Jones, and Sierra Nevada Brewing Company.



Ticket sales will open soon!

Some Thoughts on Climate Change and Seneca Lake

By John Flowers

President Obama in his inaugural address stated:

"We, the people, still believe that our obligations as Americans are not just to ourselves, but to all posterity. We will respond to the threat of climate change, knowing that the failure to do so would betray our children and future generations. Some may still deny the overwhelming judgment of science, but none can avoid the devastating impact of raging fires and crippling drought and more powerful storms."

That made me ask, "What are likely to be the effects of climate change for New York State, for the Finger Lakes and for Seneca Lake?"

According to [Climate Change Facts](#) prepared by Dr. Art DeGaetano (Department of Earth & Atmospheric Sciences, Cornell University), New York State is already experiencing higher temperatures and changing patterns of precipitation. There are more summer droughts and heat waves and more intense rains and flooding than there were in the years when our grandparents lived.

There has been over a 2^o F rise in average daily temperatures in the Northeast since 1970. The number of days above 90^o F has increased. More heat waves are expected as this trend continues.

According to the Centers for Disease Control heat waves, on average, kill more people in the U.S. than earthquakes, lightning, floods, hurricanes, and tornadoes combined. The health impacts of heat waves fall disproportionately on infants, children, people with chronic health conditions and the elderly. The elderly proportion of the generally population is expected to double by 2030.

At the same time average winter temperatures are 4^oF warmer and the number of days below 32^oF have decreased.

Total precipitation amounts in the Northeast have increased by 3.3 inches per year in the last 100 years. In addition there has been an increase by 67 % of the number of 2-inch rainfall events occurring over a 48-hour period since the 1950s. The number and intensity of even more extreme precipitation events are increasing in New York State. With more sustained heavy downpours the danger of localized flash flooding, stream bank erosion, and storm damage increases.

Increases in average annual precipitation of up to 5% by 2020; 10% by the 2050s; and 15% by the 2080s are ex-

pected.. This might seem to be a good thing for an agricultural region. However, increased precipitation is predicted in the winter, and decreased precipitation in late summer. Lower rainfall amounts in the summer may increase the numbers of droughts. Small drinking water supply systems may not be able to meet demand in late summer. This raises the question: Will marginal wells become dry in the late summer?

Increased rainfall may lead to more extreme rainfall events. Climatologists cannot determine if a specific rainfall event was caused by climate change. However, events like the extreme rainfall in August and September 2011 associated with Hurricane Irene and Tropical Storm Lee that caused streams and rivers to rise to record flood levels and forced thousands of people to evacuate their homes are likely to increase as the average temperature increases. Hurricanes such as Sandy which caused such widespread coastline damage are also likely to increase.

New York's and the Finger Lakes' ecosystems and biodiversity will also be affected by climate change. These changes will include shifts in species ranges and sharp declines in populations of certain species. New Yorkers can expect:



(1) the northward expansion of the range of some invasive species currently found in warmer climates, such as kudzu or the hemlock woolly adelgid (an aphid-like pest of hemlock trees). These invasive species will threaten the native species and change the ecosystems in New York.

(2) an increase in mosquito populations, and the danger of mosquito-borne disease.

(3) an increase populations of white-tailed deer as winters grow milder. The deer will survive more winters and do more damage to crops, plants, and suburban landscapes and become more of a problem for drivers on our roadways.

There is one possible benefit. A winemaker speculated that higher average temperatures might enable one to grow Zinfandel grapes in this region.

But if Zinfandel will grow, would the Rieslings be as good? Any winemakers out there have an opinion?

For more information see:

Climate Change Facts:

http://www.nrcc.cornell.edu/climate_change/climate_ny.pdf

Effects of climate change in New York State:

www.nyserda.ny.gov/climaid

Click on [Responding to Climate Change in New York State Synthesis Report](#).

Climate change impacts on wineries:

http://www.esf.edu/efb/limburg/Wine/Lec_13_Climate_Paul_King.pdf



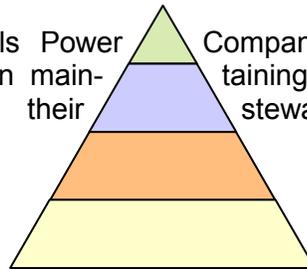
Seneca Lake Level Report
Winter 2013
Bob Kayser

High water, low water, all over the chart. That's the way the past quarter of Seneca Lake water levels can be characterized.

At the end of January, though, we seem to be right where we should be; at the high end of the Hansen Rule Curve for the winter months, and precisely where we were one year ago.

With a little luck and plenty of precipitation we should begin to see the water level rise starting March first with summer levels being reached by the 15th of that month.

The Seneca Falls Power Company continues to be a good partner in maintaining lake levels, and we appreciate their stewardship of our shared resource.



SLPWA MISSION:

Enhance and Preserve the Quality of Seneca Lake

Seneca Lake Pure Waters Association will further its mission through efforts to:

- Promote the understanding, preservation and improvement of the water quality, natural habitat and general environmental conditions of Seneca Lake and its watershed;
- Sponsor scientific research of the watershed to establish baseline data and monitor changes;
- Collect, preserve, publish and disseminate information concerning Seneca Lake and its watershed;
- Encourage and support the compliance with laws and regulations;
- Collaborate with like-minded organizations; and
- Promote patterns of development and technology to further our mission.

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