CAYUGA LAKE WATERSHED

Network News

It takes a Network to protect a watershed.

2015 i2

Tales from the Littoral Zone

The Origin of the Fish Species of Cayuga and Seneca Lakes

Mel Russo *Finger Lakes area naturalist and life-long resident*

Our story begins at an unreasonable point in time, some 550 million years ago when what is now New York State was at the bottom of an epicontinental sea.Gradually, the entire state, along with much of the northeast, fully emerged from the sea by about 200 million years ago.

As the most recent ice age ended, the Burbot (Lota lota) *was an early arrival to Seneca and Cayuga lakes. Today this species is listed by NYS DEC as "among the most unusual fish that anglers can encounter." Please see the end of this article for more information.*

For the next 100 million years or so, the somewhat level land that was Upstate New York, was then eroded by the flow of many centuries of torrential precipitation. The wearing away of the land created twelve nearly parallel river valleys, which included the mighty Seneca and Cayuga Rivers. The easternmost set of six flowed northward into a depression which was the precursor of the Great Lakes Basin. The other six rivers, including the crooked Keuka and Canandaigua Rivers, flowed southward into what is now the Susquehanna drainage. These great river valleys eventually became the eleven Finger Lakes plus one dry valley (Onondaga Valley).

Whatever life that was present in these rivers and on the land at that time was completely obliterated during a period occurring about one million years ago. This was the time of the most recent ice age. At this point, the second of two prehistoric glaciers, each of continental magnitude, extended over much of North America. This included New York State and part of Pennsylvania. This period of glaciation lasted nearly a million years in the region. It further contributed to the geographical delineation of what are now the Finger Lakes as well as numerous other geographic features of New York State.

The ice sheet which extended outward onto the continent from its center in Labrador, achieved thicknesses in New York of up to 2500 feet just before the onset of the most recent global warming era, some time before 11,000 years ago. As the glacier retreated northward, it released voluminous quantities of liquid water which flowed southward. This copious flow of water would provide the first vehicle for the re-population of aquatic fauna into the Finger Lakes.

As the front of the ice mass retreated, the young rivers produced by the melt flowed southward to fill the valleys that the glacier recently helped to shape. These numerous streams encountered other existing freshwater bodies, rivers and streams. The mingling and capture of many watersheds by the abundant flow of fresh water to the Seneca and Cayuga valleys initiated the re-colonization of aquatic organisms to the new waters of then, Lake Ithaca and Lake Watkins. These ancient lakes overflowed to the south.

So much water was released by the continued global warming that several high lake stages occurred including Lake West Danby that extended from the Great Lakes area to the south of Ithaca and Watkins Glen. This was succeeded by a large, high level lake called Lake Newberry. This massive upstate lake was a combination of high water Cayuga and Seneca Lake, and was impounded on the north by the wall of the retreating glacier. The lakes at this time, were one contiguous body of water as far south as Ovid, NY. In shape, Lake Newberry was the giant geographic replica of an extracted molar tooth with the "roots" extending into the south ends of the present lakes.

Post-glacial return of fish species to our lakes

Lake Newberry provided for the exchange of whatever species were present in Lake Ithaca and Lake Watkins at the time.

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Tales from the Littoral Zone
The Origin of the Fish Species of Cayuga and Seneca Lakes *continued from cover*

In addition, the big lake overflowed into the Susquehanna drainage, thus providing another avenue for fresh water fishes to enter Seneca and Cayuga Lakes. Ancient drainage to the Hudson-Mohawk River systems was also a resource of fish supply to the Finger Lakes.

The retreating ice wall eventually reached the Great Lakes area which was experiencing its own beginning of faunal re-population and high waters. At this point, the new terminal location of the ice provided for the eastward drainage of the Finger Lakes through the Great Lakes Basin. This allowed for the entry of fishes via St. Lawrence into Lake Iroquois (oversized Lake Ontario) and Lake Wayne (oversized Lake Erie) and eventually into Lake Cayuga and Seneca Lake.

High water of the Great Lakes Basin accounts for much of the re-population of fishes to the Finger Lakes after the glacier. Lake Erie and Lake Ontario provided a lush reservoir of fishes it recently inherited in early post-glacial times. At this time, many species immigrated to the Great Lakes from the Mississippi and giant post-glacial freshwater lakes in the north, that covered 2/3 of Canada. These lakes were Lake Agazzis and Lake Ojibway. Marine connections were also present to Hudson Bay in northeast Canada.

It is thought that the original cold water fishes of Cayuga and Seneca such as the lake trout, brook trout, trout perch, whitefish, sculpin and burbot (freshwater cod) came from the north during high waters of the Great Lakes and their drainage. Warm water fishes such as the members of the sunfish family (includes smallmouth and largemouth bass, rock bass and crappie), originally came to the Finger Lakes from Lake Ontario, the Hudson, Delaware and Susquehanna Rivers. Other warm water fishes, including most of the members of the Pike family, gar family, and bowfins immigrated to the Great Lakes from the Mississippi and eventually to Cayuga and Seneca during periods of high water.

At the current water levels prior to the construction of the canals, whatever fishes could make it up the roughly 137 foot/ 25 mile rise of the Oswego River from Ontario to Cayuga, as well as the roughly 60 foot/9 mile rise from Cayuga to Seneca, became common to both lakes.

An overall historic look at the Finger Lakes Region shows that Cayuga and Seneca watersheds, at one time or another were connected to the Mississippi, the Genesee, and the Hudson Rivers, in addition to the Susquehanna, and Lake Ontario Basin. Historical ichthyologists believe that the majority of initial re-colonization of fishes of the Great Lakes Basin (includes the Finger Lakes) is the result of prolonged very high water periods, seasonal flooding, stream capture, and ancestral drainage. In this process, some species moved out into waters that they had not previously inhabited and proliferated greatly because of the lack of competition. Other populations became extinct due to competition and change of conditions such as stream velocity, water temperature, and water turbidity. The canals led to the invasion of numerous species to Seneca and Cayuga, including the Sheepshead (drum), sea lamprey, and a host of others.

Some fish have their own little story

It is debated whether the rainbow smelt is native to Cayuga Lake or the species was introduced. Regardless, the smelt was not found in Seneca Lake until the 1970s. Legend has it that a group of guys from the East Lake Road area of Seneca Lake collected a barrel of live smelt from Cayuga Lake in the late 1960s and dumped them into Seneca Lake. Although at one period, smelt abounded in both lakes, today they are found only in Cayuga in small numbers. Their existence in Seneca today is doubtful. The species probably first entered Cayuga by the lake's long association with an arm of ancient Lake Iroquois. This was independent of Seneca Lake except for the inclined babbling brook that connected the two lakes. The rainbow smelt is marine in origin.

It is also a debate over the origin of the alewife (sawbelly). Some say the Alewife was introduced by conservationist Seth Greene as food for the Lake Trout. Others claim it made its own way up the canals to Cayuga and Seneca. The sawbelly, which constituted 90% of the fish biomass of Lake Michigan in 1964, was first recorded as present in Seneca Lake in 1868, several decades after the construction of the Cayuga-Seneca Canal. The alewife population of both lakes is said to be well established and stable. The massive mortalities of the species that once occurred in late spring and summer no longer occur. The species originates from the Chesapeake Bay.

The minnow family is well represented by over 20 species in Cayuga and Seneca Lakes. Numerous species came to the lakes both by natural means and by the emptying of bait pails. The largest member of this family, the common carp, first entered Cayuga Lake in 1888 when three farm ponds in southern Cayuga and Tompkins Counties containing the fish, overflowed during a heavy rain into Salmon Creek, Fall Creek, and a tributary of the Cayuga Inlet, thus allowing the entry of the species into Cayuga Lake. The canal with its locks, already existent, allowed for the penetration of the species into Seneca Lake. The common carp originates from Asia.

The Atlantic Salmon is thought by many to be indigenous to the Great Lakes Basin. If not, it must have been introduced into Lake Ontario from Maine or Sweden some time after

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Cayuga Lake Watershed Network

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The Cayuga Lake Watershed Network thanks Leigh Dezelan of Dezelan Dezign and Pioneer Printing of Lodi for newsletter production excellence.

Smart Steps to Clean Water: Be Informed and Be Involved

Mike Duttweiler *Board of Directors, CLWN*

Other articles in this series focused on ways to minimize direct impacts on water quality through proper use of chemicals, clean boating, etc. These actions are important and can be critical in protecting specific areas such as the shoreline in your immediate vicinity if you are a lakeshore property owner. Being a good steward of water resources also includes being aware of impacts of others that affect water quality and supporting representatives and officials formally responsible for water quality protection.

There are many straightforward steps that contribute to protecting our exceptional water resources. In this series of articles, we replay and expand upon suggestions that were presented in our 2006 publication "Smart Steps for Clean Water" available in full at: http://www.cayugalake.org/files/all/smrtstps06.pdf

Be active with groups serving to protect the lake. These volunteers are cleaning up trash along Ithaca's Cascadilla Creek, which drains to Cayuga Lake.

Individual Action

As an individual, you can report changes you observe in things like sediment levels, patterns of algae or rooted aquatic plan growth, water odors, or direct actions by others that degrade water quality such as improper dumping or failed septic systems. You don't need to be a vigilante but should know the proper authorities to report questions or problems.

Good experts, by definition, aren't experts in everything. A lay perspective is essential to provide local knowledge and evidence of problems or progress. Become involved in land use and development decisions that affect water resources and learn how watershed planning can help. The more you learn about your watershed and water protection the more effective you can be in this role. Attend hearings and educational events related to water resources

Collective Action

There are multiple groups that directly influence water quality with which you can become involved. Examples include county environmental management councils (EMCs) or local conservation advisory committees (CACs) and your own Cayuga Lake Watershed Network (CLWN) which is in need of board members and volunteers to assist with its many programs. Formal groups like EMCs or CACs often expect members to demonstrate interest and involvement before offering membership. You can do so by attending meetings regularly and contributing comments.

If you are interested in more direct roles in watershed protection, there are multiple water quality monitoring programs in the Cayuga watershed and scheduled watershed clean-up efforts with which to become involved.

The Cayuga Lake Watershed Restoration and Protection Plan (RPP)

In the coming year and a half, there is a clear opportunity for you to become involved with Cayuga Lake watershed issues. The Cayuga Lake Watershed Intermunicipal Organization (I0) is teaming up with CLWN and other collaborators to update the Cayuga Lake Watershed Restoration and Protection Plan (RPP). Hilary Lambert, Steward of the Network, is coordinating the 16-month update process with funding from the New York Department of State and support by the Town of Ithaca.

The original RPP completed in 2001, was the result of a watershed-wide process that drew together town and village officials, local and regional agencies, experts and local residents via meetings and presentations. This group developed a visionary long range plan, harnessing the energy of the lake's 45 municipalities to evaluate the condition of Cayuga Lake and its streams and formulate protection strategies. This update will focus on the watershed plan's vision and goals and intended outcomes, and renew and update the sections about the state of the lake. Currently. Lambert and IO members are developing a public participation plan for the watershed's municipalities, counties and residents. A variety of stakeholder meetings and public events will be included—your chance to become involved.

To be added to the RPP Process Update email list, please send an email request to Hilary Lambert steward@cayugalake.org or leave a message at the Network's office number (607) 319 0475.

It's Your Watershed

- Be responsible in your own actions
- Learn about watershed issues and protection
- Be observant and communicate what you see to those responsible
- Be active with groups serving to protect the lake
- Promote awareness of watershed issues

Sources:

U.S. Environmental Protection Agency. 2012. Ten Things You Can Do to Make a Difference in Your Watershed http://water.epa.gov/action/adopt/earthday_index.cfm

Stream Physical Habitat and Importance of Large Woody Debris

Maggie Passmore *environmental scientist, retired USEPA, and fellow traveler on Planet Earth*

Streams are complex, dynamic and wondrous systems formed by the continual interaction of climate, topography, geology, plants and animals. Physical stream habitat naturally varies widely due to regional variation in these driving factors. For example, low gradient coastal plain streams with sandy stream bottoms are naturally going to have different physical habitat and biota than the higher gradient streams with bedrock bottoms found in the Finger Lakes.

People often focus on water quality indicators when thinking about the health or condition of streams, but physical features (or habitat) are also very important. Stream habitat contributes to important physical and biological stream functions and services including sediment erosion, deposition, and storage; nutrient processing, cycling and sequestration; oxygen saturation; and providing habitat for plants, insects, amphibians, fish, birds and other creatures.

Stream habitat varies naturally, but can also vary immensely due to human influences. Compare a uniform concrete channel in an urban setting to a natural stream in a forested watershed, with boulder, cobble and gravel covering the stream bottom, meanders and various depth and velocity regimes (pools, riffles, glides, cascades). The natural forested stream is connected to the local ground water table, and to the forest around it, with plenty of diverse wildlife habitat nooks and crannies, and providing important functions and services to nature, including humans. The channelized urban stream is an extremely degraded place in comparison, with little natural vegetation on the banks, disconnected from ground water and likely funneling contaminated storm water to the next downstream confluence. But even if the concrete channel had excellent water quality, it still would be a degraded place with low biological diversity and would not be providing the valuable functions and services natural streams provide.

This live roots plunge pool captures and stores sediment that would otherwise be flushed downstream.

MAGGIE PASSMORE

Stream physical habitat is often categorized into different zones, for example, in the channel, on the stream bank, and in the riparian buffer. In stream cover is important for directly supporting aquatic insects, amphibians and fish and includes features such as substrate size and composition (proportions of sand, gravel, cobble, boulder, bedrock on the stream bottom), presence of large woody debris (LWD composed of downed trees in various states of decay) and other large stable cover (e.g. boulders and undercut banks).

Let's take a closer look at LWD.

In temperate regions where forest is the natural land cover, streams and stream life have evolved with trees. Live trees are the major source of carbon in small shaded creeks and streams where fallen leaves provide the base of the aquatic food chain. Live trees provide shade and help to keep streams cool. Live trees provide cover for aquatic insects as they emerge from streams as winged adults. Live trees provide countless other valuable functions.

Historically, beaver were the driving force behind the placement of dead trees in many streams. Beaver prefer to inhabit streams that aren't too steep and that are less constrained, meaning they have a valley floor wider than the stream channel. Beaver dams were once widespread across the landscape and beaver activity created complex networks of meadows, wetlands, pools and stream channels. Beavers were practically extirpated during the fur trade, and although their populations have increased, beaver do not influence the landscape and stream channels as they once did. In many regions without beaver, placement of LWD in streams is often due to trees and branches that simply fall into or over stream channels.

Downed trees impact water velocity, storage and export of organic matter and sediment, and the shape of streams and rivers. LWD creates roughness in the channel which dissipates some energy of the flowing water, and can create areas for both stream scour and sediment deposition, which improve habitat for aquatic insects, amphibians and fish. Pools can be formed and maintained by scour and deposition caused by LWD. Fish, amphibians and aquatic insects require some deeper areas so they have residual pools for refuge at low flow during summer, and the LWD itself can provide protection from overhead predators such as Great Blue Herons, King Fishers or Osprey.

The influence of LWD on streams varies by stream size. In small headwater streams, woody debris tends to stay near where it fell, provides habitat locally there for a long time, and can trap and store large amounts of sediment. Even in tiny headwater

streams, LWD is central in creating wildlife habitat and reducing sediment transport further downstream. For example, downed trees and live roots often create grade controls in small streams. The small stream doesn't have enough power to move the root, or the log, and sediment will fill in behind the log until the water flows over it, and as the water plunges off the root, it creates a small pool downstream of the root. In small streams, LWD is very stable and effectively traps and stores large amounts of sediment that would otherwise be flushed downstream.

In medium sized streams, LWD is often longer than the stream is wide. Fallen trees will partially bridge the channel and several pieces of LWD can get trapped there and form a natural dam, which pools water and traps sediment upstream of the dam.

In larger streams and rivers, the woody debris can become mobile due to larger flows, and has different influences based on where it ends up in the stream. For example, in larger streams, when a tree is eroded from the stream bank, usually on an outside bank where the force of the water hits, it often falls into the stream with its heavy root ball still on or near the stream bank. If the stream has enough power, and is wide enough, the flow will push the tree canopy downstream, while the heavier root ball stays in place upstream. If the tree falls on an outside bend, where stream banks tend to erode, the tree trunk and the canopy will eventually be pushed up along the bank, where it will deflect flow off the eroding stream bank. Sediment will deposit in the slower water between the eroding bank and the downed tree, making the eroding bank angle more gradual and stable, eventually vegetation will take root there and further heal the stream bank. The science of stream restoration has tried to copy these natural processes and restoration engineers attempt to place imported LWD in a similar manner to reduce stream bank erosion.

LWD can be extremely important in streams where the substrate is dominated by bedrock. These types of streams are common in the Finger Lakes because streams formed in side valleys when the glaciers retreated, and the streams head cut upstream, away from the lake, scouring down through unconsolidated glacial material to bedrock. Bedrock bottoms provide less diverse habitat or cover for aquatic insects, amphibians and fish than streams with boulder or cobble bottoms. Large downed trees and logs that are stable in a bedrock dominated stream channel provide critical cover. LWD can improve substrate diversity because the cobble and gravel that is being carried in the stream will be deposited near the tree and in the pool created by the tree, along with decomposing leaves, which are the basic food of many immature aquatic insects that live in streams. Sometimes LWD will even create small bends within a constrained bedrock channel, like a narrow channel within the wider channel, which improves depth and flow diversity.

Next time you're hiking along a stream, observe the LWD and how it affects the flow, sediment transport and shape of the stream channel. If you are lucky enough to have a stream cross your property, and a tree falls into your stream, whether that tree is bridging the channel, partially in the channel, or completely in the channel, think about the benefits of leaving it there. There may be some obvious short term channel adjustment in stream or on the stream banks, until a new dynamic equilibrium is reached, but that downed tree is doing important work: wildlife habitat creation, bank stabilization, erosion control, and sediment deposition and storage, that cumulatively benefit the entire watershed and Cayuga Lake.

Hydrilla Hunters! Annual Meeting/Cookout; CYCC?; Sunset on Cayuga!

HYDRILLA HUNTERS: We need you to be on the lookout for hydrilla from mid-July into October. Dave Heck of Lansing will be educating folks along the east shore; we'll be at public events with hydrilla information; and coordinating eco-cruises with the Floating Classroom around the north end of the lake. Can you help at events? Want a Hydrilla I.D. Kit? Contact: steward@cayugalake.org !

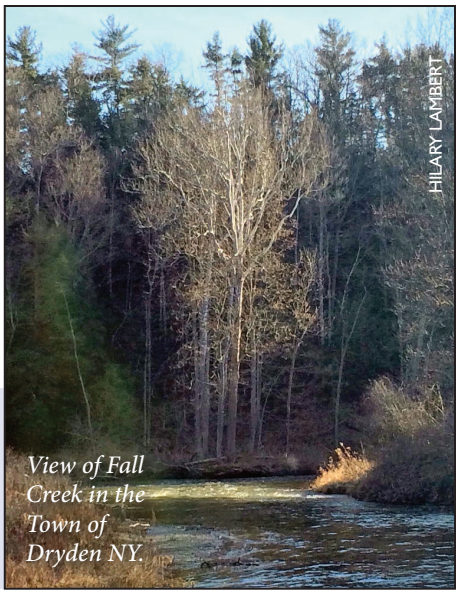
AUGUST 19: Join us for our Annual Meeting & Cookout, this year at Cayuga Lake State Park, on the lake's northwestern shore just south of Seneca Falls! We're trying a different location this year, and hope that our Lansing-area friends will travel to join us, and that members and supporters from the north end will come in large numbers. Picnic at 5 pm; Annual Meeting at 6 pm; August Board meeting at 7 pm. Join us! For the picnic, we'll provide meat and nonmeat grillables, side-dishes, beverages, cups, plates and cutlery. Your potluck contributions welcome but not required—this event is free, and our members and supporters are welcome. Check our website and Facebook page for the specific picnic site at the park. and look for signs. ***RSVPs encouraged to steward@cayugalake.org***

SEPTEMBER 19: CanYou Canoe Cayuga? Registration begins in July at www.cayugalake.org and via our Facebook page. In its fourth year, this family and friends-focused paddling event offers four launch sites along the lake's western shore, ending with a party and meal at Ithaca's Cass Park. A challenging paddle with good companions will strengthen personal ties and get you in closer touch with our lake. Reduced registration fee for those who sign up early.

OCTOBER 10: Sunset on Cayuga! Bring a date, family, friends to our dinner and music fundraiser at Wells College's beautiful dining hall in Aurora NY, with views across Cayuga Lake. Get your split-the-pot raffle tickets and dinner tickets ($60 per person) now for the big date! Silent auction, watershed awards, music, drinks, food by Skillet & Embers Catering, and local wines. Starts at 6 pm. Contact Sally Harwood harwoodsally@hotmail.com, steward@cayugalake.org or our board members for raffle and dinner tickets, and to donate items for the auction.

Adjacent to Fall Creek, in Dryden Cayuga Lake Watchdog Group Concerned Over Farm's Planned Manure Pit

JEFF STEIN *Editor @ IthacaVoice.com*



View of Fall Creek in the Town of Dryden NY.

Reprinted with permission from IthacaVoice.com, April 6, 2015. *(NOTE: Local municipalities and the public were given only two weeks notice about this project. NYS DEC, Cortland office, compiled the concerned comments from 21 members of the public, and issued the permit for this project on April 21, 2015.)*

Dryden, N.Y—An environmental watchdog group for Cayuga Lake says it is concerned about a farm's plan to build a 3.2-million gallon manure pit near the banks of Fall Creek. The Cayuga Lake Watershed Network is appealing to the New York State Department of Environmental Conservation to slow the development. Several residents of the area have also spoken out against the proposed pit.

The plan, however, is being certified by the New York State Tompkins County Soil and Water Conservation. And representatives of Beck Farms, which is behind the project, say they have gone above-and-beyond to ensure its safety—and that the new pit will reduce truck traffic, save diesel fuel, and actually improve the environment.

"The benefits are to the community, farm and the environment by operating in a more sustainable manner," says Russ Beck, managing member of Beck Farms.

What is the project? Beck Farms wants to put a manure pit in the town of Dryden. Beck Farms is an industrial Concentrated Animal Feeding Operation, which are called CAFO's. The manure pit lagoon will go on lands above Dutcher Road and North Road—with about 1.5 miles of underground manure transfer lines to Beck Farms' central operations at Red Mill Road [under Fall Creek]—according to a letter from concerned residents.

Who is concerned, and why? The Cayuga Lake Watershed Network is concerned that the development could create pollution in nearby Fall Creek, and thereby contaminate Cayuga Lake, according to Dr. Hilary Lambert, executive director of the watchdog group.

"The concerned public deserves to know more about this project, why it is proposed to be sited in this location instead of in a less-sensitive area, and if all alternatives were fully considered," Lambert says in an email to the NYS DEC.

Here's the key part of Lambert's letter:

"Fall Creek is a major economic and recreational resource. Much work and money have been put into cleaning up polluters and monitoring this creek for spills and any form of water quality degradation.

"These are some of the reasons why siting a major manure pit/lagoon and pipeline system adjacent to and underneath the creek, in documented wetlands, appears inadvisable."

A group of residents is also worried about the project. *The Cortland Standard* reported that a handful of area residents assailed the project with a "laundry list" of objections at a Dryden Conservation Board meeting in early April.

"We are deeply concerned about the potential for substantial negative community and environmental impacts from this project," residents Heather Gowe and Timothy Gowe wrote in a letter to the Town of Dryden.

Among their concerns, according to their letter:

1) Increased trucking traffic of the manure and associated noise and odor;
2) Potential well water contamination;
3) Wetlands contamination from the proposed manure pit;
4) Breaks in underground transfer lines with the potential for spills into the wetlands and Fall Creek stream bed.

What are they doing about it? Lambert, of the Watershed Network, has written a letter to the New York State Department of Environmental Conservation asking it to put the brakes on the manure pit. One of Lambert's principal requests is that the public be briefed and allowed to learn more about the project before it moves forward.

"Concerns of numerous near residents to this proposed project also deserve scrutiny and response. Many have just heard about this project and need to know more about possible impacts to the quiet enjoyment of their property," Lambert says in her letter.

What does the farm say? In a statement to the Ithaca Voice, Russ Beck, managing member of Beck Farms, defended the project. Here's Beck's statement in full:

"No one likes change, especially in their backyard. The reality is that it's in my backyard also. Beck Farms is going above and beyond the minimum engineering requirements by incorporating concrete and completely lining the structure with a commercial grade impervious liner. All construction is overseen by certified engineer and Tompkins County Soil and Water District.

"This facility will allow pumping of manure two times per year from our milking barn to the remote storage. From the storage, the vast majority of manure will be pumped and incorporated directly into the soil. As a result of this system, we estimate saving 8000 gallons of diesel fuel per year. We also calculate reducing truck traffic on the road by approximately 900 loads per year.

The benefits are to the community, farm and the environment by operating in a more sustainable manner, reducing heavy traffic on local roads, reducing odor and getting crops planted more timely."

What is the New York State Tompkins County Soil and Water Conservation District? Made up of five county residents, the Tompkins Soil and Water Conservation District (Correction: The district is comprised of paid employees, not volunteers) helps local governments make decisions about soil and water management.

"We provide oversight to make sure the grant funds are utilized to install the Conservation Best Management Practice systems planned according to engineering specifications, permit requirements and in accordance with the farms comprehensive nutrient management plan and the Tompkins County Agricultural Environmental Management Program recommendations," Jon Negley, of the District, said in a statement to the Ithaca Voice.

"All of these specifications, requirements, plans and recommendations are in place to protect the residents of Freeville, Tompkins County and New York State while making the farm viable to provide sustainable agriculture throughout the community."

How does the watchdog group respond to farm's statements? We asked Lambert to respond to the statement from Beck Farms. Here's what she wrote back:

"Beck Farms are working fully within the law as it applies to them. They have very stringent state and federal regulations to follow, and I have heard from more than one person that Beck Farms does a good job. However, the private property of neighbors and the water quality for downstream users must also be protected.

"You will see in the comments I submitted that the neighbors to this project, and all of us downstream, deserve at least a public information session where questions can be answered. As it is, the public has only recently found out about this project, and is being barraged with a bewildering array of maps, engineering diagrams and technical specs."

Are other residents concerned? Yes. Among residents' other primary concerns: 1) A lack of public notice about the project; 2) The effect it would have on Fall Creek; 3) And the typical effects of CAFO's on the environmental health of a region.

"My first concern is that this industrial feeding lot is expanding and the known consequences of CAFO operations are not being considered with regard to neighbors' quality of life, water safety and quality and future viability," writes Joanne Cipolla-Dennis, a resident of the area, in a long letter to town officials.

What's the town's response? According to The Cortland Standard, Dryden town officials say they have no authority to extend the public comment over the proposed manure pit.

Can I read the Cayuga Lake Watershed Network's full statement? *See the full comments letter at www.cayugalake.org under the 'Resources>Issues' heading.*

Thank you to the IthacaVoice for their work in this situation: "The Ithaca Voice is an online-only news and information site serving the Ithaca area and Tompkins County. Launched June 2014, it is a free and independent source of journalism that will be updated daily." Online http://ithacavoice.com/ .

Tales from the Littoral Zone
The Origin of the Fish Species of Cayuga and Seneca Lakes *continued from page 2*

Columbus. It henceforth proliferated to population levels of great magnitude in Seneca, Cayuga, Owasco, and Onieda Lakes. As late as the 1700s, it was reported as being so abundant in Seneca and Cayuga that settlers filled a canoe with fish by simply clubbing the salmon over the head in any of the many tributary streams of the lakes. The construction of the canals and locks changed the fast flowing oxygen-saturated, pristine waters of the Oswego River and connecting watersheds to an environment of more quiet and somewhat more cloudy waters. This terminated the natural propagation of salmon in the Finger Lakes. Today the species, along with most other salmonids of the lakes, owes its presence to stocking.

The rainbow trout from the Pacific coast, and the brown trout from Europe, were introduced purposefully as sport fish. Recently, other species such as the round gobie, have been introduced from Eurasia by way of the emptying the ballasts of ships into the Great Lakes waters and thus to our Seneca and Cayuga Lakes via the canals. The immigration and dispersal of fishes to our two big lakes continues today. The tale goes on.

Sources:

- Hubbs, Carl L. and Karl F. Lagler, revised by Gerald R. Smith. 2004. Fishes of the Great Lakes Region. Revised. University of Michigan Press.
- Reed, Hugh D. and Albert H. Wright. 1909. "The Vertebrates of the Cayuga Lake Basin, N. Y." Proceedings, American Philosophical Society. V. 48(193), pp. 370-459.
- Von Engeln, O.D. 1961. The Finger Lakes Region. Its Origin and Nature. Cornell University Press, Ithaca NY.

More about the Burbot *(Lota lota),* from the NYS DEC "Freshwater Fishes" online pages: "Odd in appearance, burbot look somewhat like a cross between a bullhead and an eel. They have an elongated body with a single prominent chin barbel much the same as bullheads, and long dorsal and anal fins similar to those of eels. Their bodies are covered with tiny, deeply embedded scales that give burbot a "slimy" feeling. Burbot are found sporadically across the State. They usually live in lakes, but are also found in some streams where there is cool water and plenty of hiding places. They are unique among New York State fish in that they are the only freshwater species that spawn in midwinter with ten to 12 fish forming spawning fish balls. Although burbot are frequently caught by anglers, most people do not eat them. In the past, Indians and Europeans ate these fish, but today, human consumption is mostly limited to Scandinavian people who relish the livers."

This lively article and others by Mel Russo can be viewed online at http://www.senecayuga.com/about.php , also available at www.cayugalake.org

The mission...

The Cayuga Lake Watershed Network identifies key threats to Cayuga Lake and its watershed, and it advocates for solutions that support a healthy environment and vibrant communities.

Cayuga Lake Watershed Network
It takes a Network to protect a watershed

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Please contribute NOW! 2015 Annual Appeal

Your donations help make events like CanYou Canoe Cayuga possible.

The Network asks you—our members and supporters—twice a year for funding support. You hear from us during the summer (NOW!) when we ask for a contribution to our Annual Fundraising Appeal, and again from October to year's end, when we ask that you renew your membership for another year.

We'll be mailing you an Annual Appeal request in the next few weeks, so why not get a head start and donate now!

Help us help our lake with cleanups, improved wetlands mapping, watershed planning, invasives education, CanYou Canoe Cayuga, Sunset on Cayuga, citizen water quality monitoring on creeks at the lake's north end, our website, two free community conferences annually, and our newsletter—these are SOME of the activities we are involved in.

You can donate at our website via paypal/credit card: www.cayugalake.org OR mail a check made out to 'CLWN' to: CLWN POB 348 Aurora NY 13026.

The Network is a 501 c 3 nonprofit, and your donations are fully tax-deductible. You will receive a thank you receipt for your gift.

Thank you!

Hilary Lambert

Steward/Executive Director