

## ‘They don’t call me Frank for nothing’: Frank Pratt talks watershed, raindrops and what COLA needs to do

By Kathy Hanson  
Contributing Writer

*What follows is part 2 of an interview between Kathy Hanson (KH) and Frank Pratt (FP), a well-respected fisheries biologist who worked with Sawyer CO for many years.*

KH: Everyone knows the “P” word, phosphorous. Everyone knows that’s a problem, especially in Musky Bay. How is Lac Courte Oreilles doing in that regard? Is there hope? How can COLA help?

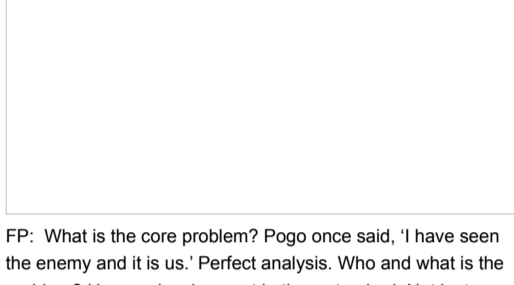
FP: The P word, phosphorus, a critical chemical nutrient known to be the usual limiting factor for living things. Gotta have it. But the key is in the amount. Too much is bad. How much is too much? Well, for a lake like LCO, that number is likely on the order of 10 parts per billion. Yes, 1 said per billion. How little is that? Ten drops of phosphorus amounts to the equivalent of 1 billion of our raindrops. Anything more than that and water quality clarity gets worse and the quality of the fishery suffers.

Right now we are at 11-12 ppb (parts per billion) in Lac Courte Oreilles and the number is going up. Of special significance is that TP (total phosphorus dissolved in the water) is significantly higher on the west side and the plume is moving eastward. We are approaching a tipping point for the cold-water or two-story fishery (mainly cisco or tullibee, with a few lake whitefish thrown in). If cisco and whitefish go extinct they will take the world-class fishery for musky and walleye with them, and the water quality will change from clear to pea soup along the way. For a preview, visit Musky Bay on a bad day. We have a very good idea of how much phosphorus is coming into the lake and a pretty good idea of how much it needs to be reduced to give the lake a chance. That number is somewhere in the order of 30 percent. A giant task but by no means hopeless if we act now, in a collaborative community action, “Human Watershed” way. Very doable and the technology is out there, at a reasonable cost.

And I should have mentioned that the Clean Water Act of 1968 has been hugely successful in all but wiping out ‘point-source’ pollution of our waterways. That would be bad stuff coming directly out of a pipe, whether a paper mill or a municipal sewage treatment plant. It is the “non-point” pollution which remains to be tackled and is the main culprit in LCO. And no, amazingly enough, the regulatory agencies (WDNR, EPA) do not consider water coming out of an agricultural ditch or pipe, or a natural tributary stream either, as a ‘point source’, but rather ‘non point,’ just like all the other unconsolidated run-off of the land. Crazy but true and we have got to live with it. This makes no functional sense and makes lake protection so much harder, but it is a fact that we all have to live with. Local level, collaborative action rather than legal mandates from centralized government seem to be in order, don’t you think?

Anyway, run-off from residences and owned land, even wild land, contributes just as much phosphorus to LCO as agriculture, and together the load is just too much. The solution is to turn off the spigot on both. Lakeshore residents have to jump all over the riparian buffer idea, immediately. Cranberry marshes need to install tail-water recovery systems (fancy name for holding ponds) and water use without discharge as soon as it is feasible and affordable. The excess phosphorus in the bottom of Musky Bay has to be dealt with, either by dredging, or Alum treatment.

There, I said it. They don’t call me ‘Frank’ for nothing. This is our chance to be good citizens, responsible stewards of the land, and join together to get the job done



FP: What is the core problem? Pogo once said, ‘I have seen the enemy and it is us.’ Perfect analysis. Who and what is the problem? Human development in the watershed. Not just cranberry marshes but also everyone else that lives in or has land in the watershed. We need to control run-off off of both residential and agriculture, to an equal extent. That means getting as many laws as possible into buffer status. Buffers capture 70 percent of the phosphorus run-off. Tail-water recovery for agriculture. Best forestry practices to optimize watershed function, capture of run-off from impervious surfaces, maybe some other wild and ultra-expensive technology. (Especially if we wait too long.)

The Europeans have this thing called “re-oligotrophication” which has been going on in lakes like Lake Geneva for over thirty years and has been at least partially successful in turning their lakes around. Very, very expensive to do things like aerate the deeper waters of a big lake, 24/7. Google it and check it out. We do not have a Swiss bank account to work with. So in the world of ‘pay me now or pay me later’ what we can do now is a bargain compared to the price of what we will have to pay later to only partially achieve what we can achieve now. To our pocketbooks, now, as well as to our children’s, children’s, children!

KH: Is the history of logging and the European settlement important to our understanding of what is happening today? Why?

FP: Early on, in the 1870s to 1890s in our immediate region the earliest settlers basically mined the pine forest. And I say mined because it was just that. They logged virtually everything, all at once. The net result was a 30-40 year period right around the turn of the century when the land was totally naked and exposed to run-off and erosion, and that was the first big hit from human development that our lakes and streams had to endure.

I have seen written accounts where soldiers returning from WWI were right at home in our home landscape in Northern Wisconsin and it looked bombed out and exposed in the same way as the war-torn trenches on the battlefields in France! Some of the pictures in the Sawyer County and Bayfield County archives show it too. There is one from around Cable circa 1900, which shows a mother and family of about six or seven kids standing outside of a very small cabin, with open ground and stumps in the background, as far as the eye could see. Another photo is from the banks of the Namekagon at Leonard’s School looking east toward the Seeley Hills. All bare, no trees, nothing. A moonscape. Rivers took this harder than lakes because of some of the physical processes, especially flooding. Once a 100-year flood reshapes a stream channel and flood plain it is hard to come back to the original state. On lakes there probably was an initial pulse of excess nutrients, but nothing like what occurred later in the 20th century when the shoreline was developed for residential, or the watershed as a whole for agriculture. The main effect on lakes was a change in big woody cover on the shoreline, an especially important habitat for fish and other aquatic life. It all but disappeared, going from 500-600 downed trees in the water per mile to often less than one percent of that! (Big woody cover is another thing which buffer zones, tree drops, and the “Fish Sticks” project are trying to restore). But the forest, for the most part, has recovered nicely and is a major component of a healthy watershed. Most of our healthier watersheds, including LCO’s, have a land-cover component on the order of 70+ percent forest. We need to keep it there, if not increase it. Its function in terms of retarding run-off, encouraging groundwater infiltration, and getting carbon dioxide out of the atmosphere cannot be overstated. I would like to see a little more research on what timber types of forest do the best job on watershed function. For now the challenge is to manage the land which is not forest or wetland, that is the developed portion, in such a way that functions as closely as possible to a real forest or wetland.



KH: How does climate change factor into all of this?

FP: Climate Change. I am not a denier. I am a scientist: the proofs are everywhere, in my field and elsewhere. Largemouth bass halfway to the Arctic Circle in just thirty years? Walleye fading fast out of the regional picture. Fish growing season a month longer than it used to be.

Anyone who is a denier to climate change is an enemy to watershed health and water quality. I don’t know what to say to you, except maybe that I will try to forgive you. (But I don’t know if your children and grandchildren will be that kind.) I am especially concerned that the political system in the entire state of Wisconsin is in denial. State scientists have been ordered not to use the term, and critical research has been cut, even jobs eliminated. Not any way to run a state. I just got back from the East Coast and can tell you that we have fallen from the best resource protection state in the union, to the laughingstock of the entire nation. For shame.

Where were you in last year’s Labor Day Storm? That type of storm is supposed to be a 100-200 year event. Lets see, how many weather events like that have we had in the last two-three years? I count five. If this was just a short term trend off the norm, and the climate was really even keel, ‘same as it ever was,’ then the odds of all those rare events falling in one small time slot are only slightly less than getting a dealt a royal straight flush in five card stud, or getting hit in the butt by a falling meteorite while walking to the post office on a sunny Saturday afternoon, in June (but not during Musky Festival.) If I can’t convince you on that one please don’t bother reading on. What chance would I have in convincing you to convert your golf-course lawn to prairie flowers, anyway?

To the rest of you, climate change is huge. It ups the ante on watershed, nutrients, run-off, and oxygen depletion in deep lakes. (Notice how I slipped in a new villain. Incremental, repetition nah!). We think that the main effects of climate change in this region are going to be an increase in summer precipitation as opposed to winter snowfall. Certainly an increase in the so-called super storms with all the hail, wind and torrential rain. Over seven inches in 17 hours last Labor Day. It takes a very well armored watershed to handle all that run-off. If not, the lake can take a ten-year hit of phosphorus in ten hours. Sort of like a city getting nuked. Scientists call it ‘shock-pulse.’ So the forest has to be intact, wetlands have to be functioning to full capacity, and the human development portion of the watershed has to be equipped to handle a big shock pulse.

During the 90s, Round Lake degraded more than it had in the previous TEN THOUSAND YEARS, after the last glaciers retreated. It looks like a couple of shock pulse events during a time of intense shoreline development were the main causes. Yikes!

Now for the oxygen depletion part. LCO is a two- story lake, meaning it has cold enough and well-oxygenated water to support a cisco population out in the middle of the lake, usually in a thin slice of water somewhere in the 30-45 foot deep zone. A deep lake like LCO stratifies during the summer with the coldest water on the bottom, gradually increasing as you move upward, and to a big surface layer of very warm water. The decay of dead and dying plants and animals in the water column and especially in the bottom sediment gradually uses up the oxygen. Typically by late August the livable cold-water layer is a very thin slice of water just at the top of the cold water and immediately below the warm surface water. What usually happens is that cold water continues to lose its oxygen for another month or so, but the surface water cools enough in the fall that cisco can abandon their old, now oxygen-poor habitat and escape upward in now cool enough surface water. But what if the summer extends into September and the surface water temperature remains in the mid-70s? The poor cisco have a choice only in the habitat they choose to die in—too-warm surface water with plenty of oxygen or cold-enough deeper water without enough oxygen. Suffocate or fry. Some choice.

Right now those super-hot, super-long summers are coming at us at maybe 1-2 every decade. Will that increase? Probably. So far the cisco and whitefish have shown some ability but not the terminal extinction kind. But what happens if you string two or three bad years in a row, or if hot surface water extends into October? Could be the end of cisco and the lake, as we know it. The cisco are the lake’s ‘canary in coal mine.’ Doing nothing with the watershed and nutrients ramps up those odds. Scientists call such co-effects ‘synergistic.’ Lay people, and their children can probably better identify with the word ‘sinister.’

KH: Frank, this has been a valuable, if somewhat frightening, interview. Yet you offer hope and solutions. I thank you for your passion and your prose—and especially your generosity in sharing your knowledge.

[More information on the Upper Couderay River Watershed](#)

*Kathy Hanson is a free-lance reporter for the Sawyer County Gazette, the Sawyer County Field Editor for Our Wisconsin magazine, and Copy Editor for the Bayfield County Journal. She has also served as Staff Reporter, Business Feature Writer, Columnist, and Copy Editor for the Sawyer County Record.*

If you haven’t already done so, please [renew](#) your COLA membership for 2015. Thanks for your support!

Learn more about COLA on Facebook or the COLA website:

**COLA Mission:** 1) to protect, preserve and enhance the quality of Lac Courte Oreilles and Little Lac Courte Oreilles, their shorelands and surrounding areas, while respecting the interests of property owners and the rights of the general public; and 2) to consider, study, survey and respond to issues deemed relevant by COLA’s membership.

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The eNewsletter Editor can be reached at:

COLA  
P.O. Box 702  
Hayward, WI 54843  
[courte.oreilles.lakes.association@gmail.com](mailto:courte.oreilles.lakes.association@gmail.com)



### Upper Couderay River Watershed

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### COLA releases its Total Maximum Daily Load Report

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### COLA finalizes its strategy to address the future health of our lakes

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### NOTICES

### Native Aquatic Plants are Good!

Native aquatic plants play a key role in the ecology of a lake. They can help to maintain water quality, prevent shoreline erosion and provide habitat for a wide diversity of species from fish to amphibians to mammals. A few things to note about aquatic plant control in our lakes:

1. It is illegal to use any herbicide on aquatic native plants unless a permit is obtained from the WDNR.

2. The maximum area someone can hand pull or rake aquatic plants is 30 feet by their dock or along their shore. If more area is to be cleared, a WDNR permit is required. Plants must be removed from the water and disposed of on land.

3. Eurasian Water Milfoil (EWM) has been found in Little LCO. Invasive plants like Curly Leaf Pondweed (CLP) or EWM can be hand pulled without a permit. In fact, immediate action is encouraged to limit weed increase. However, CLP and EWM can spread by plant fragments, so great care is needed to remove all plant material.

Some helpful resources for hand-pulling EWM can be found [here](#) and [here](#).

### Are your neighbors and extended family members of COLA?

If not, please ask them to [join](#).

### Support COLA by contributing to the Lac Courte Oreilles Foundation

### Why “Short Ears, ...?”

Lac Courte Oreilles, or Lake Short Ears, was the name used by the first French traders who visited what was then known as Ottawa Lake. A local band of Ottawas observed the custom of cutting off a portion of their ears.

### Tales of Lac Courte Oreilles

This book, edited by Tom and Sue Burgess, together with COLA’s history committee, compiled a detailed history of Lac Courte Oreilles. The book is available through [COLA](#) and the Sherman & Ruth Weiss Community Library in Hayward.

### History Comes Alive

This 2004 publication, compiled and written by Caryl A. Pfaff and Ann Marie Penskov, is a compilation of community and history center photographs available from the [Lac Courte Oreilles Ojibwa Community Library](#).

### Archived issues of Short Ears, Long Tales

