



# ***LITTLE RIVER NEWS***

FALL/WINTER 2017

## **MAY THE SERENITY OF OUR RIVER FLOW THROUGHOUT YOUR HOLIDAY SEASON**

2017 has been a very active year for the Little Manistee Watershed Conservation Council, our twenty-first year. Your council has come a long way from the early meetings in the spring of 1996, headed by John Gorys and Howard Roberts, and we remain indebted to both John and Howard for their vision, leadership, and commitment to our river.

Trustees Joyce Durdel and Armas Soorus and the Watershed Management Plan Steering Committee agreed in principle with the Alliance for Economic Success in Manistee to act as the fiduciary representative for LMWCC in selecting Networks Northwest to complete a watershed management plan for the Little Manistee River and its watershed that meets the rigorous standards of both the EPA and MDEQ. All contracts have been signed, and AES has made the initial payment of \$4000 to Networks Northwest. Two planning meetings have occurred with representatives from the DEQ, LMWCC, The Little River Band of Ottawa Indians, National Fish and Wildlife Service, the Manistee Conservation District among other interested groups. A third meeting is tentatively scheduled for December 6<sup>th</sup>. The Management Plan will provide guidelines for ensuring the continued health of the watershed for generations to come.

The council has completed several significant projects including remediating the remaining severe erosion sites along the river. The channelization project on the Gillespy property, undertaken by CRA is finished. **(continued pg10)**

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**RESULTS OF WATER QUALITY AND  
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**Imagine:** The logs in the photograph end on end stretching skyward, thick trunks slowly tapering, crowned by massive horizontal boughs, feathery branches rustling in the breeze, gently brushing against those of its neighbors, hundreds and thousands side by side so close it is difficult to slide between them, roots clutching deep into the sandy soil.

**Imagine:** The canopy of branches interlacing, impenetrable with no understory only a blanket of pine needles accumulated year upon year muffling the sounds of scurrying chipmunks and squirrels, or the heavier footsteps of deer, or moose, or bears, or the moccasin clad treads of the indigenous people who made these western Michigan river valleys their home.

**Imagine:** The cavernous darkness beneath these majestic trees, moving between trunks larger than you can wrap your arms round, touching the deep fissures of the darkened bark, alone drifting somewhere between the deep greens above and the russet brown carpet on which you walk.

**Imagine:** Swaying in the branches atop of one of those tremendous trunks, feeling the wind against your face, looking all around and seeing nothing but the vast sea of green in every direction, unable to glimpse the sinuous curves of the river far below through the density of the branches beneath you.



**Imagine:** Crystal clear, ice-cold waters dancing in dappled patches of sunlight over speckled gravel runs, dropping into deep dark pools, and inching closer to the bank looking into pods of finning grayling, so thick they bump against one another, too many to count, drifting, the sharp dorsal fins breaking the surface, the pale lavender flanks flickering in the diffused sunlight.

Now move forward through time, years, decades, centuries ignoring the constant buzzing of the saws, the stomping of the waiting draft horses' hooves on the frozen ground, the hissing of the primeval locomotives, the crashing of the falling trees gouging and scouring the banks as they slide into the river, the exposed sand tumbling behind them onto the



fine gravel stream bed. Pay no attention to the fishermen nattily attired as they yank grayling after grayling from the suddenly sun-washed and warming waters, lining them up side by side by the scores for what we today refer to as a photo op. Pretend that those sights and sounds were not repeated over and over along the entire stretch of the river, on all the rivers up and down the length of western Michigan. Put out of your mind the heat of the summer sun beating on the once shaded gravel runs now buried by sand. Don't think of the rains of spring and fall pelting the sandy embankments once protected by the canopy above and the carpet beneath, absorbed by the spreading roots of the vanished trees, or the winters' snows piling on the naked shores before the spring thaw shoots them in spates, carving

gullies into the banks washing more and more sands into the now fishless waters.

Now look all around where you stand or sit at your favorite spot on our Little Manistee River. Think of the incredible natural restorative transformations that have brought the river back from the ravages of the late 19<sup>th</sup> and early 20<sup>th</sup> century logging industry, and ask yourself what you are doing to insure the continuation of those processes. The Little Manistee Watershed Conservation Council has been, since its inception in 1996, committed to the restoration, protection, and preservation of the river we love, and it is the goal, in developing the Watershed Management Plan, to help each of us to make sure those processes continue for generations.

On pages 6 and 7 are the results of the 2017 **Water Quality Survey** and the **Macroinvertebrate Study** conducted by Joyce Durdell and her group of volunteers. The results of both programs provide an accurate assessment of the health of the watershed. A healthy and diverse population of macroinvertebrate species is dependent on suitable habitat and clean, oxygen-rich water. Water quality monitoring is an important on-going project of the LMWCC. Regular monitoring helps us to determine the overall health of the Little Manistee River. Trained volunteers collect the samples and transport them to the Great Lakes Water Quality Laboratory at Lake Ann, MI. A brief explanation of the tests performed and what they mean is outlined below.

**E. coli** - is a fecal coliform, and a biological contaminant that can be found in streams and lakes. It is a bacteria that colonizes the intestines of warm-blooded animals and humans. High counts over 300 colonies per 100 ml of water is of concern to people who spend time recreating in lakes or rivers as possible disease-causing organisms that exist in conjunction with E. coli, and some strains of E. coli can cause illness with full-body immersion in, and possible ingestion of, contaminated water. Slightly higher counts are acceptable in partial-

immersion areas such as where people just wade or have body exposure for very brief periods. High E. coli counts can also adversely affect dissolved oxygen levels, see BOD below.

The following chemicals/compounds, in excess, contribute to eutrophication, the excessive richness of nutrients in a lake or other body of water, frequently due to runoff from the land, which causes a dense growth of plant life and possible death of animal life from the lack of oxygen. High quantities of nutrients (sources such as agricultural run-off, raw sewage, products high in phosphates, i.e. fertilizers and cleaning products) create explosive growth in aquatic plants, exceeding the BOD -- biological oxygen demand -- the amount of oxygen required to decompose organic material. Increasing the abundance of nutrients in the water leads to an increase in the demand for oxygen to decompose the organic material. A BOD that exceeds the available oxygen produces dangerous levels of carbon dioxide.

**Ammonia** - A source of nitrogen that is quickly assimilated in moving water, but can act as a fertilizer.

**Nitrate/Nitrites** - Like ammonia, most forms of aquatic nitrogen break down in moving water and nitrogen is released into the atmosphere but can also act as a fertilizer.

**Phosphates** - Indispensable for plant growth - insufficiencies limit biological productivity. In high concentrations can lead to the rupture of blood vessels in aquatic organisms as well as oxygen depletion in the water chemistry - see BOD above. Less than 1.0 mg/L is considered acceptable for treated waters flowing into bodies of water from water treatment facilities.

**pH** - Water with a pH value of 7.0 is considered neutral. Any pH value under 7.0 is acidic while any pH value over 7.0 is considered alkaline/basic. Slightly alkaline waters of around 7.5, support trout reproduction, survival, and growth the best. Values between 6.5 and 8.0 supports life in most aquatic organisms.

**Chloride** - In less populated areas, chloride in streams and lakes may become elevated due to run-off from roads and ditches along roadsides where salt is used as a de-icer in the winter. Agricultural run-off may also contribute to chloride elevation due to salt and salt compounds used for farming practices. In urban areas, water softeners and waste water discharge affect the amount of chloride detected. Levels above 10 mg/L are reason to suspect contamination. Salt is damaging to

the environment of fresh water plants and animals and contributes to the effects of pollution and degradation of fresh water systems.

**Dissolved Oxygen** - The solubility of oxygen at sea-level and air-pressure of 760mm or 29.92 in., and equivalent to 29.38 in. at 500' above sea-level. A minimum of 4 ppm of dissolved oxygen is necessary for a viable aquatic ecosystem. Fish thrive best in well oxygenated water at 7.0 - 9.0 ppm. An adult brown trout thrives in water carrying levels of 9 - 12 ppm DO.

Air Temperature - ° F	Oxygen in PPM
32°	14.6
41°	12.8
50°	11.3
59°	10.2
68°	9.2
77°	8.4
83°	7.6

If you look closely at the charts on the following two pages, it is very evident that our monitoring continues to show a very healthy river.

LMWC C Site #	Collection Location	Total Coliform colonies / 100 mL	E. coli colonies / 100 mL	Nitrate mg/L	Nitrite mg/L	Chloride mg/L	Ammonia mg/L	Dissolved Oxygen mg/L	pH in pH units	Phosphorus (T) mg/L	Air Temp. °F	Water Temp. °F	Time 24 hr.
1	L.M. Below Luther Dam	1011.2	93.3	<1.0	<0.05	5	<0.05	8.2	7.2	0.063	72	64	10:40
2	L.M. Above Fairbanks Creek	>2419.6	228.2	<1.0	<0.05	5	<0.05	8.2	7.0	0.046	72	61	10:25
6	L.M. @ Hurleys Old M-63	1011.2	275.5	<1.0	<0.05	9	<0.05	8.1	6.7	0.034	72	59	10:00
8	L.M. @ Spencer Bridge	>2419.6	231.0	<1.0	<0.05	10	<0.05	8.0	6.9	0.022	68	58	9:35
9	L.M. @ Johnson Bridge	>2419.6	193.5	<1.0	<0.05	8	<0.05	8.3	7.0	0.015	62	58	9:21
10	L.M. @ Dewitts Bridge	1986.3	128.1	<1.0	<0.05	7	<0.05	8.2	6.9	0.005	62	58	9:06
11	L.M. @ Poggensee Bridge	1732.9	261.3	<1.0	<0.05	7	<0.05	8.1	6.9	0.021	62	58	8:49
12	L.M. above Cool Creek	727.0	105.0	<1.0	<0.05	7	<0.05	8.1	6.9	0.011	72	58	9:40
13	Cool Creek @ 18 Mile Bridge	2419.6	201.4	<1.0	<0.05	6	<0.05	8.0	7.0	0.010	72	64	9:35
16	Cool Creek @ Cool Lake	71.7	<1.0	<1.0	<0.05	5	<0.05	8.5	7.3	0.021	72	65	8:38
18	Cool Creek @ Hamilton Road	>2419.6	1789.0	<1.0	<0.05	5	<0.05	7.8	7.1	0.049	70	69	8:55
19	L.M. @ 9 Mile Bridge	1986.3	56.3	<1.0	<0.05	6	<0.05	7.8	6.5	0.021	70	64	9:15
20	L.M. @ 6 Mile Bridge	1986.3	49.6	<1.0	<0.05	6	<0.05	8.1	7.2	0.011	76	64	9:30
21	L.M. @ DNR Wier	155.3	53.8	<1.0	<0.05	6	<0.05	8.3	7.2	<0.005	76	64	9:50
22	L.M. @ Stronach Road	2419.6	48.7	<1.0	<0.05	6	<0.05	8.3	7.2	<0.005	77	65	10:15
23	Cool Lake @ Center West Lobe	117.8	1.0	<1.0	<0.05	5	<0.05	8.4	7.4	<0.005	72	65	8:50

## Results of the 2017 Macroinvertebrate Study

[illegible]

## LMWCC NEWS

### GRANTS

LMWCC has applied for a grant through the DNR's Aquatic Habitat Grant Program. The request is for \$40,000, and the trustees approved an expenditure of at least \$4000 as required by the program. The proposal is to fund a project utilizing the abundance of dead and dying ash trees along the river's corridor to stabilize eroded banks and prevent further sedimentation of the riverbed, construct fish habitat structures, and put into place other structures designed to improve the river's ability to transport sediments in an effort to expose more spawning areas for both resident and migratory fish. If a grant is awarded work will begin in May, and sites will be selected between King's Highway and Indian Bridge. Successful requests will be notified in late April.

### SYERS DAM

Nate Winkler of Conservation Resource Alliance (CRA) of Traverse City has informed LMWCC that he has secured sufficient funding to begin removing the earthen berm dam at the outflow of Syers Lake. The funds include a grant of \$40,000 from National Fish and Wildlife Service; LMWCC has pledged \$10,000, and the Little River Band

of Ottawa Indians has agreed to contribute \$12,500. The permitting process has begun, and Nate is hopeful that work will be underway by spring. The dam is impeding natural flows into Syers Creek, an historically important spawning area for native Brook Trout. You may remember that using a grant from Patagonia, LMWCC completed a habitat enhancement project on Syers Creek below M-37 in 2013.

### MANAGEMENT PLAN

Networks Northwest has begun collecting watershed data in the initial phase of developing a comprehensive watershed management plan. Alliance for Economic Success as LMWCC's fiduciary representative has made the first payments to Networks Northwest, and the Steering Committee has convened three planning meetings with Networks Northwest and interested parties.

### LAKE MICHIGAN

The US Army Corps of Engineers reported on October 27 that the rains of late fall have elevated lake Michigan nine inches above its level of the previous year. Currently the lake is 19 inches above the long-term average.



## CLIMATE CHANGE AFFECTS MICHIGAN'S FISHERIES

**The following is reprinted from the Michigan DNR newsletter:**

Climate, the long-term pattern of temperature and precipitation, varies greatly from the Upper Peninsula to southern Michigan. This variation in climate creates differences in water temperatures and stream flows across the state which in turn influences where different fish species live, how well they reproduce and grow, and the types of fisheries we see around the state. For example, walleye reproduction is better in northern lakes because those fish experience longer winters and cooler summers which favor this species. Therefore, it's critical to understand the importance of climate on Michigan lakes and streams and their fisheries, and how future changes in climate may affect these resources.

"Our climate is clearly changing," said Kevin Wehrly, a DNR-Fisheries Division research biologist from the Institute for Fisheries Research. "The earth's temperature increased about 1.5 degrees Fahrenheit over the 20th century. We are experiencing hotter summers and shorter winters. Ten of the hottest summers have occurred since about 2000, and 2016 was recently named the warmest year in recorded history." Climate change isn't just changes in

temperature, but also changes in precipitation and an increase in intense storm events. Changes of just a few degrees may seem trivial, but they have important effects. There are some great examples from the agriculture industry. Take for example the plant hardiness maps produced by the U.S. Department of Agriculture (USDA) which have now been updated twice in the past 26 years to reflect changes in our climate. Growing conditions in Michigan today look more like those experienced in Kentucky back in 1990... It is uncertain what future climate change will mean for Michigan's world class fisheries. To allow better planning for the future, the DNR's Fisheries Division has started a program to evaluate how lakes, streams and their associated fish communities will respond to warming temperatures and increasing precipitation... "Our preliminary results suggest that under all future climate scenarios there are clear winners and losers," Wehrly said. "Warmwater species such as largemouth bass, bluegill and other panfish are the winners and will see an increase in habitat in Michigan. The losers are coolwater species such as walleye and coldwater species such as trout. Fewer stream miles and lakes are expected to support these species under the projected future climate.

**(Continued from page 1)**

and Nate Winkler of CRA who spearheaded that project has already selected a site for another channelization project on the river designed to create a more diverse streambed with deeper pools and a current flow capable of moving accumulated sediment. Nate has begun seeking underwriting for the work in the form of corporate and public grants.

LMWCC has submitted the largest grant request in its history to the MDNR Aquatic Habitat Grant Program. **(See page 8 for details.)**

A fish habitat structure project below Fox Bridge has been approved, and as of this writing is very near completion. The cost of this work has been underwritten with monies from a gift by the Jorgensen Family Foundation which continues its incredible commitment to the work of the LMWCC through its generosity.

This is an exciting time for your council. We are bigger and have gained considerable influence around the state as a responsible and effective steward of the river, yet we have not lost the grass roots sense that this is our river. This is our council, and your involvement in the work of the council in whatever way you can contribute is mandatory to our continued success.

**Annual Meeting Review**

Minutes from the Annual Meeting in July were mailed to members, and the Trustees continue to evaluate the effectiveness of what is the major fund-raising event for the Council. And most would agree that the gathering is a wonderful occasion to hear the latest news about the work of the Council and gain the perspective from outside sources on the health and future well-being of the river and its watershed, such as the presentation this past summer by Mark Tonello, DNR fisheries biologist.

Yet in spite of securing a broader range of items for the raffles, the revenue generated at the meeting remains stagnant year to year. This year's gross sales were almost \$2,000 less than the year before, and after expenses, the net amount raised was \$1300 less than the meeting of 2016.

So as a member think about making donations to the raffles, or at least buying the raffle tickets that are mailed to you in advance of the meeting. This is your council, and any way you can contribute to its effectiveness makes it that much stronger. On page three you were asked to think about what you are doing to perpetuate the river's natural healing processes. Becoming more active in the Council is one way to do that.

**YOUR TRUSTEES****2017**

Tim Phillips	President
Jim Squier	Vice President
Dan Sernick	Treasurer
Greg Block	Project co-Ordinator
Evelyn Furman	Salmon-in-the-Classroom
Dale Downes	Membership
Joyce Durdell	Water Testing & WMP
David Spruance	Secretary Newsletter Grants
Joe Rogers	SWAT
Armas Soorus	WMP
Steve Bishop	
John Gorys	Emeritus
Kaye McDonald	Emeritus
Gordon Lewis	Emeritus

**OTHER NON-TRUSTEE CO-ORDINATORS**

Anna Jo Rogers	Web Site
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**Membership renewal** forms will be sent out before year's end. Please take a moment to renew your annual membership and consider adding to your dues with a contribution. Remember the monies donated to the **Howard Roberts Memorial Fund** are used solely for in-stream improvements and habitat enhancement. And you can now renew at The LMWCC website using Pay Pal. Also please consider what you can do for the Council in non-monetary ways. We always need volunteers to assist with our on-going work: Water Quality and Macro Invertebrate surveys, in-stream work projects, and solicitation of donations for the annual meeting.

**OUR MISSION**

Is to bring together persons and organizations who have an interest in the resource conservation and restoration of the Little Manistee River and its watershed. Our goals are to restore, protect, and preserve the natural character of the watershed by communicating resource problems and then offering and implementing problem resolution. We are a state chartered non-profit, tax-exempt organization. All contributions are tax deductible under §501{3} of the IRS code. Our business is conducted by a council of trustees elected by the membership. All positions are voluntary, non-compensated.