

Lake Associations

By Mark Hoyer, LAKEWATCH Director

I am just back from the North American Lake Management Societies 37th Annual meeting and I saw many great presentations on the ecology and management of lake systems. One interesting presentation that I want to share with LAKEWATCH volunteers was by two undergraduate students describing a statewide survey of Lake Associations in Minnesota, which is one of the few states that has more lakes than Florida. Many lakes in the LAKEWATCH program have lake associations but many do not and not many associations communicate with one another. This report may be of interest to LAKEWATCH groups that do not have associations and it may lead those that do to find a

way to communicate with other associations.

The following is the citation for the report and the whole report can be found at (<http://www.mnlakesandrivers.org/sites/mnlakesandrivers.org/files/files/mn-lake-association-survey-2017-report.pdf>):

Mona Ibrahim, Michelle Marko, Benjamin Bjertness, Matthew Zabel. 2017.

Minnesota's Lake Associations:

Who they are and what they do. Final Report. Minnesota Lakes and Rivers Advocates, and Concordia College's Office of Undergraduate Re-

search.

I have supplied the executive summary for your consideration.

Executive Summary

This report provides empirical data on who Minnesota lake associations are, the scope of the lake conservation activities that they engage in, the major concerns they have, and the main hurdles they face. Survey methodology was used to gather data from 250 respondents, representing 186 different lake associations in Minnesota. Methods of analysis included descriptive, frequencies, and correlations.

Examination of descriptive

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- Most Minnesota lake associations were formed in the 1960s and 70s. The main reason for forming a lake association is the preservation/protection of the lake. Specifically, the top goals most lake associations have are to control aquatic invasive species (AIS) in the lake and to improve the quality of the lake water.



Mark Hoyer Director of Florida LAKEWATCH

- Most lake associations in our sample report that their members are motivated to reach the lake association's goals and welcome membership by anyone interested in the welfare of the lake, not just owners of lake properties.

- Most lake association have 100-400 members and 10 or more board members. Even though about half of lake association board members have expertise in specific lake conservation areas such as fisheries and/or AIS, only about 5% of them are able to contribute to legislation affecting the lake.

- Collectively, the 500+ Minnesota lake associations donate about \$6.25 million, annually, to the care of Minnesota's lakes.

- Collectively, the 500+ lake associations in Minnesota contribute about 1.2 million

volunteer hours annually to lake conservation activities, including AIS inspection, attendance of meetings, water quality testing, and community education/outreach activities.

- The top 3 concerns of lake associations in Minnesota are: AIS, overall water quality, and runoff control.

- Most respondents agree or strongly agree that their associations face hurdles in becoming more engaged in lake conservation activities.

- The top 3 challenges that Minnesota's lake associations face as they work on achieving their goals are: Inadequate member participation (i.e. the needs far exceed the available human capital), not being heard/taken seriously by the DNR, and the aging population of lake property owners.

- Most respondents do not agree that their lake associa-

tions are authentically included in the lake planning process.

- Most respondents do not feel that their lake associations have real authority over the lake.

- Most respondents do not think that the DNR has sufficient lake management policies in place.

Qualitative data, obtained from observations at field visits, email and phone communications, and an open-ended survey question, revealed that AIS, lack of communication with the DNR, managing water quality, and engaging members are major concerns of many lake associations. Lake association members assert that AIS infestations greatly impact their lives and are eager to engage in more collaborative conservation efforts with the DNR. Miscommunications about decisions affecting the lake and about allocation of funds may result in the projection of major concerns and hostilities directly toward the DNR.

The report concludes that Minnesota's lake associations play a crucial role in protecting and managing Minnesota's lakes and recommends more communication and collaboration between policy makers and lake associations.

Planting the Seeds for Success: Program Focuses on Invasive Plant Professional Development and Resources for Educators

Dehlia Albrecht, Center for Aquatic and Invasive Plants

The Florida Invasive Plant Education Initiative was created in 2005 to provide educators with the information and resources needed to teach students about the harmful impacts of invasive plants on our natural areas and neighborhoods. Over the years, we have developed four curriculum modules with over 70 lessons and activities aligned to Florida education standards, an annual professional development workshop for educators (Plant Camp), online resources, educational materials and games, and a social media presence. Regular communication and col-

laboration with teachers ensures that our materials remain relevant and practical for classroom use.

Due in part to our tropical and sub-tropical climate and year-round growing season, Florida has major environmental and economic problems resulting from invasive species. Education can play a critical role in preserving Florida's natural areas through increased awareness of the problems caused by invasive species. By introducing younger generations of Floridians to the importance and complexities of natural resource management, our

programs help ensure that we have the engaged citizens, scientists, researchers, and resource managers needed to confront these problems in the future.

Plant Camp provides educators with a behind-the-scenes look at Florida's comprehensive invasive plant management program. Each year, teachers across the state apply to attend this unique professional development workshop. Thanks to our sponsors, presenters and teacher participants, another successful Plant Camp was held from June 12-16th, 2017. This was the 12th such work-



Teachers learn plant morphology and identification skills in an activity led by Dr. David Hall.

shop put on by the joint efforts of the UF/IFAS Center for Aquatic and Invasive Plants (CAIP) and the Florida Fish and Wildlife Conservation Commission (FWC). Presenters from CAIP and affiliated departments, state agencies, and the private sector provided informative sessions throughout the week. Teachers participate in all kinds of “camp” activities, such as trekking through the woods, identifying and removing invasive plants, observing maintenance control by airboat, and dip-netting for macro-invertebrates. The goal of the workshop is to provide teachers with practical field experience, background information, and educational resources to enable them to successfully introduce the important topic of invasive

species and invasive plant management in their classrooms. After the workshop, teachers are provided with lesson plans, materials, and online support to facilitate and encourage their continued participation and to help them teach about invasive species with confidence. Approximately 300 teachers have attended our workshops and, in turn, have taught more than 200,000 students over the past years!

Participating teachers complete a pre-test and post-test to measure their knowledge gains and to assess changes in their attitude toward the management of invasive species. For example, 2017 Plant Camp graduates showed substantial knowledge gains on the definition of a native plant (23%),

the definition of a non-native plant (17%), and the reasons why some non-native plants are able to spread (28%). We also query teachers’ opinions on the various methods of invasive plant management – chemical, mechanical, biological, and physical (each of which is explained during the program). Participants have consistently demonstrated an increase in their positive opinion on all methods of invasive plant management. Commenting on the workshop in general, one teacher stated “...This was very educational and amazing. I will absolutely be building a curriculum around this.”

Applications for our next Plant Camp, to be held June 11-15th, 2018, will be available beginning December 12, 2017. Applications can be



Plant Camp 2017 participants remove invasive tuberous sword fern from a field site.

found on our website at <http://plants.ifas.ufl.edu/education/plantcamp/> and are due February 18, 2018. The workshop is free for educators to attend, with lodging and most meals provided. Additionally, educators can earn 32 hours of professional development credit and will return to their classroom with an abundance of activities and resource materials.

All of our educational curriculum and materials, including audio-visual presenta-

tions, are available for download on our website (<http://plants.ifas.ufl.edu/education/>). Materials needed to implement the educational games developed by the Education Initiative are available in loaner kits with one month's advance notice. All activities come with detailed lesson plans. Each activity takes approximately 45-50 minutes to complete (although some require prior background knowledge). If you are an educator and/or

involved in youth outreach and are interested in borrowing a teaching kit or would like more information, please contact the Florida Invasive Plant Education Initiative at caip-education@ufl.edu or 352-273-3665. Be sure to also follow the Education Initiative on Facebook (<https://www.facebook.com/ufinvasiveplantsedu/>), Twitter (https://twitter.com/PLANT_CAMP) and YouTube (<https://www.youtube.com/user/UFIInvasivePlantsEDU>).



Teachers dipnet for macroinvertebrates in a lab activity led by Dr. Chuck Cichra and Crystal Hartman.

The Florida Fish and Wildlife Conservation Commission (FWC) is developing a Black Crappie Management Plan.



Black Crappie (*Pomoxis nigromaculatus*) is a highly-valued sportfish throughout much of North America, including Florida. Florida's Black Crappie fisheries are seasonal, largely occurring during winter and spring, making Florida a popular winter destination for travelling "Speck" anglers, as well as resident anglers. On many systems, Black Crappie are the most targeted sportfish during these winter months and possibly the most targeted fish for the entire year at some lakes.

Despite the popularity and value of Black Crappie angling to the state of Florida, there is relatively little directed management for this species. Black Crappie fisheries are typically harvest oriented and are known to produce "boom-or-bust" years due to highly variable recruitment. Currently, for the vast majority of

Florida's crappie populations, harvest is managed only by a 25-fish per day per angler bag limit.

The Black Crappie Management Plan (BCMP) seeks to provide the best direction for management and research for this popular sportfish. The BCMP is being developed by FWC staff from multiple divisions and offices with input from a wide range of public stakeholders. Initial steps of the BCMP will include a thorough review of available science relevant to Black Crappie fisheries and management. However, one of the most important components in forming the BCMP will include extensive outreach and engagement with crappie anglers, thus allowing managers and researchers to more clearly understand their motivations, priorities, and desires.

If you are a crappie angler who would like to provide input, please email Ryan.Hamm@MyFWC.com to complete an angler survey.

Florida LAKEWATCH has a great working relationship with Florida Fish and Wildlife Conservation Commission (FWC). If you are a Black Crappie Angler please consider helping FWC by filling out the survey described above.

Thank You, Mark Hoyer, Director
Florida LAKEWATCH



Questions from LAKEWATCH Volunteers

By Mark Hoyer



A photo of the Lake showing the plants along the shore. Photo credit Mark Hoyer

At every LAKEWATCH Regional meeting staff record questions from volunteers which historically has directed LAKEWATCH efforts in research and extension. For example, in the early 2000's LAKEWATCH received numerous questions about bacteria in lakes and if it was safe to swim in Florida lakes. So, we found funds to conduct a study measuring total coliforms and *Escherichia coli* in 99 Florida lakes comparing the data to state health standards and found the vast majority of Florida lakes have bacteria concentrations well below any state standards

and thus presenting little if any risk to swimmers. The data were published in a peer reviewed journal (Hoyer et al. 2006) and we created Information Circular 106 (Extension Publication) entitled "A Beginners Guide to Lake Management – Bacteria", which can be found on the LAKEWATCH QWeb Site: <http://lakewatch.ifas.ufl.edu/pubs/circulars/Circ106BacteriaLR.pdf>

LAKEWATCH continue to record questions at Regional and thought the listing the areas of questions would be interesting to our readers. Table 1

shows the summary of topics from over 500 questions that LAKEWATCH has received over the last several years. The number one issue of concern appears many management aspects of aquatic plants (35% of all question) followed by fish and wildlife interest/concerns (23%) and water level/access issues (21%). We have already written circulars on aquatic plants (Circular 111) and two on fish (Circulars 107 and 110). Just this year we have written a circular on Muck (Circular 112) to address water level/access issues that can also be found on the LAKEWATCH

web site at:

<http://lakewatch.ifas.ufl.edu/pubs/circulars/MuckCircular.pdf>

LAKEWATCH will continue to record questions from volunteers and use that stakeholders input to focus our research and extension efforts. If you have lake management questions, interests, and/or concerns feel free to share them with Florida LAKEWATCH and we will address them and we receive them. As always LAKEWATCH thanks all of our volunteers for their efforts sampling lakes and being good stewards of Florida's priceless aquatic resources.



A shorebird by the lakeshore. Photo credit Mark Hoyer

Hoyer, M. V., J. L. Donze, E. J. Schulz, D. J. Willis, and D. E. Canfield, Jr. 2006. Total coliform and Escherichia coli counts in 99 Florida lakes

with to some common limnological factors. Lake and Reservoir Management. 22: 141-150.

Table 1. Summary of topics from questions asked at LAKEWATCH Regional Meetings (2007 to 2016).

Aquatic Plants	Fish and Wildlife	Water Level/Access	Water Quality	Lake Uses
Plants (121)	Exotic Species (55)	Lake Water Level (95)	Water Clarity (31)	Swimming Areas (6)
Grass Carp (41)	Sportfish Fish (40)	Sediments (13)	Algae (16)	Jet Skis/Boats (5)
Herbicides (19)	Aquatic Birds (28)	Hurricanes (3)	Color (12)	Trash (4)
Tussocks (4)			Storm Water (9)	Irrigation (2)
	TOTAL 123 (23%)	TOTAL 111 (21%)	Waste Water (9)	
TOTAL 185 (35%)			Bacteria (6)	TOTAL 17 (3%)
			Fertilizers (5)	
			Heavy Metals (3)	
			Oxygen (3)	
			Trends (1)	
			Pesticides (1)	
			TOTAL 96 (18%)	

Volunteer Bulletin Board

LAKEWATCH has a data sheet with a small check list for you to check off after you have completed your task. Please be sure to check off that you have collected the water sample for total nitrogen and total phosphorus (the small bottle), that you have collected the water sample and filtered it for chlorophyll and that you have taken a Secchi disk reading.

You may have already noticed that the LAKEWATCH field sheets have changed adding spaces where the time samples are collected can be recorded. It is very important that you remember to write the time for each station that you sample even if you write a vanishing point on the bottom for the sample.

And, as always, we thank you for your dedication to the LAKEWATCH program and help in collecting the best data for management of Florida's valuable aquatic resource.

Thank you,
The LAKEWATCH Crew

Florida LAKEWATCH Freshwater Data Sheet

Lake Name: _____ County: _____

Sampler: _____

Phone: () _____ Date: _____

Yes ☒ No ☐ : Surface Water Collected for Total Phosphorus and Total Nitrogen.

Yes ☒ No ☐ : Surface Water Collected for Chlorophyll and Filtered Within 48 Hours.

Yes ☒ No ☐ : Secchi Depth Reading Taken

Secchi Disc Measurements:

• For **Secchi depth** and **water depth** measurements, please indicate the number of feet and then estimate and circle the appropriate fraction, if needed.

• If your **disc is visible on the bottom** write **B**, If your **disc disappears in the weeds** write **W**, in the **vanishing point** column and the **depth** at which your disc disappears.

Vanishing Point	Sun Code Number	Sun Code Key <small>Use the codes from below to fill in the Sun Code Number column.</small>	Water Depth	Time
Sta 1 ft. 1/4 1/2 3/4		1 = full sun	ft. 1/4 1/2 3/4	
Sta 2 ft. 1/4 1/2 3/4		2 = haze over sun	ft. 1/4 1/2 3/4	
Sta 3 ft. 1/4 1/2 3/4		3 = thin cloud	ft. 1/4 1/2 3/4	
		4 = medium cloud cover		
		5 = heavy cloud cover		

DESCRIBE the amount and duration of any unique occurrences that have occurred within two weeks or so before your sampling date either in the lake or on the local watershed:

Lake Level Measurements: Please circle or describe the type of gauge located in the lake and then record the lake level. Type of Staff Gauge: WMD / City / LCWA / USGS / Other (Please describe): _____

Lake level: _____ Rain (in.) since last report: _____

* If you wish to record lake levels of your lake, please fill in these last two blank. Call LAKEWATCH (1-800-LAKEWATCH) if you have any questions on how to get started.

Update Your Information

We are updating our records. If you are not a primary sampler but would like to remain on our mail list, please call 1-800-525-3928 so that we can update your information. We are purging our mail list and will remove any non-primary samplers from the mail list unless we hear from you.

Thank you,
The LAKEWATCH crew

Volunteer Bulletin Board

Notice to all Florida LAKEWATCH active Samplers

Keep those samples flowing! Please be sure to deliver all frozen water and chlorophyll samples to your collection center as soon as possible. This will allow us to collect and process them in a timely manner.

Thanks for you help!



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All unsolicited articles, photographs, artwork or other written material must include contributor's name, address and phone number. Opinions expressed are solely those of the individual contributor and do not necessarily reflect the opinion or policy of the Florida LAKEWATCH program.

From the Water Lab

Before finishing your lake monitoring duties, please check your data sheets and water bottles for accuracy. Be sure to double-check the stations locations and their numbers and remember that sampling stations should be consistent for each sampling event. In other words: Stations 1, 2 and 3 do not simply refer to the order in which you happen to collect water on a given day, but should instead refer to fixed GPS locations.

Thanks you and keep up the good work!

No longer sampling?

If you are no longer able to monitor your lake, please let us know as soon as possible so that we

can find a new volunteer to train and continue the work that you have started! It will also enable us to maintain consistent data if we can train someone before the next sampling date arrives.

Kit Roundup

If you are no longer able to sample and you have sampling materials that are in your way, collecting dust, let us help! Please give us a call and we'll make arrangements to pick up the materials so that we can revamp them and re-use them. Like everything else these days, the kits have become more expensive, so we need to be more diligent in collecting and re-circulating the unused materials.

Thanks for your help!

Happy Holiday Season