



**North American Lake  
Management Society**

2019 Annual Report

*Our mission is to forge partnerships among citizens, scientists,  
and professionals to foster the management and protection of  
lakes and reservoirs ... for today and tomorrow.*



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NALMS had a good year, including two well-subscribed conferences and many expressions of support. Through several initiatives, we affirmed and renewed our commitment to the NALMS mission.

Once again, NALMS demonstrated that the heart of our work is organizing opportunities to bring together members and partners for professional development and collaboration. The 2019 National Monitoring Conference in Denver, Colorado allowed partners to highlight advances in monitoring strategies and data access, despite a pro-longed government shutdown at the start of the year. Subsequently, the International Symposium in Burlington, Vermont engaged NALMS members and partners in important conversations, workshops, and technical sessions focused on both tried-and-true and innovative approaches to lake and reservoir management.

NALMS Development Committee members continued their work to create a culture of giving. We are grateful to all who stepped up to contribute in 2019, both in response to online requests and by participating in the annual silent auction. The NALMS student scholarship fund grew during the year, and we look forward to expanding outreach to students in the future.

While much remains the same in our organization, the Board approved two key changes during 2019. The new Partners Program was created when we recognized a need to transform the *ad hoc* Government Affairs Committee into an ongoing program focused on building and sustaining partnerships. In addition, recognizing the need to diversify our membership and leadership, we kicked off a year of diversity starting with the 2019 Annual Business Meeting.

In 2020, the NALMS Board is especially excited about several priorities: recognizing, supporting, and growing our diverse membership; formalizing an evolving culture of giving; and partnering with other organizations to bring high quality research reports and management recommendations to our members. Looking forward, we anticipate collaborating with other aquatic science societies to protect water in a changing climate, through active participation in the Consortium of Aquatic Science Societies.

Thank you to all who continue to support NALMS by contributing in multiple ways, from dedicating time toward keeping the organization thriving to donating funds to help restore our financial reserves. We are grateful for your support of lake management and protection.



**Perry Thomas**  
President



## Audited Financials as of December 31, 2019

In 2019, NALMS reached a turning point for shoring up the financial health of the organization with increased revenue along with cost cutting measures that had been put in place after depleting reserve funding at the end of 2018. The good news is that the Board was able to begin to restore funding reserves and continues to diversify revenue sources. As a result, NALMS found itself in a strong financial position heading into 2020. With the coronavirus pandemic, the Board is now focused on how to navigate through these uncertain times and support our mission of partnering to protect lakes and reservoirs, which is now more relevant than ever.

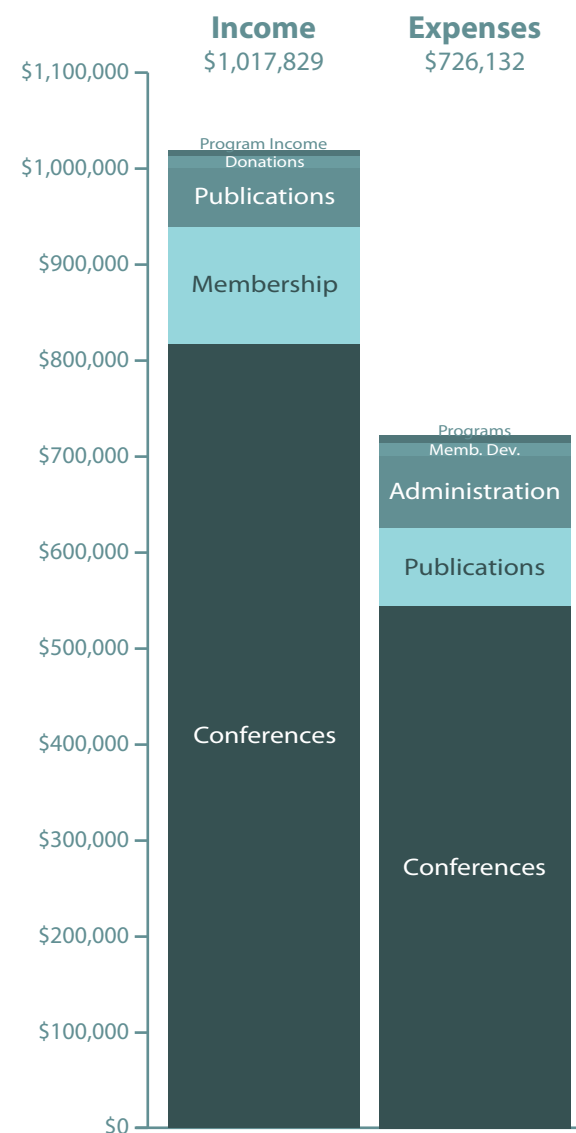
Conferences usually account for the largest portion of income and expenses for the organization, and the overall budget also fluctuates depending on whether it is a one- or two-conference year. NALMS organized two conferences in 2019, the National Monitoring Conference (NMC) on behalf of the National Water Quality Monitoring Council in Denver, Colorado in March and the NALMS international symposium in Burlington, Vermont in November. Although the NMC is typically held in even years, it was delayed from 2018 to 2019. The federal government shutdown in the months leading up to the event made for some stressful moments, but the shutdown ended just in time to hold a successful event. The annual symposium was also successful later in the year, with a record amount of sponsorship support and high attendance numbers.

NALMS continued to increase its membership and publications income, with these categories accounting for the next most important income sources. A culture of giving is now established within NALMS, with donations from individuals and organizations in excess of \$17,000 in 2019, and a campaign to chip in \$40 (or any amount) in honor of our 40th anniversary already well on the way to achieving a \$4,000 goal in 2020. NALMS continues to make a concerted effort to expand the visibility of the organization through increased social media and outreach activities.

At the annual meeting in 2019, the Board voted to restore a portion of the funding reserves and later a reserve funding plan with a schedule to increase reserve funding over time to cover core expenses for at least 6–12 months and account for inflation. The Board has already approved a development plan to guide fundraising for 2020, one that will be adapted, as needed, in response to public health concerns and the economic crisis caused by the novel coronavirus.

This report is based on audited financial information. The IRS Form 990 and Audited Financial Statement for 2019 [are posted to our website](#) where you can also find financial information for previous years.

## 2019 Income and Expenses

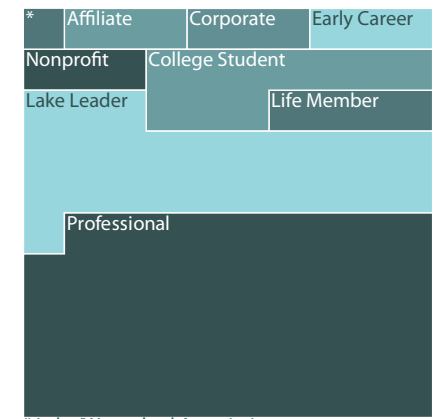


## Who Are Our Members?

NALMS was founded in Portland, Maine in 1980 as an organization with membership open to both professionals and citizens interested in applied lake management, while other organizations focused on either one or the other. This unique niche is reflected in our mission: *To forge partnerships among citizens, scientists, and professionals to foster the management and protection of lakes and reservoirs for today and tomorrow.*

Our membership serves to bring all stakeholders together welcoming anyone interested. Membership includes professional and citizen scientists, formal and informal educators and academics, federal, state and municipal officials, students, property owners, recreational enthusiasts, and industry representatives. In 2020, we were pleased to see members signing up for the new categories for early career and Lake/Watershed Associations.

### Members by Membership Level



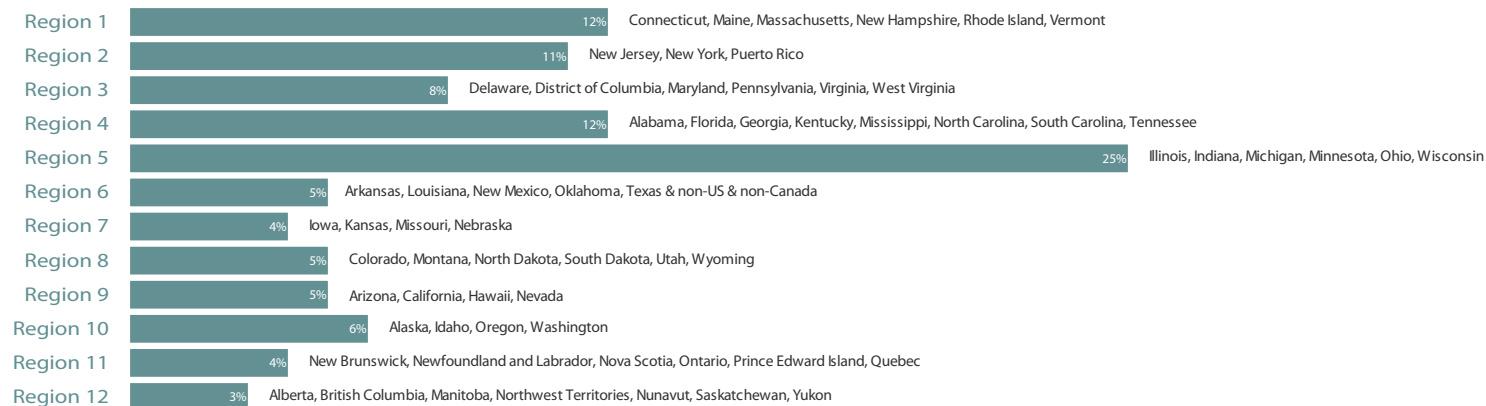
\* Lake/Watershed Association

## Where Are Our Members?

As a lake management organization, our membership is greater in areas with a high concentration of naturally-occurring lakes, *i.e.*, the Great Lakes, New England, and Southeast. NALMS members, however, are found in all areas of the US and Canada as well as internationally. NALMS members live and work not just on natural lakes, but also on reservoirs and in the watersheds that feed lakes and reservoirs.

NALMS' board of directors includes volunteers representing 12 geographic regions in the US and Canada. Members residing outside of the US and Canada are represented on the board by the Region 6 director.

### Members by Region



## Promoting Diversity

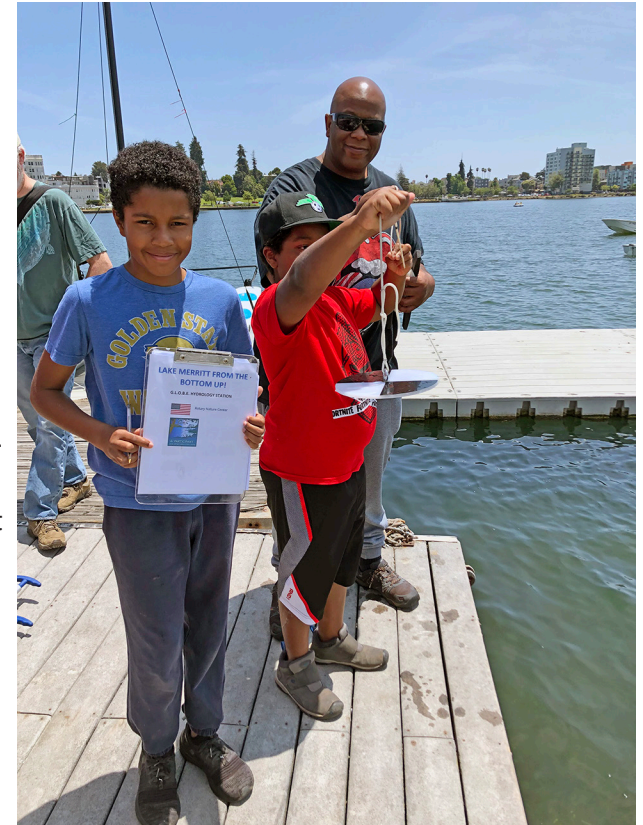
NALMS is an organization focused on improving lakes and watersheds through outreach, education, and research. Much of this is performed by members affiliated with universities, government agencies, and private companies. This has been a successful approach for many years, but NALMS realized we needed to reach out beyond our traditional base and bring in younger and historically underrepresented groups to introduce them to the field of aquatic sciences.

In 2019 NALMS initiated an effort to form connections with high schools, community colleges, historically black colleges and universities, and women only colleges and universities to encourage participation in NALMS symposia and provide mentorship for students and educators. Starting at the high school level will introduce students to a field they may not have considered, encouraging them to take up the vocation when they enter college. Because students learn best from teachers with diverse backgrounds and experiences, these sessions will be led by local leaders in the communities.

In addition to work currently presented by university students, future symposia will include workshops for educators and sessions where local high schools and community colleges can present their work in the fields of aquatic science. Students and educators will be exposed to leading researchers and management practitioners that can provide feedback on their projects while inspiring enthusiasm for future work. This will be particularly important for urban neighborhoods without easy access to lakes or streams.

To promote these goals NALMS adopted a Diversity Statement, seen on our website at <https://www.nalms.org/diversity-statement/>, and inserted language in the host committee RFP requiring the applicant to state how they will encourage participation by diverse groups and early learners.

NALMS will be a stronger organization by embracing participants from all backgrounds and ethnic groups, working for the common goal of healthy lakes and watersheds.



*Participants in the 2019 Secchi Dip-In at Lake Merritt, Oakland, California. Photo: Katie Noonan.*

## Volunteers Monitoring the Quality of Our Lakes

Since 1994, **The Secchi Dip-In** has demonstrated the potential of volunteer monitors to gather environmentally important information on our lakes, rivers and estuaries.

The original concept of the Dip-In was simple: individuals in volunteer monitoring programs take a transparency measurement on one day during the month of July. Individuals may be monitoring lakes, reservoirs, estuaries, rivers, or streams. These transparency values are used to assess the transparency of volunteer-monitored lakes in the United States and Canada. A goal of the Dip-In is to increase the number and interest of volunteers in environmental monitoring by contributing to an international effort.

In 2018, NALMS partnered with the Oklahoma Water Resources Board and was awarded an Exchange Network Grant from the US Environmental Protection Agency for updating the Secchi Dip-In database using the Ambient Water Quality Monitoring System (AWQMS). Work on the new database began in 2019 with plans to have the new data entry forms available in time for the 2020 Dip-In. These enhancements will make it easier for individual volunteers and volunteer monitoring programs to submit their Dip-In data via the NALMS AWQMS website or Global Lake Ecological Observatory Network (GLEON) Lake Observer mobile app. The updated database will also allow volunteers to submit as much data as they can gather on a year-round basis.

In the archived database, there are now more than 46,500 Dip-In records on more than 7,800 waterbodies from twelve countries available for viewing and downloading. NALMS also submits Dip-In data directly to the Water Quality Portal, the US government's water quality data clearinghouse.



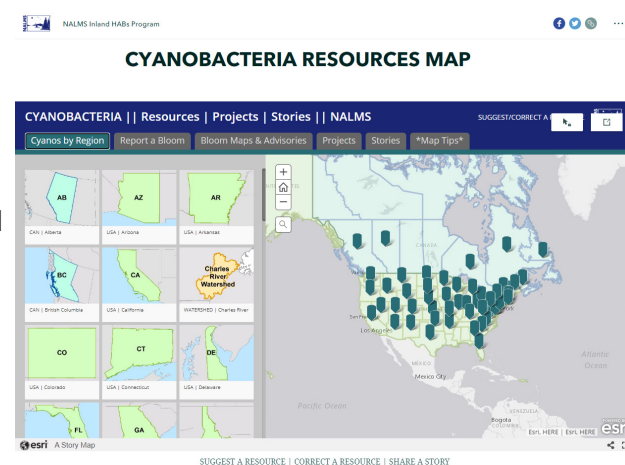
Participants of the 2019 Secchi Dip-In on Lake Wallenpaupack, Pennsylvania. Photo: Lisa Borre.

## Expanding the Harmful Algal Blooms Program

During 2019, we announced new features on the **NALMS Inland HABs Program** web page, including an interactive Story Map featuring cyanobacteria resources. These resources are maintained by Shane Bradt and Angela Shambaugh, co-chairs of our HABs Committee.

Angela Shambaugh is also co-leader of a study focused on harmful cyanobacteria blooms by a national team sponsored by the Interstate Technology and Regulatory Council (ITRC). Angela reports, "The final product will include sections on nutrient management, monitoring, in-lake management approaches, and communication strategies." ITRC works closely with EPA, NOAA, USACE and other federal partners while developing these products. The harmful cyanobacterial blooms (HCBs) Team will finalize their product in 2020, with public release and training opportunities scheduled for early 2021.

In the interim, NALMS is in conversation with partner organizations such as the Aquatic Plant Management Society and members of the Consortium of Aquatic Science Societies regarding cyanobacteria-related initiatives leading up to the 2020 NALMS Symposium and the 2022 Joint Aquatic Sciences Meeting.





## Advancing the Profession of Lake Management

NALMS' **Professional Certification Program** recognizes individuals who have exceptional training and experience in lake management and guide their continued professional growth as leaders of the lake management profession.

A Certified Lake Manager (CLM) is an individual who is directly involved in the comprehensive management of a lake, pond, reservoir or other body of water and its watershed. Lake managers make decisions that affect the quality and uses of the body of water through management recommendations and the implementation of those recommendations.

A Certified Lake Professional (CLP) is also an individual who is directly involved in the management of a lake, pond, reservoir or other body of water and its watershed. However, lake professionals provide critical technical or socio/economic data used in making decisions that affect the quality and uses of the body of water.

CLMs and CLPs have satisfied NALMS requirements for certification and established themselves as knowledgeable and experienced experts of waterbody management. CLM and CLP certifications are valid for three years, and re-certification requires 50 NALMS Continuous Education Units (NCEUs) earned over the past three years. Both the initial and renewal applications are vetted by a panel of volunteer evaluators who themselves are CLMs and CLPs and appointed based on their outstanding achievement and continued growth.



*Deploying a sensor array in New Hampshire as part of the lakes Regional Monitoring Network project. Photo: Amy Smagula.*

## Celebrating Our Lakes

For more than 20 years, NALMS has celebrated **Lakes Appreciation Month** to focus attention on the value lakes and reservoirs provide to society and the threats they face. Lakes and reservoirs are used for a variety of purposes: water supply for municipal, industrial and agricultural use, recreation, flood control, and aesthetic enjoyment. However, they are often considered “free” resources by users and this can result in abuse and neglect.

July is a time when many folks are vacationing and enjoying lakes and reservoirs. This provides a perfect opportunity to set aside time to celebrate or volunteer to help your local waterbody.

NALMS encourages the public to participate in Lakes Appreciation Month activities such as organizing lake or watershed clean-up events, starting a watershed storm drain stenciling program, hosting a Lakes Appreciation Night at a local restaurant benefiting a local lake association, among many other ideas listed on the Lakes Appreciation Month website. In 2019, NALMS posted a map to track the 18 state and local declarations.

In 2019, LaMotte Company and SOLitude Lake Management sponsored Lakes Appreciation Month.



*NALMS member Robyn Smyth and daughter Haddy celebrating Lakes Appreciation Month at South Twin Lake, New York. Photo: Robyn Smyth.*

## Supporting the Next Generation of Lake Managers

NALMS' student members play an important role in the future of the organization and we offer a number of **student programs** to help them in their transition to lake management professionals. At our symposia, NALMS offers travel scholarships through the Eberhardt Memorial Student Fund, and the Jody Connor Student Awards recognize excellent student presentations. The Student Mentorship Program pairs active NALMS members with student members providing a valuable student-mentor relationship.

Students elect their own representative to the NALMS board and the organization also highlights the work of student members through a regular column in *LakeLine Magazine*. A series of videos on lake management topics has been created by students and is showcased on the NALMS website and the organization's YouTube channel.

To help our student members more easily make the transition from school to professional careers in lake management a new early career membership category was created in 2018. This membership level is available to individuals with less than 5 years in the field.



*Students are encouraged to interact with NALMS board members at events such as the student luncheon at the symposium. Photo: Todd Tietjen.*

## Facilitating the Exchange of Lake Management Advancements

Since 1980, NALMS' **Annual Symposium** has played an important role in facilitating the exchange of ideas and technological advancements through oral presentations, posters, workshops, field trips, and exhibits covering a wide variety of lake and reservoir management topics. The symposium offers excellent opportunities for networking, and lifelong professional associations are often forged at the NALMS symposium.

NALMS is a melting pot, welcoming anyone with an interest in lakes and lake management. The 500–600 attendees of NALMS' symposia represent both public and private sectors, including water resource professionals, academic researchers, lake and watershed managers, and lake associations. The symposium attracts attendees from all over the US and Canada, as well as other international locations.

NALMS, along with our host organizations the New England Chapter of NALMS, the Lake Champlain Basin Program, and the Vermont Department of Environmental Conservation welcomed more than 600 attendees from throughout the US, Canada and seven other countries to a snowy Burlington, Vermont November 11–15, 2019 for NALMS' 39th International Symposium, "Watershed Moments: Harnessing Data, Science, and Local Knowledge to Protect Lakes."



*The Understanding Harmful Cyanobacteria Blooms workshop held as part of the 2019 Symposium in Burlington, Vermont. Photo: Todd Tietjen.*

In addition, NALMS facilitated the 11th National Monitoring Conference in partnership with the National Water Quality Monitoring Council. The conference was held March 25–29, 2019 in Denver Colorado and hosted over 900 attendees from 7 countries, 49 states, and 31 tribes to discuss water quality monitoring.

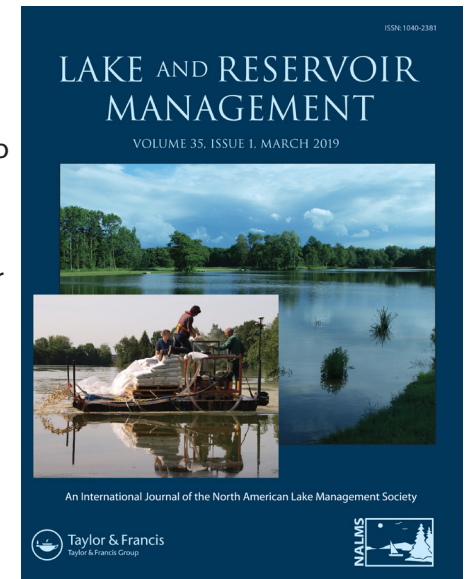


## Advancing the Science of Applied Lake Management

***Lake and Reservoir Management*** publishes original, previously-unpublished studies relevant to lake and reservoir management. Papers address the management of lakes and reservoirs, their watersheds and tributaries, along with the limnology and ecology needed for sound management of these systems. All submissions are peer-reviewed.

*Lake and Reservoir Management* is published quarterly by Taylor & Francis as part of their Environmental Science portfolio with ownership and editorial control residing with NALMS.

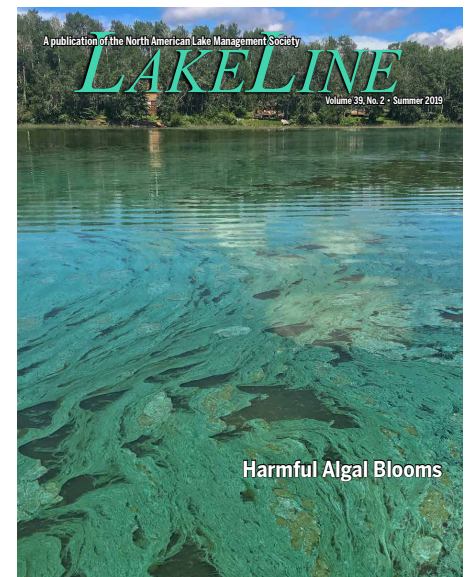
Most NALMS members receive complimentary copies of *Lake and Reservoir Management* by mail as well as online access through the Taylor & Francis website. Non-members may purchase individual articles or subscriptions through the Taylor & Francis website.



## Providing Resources for Lake Managers, Users, and Advocates

***LakeLine Magazine*** is published quarterly as a medium for exchange and communication among those interested in lake management. *LakeLine* is distributed to all NALMS members and other subscribers and each issue contains news, commentary and articles on topics affecting lakes, reservoirs and watersheds. Because issues are organized around a theme, such as control of invasive species or resolving recreational conflicts, each issue becomes a valued reference and resource for lake managers, users, and advocates. Starting with the spring 2019 issue, *LakeLine* moved to a fully electronic version, both to cut costs and to leave a greener footprint.

The themes for the *LakeLine* issues in 2019 were: Student Issue, Harmful Algal Blooms, Source Water Protection, and Emerging Contaminants.



## Forging Partnerships

A key part of our mission is to forge partnerships among a diverse group of lake and watershed stakeholders as well as lake-related managers, scientists, governmental agencies, and nonprofit organizations and consortia. NALMS values and encourages relationships among its members, constituents, and professional colleagues to support NALMS' mission to foster the management and protection of lakes and reservoirs for today and tomorrow.

Current partnerships include the *Consortium of Aquatic Science Societies*, the *Source Water Collaborative*, the *Reservoir Fisheries Habitat Partnership* and the *Aquatic Plant Management Society*. NALMS also has representatives on the *Advisory Committee on Water Information (ACWI)*, the *National Water Quality Monitoring Council (NWQMC)*, and the *ACWI Climate Change Work Group*. These scientific advisory committees to federal agencies assure these agencies work with state governments and stakeholders to improve decision-making about natural resource management and environmental protection. The US Department of Interior ordered that all ACWI-related activities should cease as of December 5, 2019, but the NWQMC continues in an informal (non-advisory) capacity.



*Next Generation Field Methods field trip held as part of the National Water Quality Monitoring Council's 11th National Monitoring Conference facilitated by NALMS. Photo: Lisa Borre*

## Supporting Action on Climate Change

Aquatic ecosystems are sensitive to climate change, and the impacts of future climatic changes include a wide range of negative consequences. There may be increased flooding, pollutant transport, sediment erosion, and extended droughts from more frequent extreme events. Increased water temperatures will affect oxygen regimes, redox potentials, lake stratification, mixing rates, and the metabolism and life cycles of aquatic organisms. Freshwater species are at especially high risk to be threatened or endangered due to climate change. Overall, shifts in precipitation variability and seasonal runoff will have profound effects on water supply, water quality, and management of water resources.

NALMS supports the following three 'prudent and responsible' actions for citizens and policymakers, as provided by the Union of Concerned Scientists and The Ecological Society of America:

- Anticipate and plan for the regional impacts of climate change to reduce future damage;
- Reduce contributions to the global problem of heat-trapping greenhouse gas emissions;
- Minimize human pressures on the global and local environment to reduce the vulnerability of ecosystems. Prudent actions include: reducing air pollution, protecting the quality of water supplies and aquatic habitat, reducing urban sprawl, reducing habitat destruction and fragmentation, restoring critical habitats, and preventing the spread of invasive nonnative species.



*Lake Mead's "bathtub ring" shows the effects of upstream drought, evaporation, and increasing population in Las Vegas and other western cities that rely on the reservoir. Photo: Philip Forsberg.*

For more information see NALMS' entire climate change policy at [www.nalms.org/nalms-position-papers/climate-change-impacts-on-lakes/](http://www.nalms.org/nalms-position-papers/climate-change-impacts-on-lakes/)

## 2019 Donors

The support of our donors allows us to strengthen our programs, and therefore, continue our important work to save lakes, reservoirs, and watersheds.

### Eberhardt Memorial Fund

*Donations to the Eberhardt Memorial Fund support NALMS' student programs, including travel grants to attend our yearly symposium.*

Applied Polymer Systems  
Aqua Cleaner Environmental  
Ciera Baird  
Michelle Balmer  
Lisa Borre  
Sarah Burnet  
Jon Celmer  
Kim Chambers  
Victoria Chraibi  
Sydney Diamond  
Chris Doyle  
Judith Dudley  
Linda Green  
Imad Hannoun  
Martin Hilovsky  
Chris Holdren  
JR Holtsmaster  
Bradley Hufhines  
Shannon Junior  
Ellen Kujawa  
Matt Ladewig  
Diane Lauritsen  
Emily Mayer  
Heather McGuire  
Heidi McMaster  
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Richard McVoy  
Margaret Modley  
Edward Molesky  
Michelle Nault  
Sara Peel  
Sabina Perkins  
James Plummer  
Mark Rosenkranz  
Phyllis Schaefer  
Jeffrey Schloss  
Ella Schmidt  
Ann St. Amand  
Perry Thomas  
Thomas Whitmore

### Lake Givers Club

*The Lake Givers Club provides a way for individuals and organizations to make a contribution towards NALMS programs.*

AmazonSmile  
Michelle Balmer  
Barbara May Barry  
Ernie Benoit  
Glen and Betsy Borre  
Lisa Borre  
Eugene Braig  
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Todd Tietjen  
Cindy Tracey  
Bjorn von Euler  
Kenneth Wagner  
Jeremy Wallace  
Wawasee Area Conservancy Foundation  
Frank Wilhelm  
Tamara Wood

### Eleanor Ely Memorial Scholarship

*The Eleanor Ely Memorial Scholarship provides travel funds for volunteer monitoring coordinators, or others in need, to attend the National Monitoring Conference.*

Lisa Borre  
Christopher Goodwin  
Revital Katznelson  
James Meek  
Patrice Spindler  
Perry Thomas  
Jake Zwart

### Honorary & Memorial Donations

#### *Donations in Memory of Jim Vennie*

Molly Bauer  
Joan Vennie

### G. Dennis Cooke Symposium Fund

*The G. Dennis Cooke Symposium Fund provides support for themed sessions and plenary speakers at our annual Symposium.*

Lisa Borre  
Sara Peel  
Amy P. Smagula  
Todd Tietjen

### Symposium Sponsors

#### *Leading Sponsor – \$5,000 and above*

Lake Champlain Basin Program  
New England Chapter of NALMS  
Vermont Department of Environmental Conservation

#### *Supporting – \$4,000 and above*

GZA GeoEnvironmental, Inc.

#### *Sustaining – \$2,500 and above*

Aquarius Systems  
Northeast Aquatic Research  
Phoslock Environmental Technologies  
Vermont Lake Wise Program

#### *Contributing – \$1,500 and above*

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Lake Champlain Sea Grant  
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*Back Cover: Banks of the Shire, Hobbiton Lake, New Zealand by NALMS member Tracey Burton*

*Both photos were entries in the 2019 NALMS Photo Contest. Sara's photo was awarded the People's Choice Award and Tracey's received the Editor's Choice Award.*