2021 Lake Attitash Association Annual Meeting

Veronica Wolfe~ Lake Attitash Association President

WELCOME

Agenda

- LAA Priorities
- Thank you to LAA Volunteers
- 2020 Financial Report
- Board Membership & Volunteer Needs
- “Protecting our Lake and Waterfronts” ~ Emily DiFranco, Senior Scientist, Comprehensive Environmental Inc.
- Invasive Weeds
- Break
- Water Quality – Testing – Watershed
- Discussion

LAA – Who are we?

- Private, not-for-profit 501 (c) (3) organization
- All volunteer Board of Directors
- The LAA does not own property
- Over past 20 years LAA has brought in $850,000 in State and Federal grants – all focused on better management of storm water in watershed and most recently the in-lake alum treatment
- In 2012 Amesbury, Merrimac and LAA shared the cost of a lake-wide invasive weed treatment
- Since 2013, 95% of annual invasive weed treatments have been funded by donations from lake residents

Current Critical Priorities

1. Survival
   - As an Organization – Board Members and Volunteers Needed
   - Financially – To continue essential work to maintain the health of Lake Attitash
2. Continuing to manage invasive weeds
3. Watershed - water quality protection

Veronica Wolfe~ Lake Attitash Association President

THANK YOU LAA VOLUNTEERS!

Current Board Members

- Veronica Wolfe – President
- Cindy Roberts – Vice President
- Larry Wolfe – Treasurer
- Adam McLaughlin – Secretary
- Mike D’Orlando
- Pauline Duhamel
- Ivana Garside
- Denise Guida
- Nicole Maker
- Lisa O’Hearn
- Derek Salisbury
- Jack Sanborn
- Pam Shaw
- Dennis Welcome
- Mark Wolfe

All board members are volunteers

Neighborhood Captains

- Ivana Garside – Board Support

- Yvonne Bednarz
- Patty Brown
- James Darsney
- Bowen Jackson
- Katie Karatzas
- Clare Ostrander
- Tom Phillips
- Mike Ruggelo
- Betty Strogney

Weed Watching

- Corey Simons leads the weed watching effort
  - Michelle Brodsky
  - Chris Cable
  - Linda Carpino
  - Mike D'Orlando
  - Pauline Duhamel
  - Dalton Dow
  - Debra Dow
  - Laney Dow
  - Terri Gilbert
  - Denise Guida
  - John Giunta
  - Krystine Leger
  - Mark Leger
  - Ben Lynch
  - Kristen Lynch
  - Chris Markuns
  - Max Markuns
  - Rachel Matos
  - Adam McLaughlin
  - Alex Milne
  - Joe Osbaldestion
  - Stacey Pinkerd
  - Roger Roberts
  - Jack Sanborn
  - Jim Stabile
  - Ann Sutherland
  - Tish Tanski
  - John Theriault
  - Larry Wolfe
  - Veronica Wolfe
  - Chrissy Valteris

Boat Ramp Monitors

- Dennis Welcome – Board Support

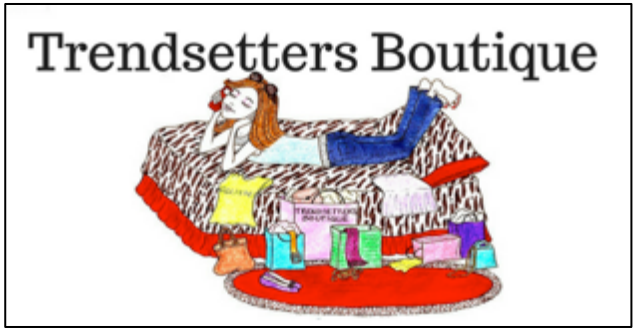
- Barry Arnofsky
- Sharon Arnofsky
- Alex Flickinger
- Robert Suggs
- Thomas Taplin
- Dennis Welcome

Water Quality Monitoring

- Roger Roberts
- Ryan Roberts

Merchandise Partners

- **Five Daughters LLC** located at 123 E. Main Street (rt 110), Merrimac, MA
- **Trendsetter's Boutique** located at 85 Main Street, Amesbury, MA 01913



Larry Wolfe ~ Lake Attitash Association Treasurer

2020 FINANCIAL REPORT

2020 Financial Report

ASSETS ON JANUARY 1st, 2020	
$1,082	Provident Bank
$1,074	PayPal
$69,174	Capitol One Savings

ASSETS ON DECEMBER 31st, 2020	
$3,970	Provident Bank
$282	PayPal
$79,140	Digital Credit Union
$83,392	**Total**

NOTE: Total Assets include a reserve of $27,779 for final payment of Algae Grant expenses and 2021 anticipated weed treatment of $25,000

2020 Financial Report

Revenue	
$2,305	Clothing Sales
$3,905	Membership
$22,365	Fundraising/Donations
$567	Interest Earned
$29,142	**Total**

Expenditures	
$2,045	Clothing Costs
$1,124	Fundraising/Donation
$94	Memberships
$140	Document Filings
$200	Office Supplies/Expenses
$1,736	Insurance
$10,435	Weed Treatment
$15,680	**Expenditures Total**

Amazon Smile Donations

- Make your Amazon purchases using AMAZON SMILE and Amazon will make a donation to the Lake Attitash Association
- **$177 donated in 2019, $348 in 2020, and en route to $800 in 2021**
- *No added cost to you* when making your purchase with Amazon Smile
  - Click on the AMAZON SMILE icon on the bottom of the LAA Web Site "Donate or Pledge" page
  - Or sign in to or sign up with Amazon and when Amazon asks you who they should make a donation to, just put in the "Lake Attitash Association"
  - Use Amazon App on your phone
  - **Instruction sheets are available at the check in table**

- **We thank you for helping support improving the water quality in Lake Attitash**

amazonsmile
You shop. Amazon gives.

Membership Dues

- Currently 118 paid LAA members
- Please remember to renew your LAA membership if you have not already
  - Individual $35
  - Family $60
  - Senior (65+) $20
  - Business $100
- https://lakeattitash.org/join-or-renew/

SUMMER COTTAGES AT LAKE ATTITASH. MERRIMAC. MASS.

Adam McLaughlin ~ Lake Attitash Association Secretary

BOARD MEMBERSHIP & VOLUNTEER NEEDS

Board of Directors Nominees

We are actively recruiting Board members and other volunteers to continue the stewardship of the lake for our children & grandchildren

- Most Board Members have served for many years, undertaking and successfully completing an impressive amount of tasks
- Several Board Members would step aside if others are willing to step in
- LAA cannot sustain the current level of activity without more help
- **We all** must make sure that water quality protection and invasive weed management continues

Next meeting: **Tuesday, September 14th, 2020 at 6:30 PM**

- Our Board meetings are open to all, we invite you to join if you are able
- Let us know through the website if you wish to attend so we can send location info

Volunteers Are Needed Now

- Board Members
- Weed Watchers
- Boat Ramp Leader and Boat Ramp Monitoring
- Merchandise Committee Leader and Members
  - Graphic Artist for Merchandise Designs
- Fun Committee
- Watershed Protection Committee Members
- Etc.

Fill out the interest form on our website or contact a board member for more information

Upcoming Events

- Illumination Day – Saturday, September 4th, 6:30 PM at boat ramp
  - (Rain date Sunday, September 5th)
- Shore line clean up in Fall (helps to reduce Phosphorus in lake)

Homeowner Solutions to Protect Your Lake

August 17, 2021

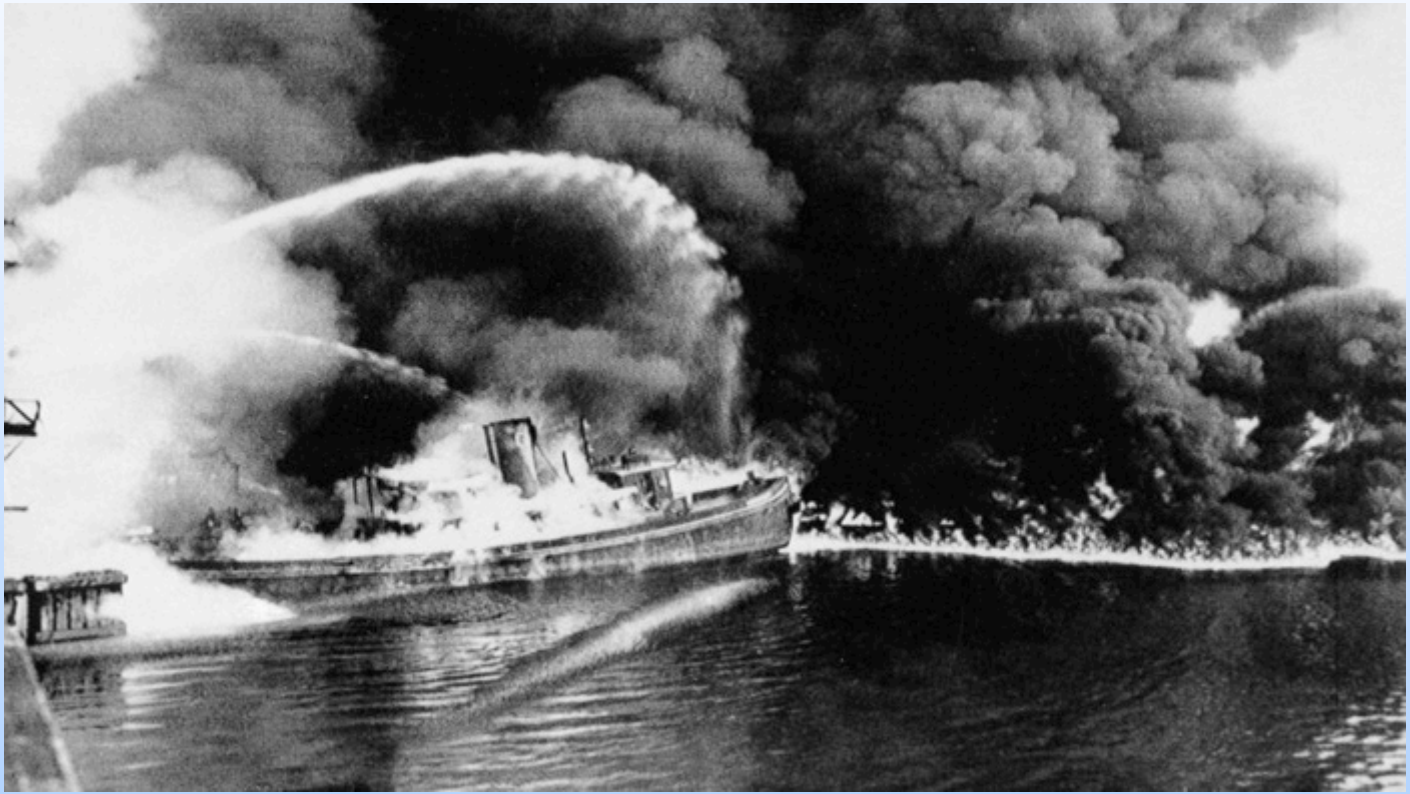
Lake Attitash Association Annual Meeting

Presented by:
Emily DiFranco
Senior Scientist
Comprehensive Environmental, Inc.

Agenda

- Water Pollution
- Watersheds and Nonpoint Source Pollution
- Homeowner Solutions
  - Inspecting your Property
  - Best Management Practices
- Resources for Homeowners
- Questions

Water Pollution



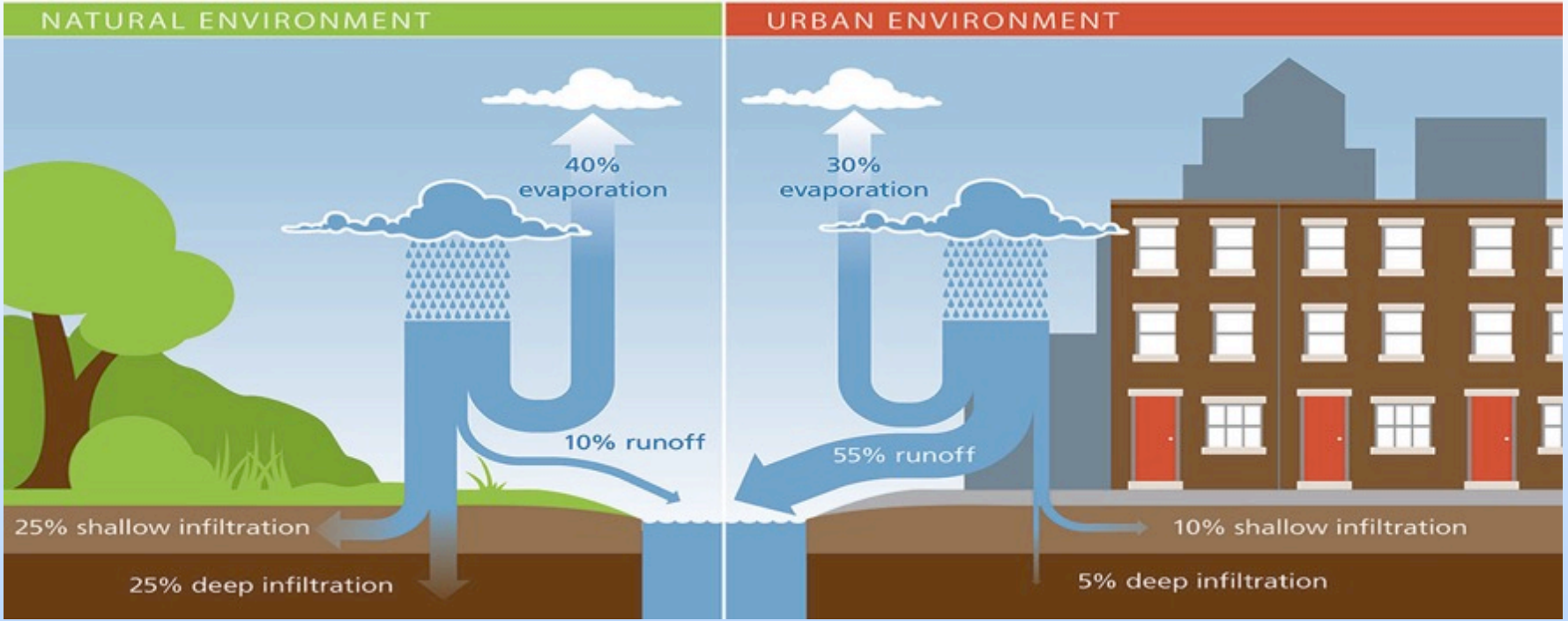
Water Pollution – Point Sources

Nutrients, Bacteria,
Oil, Haz Waste,
Sediment, etc.

Water Pollution – Nonpoint Sources

Nutrients, Bacteria, Oil, Haz Waste, Sediment, etc.

Stormwater Runoff



Development leads to “flashier” systems and higher pollutant loads

Watershed Approach

- The area that surrounds the lake and supplies the lake with water (surface- and groundwater).
- Defined by surrounding topography and geology.
- Watershed land uses will deterr
  water supplied to the lake.

Lake Attitash Watershed

Lake Attitash = 360 acres in Amesbury and Merrimac

Lake Attitash Watershed = 2,500 acres and extends into NH

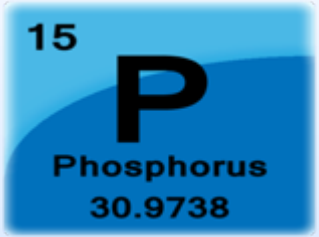
Lake Attitash Watershed

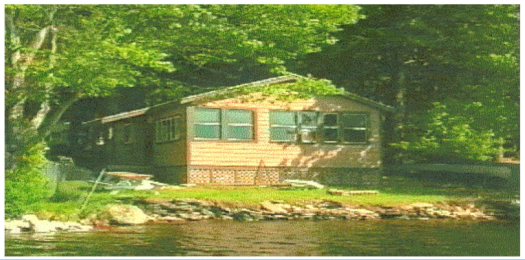
Atmospheric Load - ~10%
Internal Load - ~40%
Waterfowl - ~3%
Watershed Load - ~47%

Atmospheric Load - ~10%
Internal Load – Alum Treatment
Waterfowl
Watershed Load

From the 2016 WRS Attitash Management Report

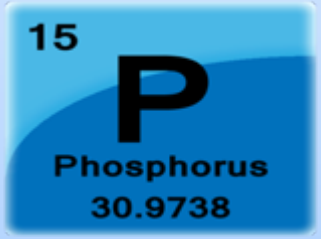
Stormwater Runoff and Lakes





Lake Properties

- Lack of shoreline vegetation
- Steep slopes
- Impervious surfaces
- Sediment/Beach sand



Protecting your Lake

Inspecting your Property

Inspecting your Property

1. Look for obvious signs of erosion

Sediment = phosphorus!

Inspecting your Property

2. Look for slopes with no buffer

Inspecting your Property

3. Look at your practices

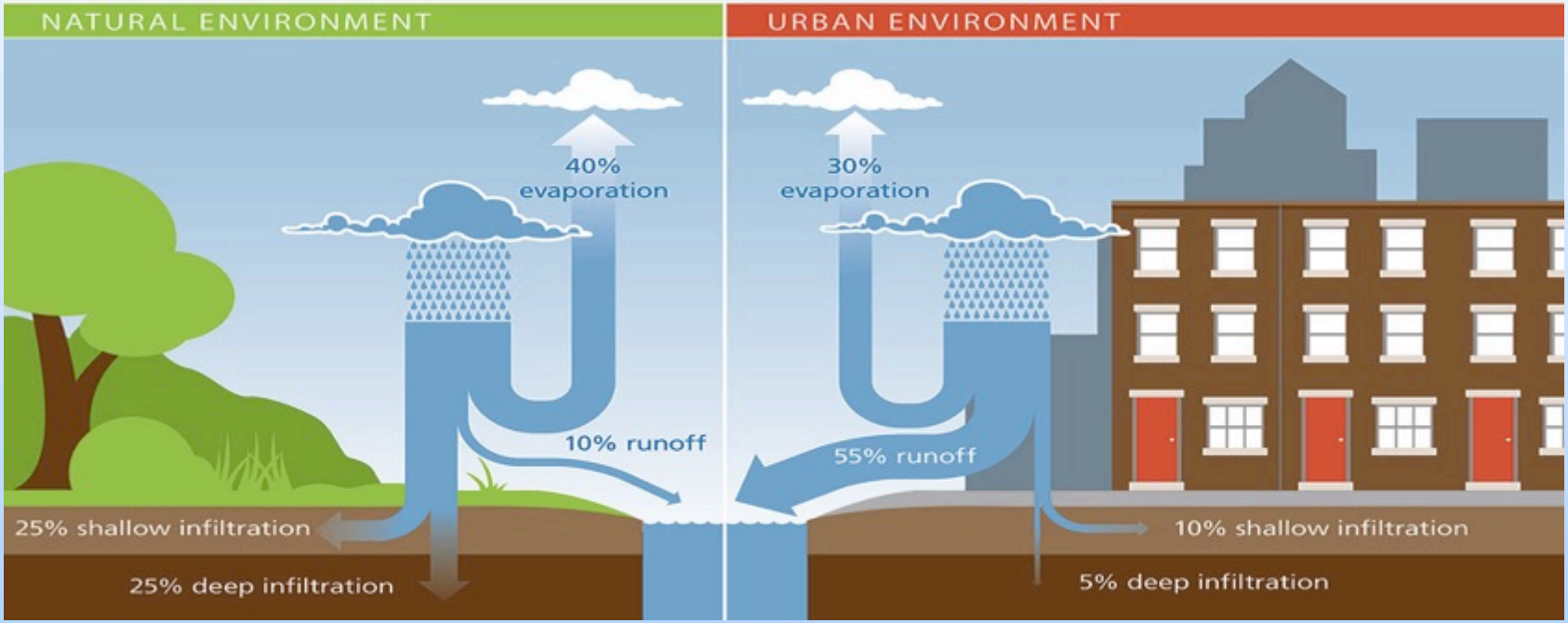
Protecting your Lake

Landscape Design Improvements

1. Increase infiltration
2. Reduce the quantity of stormwater runoff
3. Alter your practices

Landscape Design Improvements

1. Increase infiltration



Infiltration Practices

Vegetated Buffers

- **Pollutant Uptake /Filtering**
- **Habitat / Wildlife Food Source**
- **Shading**
- **Aesthetics**
- **Physical deterrent to Canada geese, which prefer easy access to grassed areas for feeding**

Vegetated Buffers

Simple to Complex

Vegetated Buffers

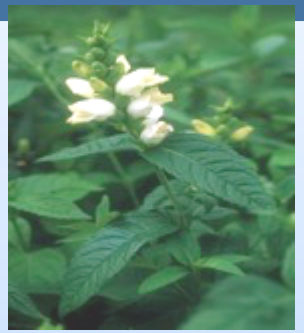
Design Considerations

- Aesthetics. Include a diversity of shrubs, wildflowers and ground cover that will add visual interest provide year-round color.
- Maintain lake access and unobstructed views.
- Use low-maintenance native plants, beneficial to wildlife.
- Maintain a "useable area" between the homes and buffer for picnic tables, chairs, etc.

Vegetated Buffers

Wildflowers

New England aster
White turtlehead
Boneset



Blue flag iris
Cardinal flower
Wild bergamot
Foamflower

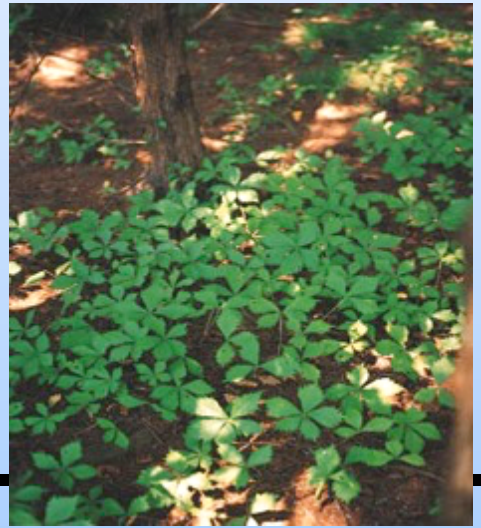
Vegetated Buffers

Groundcover

Bearberry

Partridgeberry

Virginia Creeper



Lowbush blueberry

Vegetated Buffers

Ferns

Cinnamon fern

Royal fern

Christmas fern

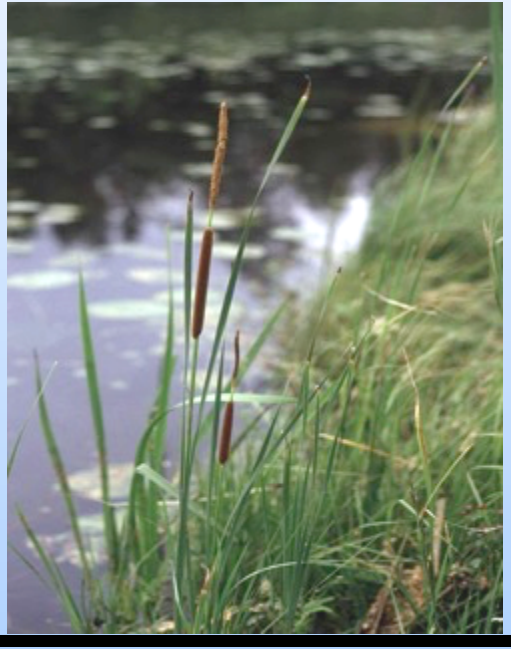
Vegetated Buffers

Grasses/Sedges

Canada Bluejoint or Reedgrass

Pennsylvania sedge

Narrow-leaved cat-tail



Vegetated Buffers

Shrubs

Sweet pepperbush

Winterberry holly

Sheep laurel

Highbush blueberry

Maple-leaf viburnum

Vegetated Buffers

Installation

Vegetated Buffers

Installation to Completion

Preconstruction Condition

Shrub Buffer Plantings

Silky Dogwood

Red Osier Dogwood

Bayberry

Pussy Willow

Meadowsweet

Northern Arrowood

Sweet Pepperbush

Installation

Installation

Fully Stabilized Buffer

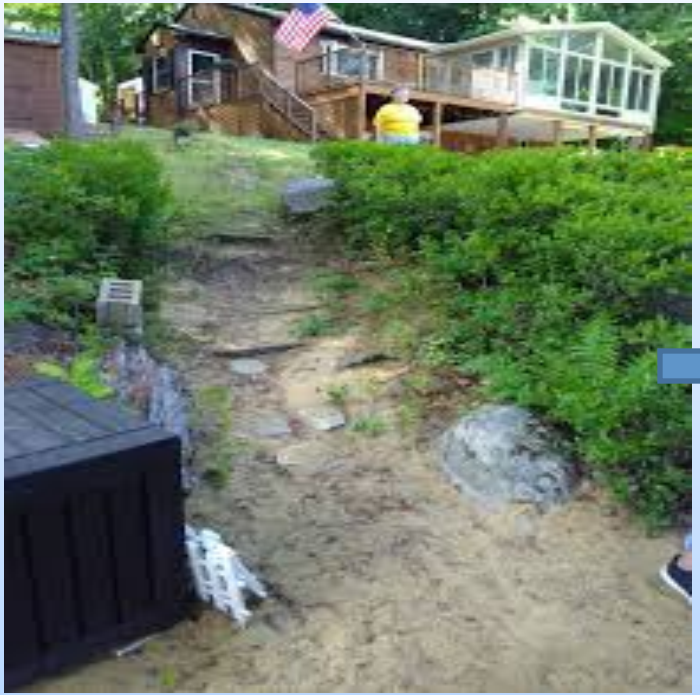
Infiltration Practices

Other Examples

- **Rain Gardens**
- **Infiltration Steps**
- **Infiltration Trenches**
- **Rubber Razors**

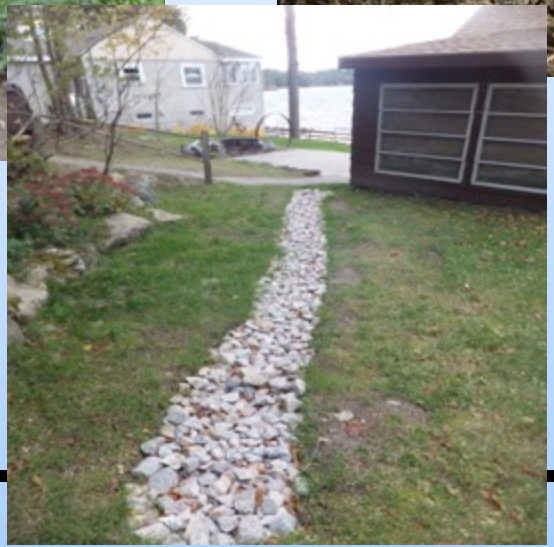
Rain Gardens

Infiltration Steps



Infiltration Steps

Infiltration Trenches



Rubber Razors

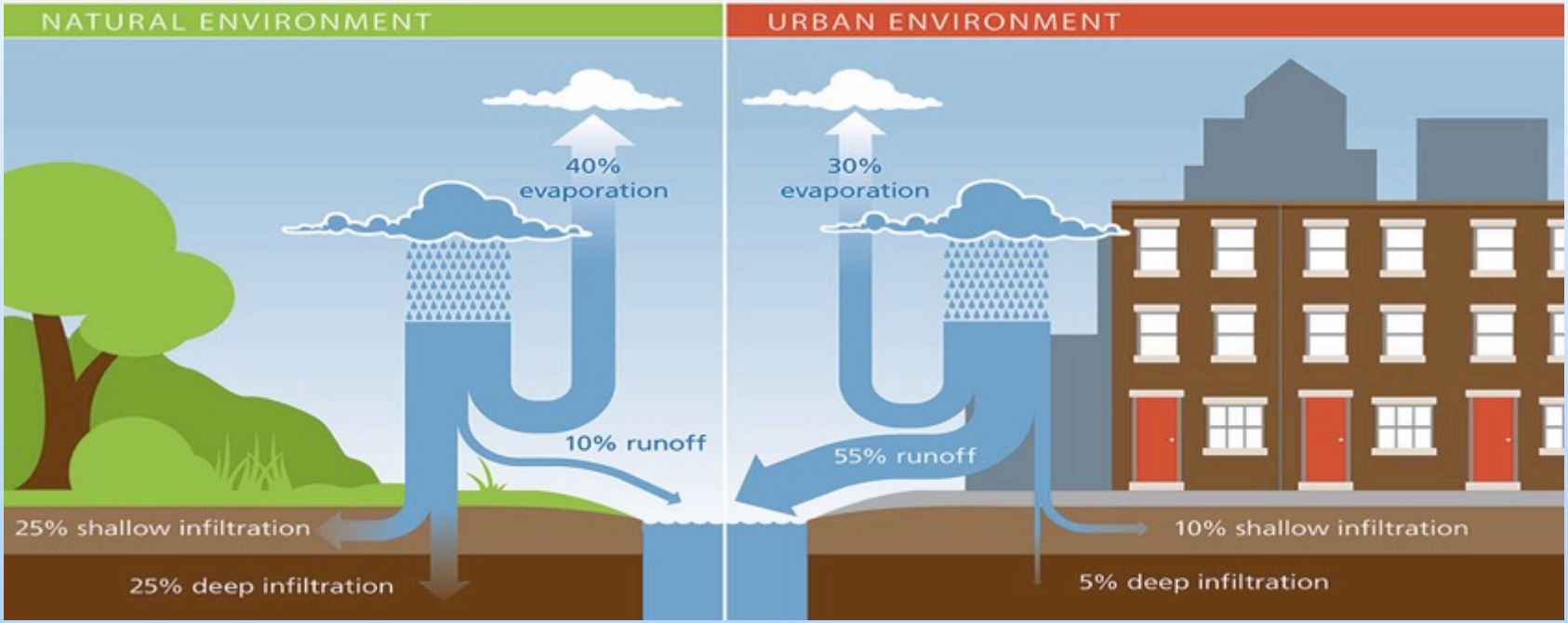
Protecting your Lake

Landscape Design Improvements

1. Increase infiltration
2. **Reduce the <u>quantity</u> of stormwater runoff**
3. Alter your practices

Landscape Design Improvements

2. Reduce quantity of stormwater runoff



Reduce Quantity

Capturing Stormwater for Reuse

Reduce Quantity

Reduce Impervious Surfaces

- **Less Pavement**
- **Alternative Materials**

Alternative Materials

Protecting your Lake

Landscape Design Improvements

1. Increase infiltration
2. Reduce the quantity of stormwater runoff
3. **Alter your practices**

Landscape Design Improvements

3. Alter Practices

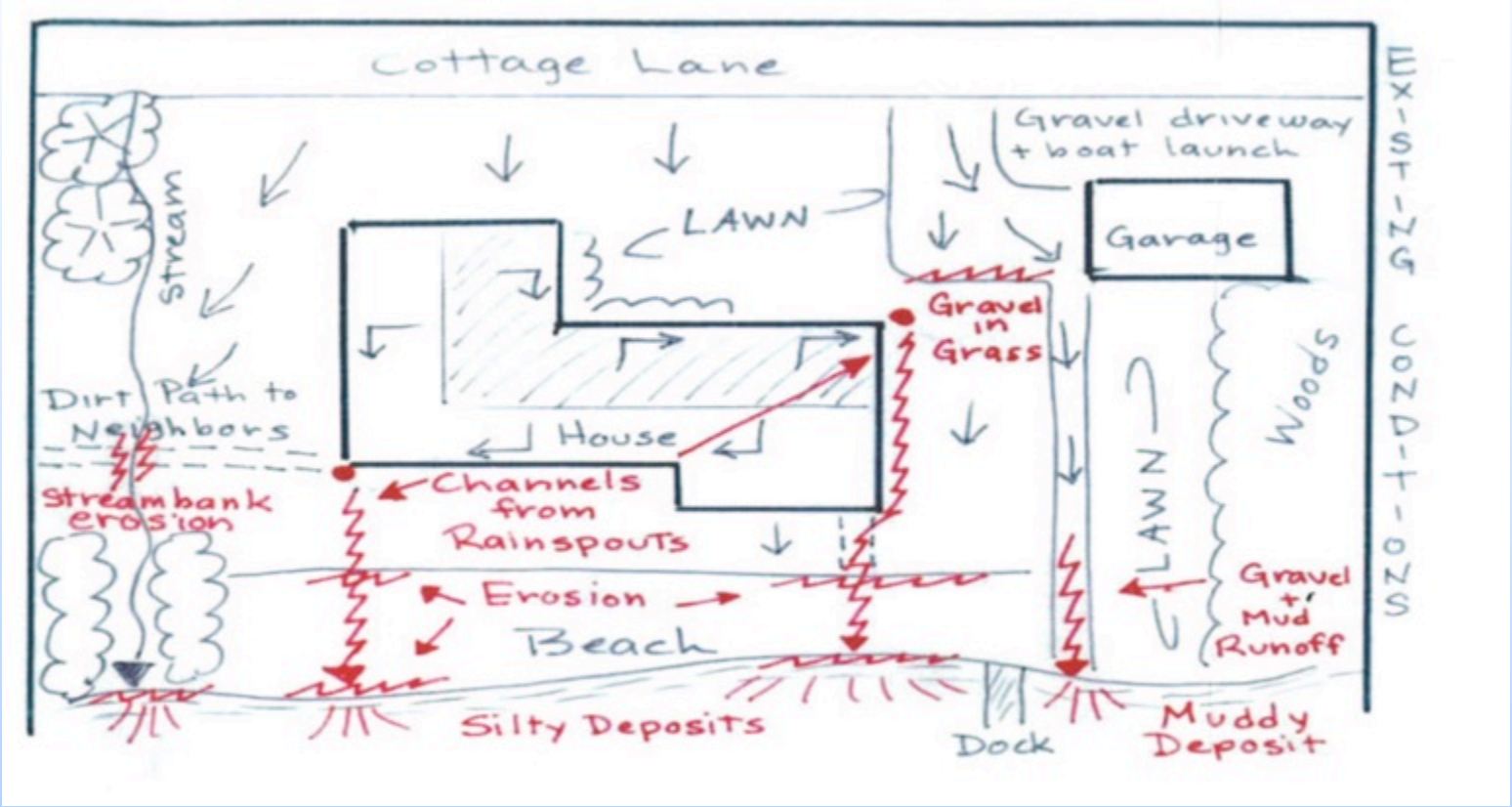
Phosphorus-Free Fertilizer

- Soil test first!
- Buy low to no phosphorus fertilizer.
- Time it right!
- Don’t overdo it!

Protecting your Lake

Inspecting your Property

Protecting your Lake



Protecting your Lake

Protecting your Lake

Lake Properties

Lake Properties

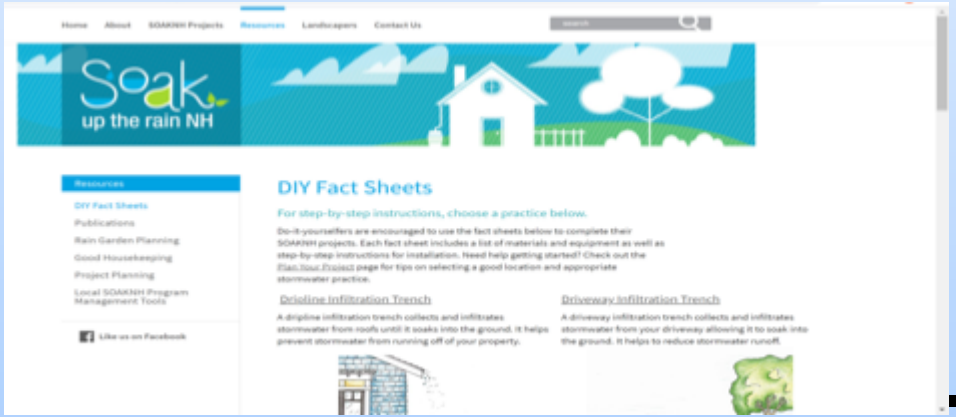
Resources for Homeowners

USEPA Soak up the Rain Program

https://www.epa.gov/soakuptherain

NHDES Soak up the Rain Program

https://www4.des.state.nh.us/SoakNH/

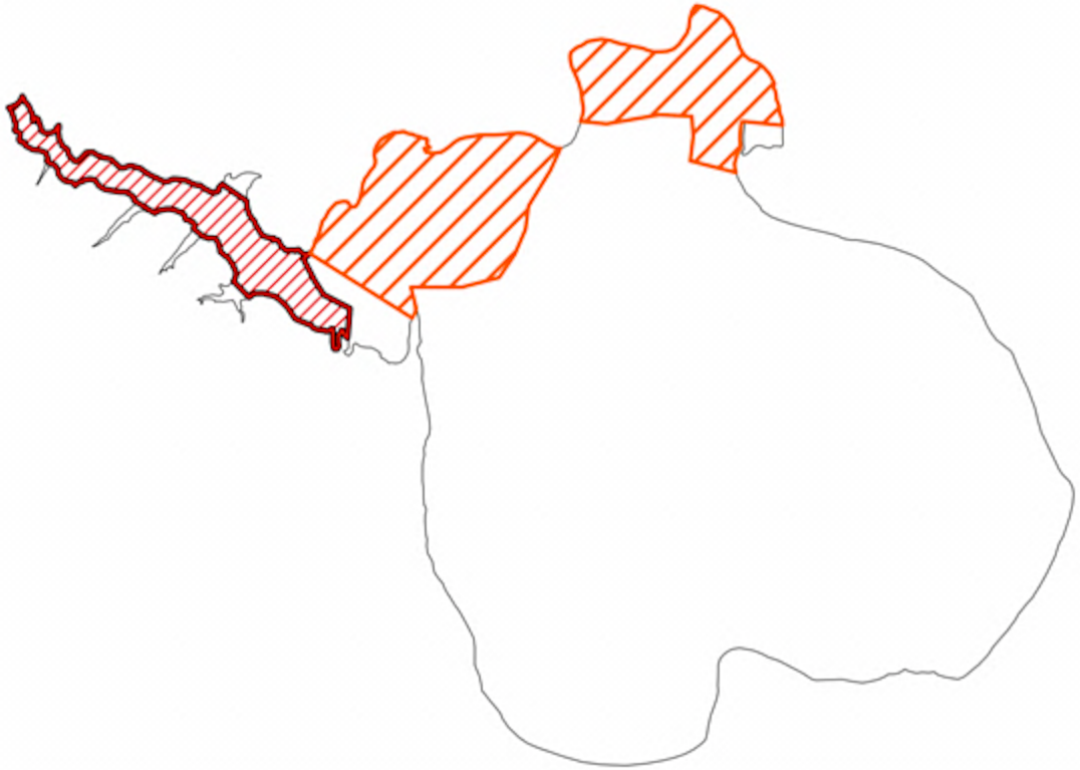


Questions?

Corey Simons ~ Lake Attitash Association Volunteer & Member

INVASIVE WEED MANAGEMENT

2021 Weed Treatment Map



Legend

ProcellaCOR treatment area (15.2 ac.)

Diquat treatment areas (48.4 ac.)

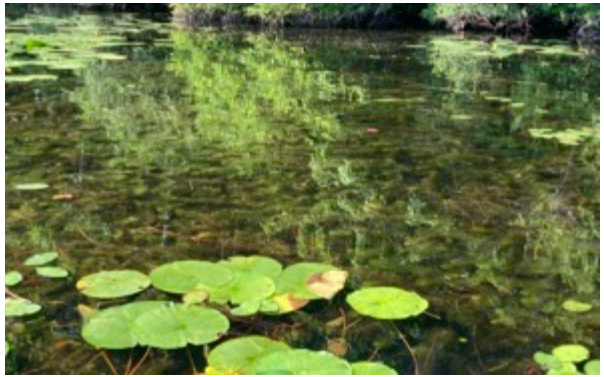
Solitude Lake Management

- 2021 Contract $26,000: Treatment Day June 10th
- Annual Diquat 48 acres – Curlyleaf Pondweed and Eurasian Milfoil
- ProcellaCOR 15 acres – Variable Milfoil
- Pre and post treatment surveys
- Permits
- End of Season Report

LAA Responsibilities

- Weed Watchers preform monthly surveys during spring and summer months to inform Solitude's treatment plan
- Stay away from weed markers
- Maintain permits and Order of Conditions with both Conservation Commissions
  - Merrimac every 3 years
  - Amesbury every year

Why do we need to raise money every year?



Look no further than Meadowbrook

Annual Weed Treatment Costs

- Managing the invasive weeds has cost $12,000 to $26,000 every year
- Be generous
- Maintain your membership
- Donate, donate, donate (donations typically range from $100 to $2,000+)

BREAK

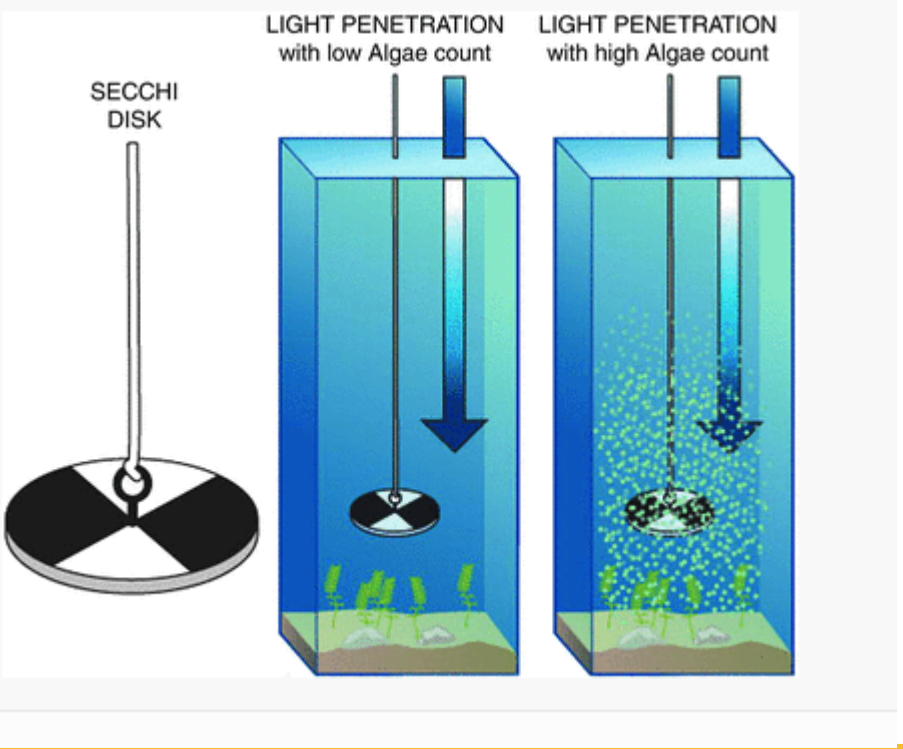
Cindy Roberts – Lake Attitash Association Vice President

WATER QUALITY/TESTING/WATERSHED

Water Quality Monitoring

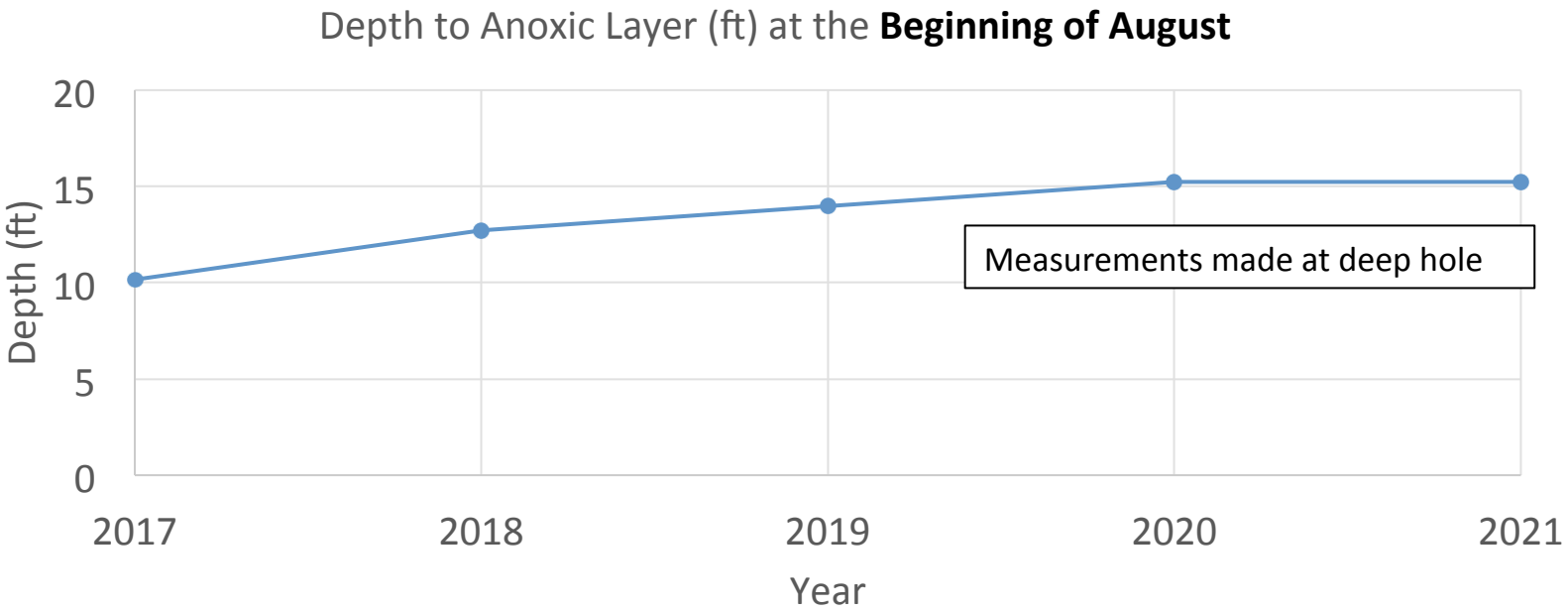
- Bi-Weekly testing: Water clarity, Oxygen levels, Temperature and Visual recordings
- Monthly phosphorus water samples sent to University of New Hampshire for testing and reporting: SW Inlet, mouth of the Back River, Birches Dam, Deep Hole

Water Clarity – deep hole



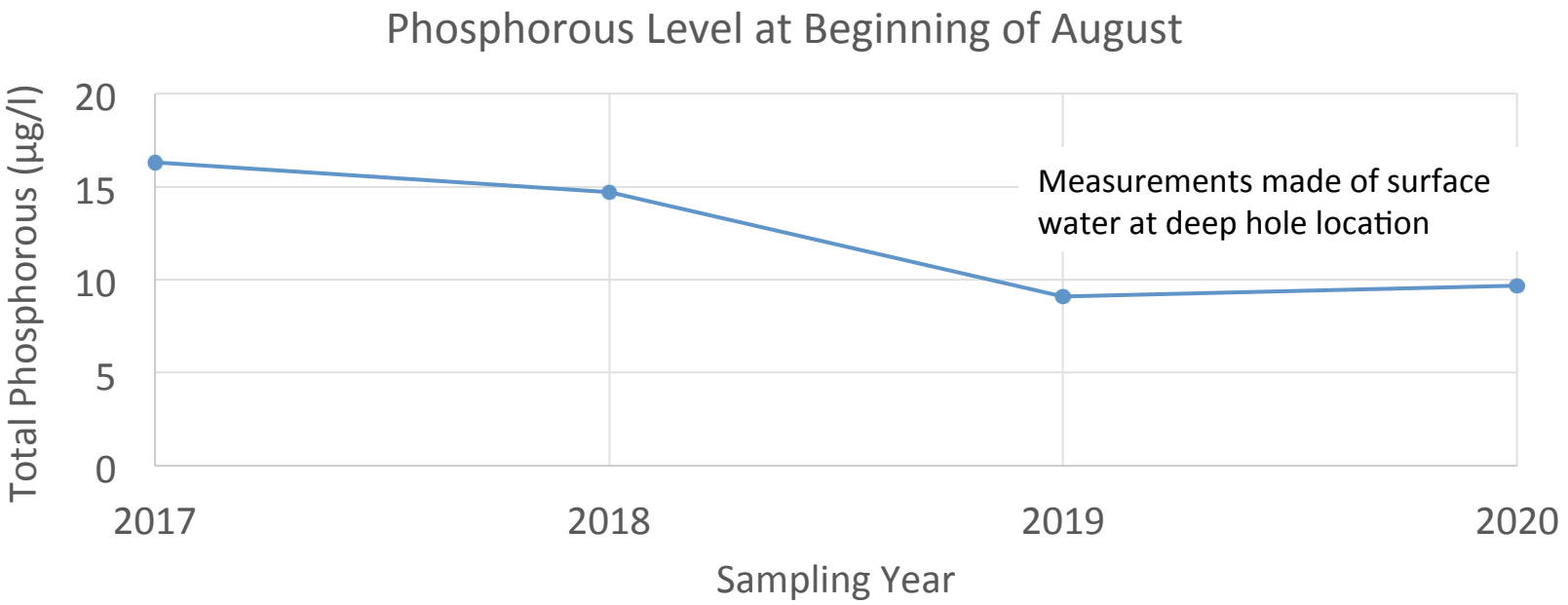
- Greater than 6 feet is generally good
- Secchi disk depths have been good at the beginning of the summer
- Prior to 2018, the depths have been very low in late summer. Since the alum treatment, the depths have been good

Depth to Oxygen Depleted Water



Oxygen-rich water depth has increased since alum treatment in 2019. That's a good thing!

Phosphorous level Year-by-Year



Since alum treatment in 2019, phosphorous levels at deep hole location have declined by about 40%. Less phosphorous means less nutrients for cyanobacteria.

Amesbury's Cyanobacteria Testing

- The City of Amesbury conducts cyanobacteria testing at the AALSIA beach
- Results are posted on the Amesbury Health Department website
- Samples that exceed 70,000 cells per milliliter of water are considered hazardous

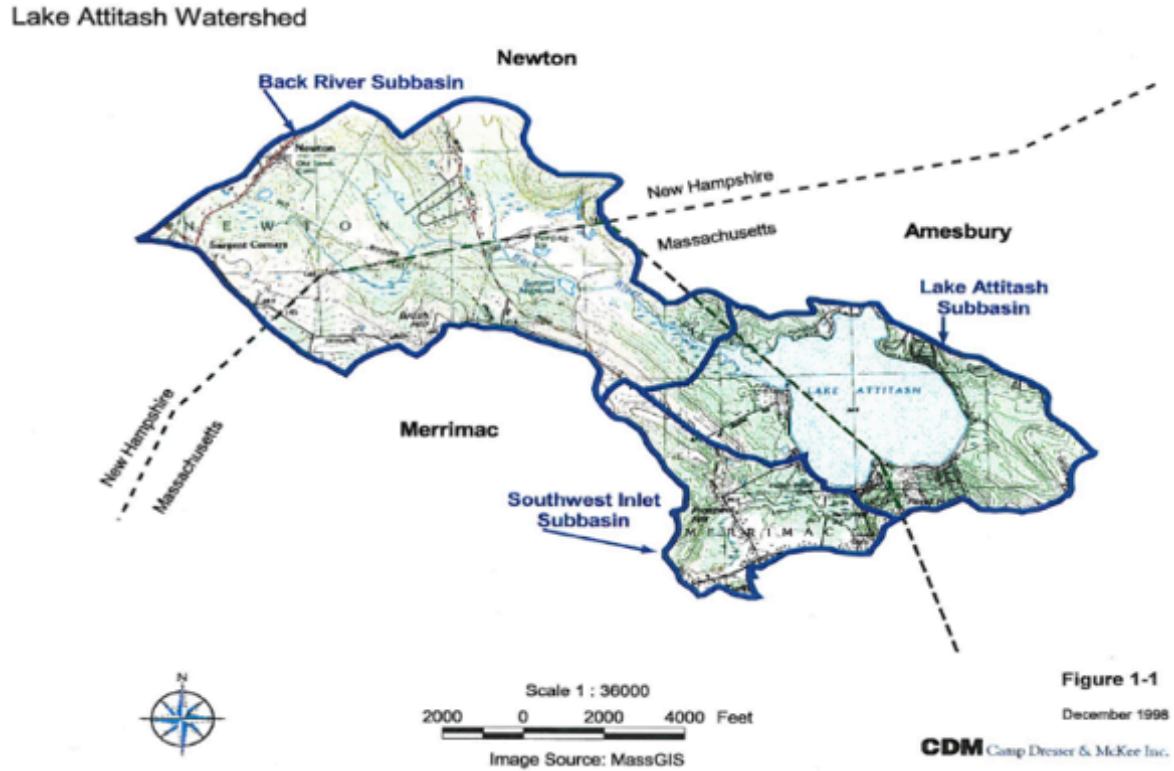
Date (2021)	Cyanobacteria Level (cells/ml)
5/24	620
6/7	6,800
6/14	13,000
6/21	6,200
6/28	11,000
7/6	5,500
7/12	5,900
7/21	3100
7/28	13,000
8/2	23,000
8/10	17,000

Observations

- Water quality has improved measurably since the alum treatment in 2019
- Since the alum treatment, localized and short-lived cyanobacteria blooms have been observed in the spring and fall near the shoreline, but a full bloom hasn't been observed
- Please keep in mind that the alum treatments in 2019 and 2020 are expected to significantly reduce algae growth in the lake for 15 – 20 years according to Dr. Ken Wagner, the national expert who prescribed the alum treatment program but continual efforts are required to mitigate phosphorous loading from surface runoff

LAA Watershed Committee Update

The LAA Watershed Committee



The LAA Watershed Committee

- Search for sources of phosphorus (and other nutrients) – potential hot spots
- Work with Amesbury and Merrimac Conservation Commissions
- Provide homeowner education
- Reach out to other organizations, such as NHDES and MA DEP when needed

Nicol Farm – Newton, NH

- Septage spreading operation near the Backriver
- LAA added monthly phosphorus testing: McLaren Trail and Bear Hill Road Bridge; Started in summer of 2020 and will continue this year
- NHDES Phosphorus Risk Assessment performed: Nicol Farm very cooperative
- Results: Nicol Farm will increase the buffer from 33ft to 100ft from the drainage ditch and grow an off-season crop to reduce nitrogen – split applying

Additional 2021 testing locations

- Merrimac: Merrimac Commons – Pond
- Amesbury: Lake Attitash Road – seasonal stream from Whitewood Circle (Spindletree development)
- Amesbury: Bottom of First Street/Lake Shore Drive, pipe from storm drain

Reviewing fertilizer use: non-agricultural lawns

Limitations on fertilizing with phosphorus on non-agricultural turf and lawns

- Soil test required every three years
- No applications between December 1 and March 1
- No applications within 20ft of a waterway using broadcast method or within 10 ft if using a drop spreader
- No applications within zone 1 of a public water supply well
- No applications within 100ft of surface waters that are used for public drinking water supply

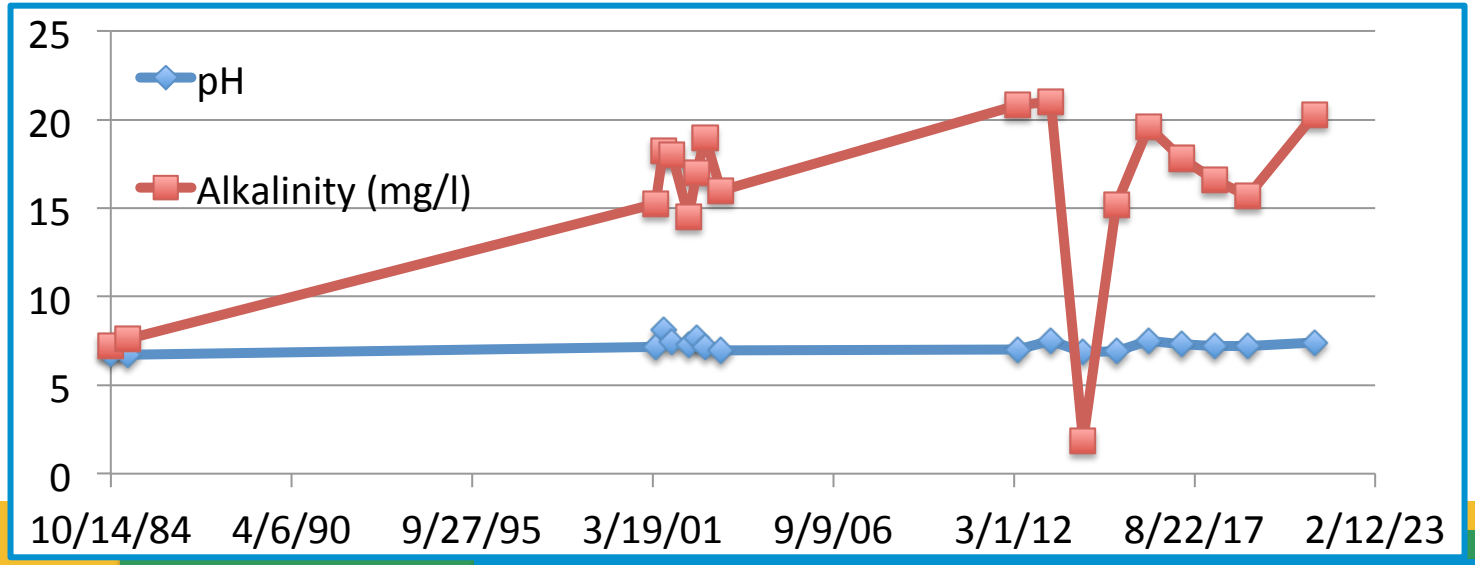
Veronica Wolfe~ Lake Attitash Association President

DISCUSSION

Thank You for Attending

- Enjoy the rest of Summer
- Check out the Merchandise at:
  - **Five Daughters LLC** located at 123 E. Main Street (rt 110), Merrimac, MA
  - **Trendsetter's Boutique** located at 85 Main Street, Amesbury, MA 01913
- See you on Saturday, September 4th, 6:30 PM at boat ramp for the Grand Illumination Day Parade!
  - (Rain date Sunday, September 5th)
  - Decorate yourself and your boat or come as you are

Thank You for Your Continued Support!

Acid Rain Monitoring Program

- Administrated state wide by UMass Amherst with data back to 1984
- Attitash is holding stead at a nearly neutral pH of 7.4
- The lake has an alkalinity of 20.3 mg/l classifying it as not sensitive to pH change