



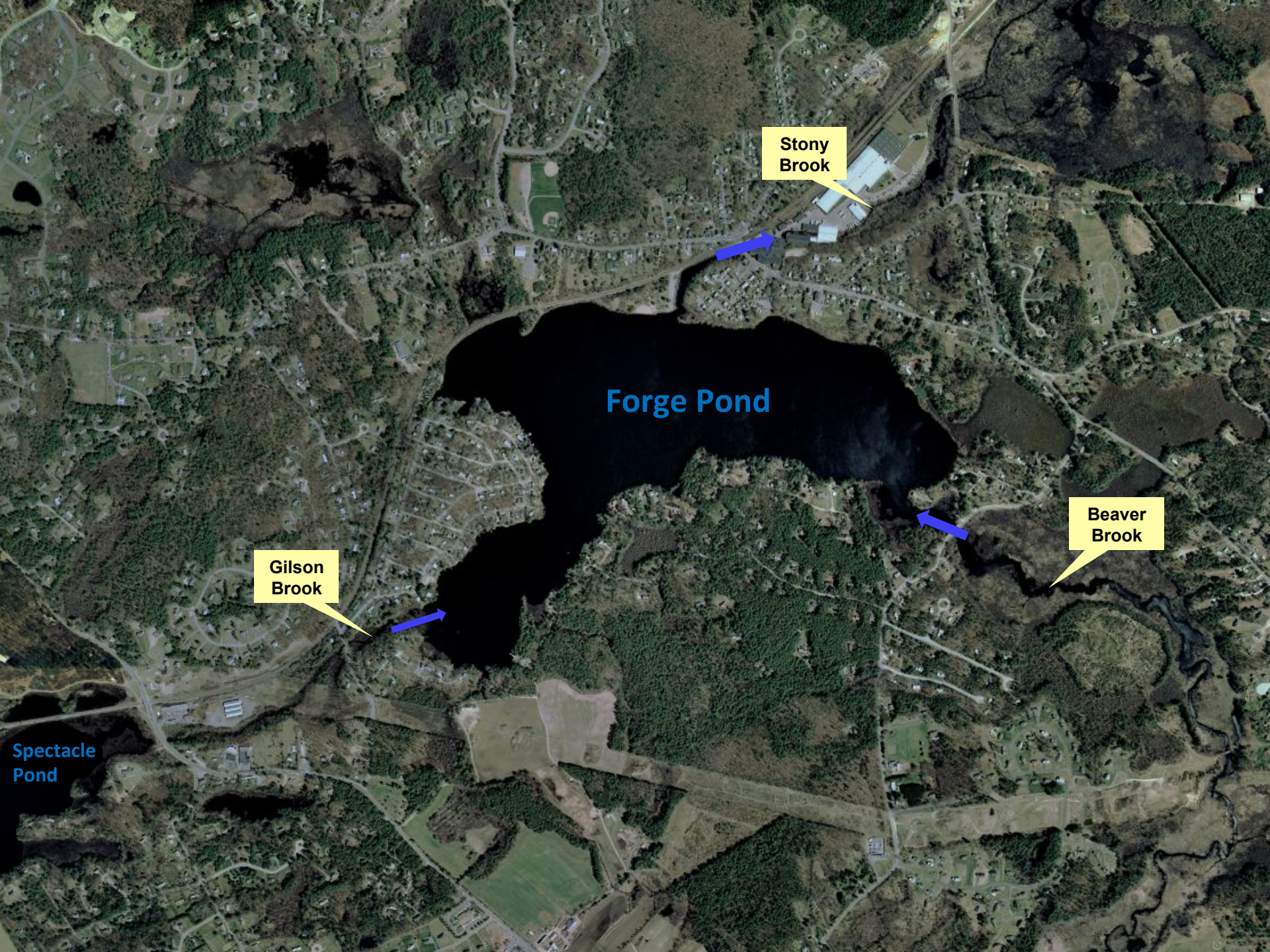
Friends of Forge Pond

We are dedicated to protecting,
preserving and enhancing Forge
Pond and to fostering the mutual
cooperation of its bordering
communities



Why Another Organization?

- **Lake Matawanakee Association and Woodlands Association are mandated homeowners' associations**
 - Do not represent the whole lake
 - Have many important diverse concerns
- **Clean Lakes Committee's mandate is Littleton lakes**
 - Requires public access for support
 - Our lake straddles 2 communities
- **Friends of Forge Pond's sole focus is the lake's ecosystem**
 - DOES represent the whole lake's interest
 - Can raise and expend private town and state funds
- **LMA is a FOFP founding member and contributor**
- **Support from CLC has been secured**



Stony Brook

Forge Pond

Gilson Brook

Beaver Brook

Spectacle Pond



Challenges

Invasive Aquatic Plants

- Introduced to the lake by boat trailers, Milfoil and Fanwort have grown to become a nuisance
- Unchecked, they accelerate “eutrophication” (lake aging), as excess nutrients fuel plant growth, sediments accumulate, water clarity declines, etc.
- New invasive species like Water Chestnut threaten

Algae

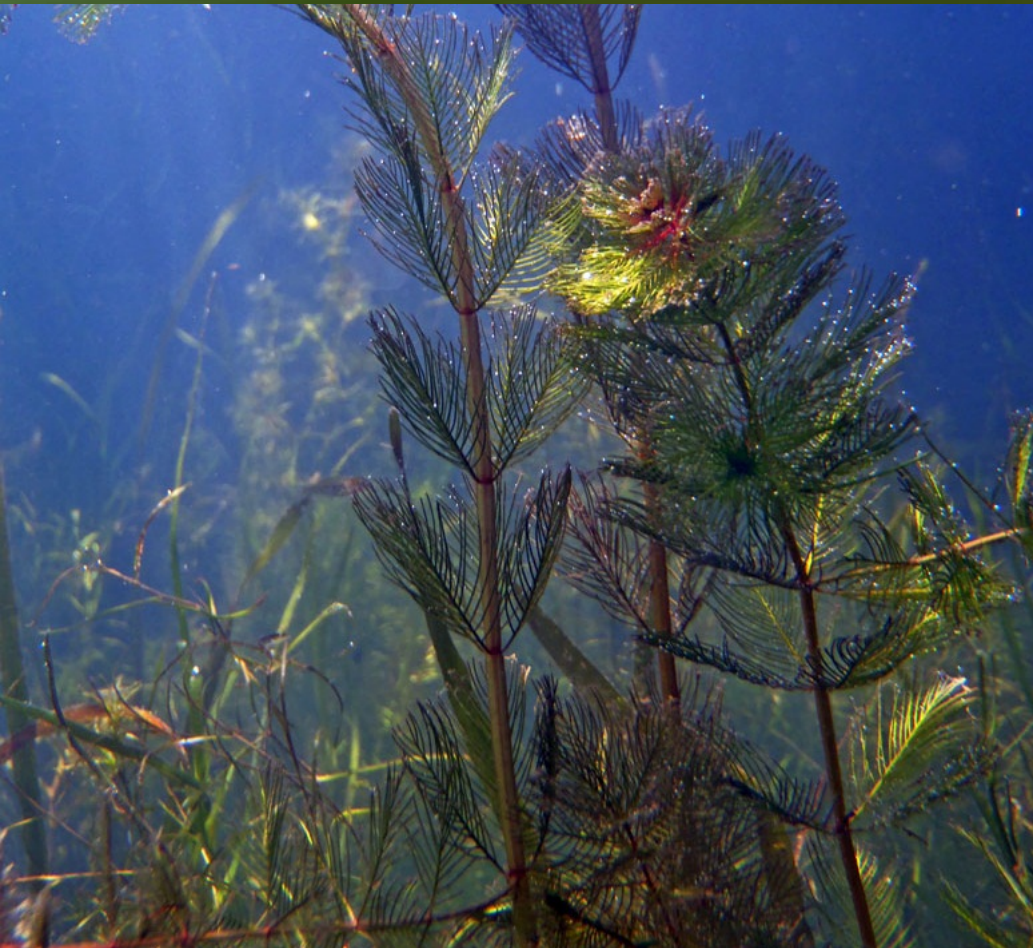
- Certain species of Blue-Green Algae produce toxins when they die. Population spikes (blooms) of these species can put enough toxins in the water to be a health hazard to swimmers or pets



Fanwort



Eurasian Milfoil




Variable Milfoil





Water Chestnut

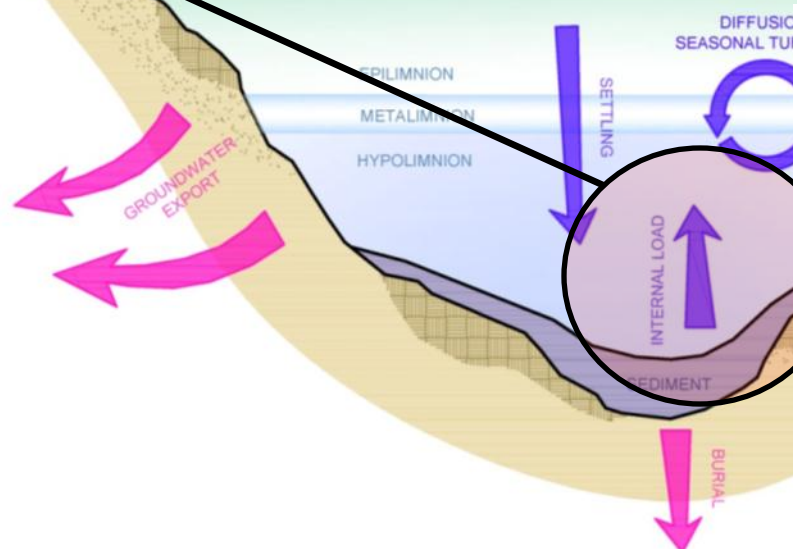
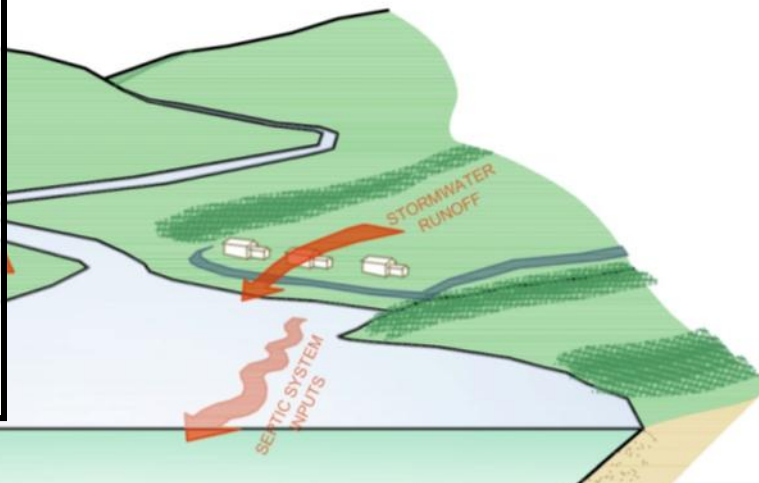
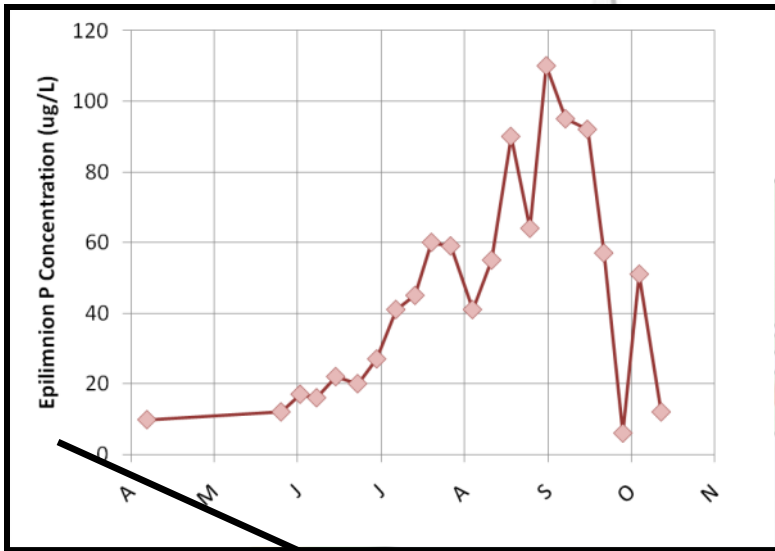




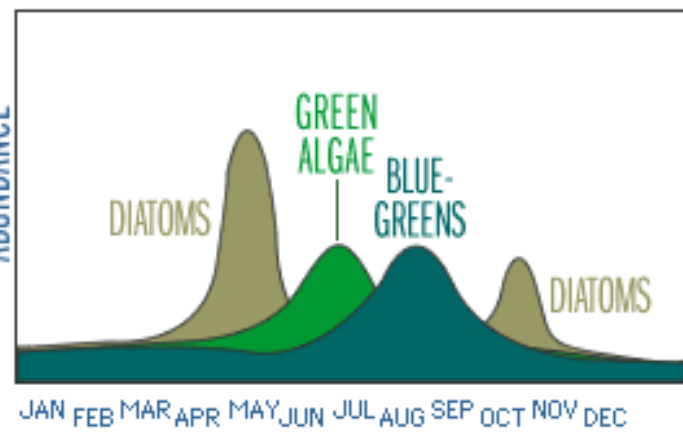
Blue-Green Algae (Cyanobacteria)

- Blooms can occur any time, but most often in late summer/early fall.
- Some species may produce toxins as cells decompose
- Ingestion can cause:
 - stomach/intestinal illness, skin irritation, allergic responses
 - liver damage; neurotoxic reactions (e.g. tingling fingers/toes)
- Worsened by high nutrient load
- Improved by moderating fertilizer, septic runoff
- Algaecide treatments possible, but can make situation worse by causing mass die-off and decomposition of cells

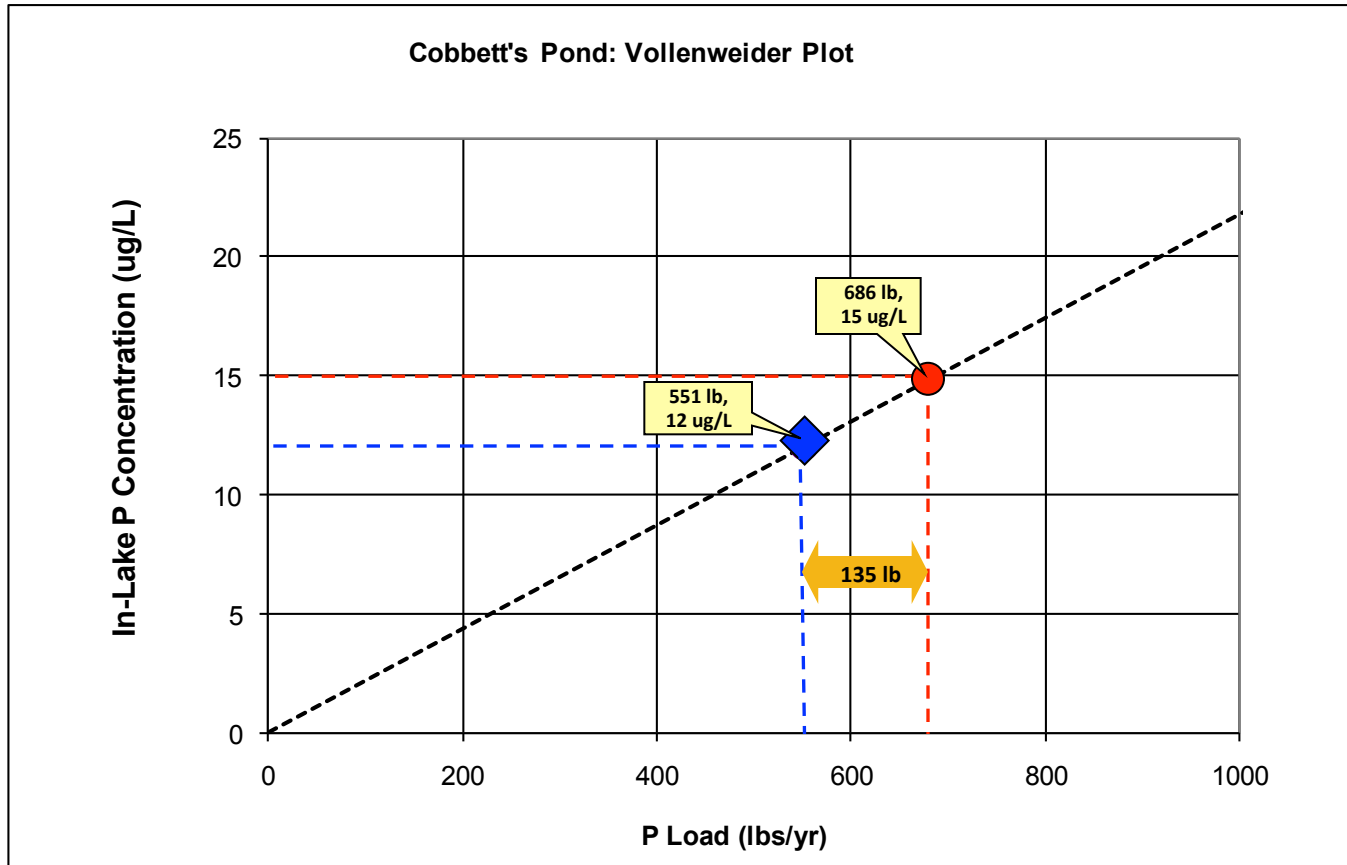
CONCEPTUAL PHOSPHORUS DYNAMICS



SEASONAL SUCCESSION OF PHYTOPLANKTON POPULATIONS



VOLLENWEIDER MODELING EXAMPLE



Each reduction of **45 lb.** in annual P load = Reduce in-lake P by **1 ug/L**

Blooms can appear as:

- Turbid, “pea soup” water color
- Surface scum throughout lake or collected at shoreline
- Floating green “chips”



Blue Green Algae (Cyanobacteria)

MADPH recommends contact advisory when:

- ❑ Total cell count exceeds **70,000 cells/ml**
- ❑ Visible cyanobacteria scum or mat is present

Standards indicate *potential* for toxin...not toxic conditions

Contact Advisory:

- ❑ Post signs should at all water body entry points;
- ❑ Avoid water contact, rinse pets that accidentally enter water

August 27, 2010: 74,187cells/ml

- ❑ 95% *Anabaena*
- ❑ 76% potential toxin-producing species



POSTED : Based on counts of the cyanobacteria (blue-green algae), MADPH thresholds for recreational waters have been exceeded.



- Water which looks like the pictures above may contain algae capable of producing toxins that can be dangerous to humans and pets.
- People and pets should avoid contact in areas of algae concentration
- Do not swallow water and rinse off after contact

For further information call:

MA Department of Public Health at 617-624-6757



Anabaena sp.



What To Do?

Change Behavior / Nutrient Load Reduction

- Eutrophication and algae blooms can be slowed by reducing the lake's phosphorus load ...sources include storm water, septic systems, fertilizer runoff.

Drawdown

- Invasive weeds can be killed by lowering water level and freezing roots... Better drawdown facilities

Physical/Mechanical Removal

- Poor longevity; Important to minimize fragmentation

Chemical Treatments

- Herbicide and algaecide treatments are an option

Drawdown

- Best Bang/Buck
- Fortunate to have a level control structure
- Lowering water level exposes roots to freezing
- Not a cure, but a good treatment



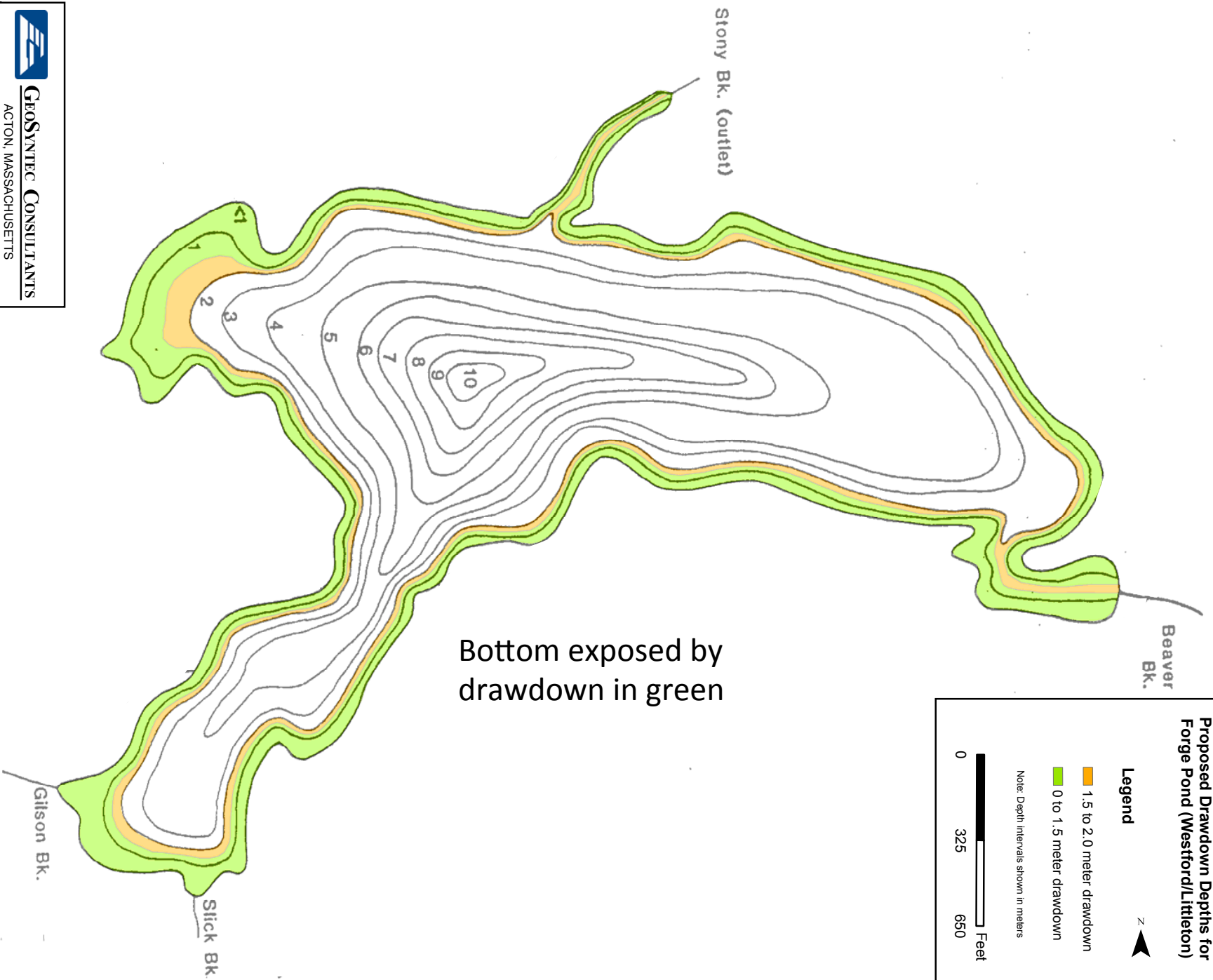
**Bathymetric Map and
Proposed Drawdown Depths for
Forge Pond (Westford/Littleton)**


Legend

- 1.5 to 2.0 meter drawdown
- 0 to 1.5 meter drawdown

Note: Depth intervals shown in meters

0 325 650 Feet



 GEO SYNTEC CONSULTANTS ACTON, MASSACHUSETTS	
DATE: 06/29/06	FIGURE NO. 1
PROJECT NO.	FILE NO.
DOCUMENT NO.	

Sluiceway and Control Structure





What Next?

- Organize
 - 501(c)3 Charitable Organization
- Raise Funds
 - Sales, events, dues, donations, grants
- Contract professionals, organize volunteers
- Monitor and Report
 - Establish baselines, trends, effects



FOFP

Organizational Structure

- 5 Member Board

- Bob Petersen, Jim Barisano, Jeff Sacknowitz, Bob Hartzel, Scott Lewis

- 4 Officers

- Bob Petersen (P), Jim Barisano (VP), Jeff Sacknowitz (Treas), Scott Lewis (Secy)
- Raise and account for funds
- Commission Studies, Construction, Remediation
- Prepare and present reports to Board and Public



July 2013 Status

- Incorporated as a MA corporation
- Not-For-Profit legal status granted
- Donations totaling \$5500 have been made
 - LMA contributed \$1000 in 2012, \$200 in 2013
 - FOFP conducting monitoring of water quality
 - Littleton CLC support is gained with \$2500 pledge
 - Be sure you have a tax receipt for your donation



2013 Activity

- Water quality sampling
- Surveyed mill water handling ability
- Annual vegetation survey in August
- Secured access to Westford Town Beach for Littleton residents
- Secured support of CLC
- Membership guidelines developed
 - \$50 Friend
 - \$250-up Benefactor

T-Shirts



Membership Plaque





Clean Lakes Committee

- Littleton Water Dept. leases surplus land for cell towers
- CLC distributes about \$15,000/year each to Mill Pond, Long Lake and Spectacle Pond, largely for weed control
- CLC's mandate requires public access
 - FOFP arranged public access to Westford Town Beach
 - Along with State boat launch, CLC accepted that public access was available



FOFP: Financial Review

Annual General Meeting, July 24, 2013

Jeff Sacknowitz



Since Inception

Donations = \$8,855

Total Expenses = \$7,304

Legal = \$5,312

Filing Fees = \$1,000

Water Test Equip = \$900

Printing/other = \$92

Net Cash = \$1,550



Expense Trend

2011: Jul - Dec = \$1,927

2012: Jan - Jun = \$2,592

2012: Jul - Dec = \$1,812

2013: Jan - Jun = \$973



Donation Trend

2011 = \$4,750

2012 = \$3,255

2013 = \$850



Future Expenses

- Water Chemistry Testing:
 - Equipment about \$400 per year
 - Lab fees: Littleton CLC funding for 2013-14
- Engineering Study: Hope for public funds - - will need to partially fund ourselves
- Engineering work: Will need public funds - - but contribution likely required of FOFP
- Other/misc: Printing/distrib of informational materials, grant application fees, postal box, operational funding, etc