Water Quality Monitoring , 3 programs

- On-going over 15 year lake water sampling, monitoring 16 sites in open water and shorelines
- Citizens Statewide Lake Assessment Program CSLAP in 3 open water sites and shoreline HAB sampling, in it's second year
- New this summer, Stream water quality, sampling in for large streams at 8 sites monitoring inputs to lake

Lake Water Quality Monitoring

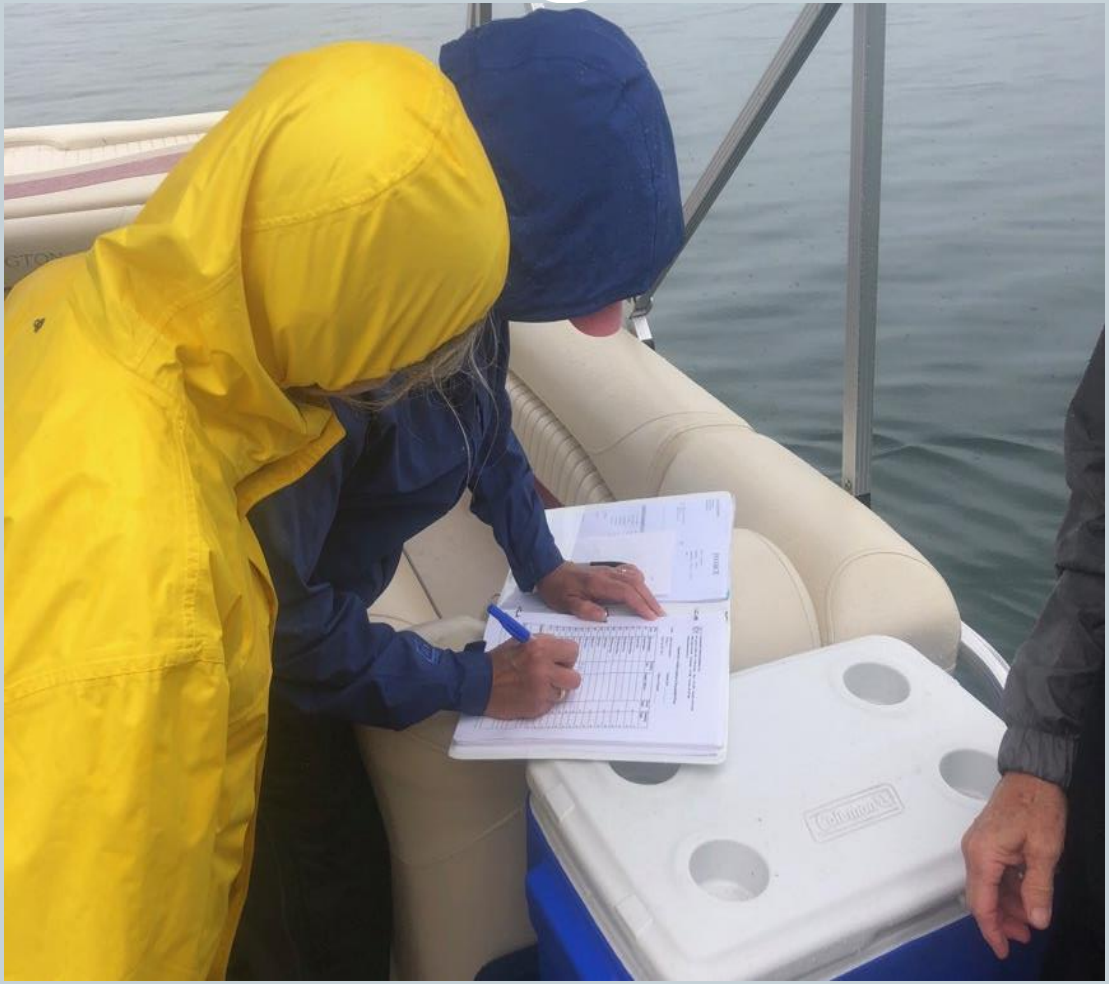
- Samples taken at 16 sites once a month, April – October by team of volunteers, Cornell Cooperative Extension, and Yates Co. Soil and Water
- 4 open water sites in each branch in water at 1 meter 50 meters and a composite sample of 1-12 meters. Also 4 shoreline sites at 1 meter.
- Analyzed by an EPA certified lab for nutrients, chlorophyll, clarity and phytoplankton.
- Stats compiled and reported by Dr. Tim Sellers, Keuka College

Team work

Kemmerer Bottle

Composite Sample 1-12 meters

On site data record



CSLAP

CITIZENS STATEWIDE LAKE ASSESSMENT PROGRAM

In 2017 Keuka joined the group of 11 Finger Lakes to sample lake waters for indicators of water quality and monitor the shorelines for Harmful Algal Blooms

In cooperation with NYS Dept. of Environmental Conservation and NYS Federation of Lake Assoc. (NYSFOLA)

KLA volunteers are trained and supplied with equipment to take samples, process and ship them for analysis to a certified DEC lab

2017 Results

- Results from 8 sampling days at two sites (West Branch and Central) show the lake to be Oligotrophic
- Susceptibility to Harmful Algal Blooms is low.
- HABs were sampled and confirmed in September
- Also confirmed high vulnerability to Invasives

2018 CSALP

- East Branch added
- New Volunteer (Alison Marshall) has been trained
- Sampling started June 27, twice a month, 8 times
- Shoreline monitoring included in program may be expanded later in the summer

Harmful Algal Bloom Monitoring

- Blooms reported to the DEC by homeowners will be sampled by CSLAP representatives and sent for analysis and confirmation

- TO REPORT : email description, address, contact info and if possible a picture to HABSinfo@dec.ny.gov

Stream Water Quality Monitoring

PEERS (PROFESSIONAL EXTERNAL EVALUATIONS OF RIVERS AND STREAMS) PILOT PROGRAM

Questions

- Why are we embarking on this program?
- What are possible “non-point” sources nutrient inputs from the watershed ?

“Non-point” Sources

- Agricultural : fertilizer runoff, manure from grazing animals along streams, erosion from cleared land, plowed fields and construction sites
- Drainage ditches : salt, soil and debris
- Storm runoff from unprotected streams

Where does sampling occur ?

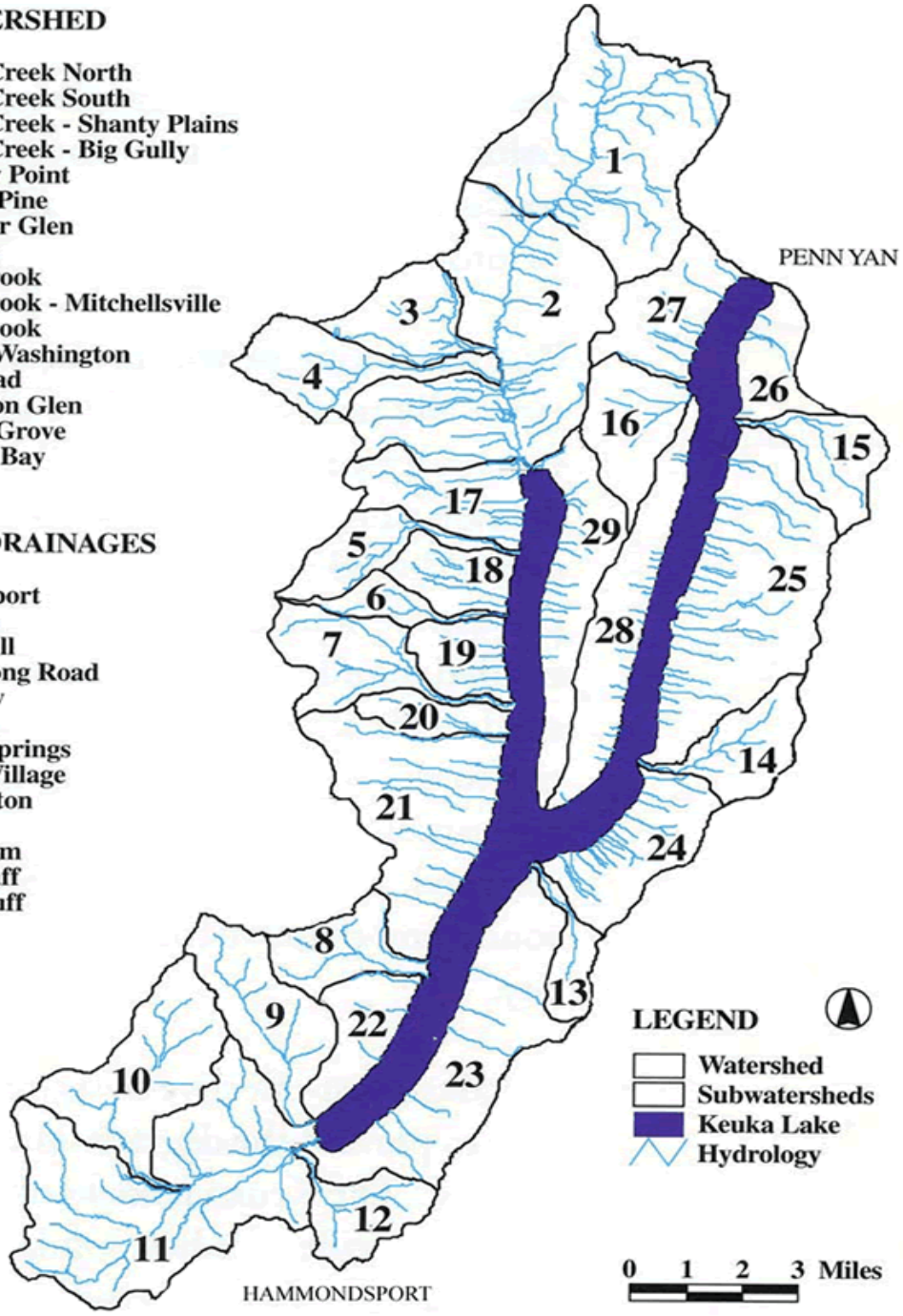
- Sugar Creek and the Keuka Inlet (Cold Brook) at 3 sites : the mouth, middle and headwaters
- Wagener Glen (west side) and Eggleston Glen (east side) at or near the mouth
- 41% of the watershed on subwatershed map :

SUBWATERSHED

1. Sugar Creek North
2. Sugar Creek South
3. Sugar Creek - Shanty Plains
4. Sugar Creek - Big Gully
5. Chidsey Point
6. Knotty Pine
7. Wagener Glen
8. Urbana
9. Glen Brook
10. Cold Brook - Mitchellsville
11. Cold Brook
12. Mount Washington
13. Day Road
14. Eggleston Glen
15. Willow Grove
16. Brandy Bay

DIRECT DRAINAGES

17. Branchport
18. Coryell
19. Boyd Hill
20. Armstrong Road
21. Pulteney
22. Urbana
23. Grove Springs
24. Keuka Village
25. Barrington
26. Milo
27. Jerusalem
28. East Bluff
29. West Bluff



How will sampling be done?

Volunteers are trained by the DEC in the use of a sampling churn to take samples in flowing water at each designated site. Sampling equipment was provided by the NYDEC and the KLA .

We work in coordinated teams of at least two people to drive to each site, identify flowing water, take samples, fill bottles, complete paperwork and transport samples to Ithaca.

Sampling with the Churn

Churning

When will sampling be done?

- First sampling was performed July 2
- "Rain Event" was July 30th after a wet week
- lastly August 24

What will we be looking for?

- Field Conditions at each site are evaluated and recorded
- Samples are analyzed for bacterial contamination, nutrients and solids:

Analyses performed

- E. Coli (bacterial contamination for human or animal waste)
- TKN (Total Nitrogen from organic sources ie manure)
- Ammonia (Nitrogen such as from fertilizer)
- Nitrate (inorganic nitrogen)
- Total Phosphorus
- Soluble Reactive Phosphorus (taken up quickly by algea)
- Total Suspended Solids (silt)
- Total Dissolved Solids (salts, minerals, metals)
- Chloride (road salt)

Quality Assurance Project Plan

- Written in compliance with state and federal regulations
- Describes the project objectives and scope, lists the procedures and certified analyses
- Assures that the data will be accepted without further review or certification by the DEC

Who will be involved ?

- Keuka Lake Association Volunteers

Maria Hudson, Project Coordinator with ;

Nancy Feinstein, Trish Bagley, Julie Brooks, Chris Brooks, Allen Carstensen, David Soule, Lorraine Nelson, Alison Marshall, Mark Morris, Rick Rapach, David Thompson, Lynn Eusden, Dr. Mark Sugalski

- Cornell Cooperative Extension
  Arlene Wilson

- The NYDEC : Tony Prestigiacomo/Alene Onion

- Special thanks to Dr. Alex Flecker from Cornell Dept. of Ecology and Evolutionary Biology and his student Nicholas Hudson

What will we do with the Data?

Data obtained will comprise the first element of the

9 Element Watershed Management Plan

“ to identify and quantify sources of pollutants in the watershed”

Status of the Fishery - Update

- Update from from last summer's presentation by Brad Hammers from the DEC
- DNA sampling by DEC winter of 201 7 showed little to no native Cisco (lake herring) spawning in Keuka
- Current plans to stock cisco : 15,000 from DEC hatchery and another 70-100,00 from (USGS) hatchery in Cortland
- Possible Alewive recovery indicated by the 2017 angler report