Why The People of the Otsego Lake Watershed need a 9E Plan

Open letter with contributions from Watershed committee members asked to be shared with the community

To understand why we need a 9E Plan, we need to understand two things: 1.) What's wrong with the lake and 2.) How is this mysteriously coded, "9E Plan", going to help us.

"So what's wrong with the Lake?"

Twenty-five years ago, Otsego Lake had increased nitrogen and phosphorus concentrations documented by our Biological Field Station (BFS) under the direction of Dr. Willard Harman. In response to our "pollution" and that of many other Lakes, the NY State Department of Health created NY Public Health Law 1100 in 1985 to give local governments the authority to inspect watershed-adjacent septic systems, a common source of nitrogen and phosphorus lake water contamination. Adoption of that law locally in 2004 gave power to the Otsego Lake Watershed Supervisory Committee (the WSC). By 2006 the work of the WSC had inspected 108 of 337 septic systems, identifying 105 (58%) as failing or inadequate systems that were releasing increased amounts of nitrogen and phosphorus and potentially infectious microbes into the lake. The remarkable improvement in Lake water quality following local septic system corrections and the concurrent statewide regulations against the sales and usage of phosphorus-containing dishwasher detergents and lawn fertilizers was again documented by the BFS. Since then, our Lake's phosphorus level has declined significantly, accompanied by a moderate reduction in nitrogen, which overall became satisfactory for the lake ecosystem.

Unfortunately, our lake has since acquired new undesirable changes. The most striking is the appearance of Harmful Algal Blooms (HABs). This typically green, floating accumulation of cyanobacteria ("blue-green algae") can produce toxins especially dangerous to dogs but also people who do not recognize and avoid the contaminated water. Cyanobacteria have been in Otsego Lake since the melting of the glacier that created Otsego Lake and its watershed 10,000 years ago. They are not an "invasive species", but prior to 2022, the production of these toxin-producing blooms was almost unheard-of. They are now seen in the warmer months every year since 2022. Suspected causes for the appearance of HABs are the infestation of invasive species (especially quagga and zebra mussels that voraciously filter the lake water and eat the "good" algae. This leads to clearer water, which allows warming sunlight to penetrate much deeper into the lake. Lake temperature at the surface has steadily increased over the last few decades, days of ice cover has halved, and since late 2001, the Lake has failed to completely freeze over in four winters (according to the BFS records, the Lake had complete ice cover every winter from 1842 to 2001). These are associated with global warming, and accumulations of lake sediment that contain nutrients for bacteria continue and could be worsened by the changing precipitation patterns.

What is the mysterious 9E Plan?

The observed poor water quality, highlighted by the appearance of HABs across NY State's lakes began in the more westerly lakes years ago. In response to requests for help from troubled watershed communities, NY State's response was to have the "Department of State" create the 9 Element (9E) Plan Granting Process adopting the U.S.

Environmental Protection Agency's (EPA) nine-element framework for developing watershed-based plans. This format helps guide cooperating Lake Tributary Communities to address this complex problem.

How is a 9E Grant different from any other of the many possible State or Federal Granting Organizations? First, we need to understand that the 9E Grant program does not accept proposal submissions from lake researchers. Rather, a 9E Grant proposal is a request for financial help from a group of watershed communities, often staffed by volunteers, asking how to get State-recognized scientists to help improve their Lake's water quality. The 9 Elements describe how this special NY State Funding Process inherently gives guidance (to mostly non-scientists) through a progression of 9 Elements (or activities) on how to get scientific help when needed, how it specifically pertains to their lake, how to involve their entire communities and how NY State can expect measurable, sustainable improvement using this method. Fortunately, we, the citizens of the Otsego Lake Watershed, have the good fortune of having many years of our BFS's scientists' attention, and water testing to help advise our grant writing process.

The individual 9 "tasks" of the 9E Grant Proposal help our locally staffed governments request scientific investigations of our lake water quality. That helps identify the "best management practices" to achieve the needed improvement. It helps local communities figure out what it's going to cost so they can appropriately request financial help. It also provides a format to help describe how the grant's writers need to involve all the people in Otsego Lake's Watershed who may have different interests and concerns regarding the Lake and the land adjacent to the Lake's tributaries. It teaches us how to know the milestones to measure change over time and describes how our local people will know what is changing and how scientists will be able to measure the improvement over time.

Hear are the Nine Key "Elements" in an abbreviated way, in numerical order:

1. Identify and quantify sources of pollution in the watershed
2. Identify the water quality target or goal and pollution reductions needed to achieve the goal
3. Identify the best management practices (BMPs) that will help to achieve reductions needed to meet the water quality goal/target
4. Describe the financial and technical assistance needed to implement the BMPs identified in Element 3
5. Describe the stakeholder outreach, explain how their input was incorporated, and include the role of stakeholders in implementing the plan
6. Estimate a schedule to implement the BMPs identified in the plan
7. Describe the milestones and estimated timeframes for BMP implementation
8. Identify the criteria that will be used to assess water quality improvement as the plan is implemented.
9. Describe the monitoring plan to collect water quality data that will be used to measure improvements using the criteria described in Element 8

Maybe even more importantly than the initial grant success, the 9E Grant Application acceptance will demonstrate to other funding organizations (EPA, DEC, CDC, DOH, etc.), that the 9E Grant-winning community is to be recognized in future requests for financial support as being qualified to demonstrate that they know how to put together and carry out a scientifically supported, sound proposal that has local community backing and a high expectation of success.

Our Lake's Watershed needs help improving Otsego Lake Water Quality. The 9E Plan is the best way for us to measure what's wrong, to show NY State we know what we're talking about and that we are together on this so we can convince them that this will be "money well spent" to have better Otsego Lake Water Quality soon and for the future.