Lake Quinsigamond Water Pollution
Basak Soylu (ME), Marianna Bailey (ChE), Craig Barrett (Undecided), Jessica Wey (EE), Allysia Grant(ME)
Advisor: Professor Derren Rosbach (EnE), Professor Elisabeth Stoddard (E&S Studies)

Problem and Goal
Due to runoff from the roads, major highways, the inhabitants that live in the lakes vicinity, and the industries on the shore, Lake Quinsigamond has become excessively polluted.

- Raise oxygen levels in the lake and decrease pH levels by implementing a solution.

Pollutants | Affects
---|---
Over-Nutrients: Phosphorus, Nitrogen | lowers dissolved oxygen levels
Heavy Metals: Lead, Copper, Zinc | lowers dissolved oxygen levels
Constructions Waste | increases pH levels
Salt | increases pH levels

Average Dissolved Oxygen (DO) and pH Levels

- Current data taken from our data sampling. Data from 1995-2012 taken from EPA.

Our Research
1. Researched history of the pollution in Lake Quinsigamond.
2. Interview: Ed Himlan (Mass. Watershed Coalition) and Heidi Ricci (Mass Audubon Society)
3. Analyze ten samples each of pH and DO: I-290 (A), Boathouse (B), Shore (C), Route 9 (D).

*See map below

Final Solution Recommendation
Bio-retention basins catch runoff pollutants that are causing problems in the lake particularly phosphorus which causes over nutrients and bacterial pollutants which harm organisms in the lake.

Implementation of Solution
- Need minimum of 200 square feet
- Cost: $5,000-$10,000
- Build in Lake Quinsigamond State Park
- Contact MassDOT, Environmental Consulting Restoration, Worcester Public Works and Parks

Data Sampling

Pollutants and Affects

Data Sampling Instruments

References
