

# **CR ENVIRONMENTAL, INC.**

*Ecological & Oceanographic Consultants, East Falmouth, Massachusetts*

## **Environmental Sampling, Aquatic Vegetation & Bathymetric Surveys, and Sediment Mapping**

### **Jordan Pond**

**Shrewsbury, Massachusetts**

CR Environmental provided GZA GeoEnvironmental, Inc. (GZA) with limnological services required to assess and remediate bacterial and nuisance aquatic vegetation impacts to this intensively used urban pond. Services included: collection of surface water and sediment samples for extensive microbiological and chemical analysis; physical/chemical water quality profiling using an oceanographic CTD instrument and conventional multi-parameter water monitoring instruments; and mapping of aquatic vegetation, water depth and sediment thickness.

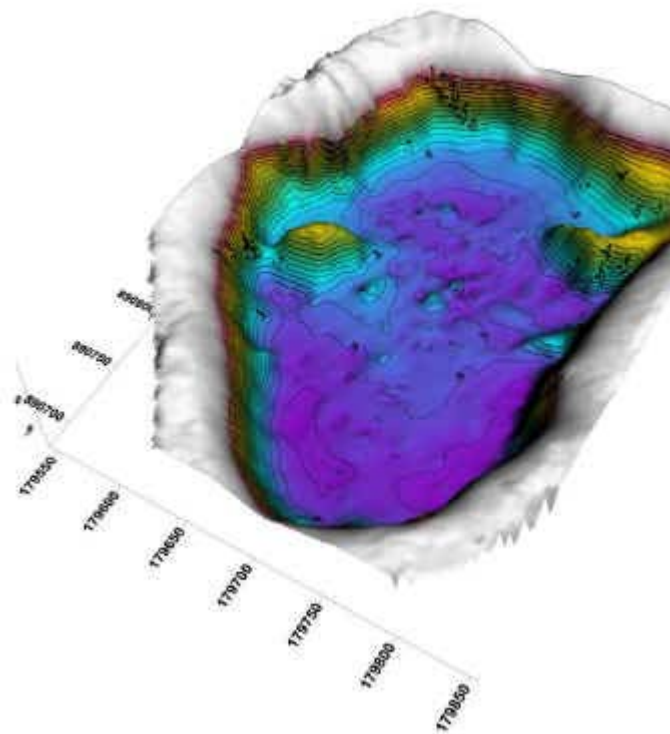
Because the surveys and sampling were conducted during late autumn, most of the nuisance aquatic vegetation present in the pond was senescent and below the water surface. Additionally, sub-surface visibility of vegetation was severely impaired as the result of a late-season bluegreen algal bloom. Therefore, CR mapped vegetation based on bottom sweeps of dying vegetation and by carefully evaluating the 200kHz sonar data collected during our bathymetric mapping effort (see bottom-right image).

CR delivered a comprehensive ArcView GIS project including all environmental and hydrographic data and maps. These data will help GZA engineers to assess the environmental condition of the pond and the options for improvement of water quality.

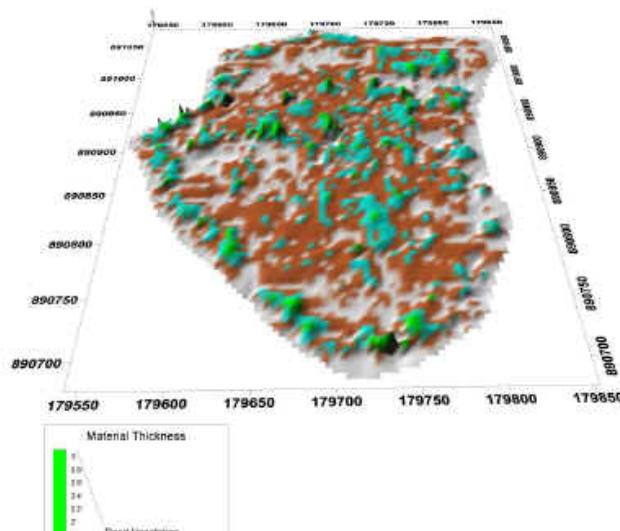
#### Reference:

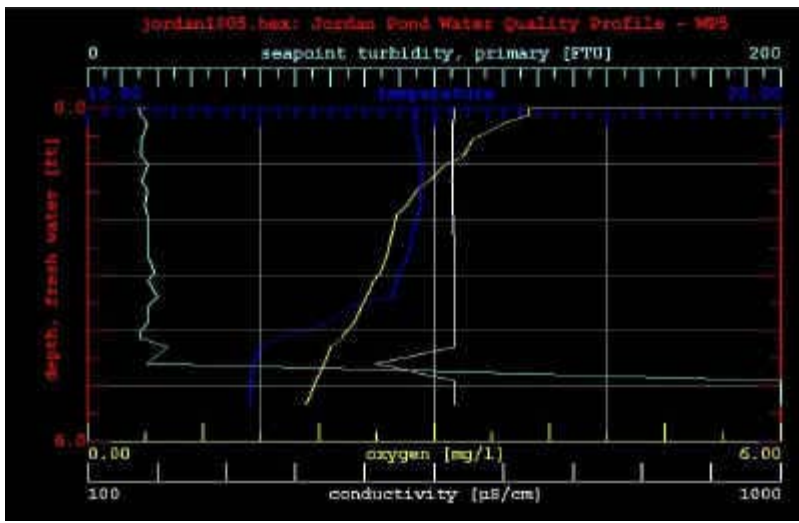
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*Bathymetric surface map of Jordan Pond*



**APPROXIMATE DISTRIBUTION OF SENESCENT AQUATIC VEGETATION  
BASED ON 200-kHz SONAR DATA  
JORDAN POND  
Shrewsbury, Massachusetts  
5X Vertical Exaggeration**





*Typical water quality profile - Jordan Pond*

*Sonar data used to map stands of submergent aquatic vegetation from surface view by cyanobacterial bloom*

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