



A brief summary of the 2009 study of Highland Lake

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LakeCounty
Health Department and
Community Health Center

Lake Facts

- Located in the Squaw Creek drainage of the Fox River Watershed.
- Surface area: 102.7 acres
- Max Depth: 30.0 feet
- Watershed area: 432.0 acres
- Last studied by the ES in 2001



2009 Study

- Watershed approach
 - Began in 2005
 - Squaw Creek Watershed
 - Old Oak, Owens, Schreiber, Davis, Helen, Nippersink (LCFPD), Summerhill Estates, Ozaukee, Patski, Hook, **Cranberry**, **Highland**, **Round**, and **Long**.
- Water quality
 - Nutrients (phosphorous, nitrogen)
 - Physical parameters (DO, clarity, pH, temperature, conductivity)
- Plant Survey
- Re-assess shoreline erosion
- Report and give recommendations

2009 Study

Water quality



Water Quality

- Parameters Measured:
 - Nutrients
 - Solids
 - Clarity
 - Temperature
 - Dissolved oxygen
 - pH
 - Conductivity
 - Light penetration

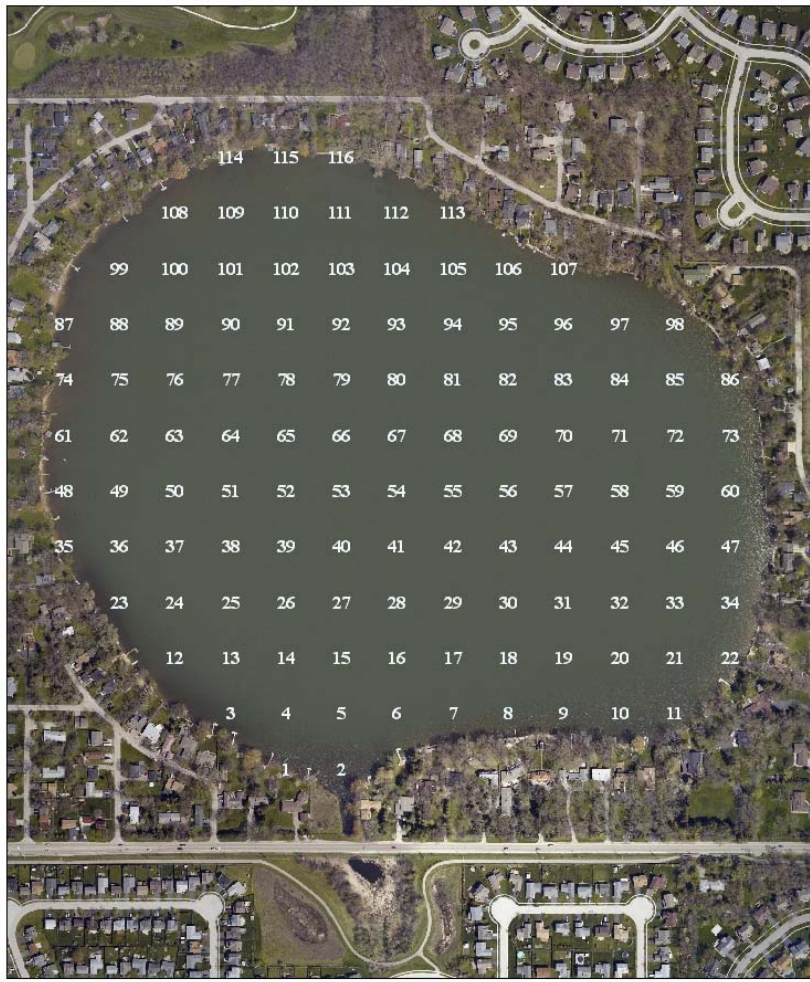
Water Quality

- Nutrients
 - Most have decreased from 2001
- Solids
 - Slight increase from 2001
- Clarity
 - Slight increase from 2001
- Conductivity
 - Increased from 2001

Water Quality

- Dissolved Oxygen
 - No apparent problem in 2009
- pH
 - No apparent problem in 2009
- Light penetration
 - Light required for plants ranged from 10 – 22 feet
- Temperature
 - Thermally stratified May – September (14 – 16 feet)

2009 Study

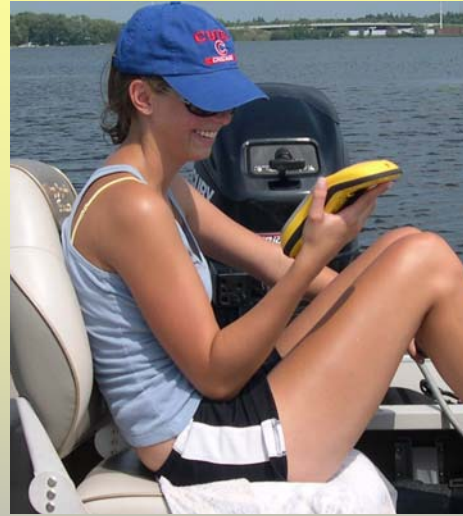


Lake County
with Departments and
Community Health Center



0 200 400 600 800 Feet

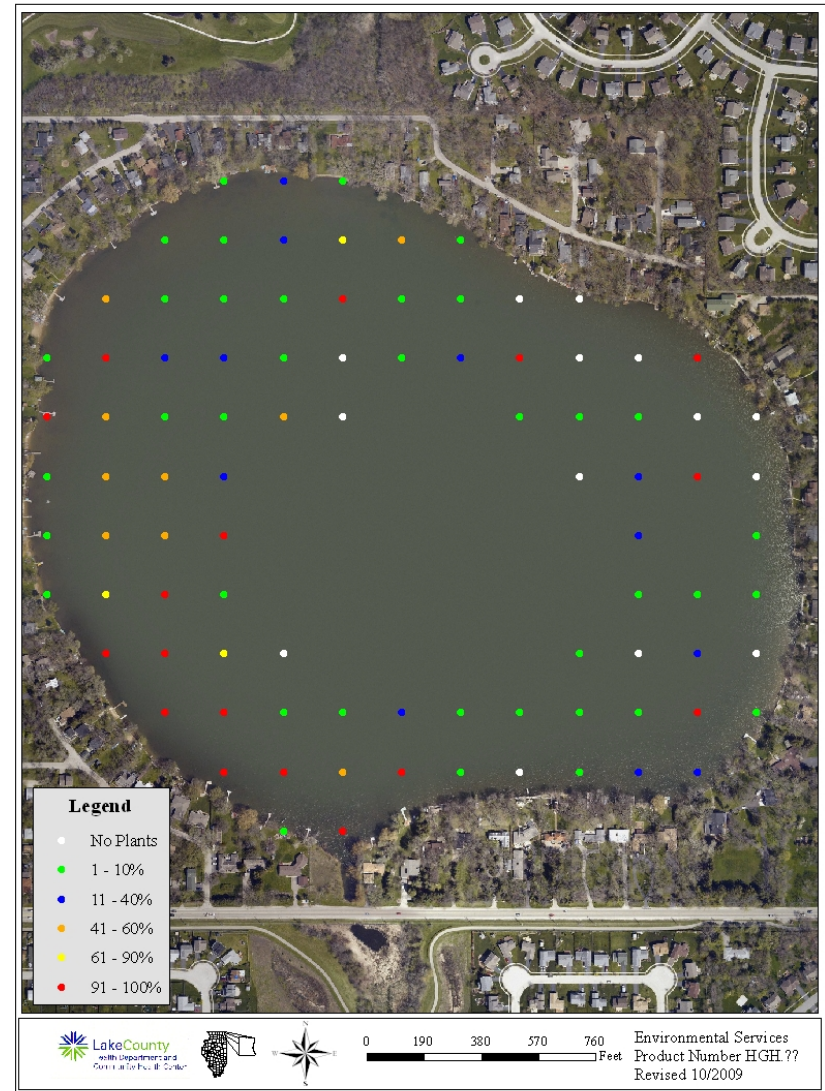
Lakes Management Unit
Product Number HGH.PG09
Revised 3/2009



- Plant Survey

Plant Survey

- Conducted in July
- 9 aquatic plant species and one macro-algae
- 68% of the sampling sites had plants
- Decrease in plant species from 2001
 - Eurasian Watermilfoil, Northern Watermilfoil, and Coontail found in 2001 only
 - American Pondweed found in 2009 only

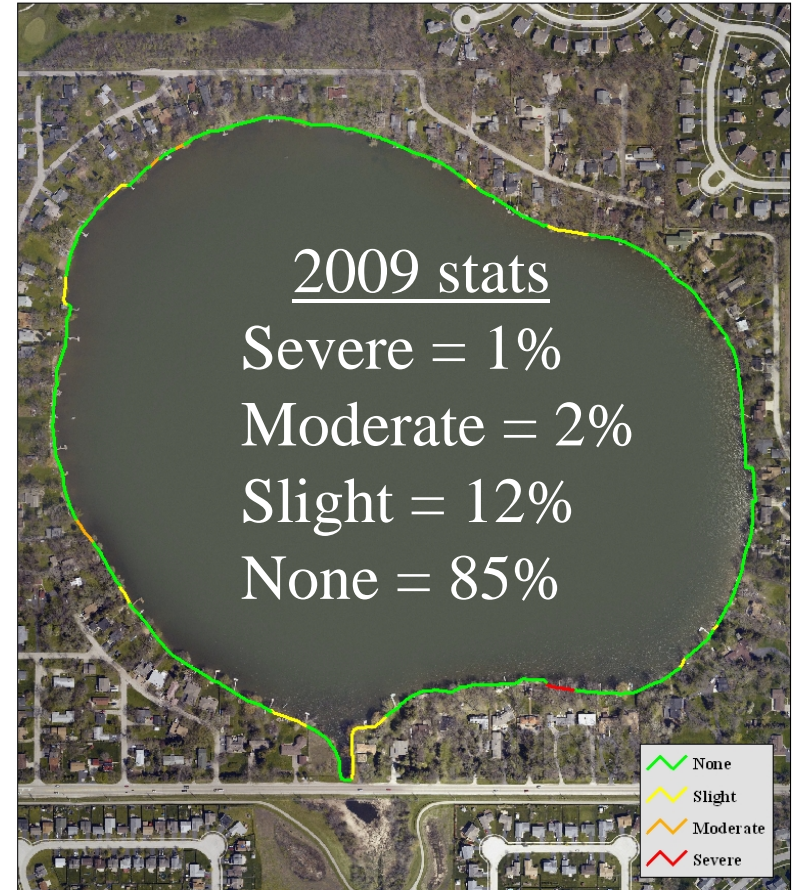
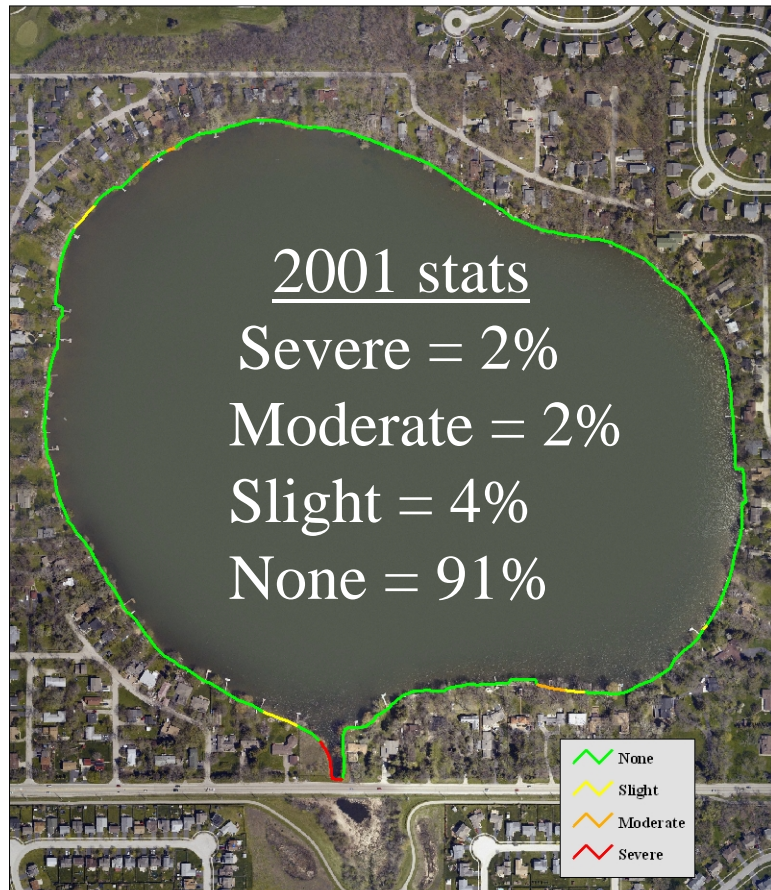


Plant Survey

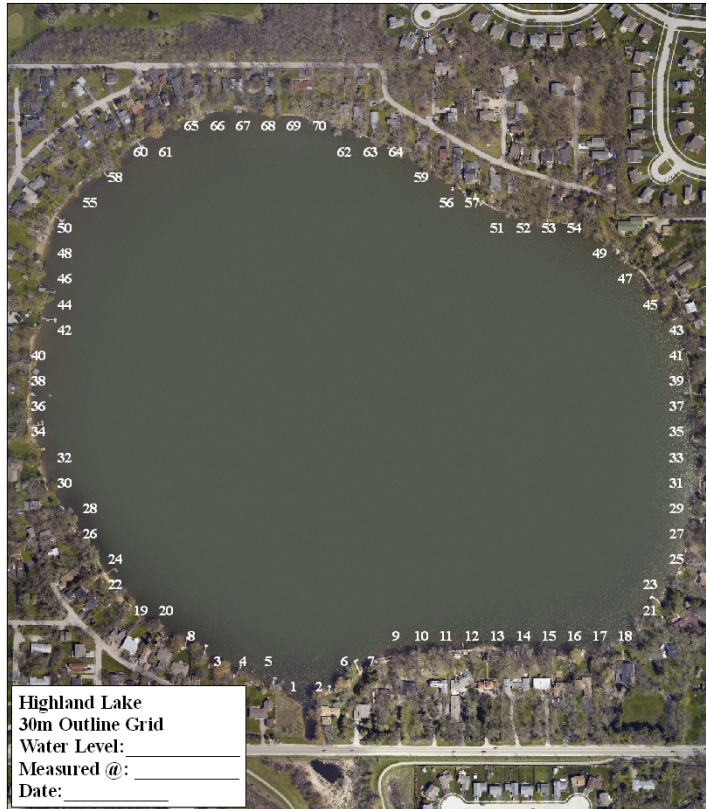
- Most dominant plants species in 2009 were Chara and Spiny Naiad (52% of sites sampled)
- Other plants found
 - Sago Pondweed (27%)
 - Horned Pondweed (15%)
 - White Water Lily (12%)
 - Curlyleaf and Small Pondweed (7%)
 - Slender Naiad (3%)
 - American Pondweed (2%)
 - Spadderdock (1%)

2009 Study

- Re-assess shoreline erosion



2009 Study



- Updated Bathymetric Map
 - Data collected
 - Map will be produced this winter

2009 Study

- Report and give recommendations
- Possible suggestions
 - Phosphorous Ban
 - De-icing alternatives
 - Buffer Strips
 - Increase fish habitat
 - Plant management
 - balance plants/use/algae
 - Proper disposal of used pharmaceuticals
 - Installation of a staff gauge
 - Become a member of Illinois Lakes Management Association

2009 SUMMARY REPORT
of
Highland Lake
Lake County, Illinois

Prepared by the

LAKE COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH SERVICES
LAKES MANAGEMENT UNIT

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Other 2009 Studies

- IDNR conducted a fish survey
 - October 13th
 - 60 minute electrofishing survey (DC)
 - 8 species collected
 - Bluegill most dominant followed by Largemouth Bass
- McCloud Services conducted a site visit
 - September 14th
 - Noted similar finding with plants
 - Treatment options
 - Sonar AS vs. Spot treatments to control Curlyleaf Pondweed
 - Weigh benefits with cost

More Info:

- On the web:
 - <http://www.lakecountyil.gov/Health/want/BeachLakeInfo.htm>
- In the office:
 - 3010 Grand Avenue, Waukegan, IL 60085
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Questions?

