

Huntsdale Subdivision Lake Recovery Plan

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Concern

- LAKE'S HEALTH HAS DIMINISHED
 - Surface aquatic vegetation non-existent (pickerel weed, yellow pond lily (spatterdock)
 - Cover from intense sunlight
 - Snail population depends on it
 - Smaller fish use these as predator protection
 - Provides dissolved oxygen (dO₂)
 - Algal specimens limited and almost non-existent
 - Food for all small fish, amphibians, larval insects and snails
 - dO₂
 - Aquatic insect populations greatly reduced
 - Needed for fish and turtle food
 - Dragonfly and Damselfly adults feed on mosquitos (30 -> hundreds per day)

Steps for Recovery

A. Assessment of current conditions

1) Assay chemical composition

- Nitrogen
- Phosphorus
- Potash (potassium)
- Dissolved O₂ level

2) Map lake topography

- Depth using manual use of lead line or a boat with a depth finder

3) Determine fish population types and numbers

- Extrapolating based with a use of seining

4) Sampling of non-fish aquatic life.

- Hand Net use

Steps for Recovery (cont.)

B. Assessment of current conditions (cont.)

B. Assess avenues of run-off of water into the lake

B. Fertilizers and soil erosion

C. Assess lake shore vegetation for possible removal

B. Trees, shrubs, other vegetation

C. Steps to restore lake

1) Base on depth via topographic plotting and minimum requirements

- Potential need for some dredging

- May need to ask residents for temporary annual rate increase to cover costs (TBD)

- ❖ Last resort because of \$\$\$

Steps for Recovery (cont.)

C. Steps to restore lake (cont.)

- Re-introduce Aquatic life

- Plants

- Water lily (a.k.a. spatterdock) -*Nuphar lutea*



Water lily

- Pickerelweed -*Pontedria cordata*



Pickerelweed

- Marsh Marigold –*Caltha palustris*



Marsh Marigold

- Cattail - *Typha* sp.

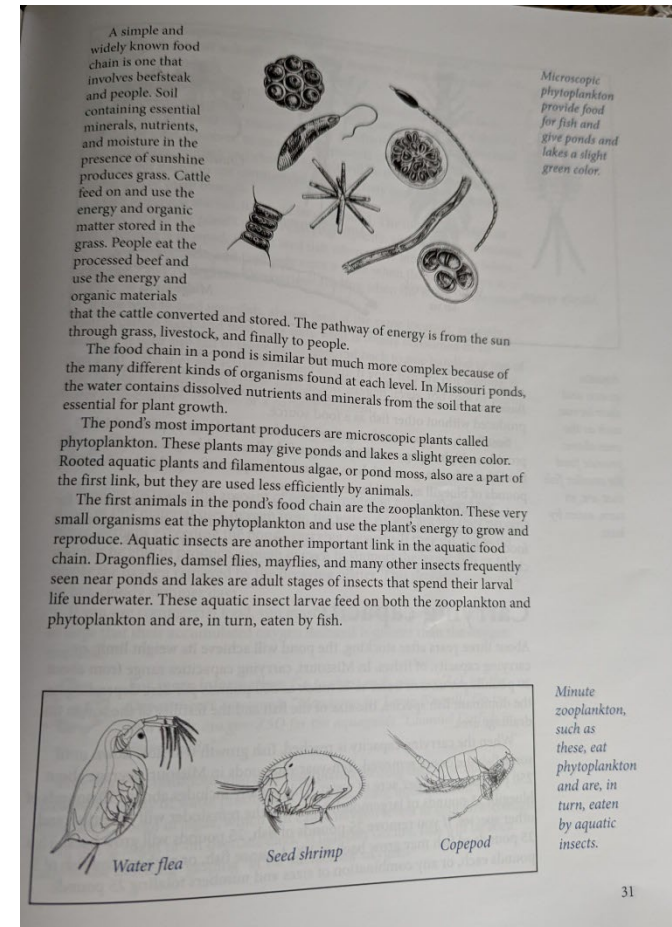


Cattail

Steps for Recovery (cont.)

C. Steps to restore lake (cont.)

- Reintroduce plankton
 - Phytoplankton
 - Zooplankton
- Restocking fish
 - Species TBD but balanced



Timeline

- The following is a suggested timeline for restoration. It is not a simple process and takes time.
 - Fall 2022
 - Topographic mapping
 - Erosion control of north side of lake
 - Cedar Trees removal north shoreline
 - Water testing
 - Plankton sampling (phytoplankton and zooplankton)

Timeline (cont.)

- The following is a suggested timeline for restoration. It is not a simple process and takes time. (cont.)
 - Spring 2023
 - Fish population survey (seine)
 - plankton reintroduction – (MDC supplied)
 - Lake Surface vegetation reintroduction - (MDC supplied)
 - Shoreline aquatic vegetation reintroduction - (MDC supplied)
 - Possible fish restocking based on fish survey – (HOA purchase)
 - ☐ May be delayed to let plants be established. Will have existing fish to help with initial recovery.

Cost

The cost of the reclamation will be determined:

- by the extent of reclamation needed
 - Improving water quality
 - Chemicals needed
 - MDC contributions for plants
 - Cost of phyto- and zooplankton
 - Control of run-off
 - Fish stocking
 - Etc.