# EURASIAN WATERMILFOIL

## AN ORGANIC APPROACH

# History of Christmas Lake

- Consistently one of Minnesota's highest rated lakes
- DNR reported water clarity of 18.75 feet
- Late 1990's introduction of milfoil

| Water Quality Report Card for the Upper Watershed Lakes | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
| Christmas Lake | A | A | A | A | A | A | A | A | A |
| Dutch Lake | - | - | C+ | D+ | C | D | D+ | C- | C- |
| Gleason Lake | C- | C- | C- | D+ | C- | D | C- | C- | D |
| Langdon Lake | D- | D | F | D- | D+ | F | F | D | F |
| Long Lake | C+ | C | C- | D+ | C | C- | C- | C | C- |
| Minnewashta Lake | A- | A- | B+ | B+ | B+ | A | B+ | A- | B |
| Parley Lake | - | - | D | D+ | D+ | D | - | D+ | D- |
| Schutz Lake | - | - | - | - | B | C+ | C | C | C+ |
| Steiger Lake | - | - | C+ | - | C+ | C | C+ | B- | - |
| Wasserman Lake | - | - | D | D | C | C- | D+ | D | D+ |
| West Auburn Lake | - | - | B+ | - | B- | C- | B- | B- | - |
| Zumbra Lake | - | - | A- | - | B+ | B | B+ | B | - |

http://www.dnr.state.mn.us/lakefind/showreport.html?downum=27013700
http://www.minnehahacreek.org/wq_report_cards.php

# The Three H's

## Combating Milfoil on Christmas Lake

1) Harvesting

2) Hand-Pulling

3) Herbicides

# Harvesting

- Short-term relief of select areas
- Long-term detriment of lake as a whole
- Highly controversial
- Non-selective
- Costly: $35,000/season
- Partial removal of milfoil stalks leaving root system intact
- Results in accelerated growth patterns
- Must be repeated annually; larger scale operation each time

# Redistribution of Milfoil Cuttings

June 21-22, 2007

# Hand-Pulling

Before

After

http://waterfrontrestoration.com/before_after.htm

# The Benefits of Hand-Pulling

- Immediate, superb results from surface to substrate
- Minimal redistribution of seeds as entire milfoil plant is pulled and safely disposed of offsite
- Can be selective, protecting native aquatic vegetation
- Manual & organic process → guaranteed no adverse, unknown side effects!
- Leads to reduction in amount of future milfoil growth

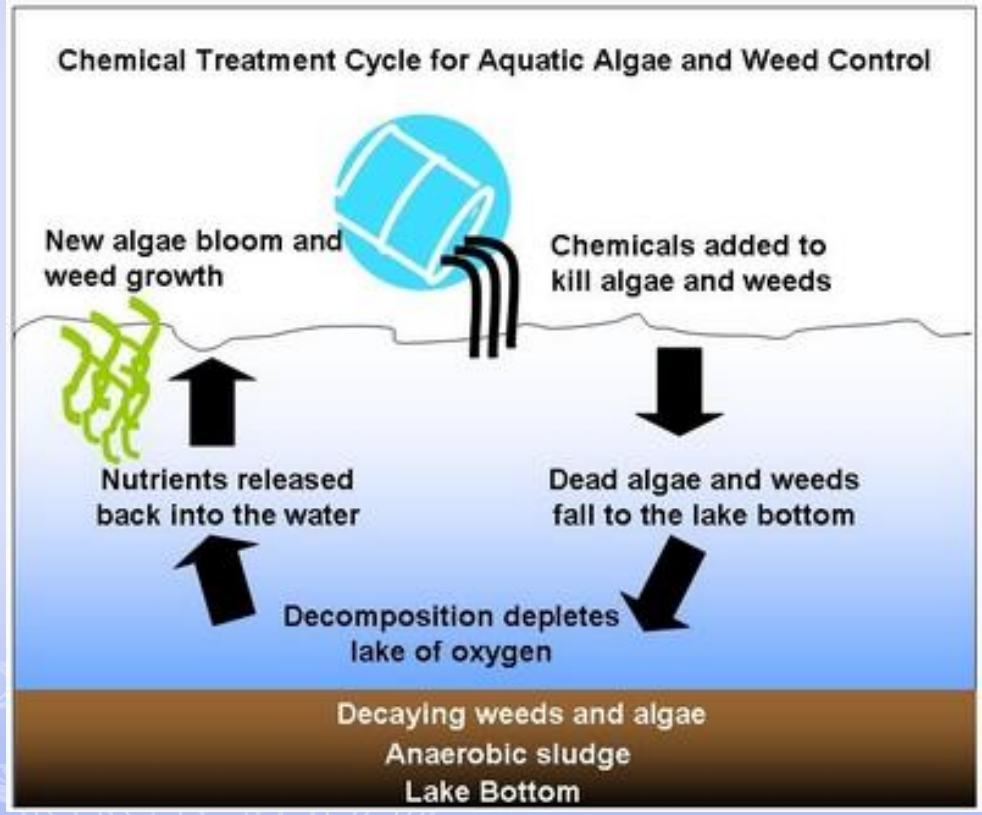
# Herbicides

- Potential for temporary control comes at an unknown risk
- Studies have yielded a broad range of results
  - Michigan Lake study
  - Wisconsin study (see handout)
- Must perform routine chemical maintenance every season
  - Plants may develop resistance to treatments
- Once chemicals are introduced, there is no turning back!

# The Chemical Cycle

## Short-term = Kill-off

## Long-term = General Lake Deterioration




http://shermanlake.wikispaces.com/Chemical-Herbicide+Treatment

# Herbicides

## The absence of evidence or the evidence of absence?

- Dearth of peer-reviewed articles evaluating long-range effects of herbicides on EWM control, native aquatic vegetation, fish biology, water clarity, potential health risks, etc.
- Inconsistent outcomes
  - Who to trust?
- Why subject Christmas Lake to guinea pig experimentation?

# Worth the Risk?

The Health of Our Families

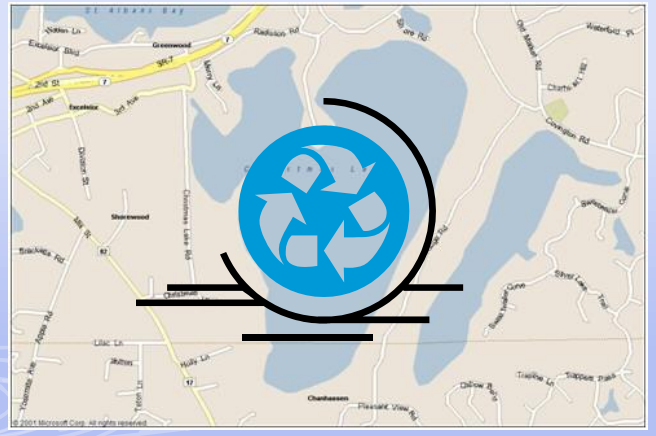
Pristine Water Quality

Christmas Lake's Food Chain

# Board Recommendation

## An Organic Approach

- March 2006 Resolution
  - "The board has had 8 meetings and considered copious amounts of data, and concluded that there are currently no available safe chemical treatments for our lake."
- Selective EWM plant removal by the root – the only safe, effective and environmentally sound option!



http://www.christmaslake.org/news/news.htm