Grant-funded lake projects update
SCWM monthly meeting October 12, 2023
Agenda

1. Crystal Lake Management Plan (319 grant)
2. Meadow Lake Drawdown and Management Plan (CWF grant)
3. Bass Lake Vegetation Improvements (DNR CPL grant)
Crystal Lake – 2023 Activities

Monitoring
• Water quality monitoring – City of Robbinsdale
• Curly-leaf pondweed visual inspection
• Sediment cores (Oct 4, 2023)

Management
• Carp removals
Crystal Lake Alum Treatment

Alum treatments in September 2021 & 2022
Crystal Lake Alum Treatment

Sediment Core Release Rates

- Station 1
- Station 2
- Station 3

- Phosphorus Release Rate (mg/m²/day)

- 2020
- 2022

Non-detect
Crystal Lake Water Quality

Crystal Lake Surface Total Phosphorus

Crystal Lake Depth Total Phosphorus

surface

depth
Crystal Lake Carp Removals 2023

- 9 removal events
- 1,394 captured & removed
## Crystal Lake Carp Removals Summary

Initial carp population was estimated in 2020: 12,011 carp

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<thead>
<tr>
<th></th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
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</thead>
<tbody>
<tr>
<td>Carp Removed</td>
<td>0</td>
<td>3,923</td>
<td>3,626</td>
<td>1,394</td>
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<tr>
<td>Biomass Remaining (lbs/acre)</td>
<td>436</td>
<td>293</td>
<td>165</td>
<td>117</td>
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<tr>
<td><strong>Goal Biomass (lbs/acre)</strong></td>
<td></td>
<td></td>
<td><strong>89</strong></td>
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Crystal Lake Aquatic Plants

Two species in the lake in low abundance
- White waterlily
- Curly-leaf pondweed
Crystal Lake Remaining Tasks

• Assess sediment core results
• Close out grant in December
• Routinely monitor for future management
Meadow Lake Drawdown

Drawdown Winter 2021-2022
Lake filled back up with stormwater in April 2022
Meadow Lake – 2023 Activities

Monitoring
• Water quality monitoring – CAMP and Stantec
• Two aquatic plant surveys (June, August)
• Sediment cores (Oct 4, 2023)

Management
• Alum treatment
• Herbicide treatment for Curly-leaf pondweed
Meadow Lake Water Quality

Meadow Lake Total Phosphorus

- Growing Season Average
- Shallow Lake Standard

TP (ug/L)

9/12/23 sample
Meadow Lake Water Quality

Meadow Lake Chlorophyll-a

- Growing Season Average
- Shallow Lake Standard

9/12/23 sample
No curly-leaf pondweed observed following herbicide treatment
Meadow Lake 2023-2024

- Cores collected on October 4, 2023
- Two more water quality samples in September/October
- Potential monitoring and management in 2024
  - Aquatic vegetation treatment
  - Water quality monitoring
  - Fish survey
Bass Lake Vegetation Improvements

Plant harvesting on Big Carnelian Lake on July 27th and September 14th, 2022

- 12 native species collected and placed into coolers, transported to Bass Lake
Species transplanted
Not previously found in lake

- Water marigold
- Robbins pondweed
- Northern milfoil
- White stem pondweed
- White water crowfoot
- Small pondweed
  (various species)
- Clasping leaf pondweed
- Elodea
- Water stargrass
- Naiad
- Large leaf pondweed
- Flat stem pondweed
Bass Lake Vegetation Improvements

Monitoring

- Biweekly monitoring into September 2022 to count plants that survive in each plot
- Difficult to see, high plant mortality
- Largeleaf, water marigold, and flat stem pondweed appeared to have good success
Bass Lake Vegetation Improvements – 2023 Survey

2023 survey

• 19 species found
Bass Lake Remaining Tasks

• Close out grant in December
• Curly-leaf pondweed treatment in Spring 2024
Thanks!
Crystal Lake Water Quality

Crystal Lake Total Phosphorus (Surface)

Crystal Lake Total Chlorophyll-a

Crystal Lake Secchi Depth