



Otter Pond 2019 Review/2020 Plan

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OP Pond Committee

2019 on the Pond - A good year, a challenging year, new opportunities

- The silt retention pond was dredged in the early spring
- Abundant snowpack meant plenty of water available early
- An early midge outbreak led to an aggressive response
- Reduced flows, little monsoonal moisture and changing agricultural practices resulted in an unusual valley wide late season algae bloom
- An opportunity to work with a resident limnologist and provide educational opportunities for local students has been created beginning in 2020

Pond Management Considerations

- Residents want a Multi-use approach
 - Wildlife
 - Boating
 - Fishing (cold water and warm water)
 - Swimming
 - Irrigation
 - Aesthetics

Residents prioritize these objectives differently

Informal “Board of Advisors”

- Biology Professor, CMU
- Biology Professor, EIU
- Fisheries Biologist, CPW
- Aquaculture Fisheries Professional – Montrose
- Aquaculture Fisheries Professional – Durango
- Pond Biology Specialists, Organic Pond, Vertex

Factors affecting the pond ecosystem

- Incoming water quantity
- Incoming water quality
- Upstream usage
- Weather

The time scale of change in an ecosystem is much slower than people are used to in their everyday lives.

The Midges

- What they are
- A huge early midge hatch precipitated a homeowner initiated survey indicating that 72% of the residents wanted to participate in a coordinated spraying program
- Given residents concerns, a plan was presented and adopted by the board with a supplemental \$5000 budget (\$4000 spent)

The Midges

- In consultation with advisors a Plan was proposed and approved by the board that was biologically based and included
 - Stocking of significant quantities of fish that would prey on the midge larvae and pupae
 - Cold water fish – brown and rainbow trout
 - Warm water fish – sterile grass carp and bluegills
 - Additional aeration at the south end of the pond
 - Increasing bird habitat to attract species that would eat the adult midges (swallows)
 - Educating the homeowners on the pond of specific actions they could take to reduce the midge population

The Midges

- Based on informal board surveys the results were largely successful
 - Easily walk around the pond without constantly battling swarms
 - During the day one could often observe swallows and other birds feeding, and in the evening fish could be seen rising everywhere

The Midges (Final Word)

- Consider reducing the number of plantings in your yard
- Avoid the use of outdoor white lights turned on at your house at night
- If you have a water feature, try to add a few fish
- Do everything you can to encourage birds to visit your yard
- Consider using a “bug zapper” as you will kill hundreds of them every night
- If desired, use pesticides on and around your residence during periods of peak emergence

You will never get rid of the midges, but you can achieve a goal of reducing them to below nuisance levels - CPW Fisheries Biologist

Plan for 2020

- Continue fish stocking, at a reduced level
 - Warm water – 20 sterile grass carp
 - Cold water – 1000(?) trout (Board + contributions)
- Adjust aeration plan towards new Vertex recommendations
- Maintain aerators and compressors
- Implement bird house program

Satellite

Compressor station
Pond Outlet X

11	11	12	11
9	9	15	15
8	8	10	12
8	8	8	7
6	6	6	6
5	6	6	6
4	5	5	

18 Dee

Inlet X

Street View

Google

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Vertex Water Features

Lake Aeration Systems & Floating Fountains

Tel: (800)432-4302 / Fax (954)977-7877

Organic Pond

Otter Pond

LL22



Legend

Compressor Cabinet



Air Station



BottomLine Tubing

Optional Equipment



Shoreline Valve Box



1" PVC Pipe

Site and System Specifications

Surface Acres:	14.0
Perimeter Feet:	3,176
Lake Volume, Gal.:	38,053,114
Total Acre Feet:	116.8

# of Air Stations:	14
CFM / Air Station:	1.14
GPM / Air Station:	2,122
Daily Pumpage:	42,773,140
Turnovers/Day:	1.12
System PSI:	12.7

Date: 9/18/19



Pond Management Opportunity for 2020 and beyond

- Bring on Doug Eccher to provide overall guidance in pond management
 - Pond management business on the Front Range
 - Currently a high school teacher at Peak Academy
 - Plans to have students actively involved
 - Drones
 - Submersibles
 - Continuous sensors and monitors
 - GPS sensors on tagged fish
 - Measurement of sedimentation rate
 - No cost to the HOA

Pond Plan for 2021 and beyond

- Dredge silt retention pond
- Dredge inlet and refurbish south marina docks
- Continue fish stockings as needed
- Continue to maintain and improve the pond aeration system
- Develop a sense of when it will be necessary to address sedimentation of the pond

The Pond is what makes our Community Unique



Our residents are what make it special.