ROUGH FISH REMOVAL UPDATE:

For the past two years the BDL District and BDLIA have been meeting with the DNR Fishery regarding the resumption of rough fish removal from our Lake. We believe that it is essential that the carp population must be managed in order to improve water quality and habitat for game fish. Although the complete plan has not been agreed to yet, all parties felt we should move ahead with step 1 which focuses on Trestle Bay. The DNR Fishery inspected and repaired the carp barrier at the trestle, our fisheries biologist completed an electrofishing study to estimate fish populations in the bay and the DNR issued a 3 year rough fish harvest contract to reduce rough fish in the bay. The first stage of removal occurred in October with 135,000 lbs. of fish taken to market

On December 10th a meeting with BDL District, BDLIA and DNR Fishery reviewed the Trestle work and continued negotiations on the complete plan. Notes from this summary follows below. The slides referenced are included.

December 10, 2024 1:00 – 2:45 PM

Present:

DNR:	Michelle Allness	Todd Kalish
BDLIA	Karen Huber	Steve Hughs
BDL District	Gene Mazewski	Bill Foley

Foley presented a graphical and photo summary for the rough fish removal program at the Trestle Bays sub watershed of BDL. It was noted that the property owner Mr. Kovocic was very accommodating with access to the bay and storage of the equipment at the site.

Slide 1 Identified plot of Trestle Bay with wetland delineated

Slide 2-14 Reviewed contract fisherman process and equipment for netting of rough fish with notation for their efficiency and specialized equipment used to perform this removal.

Slide 15 Presented DNR estimates for rough fish density as a result of electro fishing Sept 2024, 642 #/acre & 803 #/acre. (Source: DNR Baldock)

Presented summary of 'Contract and State Fisherman's report' for October 2024 catch data.

Oct 1 1658 #/acre, Oct 7 445 #/acre and Oct 21 1061 #/acre Average: 1054 #/Acre

(Source: Bruring and Kalanbach consortium.)

The DNR projected density and actual catch rates far exceed the UW FWS recommendation of 100 #/acre. With all measures exceeding the 268 #/acre parameter which results in sever habitat damage.

Slide 16

- These densities are of further concern as identified by Colvin (Iowa State Univ) indicating in his 2012 paper that 'biomass doubling time of 2.7 years' could be expected if removal is not undertaken.

- Wisconsin Institute on Climate Change: 2021 Assessment Report Pages 42 – 50 identifies that;

  Threats Due to Climate Change are an increase of growth, spawning, habitat expansion for carp.

  Lakes should 'Prevent expansion of native warm water fishes and invasive species.'

Slide 17 - 20 presented a shoreline survey (October 8, 2024) which identifies that 55 % of Trestle Bay shore is currently in a natural wetland condition. These wetlands extend further into the sub watershed and provide excellent cover and spawning habitat for the Fishery. (See Dodge County Map, GIS w/ wetland delineation) Rough fish at the current density will adversely impact these wetlands.

Slide 17 Barrier. The barrier is much improved with repairs completed the fall of 2024, however, significant gaps still exist which will allow passage of carp.

Slides 21 - 27 presented nutrient load data analysis provided as part of the Lake Plan.

Slide 24 graphically indicates that water quality could be improved from poor to fair with rough fish removed to a level of 100 #/acre.

Slide 28 -30 Foley and Huber then presented a revised agreement which would be approved by the District and Association. The essence of this agreement would have the DNR continue to collect their data as per segment 1 through 4 while contract or experimental fishing is resumed on BDL. Huber indicted that the increased density identified in the October fishing make a Cooperative Fishing contract financially impractical which would require funding in excess of $1,500,000 over four years by the Community.

Time is of the essence to resume contract fishing with the fishing and processing chain under extreme duress due to the absence of rough fish for processing in the market place since 2017. It is understood that this is not part of the biologic analysis for rough fish but rather a practical consideration for future capabilities to remove carp.

Processors provide an economical method to dispose of captured rough fish while avoiding pure waste of a natural resource.

It would be an unfortunate consequence of delaying this program which may require the disposal of the fish and then would deprive this high protein food source to needed communities.

Slide 31 It was requested that the DNR review the October rough fish removal program and consider continuous improvement practices which would include;

- Team Training to include DNR, BDL Orgs and Contract Fishing
  The contract fishing staff are an excellent source of fishery data.
- Provide periodic meetings and reports to inform all concerned of the progress.
  At a minimum 1) A kick off meeting and 2) a summary meeting upon completion of fishing
  Allness was provided with a copy of the Wis DOT project program policy which could be used as a good starting point for DNR consideration.
- Strive for transparency in all communications

Slide 33 – 34: We are monitoring the efforts of the Green Lake District with their plans to improve their existing fish barrier with an improved design.

Kalish identified that DNR Fisher staff have received increased level of confrontation events from the Community. DNR Fishery has thus established a zero tolerance level for any discord or questionable language with contractors or the Community at large.

Kalish will investigate the potential for implementing the rough fish program as a Plan Document versus a contract Agreement.

Foley noted that BDL is fortunate to have a number of proactive Producers who strive to develop better soil health and reduced runoff. We have reached out to NRCS Engineering for review with potential improvement practices for two identified point sources from Ag land to BDL.

Meeting adjourned at 2:45PM

Beaver Dam
LAKE DISTRICT

.

ROUGH FISH REMOVAL OCTOBER 2024

TRESTLE BAY @ BDL

310 Acres

15,220 Ft. shore

Kovacic Entry to Bay - Thank You !

Boats & Equipment Hauled In

Setting End of Net Trap

Net Anchor Point For Return

Payout Net 5000 ft.

Net Winched In to Trap

Net At Shore

Rough Fish in Trap

Trap Full

Bucket Carp to Bins

10/2/24

Week 2 Haul In

10/8/24

Carp in Bins on Transfer Boat

Healthy

Carp to Truck

Would take more

Contract Fishing Activity Beaver Dam Lake Trestle Bay October 2024

12/6/2024

	Initial Electrofish Estimate	Electrofish Estimate Adjusted for Catch Rate week of Oct 1	Catch Week of Oct 1	Catch Week of Oct 7	Catch Week of Oct 21
Source	Baldock	Baldock	Bruring	Bruring	Bruring
Buffalo (sold)	50,000	100,000	27,220	7,480	825
Released			30,000		
Carp (sold)	149,000	149,000	18,530	33,150	47,642
Total Rough Fish	199,000	249,000	75,750	40,630	48,467
Bay Acres	310	310			
Net Acres			45.7	91.4	45.7
#/Acre	642	803	1658	445	1061
Average #/Acre					1054

Impact to Rough Fish Population

- Without removal carp density will double in 2.7 years

  Colvin, et.al., Iowa State 2012, Strategies to Control Common Carp

- What is the Impact from Climate Change?

  ‘Prevent expansion of native warm water fishes and invasive species.’

  Wisconsin Institute on Climate Change, 2021 Assessment P. 42 - 50

  warmer waters will increase growth rates

  habitat range expansion

  multiple spawning events

- Zooplankton

  what is the current level and trend?

  competition with desired game fish

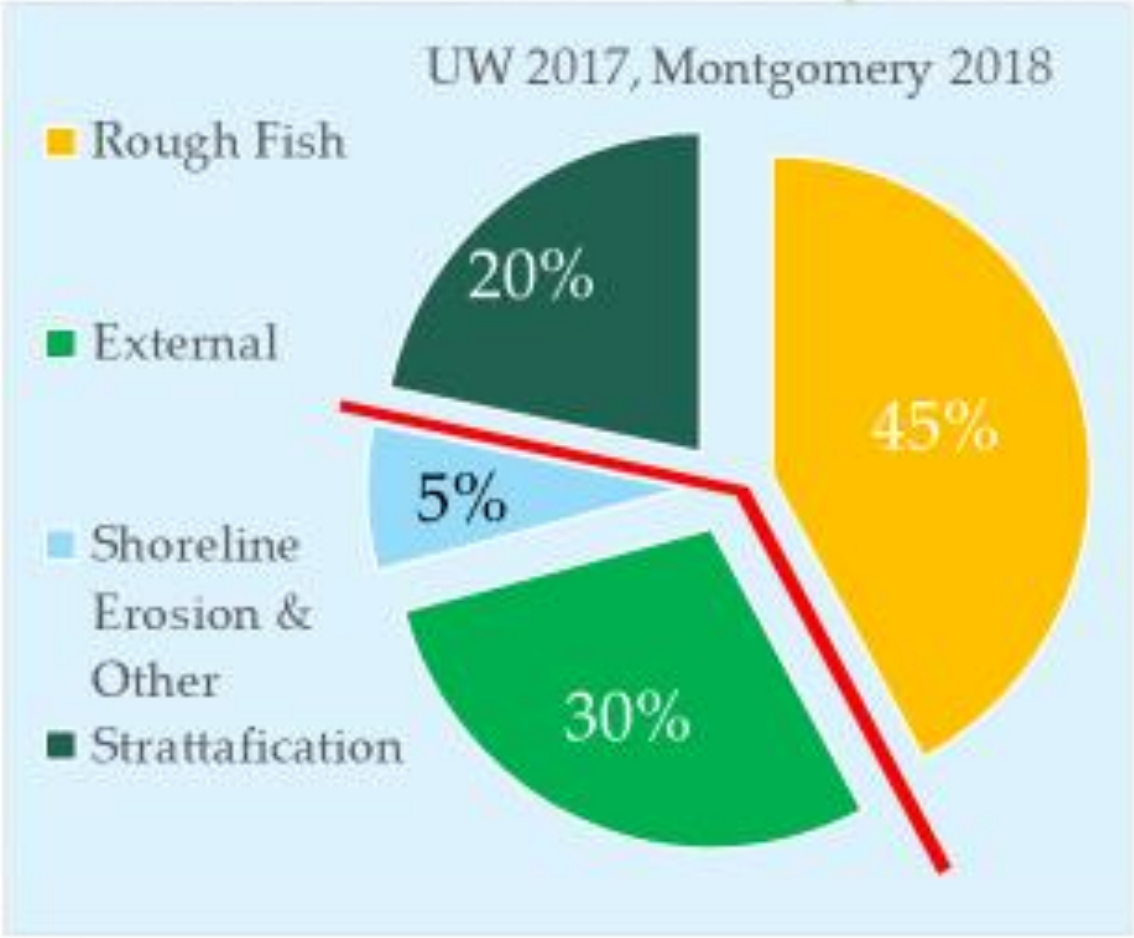
Barrier at Wis Southern RR (10/2) 2820 ft. 19%

Wetlands 8410 Ft. 55 % 10/8/24

LAKE SCIENCE 2015 -2024

UW/DNR/MARS

Sources of Phosphorus



100 Tons

Source : Mont Eng.

Note:
Residential
AG
Septic

Source: UW WRM

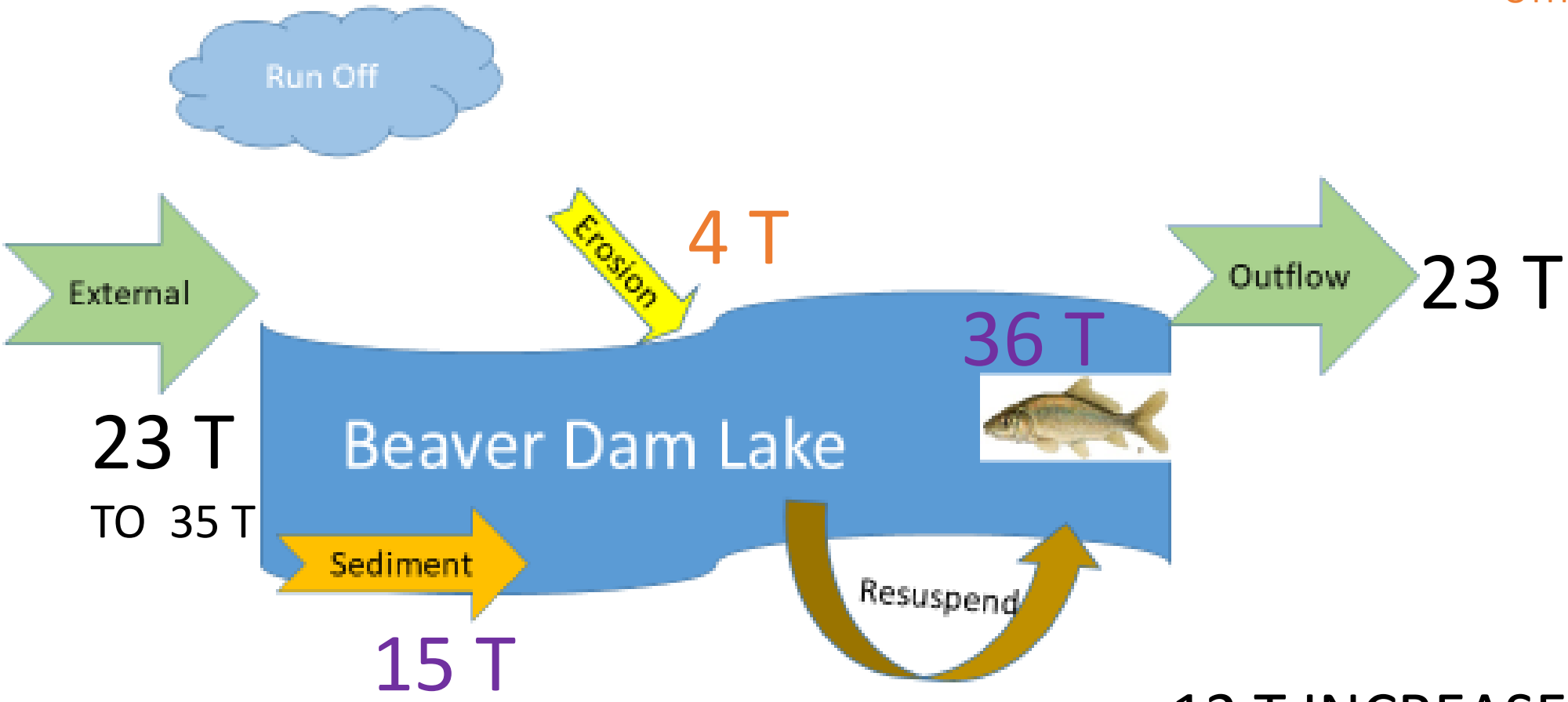
1 # P = 500 # Algal

Beaver Dam lake Nutrient Balance

MARS

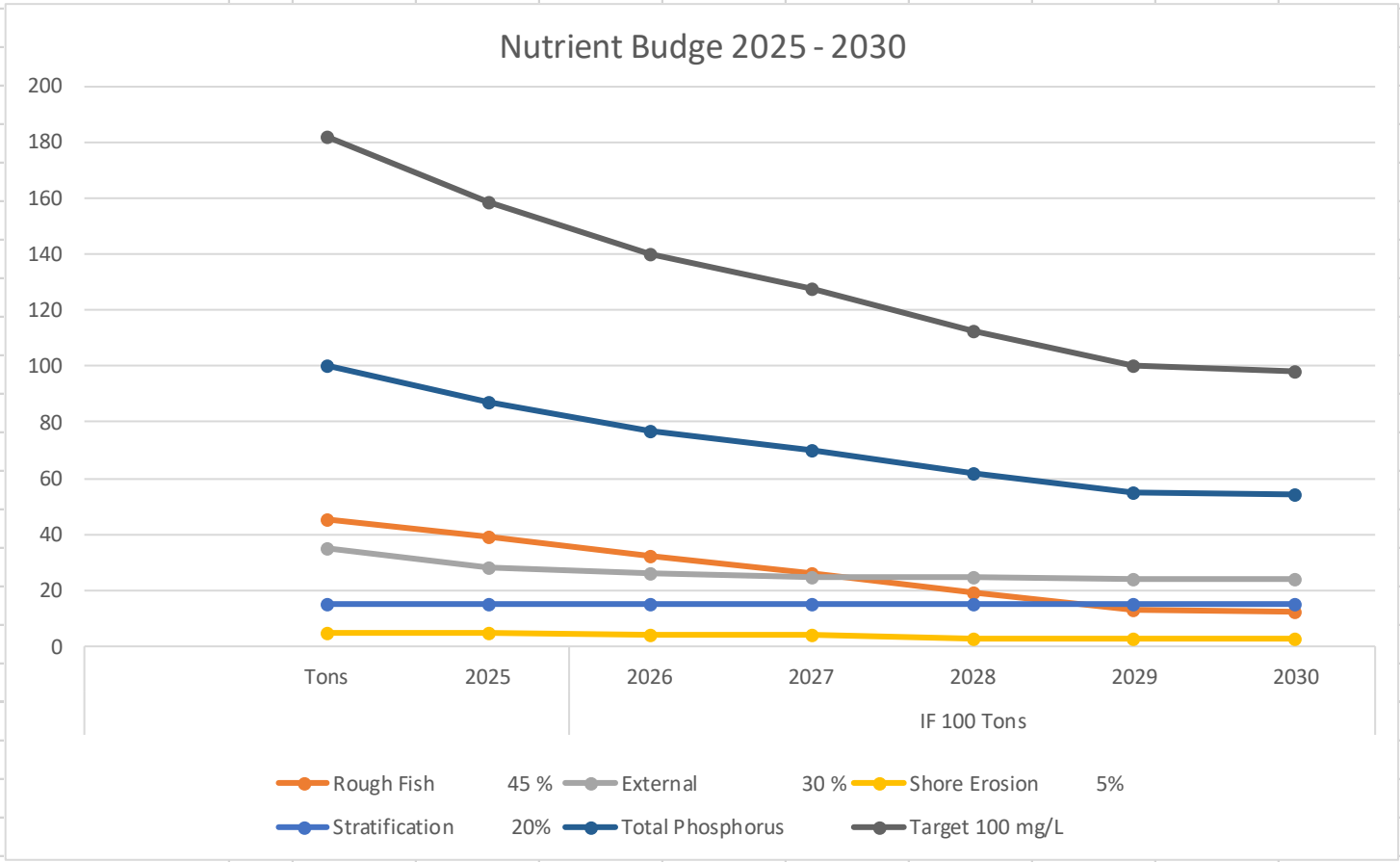
UW WRM

OTHER

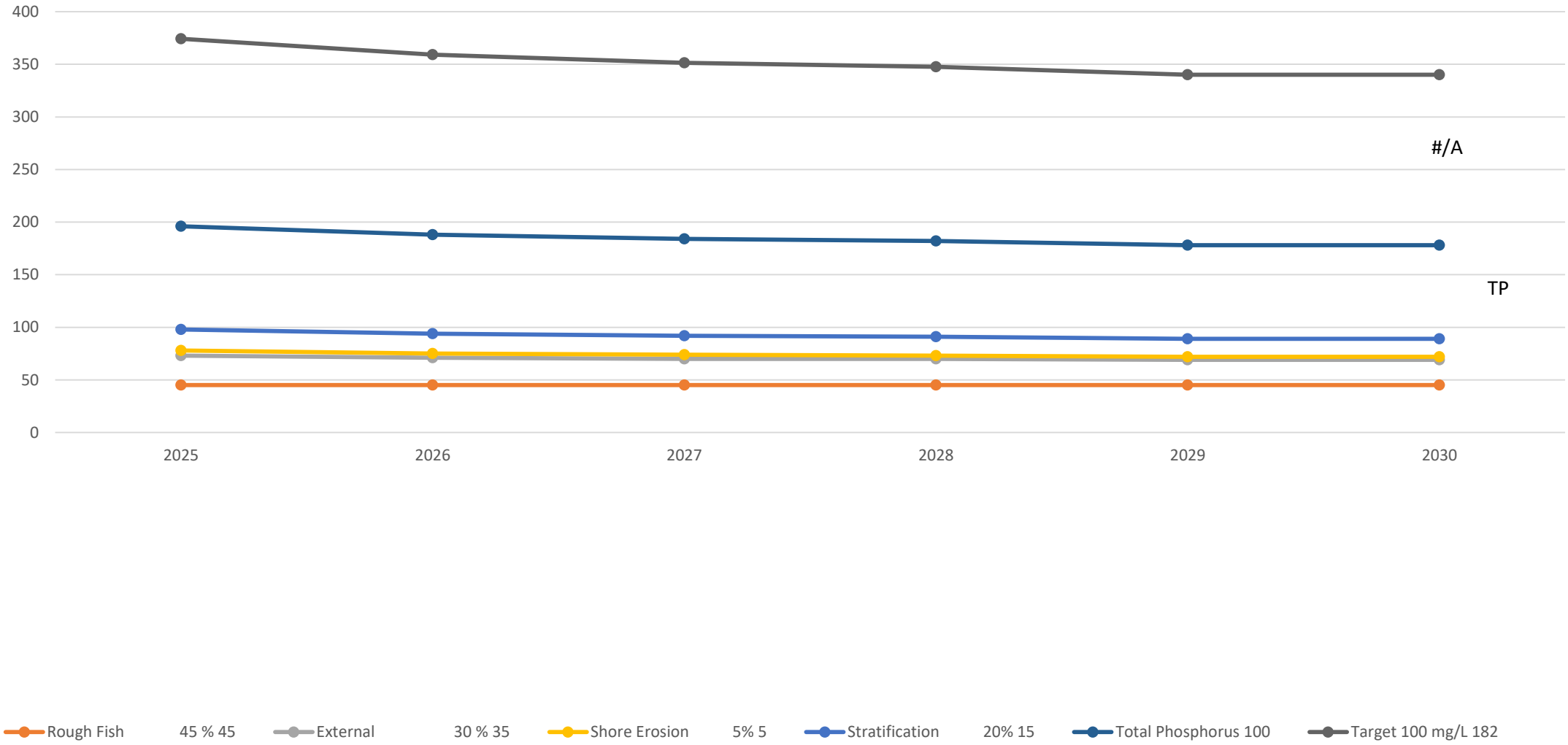


12 T INCREASE EA YR

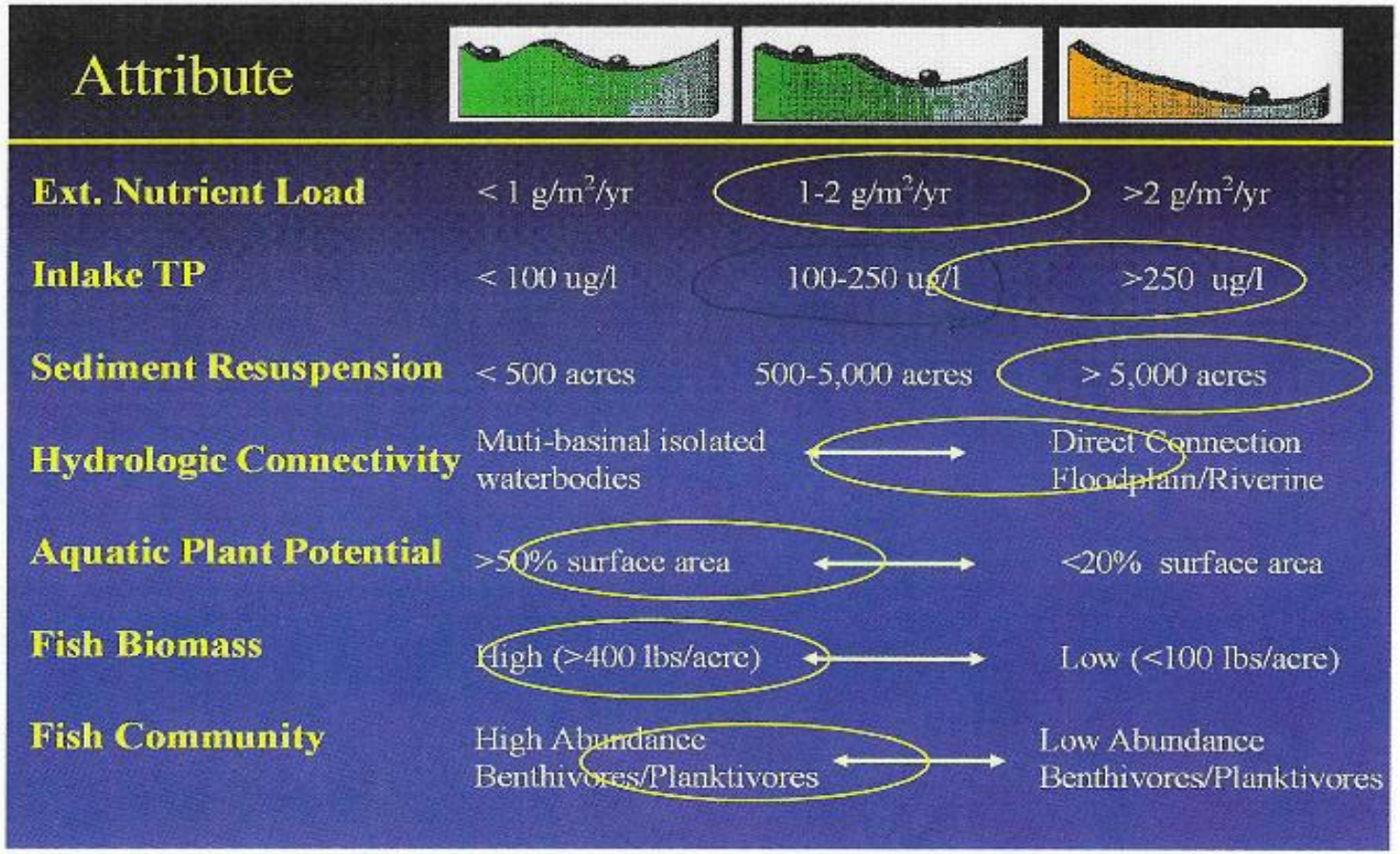
Nutrient Budget 2025 through 2030			IF 100 Tons										
			Tons	2025	2026	2027	2028	2029	2030				
Rough Fish	45 %		45	39	32	26	19	13	12				
External	30 %		35	28	26	25	25	24	24				
Shore Erosion	5%		5	5	4	4	3	3	3				
Stratification	20%		15	15	15	15	15	15	15				
Total Phosphorus			100	87	77	70	62	55	54				
Target 100 mg/L			182	158	140	127	113	100	98				



Nutrient Budget
If No Carp Removal



Is Shallow Lake Restoration Feasible? Beaver Dam Lake



Presto Model 1 and 2 Median outputs, WILMS low and High.

P_LOAD_MR1_MED_metric areal load	P_LOAD_MR2_MED_metric_areal	WILMS low(g/m2/yr)	WILMS high(g/m2/yr)
0.922280047	0.362414899	1.4074365	2.258444619

Grand mean from Deep hole SWIMS 2004 to current=252 ug/l; Onterra Report a growing season mean of 256ug/l

Important as it relates to fish immigration during biomanipulation

1968 and 1987 Rotenone Treatment may help adjust this metric

2014 Carp PE=330 lbs/acre, DNR files

2020 Objectives

WDNR Assessment of Beaver Dam Lake — August 5, 20

P. Cunningham L. Stremick (Motl) S. Graham M. Sorge

Inlake Rehabilitation Objectives to Shift BDL to a Clear-water State

Category	Metric	Parameter	Management Objectives	Management Objectives (TSI)	Current Conditions
Water Quality	Nutrients	Phosphorus (Total)	60-100 ug/l	60-64 WTSI	mean of 252 ug/l (71 WTSI)
	Algae	Chlorophyll a	20-29 ug/L Chl. A summer mean that will allow for colonization of profuse submersed aquatic plants in 5-6' water depths	57-60 WTSI	136 ug/L (72 WTSI)
	Clarity	Secchi Depth	2.6' - 3' Secchi depth summer mean **(3 ft.)** that will allow for colonization of profuse submersed aquatic plants in 5-6' water depths	61 - 63 WTSI	1.312 feet (.4 meters) (WTSI 73)
Aquatic Plants	Plants	Submergent Plant Cover	Profuse beds of submergent plants colonizing the lake bed out to 5-6 ft depths; 34.5 - 58% of the Surface Area of the BDL	Beaver Dam Lake Map	< 10% of lake area (14% FOO in mid July 2014)
	Aquatic	Emergent Plant Cover	limit recession of emergent plants and associated costal wetland vegetation. Consider the expansion of emergent vegetation in Rakes, Beaver, and Trestle Bay if water-level management is deployed		
Fish Community	Detrimental Fish	Carp	0-100 lbs/acre (*100 may be high give the synergestic effects of carp and wind on this larger shallow lake). <1st quartile for warm dark complex lake, or < median for warm clear complex lakes		330 lbs/acre
	Sport Fish	Walleye	<=2 WAE/net night; median CPE or less for Complex Warm Dark waters		25-36 WAE/net night
		Northern Pike	>3.7 NOP/net night; 3rd quartile or higher for Complex Warm Dark waters.		0.04 - 2 NOP/net night
		Largemouth Bass	>37 LMB/mile (Shoreline Electrofishing-2). 3rd quartile or higher for Complex Warm Dark waters;		1.08 - 3.49 LMB/mile; se2
		Bluegill	> 116 BLG/mi (Shoreline Electrofishing-2). median or higher for Complex Warm Dark waters		2.3-4.0 BLB/mile;se2
		Yellow Perch	> 3 YEP/net night; median or higher for Complex Warm Dark waters		6 - 240 YEP/net night
		Black Crappie	<= 6.1 BLC/net night; median or lower for Complex Warm Dark waters		10-198 BLC/net night

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison WI 53707-7921

Tony Evers, Governor

Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

December 10, 2024

BEAVER DAM LAKE FISH HABITAT IMPROVEMENT AGREEMENT

COOPERATIVE FISH HABITAT PROJECT AGREEMENT between the Bureau of Fisheries Management ("Fisheries"), Beaver Dam Lake District ("BDLD") and Beaver Dam Lake Improvement Association ("BDLIA"). The parties named above agree to the following actions to address fish habitat issues related to common carp ("carp") concerns in Beaver Dam Lake, Dodge County, Wisconsin. This agreement will be in effect for 6 years from the date of approval by all parties.

1. The parties agree to address fish habitat concerns on Beaver Dam Lake using a 2-pronged approach, with the first approach being to restore fish habitat (i.e., aquatic vegetation) in isolated bays by excluding carp and the second approach being an overall reduction in adult carp abundance by focusing harvest on concentrations of carp during the spawning period. The parties agree that focusing on these 2 approaches is the most efficient and effective way to address fish habitat issues related to common carp.

2. The parties agree to focus first on restoration of fish habitat in Trestle Works Bay. The parties further agree that the success of this effort is contingent upon boat access and maintenance of a functional carp barrier on Trestle Works Bay (to exclude carp movement into the bay) and the removal of rough fish from Trestle Works Bay using commercial fishing gears.

    a. BDLD commits to obtaining permission for boat access to Trestle Works Bay for fish survey crews, water quality crews and commercial contractors by working with willing landowners.
    b. Fisheries commits to attempting to conduct a carp biomass estimate and fish community survey using electrofishing methods in Trestle Works Bay prior to rough fish removal efforts. If a biomass estimate cannot be achieved through electrofishing, Fisheries will attempt to estimate carp biomass *ex post facto* using a depletion estimate or other methods based on contract fishing catch efforts.
    c. Fisheries commits to announcing a Rough Fish Removal Contract to potential contractors and issuing a 3-year contract to remove carp from Trestle Works Bay with commercial fishing gears.
    d. Fisheries commits to conducting a carp biomass estimate and fish community survey using electrofishing methods in Trestle Works Bay at the end of the 3-year Rough Fish Removal contract to measure fish community responses to carp removal.
    e. Fisheries commits to maintaining the carp barrier on Trestle Works Bay during the period of this agreement.
    f. BDLD commits to assisting Fisheries with assessment of the existing carp barrier and with any repairs that may be needed.
    g. BDLD/BDLIA commit to annual monitoring of aquatic vegetation, water clarity and water quality in Trestle Works Bay during the period of this agreement, to measure responses to rough fish removal.
    h. If, after the 3-year contract period, these efforts are considered successful at increasing fish habitat in Trestle Works Bay, as mutually agreed upon by the parties, future rough fish removal and monitoring efforts will be discussed and agreed to by both parties, which may include Conservation Cooperator Agreements or Rough Fish Removal Contract, to maintain carp abundance at lower levels.

1.BDLD/BDLIA commit to investigating the concept of re-vegetating portions of Trestle Pond by seeding or planting.

•The parties agree to focus on restoration of fish habitat in Rakes Bay. The parties further agree that the success of this effort is contingent upon boat access and installation and maintenance of a functional carp barrier on Rakes Bay (to exclude rough fish movement into the bay) and the subsequent removal of rough fish from Rakes Bay using commercial fishing gears.

1.BDLD commits to obtaining permission for boat access to Rakes Bay for fish survey crews, water quality crews and commercial contractors by working with willing landowners.
2.BDLD/BDLIA commit to installation and maintenance of a carp barrier at the mouth of Rakes Bay during the period of this agreement or it's renewal.
3.The Department commits to assisting BDLD/BDLIA with securing any required environmental permits for the placement of a carp barrier at the mouth of Rakes Bay.
a.The Department commits to assisting BDLD/BDLIA with securing any required environmental permits for the placement of a carp barrier at Rakes Bay.
b.If a carp barrier is installed on Rakes Bay by BDLD/BDLIA, Fisheries commits to attempting to conduct a carp biomass estimate and fish community survey using electrofishing methods in Rakes Bay prior to carp removal efforts.
c.If a carp barrier is installed on Rakes Bay by BDLD/BDLIA, Fisheries commits to announcing a Rough Fish Removal Contract to potential contractors and issuing a 3-year contract to remove carp from Rakes Bay with commercial fishing gears.
d.If a carp barrier is installed on Rakes Bay by BDLD/BDLIA, Fisheries commits to conducting a carp biomass estimate and fish community survey using electrofishing methods in Rakes Bay at the end of the 3-year Rough Fish Removal contract to measure fish community response to carp removal. If a biomass estimate cannot be achieved through electrofishing, Fisheries will attempt to estimate carp biomass *ex post facto* using a depleted estimate or other methods based on contract fishing catch and effort.
e.If a carp barrier is installed on Rakes Bay by BDLD/BDLIA, BDLD/BDLIA commit to annual monitoring of aquatic vegetation, water clarity and water quality in Rakes Bay during the period of this agreement, to measure responses to carp removal.
f.If, after the 3-year contract period, these efforts are considered successful at increasing fish habitat in Rakes Bay (not Trestle), as mutually agreed upon by the parties, future rough fish removal and monitoring efforts will be discussed and agreed to by both parties, which may include Conservation Cooperator Agreements, to maintain carp abundance at lower levels.
g.BDLD/BDLIA commit to investigating the concept of re-vegetating portions of Rakes Bay by seeding or planting.

•The parties agree to focus reducing spawning carp abundance in Beaver Creek. The parties further agree that the success of this effort is contingent upon installation and maintenance of a functional removable carp barrier on Beaver Creek during the carp spawning period and the subsequent removal of adult rough fish from Beaver Creek using commercial fishing gears. These practices will be initiated to protect the habitat of Beaver Creek upstream to Paradise Marsh by reducing carp spawning activity.

1.BDLD/BDLIA commit to investigating the feasibility of installing and maintaining a removable vs temporary (time vs purpose) carp barrier or trap on Beaver Creek during the carp spawning period, potentially at the County
Highway G right-of-way. This may involve working with adjacent landowners to secure access to Beaver Creek for a sub-contractor to conduct carp removal operations.

a. The Department commits to assisting BDLD/BDLIA with securing any required environmental permits for the placement of a temporary carp barrier on Beaver Creek.
b. If BDLD/BDLIA installs and maintains a removable carp barrier on Beaver Creek, Fisheries commits to issuing a Rough Fish Removal Contract or Conservation Cooperator Agreement to BDLD/BDLIA which would allow removal of rough fish from Beaver Creek (either directly or by sub-contract) during the carp spawning period.

    i. If a Rough Fish Removal Contract is issued and harvested fish are not able to be sold by a contractor, the contractor would be required of unmarketable fish.

    ii. Fisheries commits to assisting BDLD/BDLIA and the contractor with obtaining required low hazard waste approvals to dispose of carp by land spreading if a willing landowner is located by BDLD/BDLIA for rough fish disposal.

1. Concurrent with initiatives 1 through 4 above, a Rough Fish Removal Contract will be issued for a term of three years (see DNR proposed changes Dec 2020) to maintain the rough fish population in check until such time that a comprehensive evaluation can be made. The parties will review the capture rate and water quality improvement upon completion of year two and determine if the program should be extended for an additional three years.. The objective of the rough fish removal would be to maintain a lower density of rough fish which will be essential in maintaining water quality and reducing rough fish induced phosphorus. The parties commit to working collaboratively to develop additional, future efforts for the targeted harvest of rough fish from Beaver Dam Lake that will benefit fish habitat (without impacting existing sport fish population in Beaver Dam Lake). (define)

By

_____

Bureau of Fisheries Management Date

William Foley
Chairman Beaver Dam Lake District Date

Karen Huber
President Beaver Dam Lake Improvement Association D

Continuous Improvement

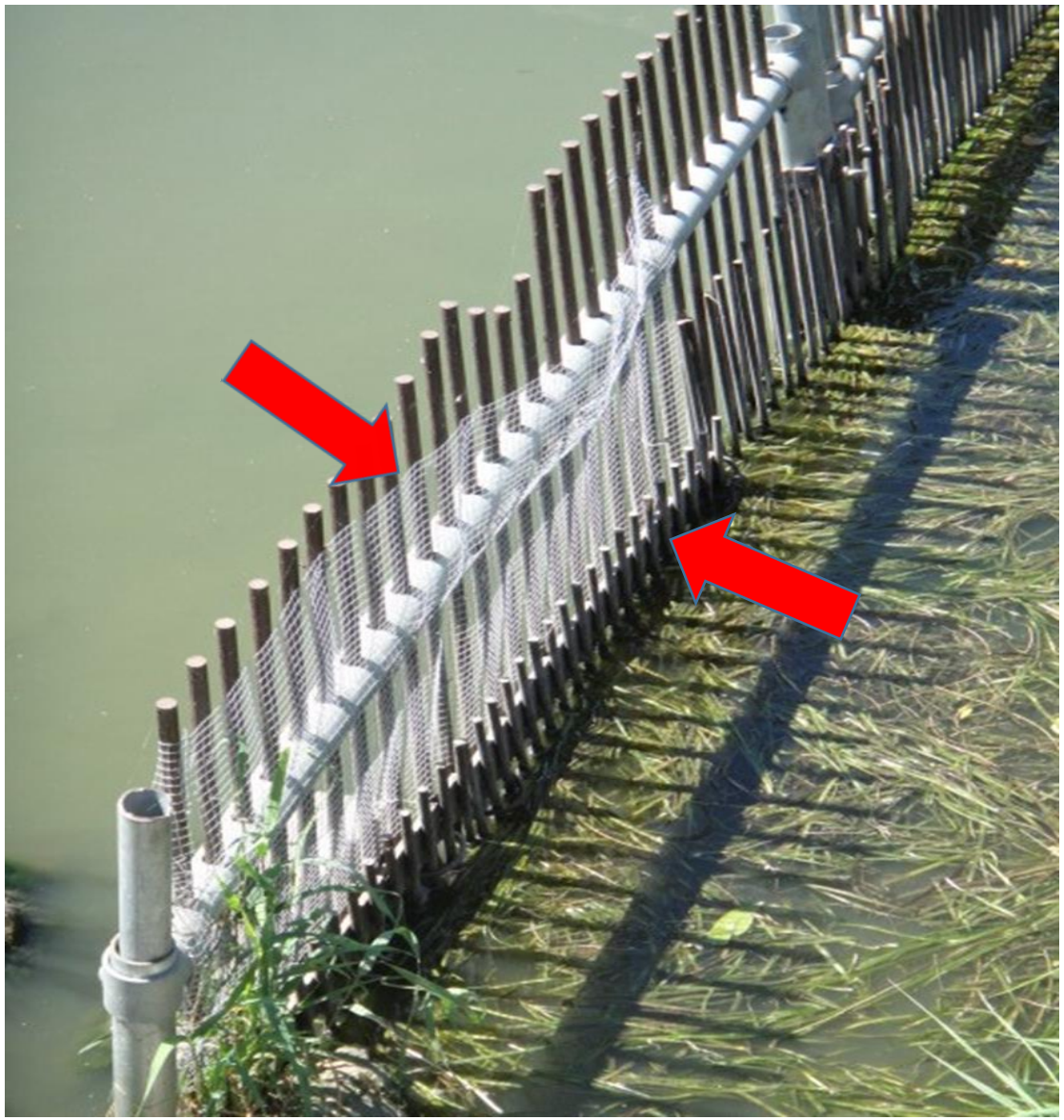
- Team Approach
- Contract Review Meeting
- Kick Off on Site
- Mid Course Lessons Learned
- Wrap Up Meeting (requested DNR on 10/22 for early Nov)
- Transparency

- *Threat: Loss of Processing Source/Capacity*

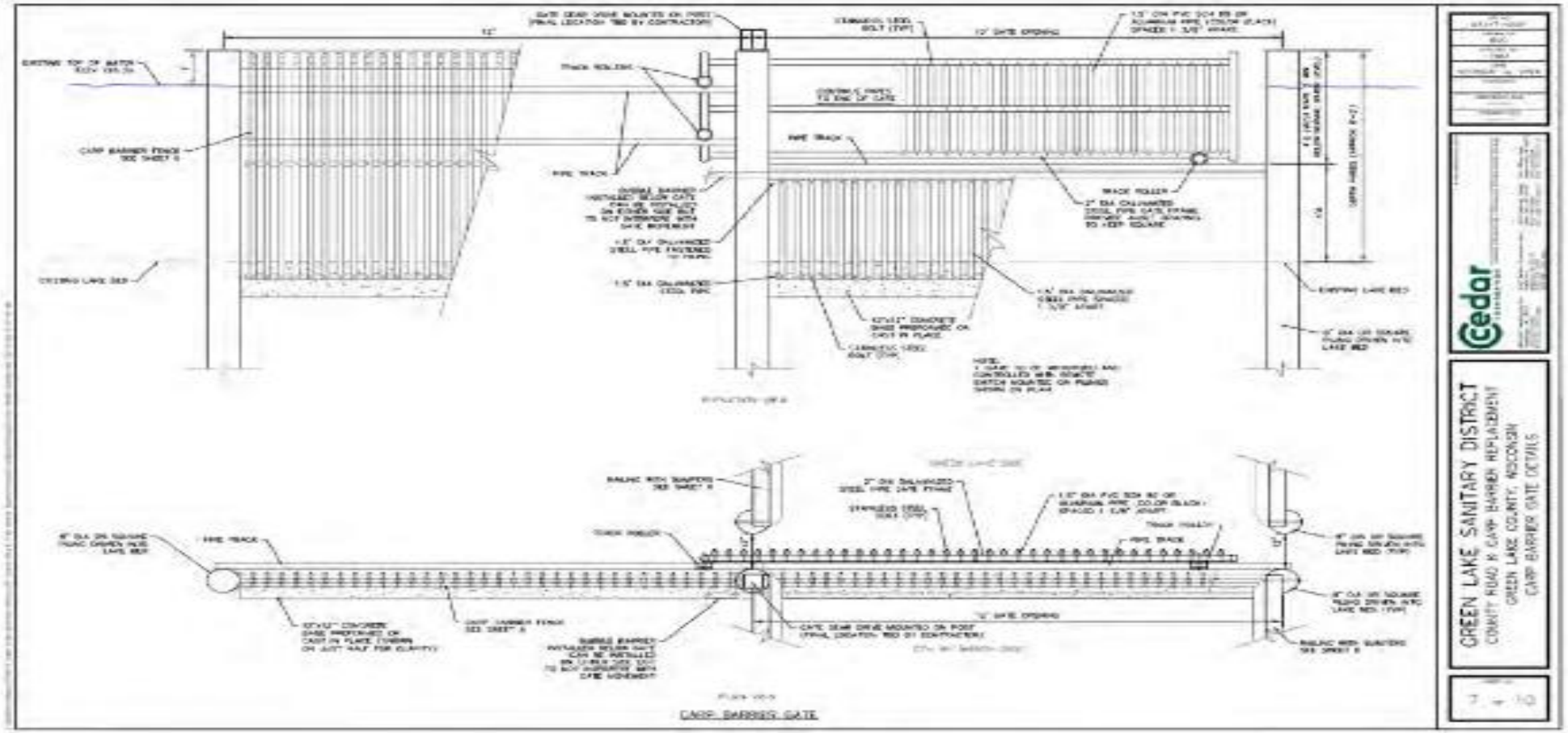
PRACTICES

BACK GROUND

Green Lake Current



CKM New Barrier Draft Design
from Cedar Corp.

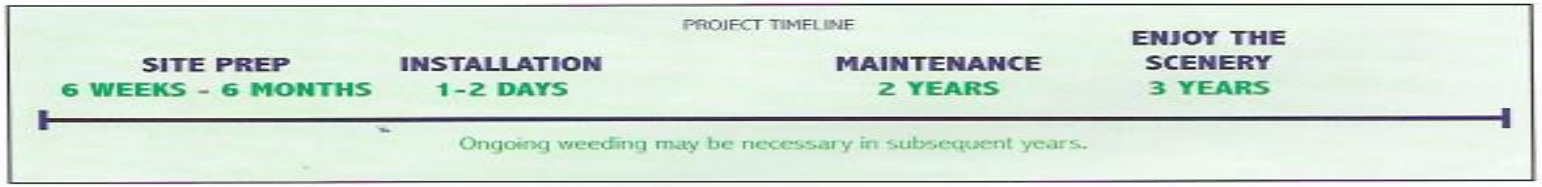


BETA SITE 2015

Step 7: Maintain your native garden.

Taking care of a natural shoreline takes less time and money than maintaining a lawn. Not to mention, it is more beneficial to your lake and the creatures that live there. However, all projects require some initial care. Here are some tips to help your Healthy Lakes native garden thrive:

- Water the plants a minimum of one inch per week (more during dry periods) for 1-2 years.
- Become familiar with weeds and invasive species, in particular, and remove them frequently.
- The standing dead plants may be left in place through the winter for wildlife cover and food.
- Native Plantings must remain in place according to local zoning specifications, if within the vegetation protection area (i.e. buffer).
- The 350 ft2 native plantings must remain in place for 10 years if funded through a Healthy Lakes grant.
- Preventing critter damage will be important if you live in an area with abundant wildlife. We suggest a deer fence or wildlife repellent sprays to limit damage to your native plants (depending on where you live, this may be a requirement).
- Now, sit back and enjoy the scenery!



The Foley's installed this 350 ft2 native garden on Beaver Dam Lake in 2015 with the help of a Healthy Lakes grant.

HEALTHY LAKES 2024 DNR TOUR

Permitting

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Conservation Practice Standard Overview

Open Channel (582)

An open channel is a natural or artificial channel in which water flows with a free surface.

Practice Information

Constructing, improving, or restoring an open channel can convey water required for flood prevention, drainage, wildlife habitat protection or enhancement, or other authorized water management purpose.

This practice applies to the construction of open channels or modifications of existing streams or ditches with drainage areas exceeding one (1) mi^2 (1.6 km^2) .

Construction or modification of an open channel has the potential to impact water quality and quantity. It could also affect the fish and wildlife habitat in the stream and the adjoining riparian areas. In addition, both upstream and downstream channel reaches could change as a result of the construction or modification of a stream segment. Careful planning will reduce the potential effects of this work.

This practice has a minimum expected life of 15 years. Maintenance activities could include reconstruction of damaged areas and revegetation of eroded areas.

Common Associated Practices

Open Channel (582) is commonly applied with conservation practices such as Streambank and Shoreline Protection (580), Critical Area Planting (342), Clearing and Snagging (326), Channel Bed Stabilization (584), Riparian Forest Buffer (391), and Riparian Herbaceous Cover (390).

For further information, contact your local NRCS field office.

Helping People Help the Land
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October 2015