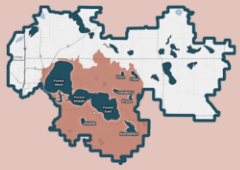
MEMORANDUM
Comfort Lake-Forest Lake Watershed District



Forest Lake
Managment District

Date: October 20, 2026
To: CLFLWD Board of Manager
From: Mike Kinney, District Administrator
Subject: Letter of Support for Forest Lake Carp Tournament

Background/Discussion:
The Forest Lake Lake Association (FLLA) is organizing a carp bow fishing tournament for 2027 as a means to reduce the population of carp in Forest Lake. The FLLA has requested a letter of support from the CLFLWD. Common carp are an aquatic invasive species (AIS) that are detrimental to water quality because their feeding habits disturb lake beds and suspend sediment and nutrients into the water column. The Minnesota Department of Natural Resources (MN DNR) has documented common carp in all its Forest Lake fish surveys since 1969. On Forest Lake, CLFLWD has undertaken several projects which are related to carp, an outlet weir reconstruction and an electrofishing survey.

Common carp rely on littoral areas (<15 feet deep) for reproduction, and barriers are commonly used to cut lakes off from these types of areas. In 2020, CLFLWD altered the existing outlet weir located on the west side of Forest Lake, near the intersection of North Shore Drive and 236th St Circle North with a rough fish barrier to help inhibit carp migration into Forest Lake. While the barrier is effective at low flow, carp have been documented passing the barrier at high flow regimes. In addition, areas of Forest Lake itself are thought to be suitable habitat for common carp reproduction.

The CLFLWD has implemented several projects on Forest Lake to improve water quality. One of these projects, the 2023/2025 Alum treatment on Forest Lake's middle basin has the potential to be impacted by carp. Alum binds to readily available phosphorus in the lake including the water column which prevents algae blooms by making nutrients unavailable. After binding, the alum precipitates to the lake bottom where it remains in the sediment and unusable to algae. Due to their feeding habits, carp could have the potential to resuspend nutrients in the shallow littoral areas which could then translocate and settle out in deeper water. Such activity would counteract the long-term effectiveness of the treatment.

To assess this risk, CLFLWD hired WSB in 2023 to survey the Common carp population in Forest Lake to determine if the fish would have a negative impact. The survey was conducted using the preferred method of a catch per unit effort (CPUE) model and found a CPUE of 50.9 +/- 6.5 lbs/acre, which is below the threshold of concern of 89.9 lbs/acre. Additionally, WSB recorded length and looked at historical DNR fishery surveys to estimate frequency of carp

recruitment. All recorded carp were over 12 inches, which shows infrequent recruitment and suggests a relatively stable population.

While modeled carp numbers are low, the infrequent recruitment suggests any fish removed would impact future recruitment. Therefore, a bow tournament for carp could help protect the water quality of Forest Lake.

Recommended Motion:
Proposed Motion: Manager _____ moves to authorize the administrator to submit a letter of support on behalf of the CLFLWD for the Forest Lake Lake Association common carp bow tournament. Seconded by Manager _____.

Attached:
Letter of Support for Carp Bow Fishing Tournament
Forest Lake Carp Assessment WSB Final Report

11/14/2023

Forest Lake Carp Assessment 2023

Prepared for the Comfort Lake Forest Lake Watershed District

BOLD | VISIONARY | AUTHENTIC | PASSIONATE | OPTIMISTIC

Mary Newman
WSB SENIOR ENVIRONMENTAL SCIENTIST

Introduction

In 2023 WSB was commissioned to complete an assessment of the population of Common carp (*Cyprinus carpio*), in Forest Lake located in the Comfort Lake Forest Lake Watershed District (CLFLWD), Forest Lake, Minnesota. The Minnesota Department of Natural Resources (MN DNR) standard fishery surveys confirm the presence of common carp, but the density of the population and potential impact to in-lake water quality is unknown. The watershed district coordinated an alum treatment on Forest Lake in the Fall of 2023 and are interested to know what the potential impact the carp population is having on both water quality in the basin and potential impacts to the executed alum treatment.

This report includes results from the survey in relation to lake water quality and recommendations for monitoring the carp population in the future. Although this method does not directly describe the effects carp will have on an alum treatment, the potential effect a carp population is having on water quality will be extrapolated to assume a similar impact to an alum treatment.

Methods & Results

In 2023, a permit was acquired from the MN DNR to complete three (3) visits to the lake with an electrofishing boat to survey the carp population. To complete an estimate of the carp population, WSB scientists use a boat electrofishing unit to capture carp and estimate the abundance using a catch per unit effort (CPUE) model. This estimate gives managers a better idea about the severity (low-medium-high) by which these fish are impacting the ecological integrity of the lake and can manage resources accordingly.

Forest Lake was visited on three dates separated by at least one week to fit the carp CPUE model of estimation. These dates were September 6, September 20, and October 4, 2023. Three transects were traversed on each date and lasted 19 or 20 minutes each and carp that were seen were netted. Length and weight were recorded along with time spent fishing to fit the data to a model of estimation.

The results of the 2023 CPUE estimate on Forest Lake is 50.9 +/- 6.5 lbs/acre. This population estimate for carp can be compared to the threshold value that scientists have assigned where carp are known to be damaging to a system, this threshold value is 89.9 lbs/acre (Table 1).

Date 2023	Transect	# Carp Captured	Length (in)	CPUE by Date	2023 CPUE	CPUE Threshold Value
Sept. 6	1	0	-	41.8	**50.9 ± 6.5 lbs/acre**	89.9 lbs/acre
	2	0	-			
	3	1	30.0			
Sept. 20	1	1	27.8	54.2		
		1	28			
	2	0	-			
	3	0	-			
Oct. 4	1	0	-	56.7		
	2	0	-			
	3	1	25.5			
		1	23			

Discussion

The 2023 population estimate for Forest Lake is below the threshold value and considered to be in a low to moderate range. This is an indication that there is not an extreme overabundance of carp that would heavily impact water quality or alum treatment at this time.

Forest Lake has a maximum depth of 37 feet and is 2,271 acres in total with nearly 70% of the lake considered littoral area (<15 ft deep). This littoral zone is especially suited for vegetation and the high percentage may impact carp success in-lake as this area is used for both spawning and feeding in the growing season of June-September. An open connection to a shallow and heavily vegetated bay in the northern most lobe of Forest Lake may provide habitat for successful recruitment in some years. Besides habitat, successful recruitment of young carp depends on the ability of young carp to escape predation. Forest Lake supports a variety of predator species including bluegill that are known to predate on carp eggs and larvae.

The length samples collected in the 2023 survey suggest that carp recruitment is infrequent because of the small range of lengths collected and that predation pressure is high enough to control the carp population. To bolster confidence in this hypothesis, MN DNR fisheries survey data was reviewed by desktop for all years sampled and combined with data from WSB's 2023 electrofishing survey (Figure 1). This data also suggests that recruitment may be infrequent since no carp were sampled under 12 inches in all surveys in all survey years.

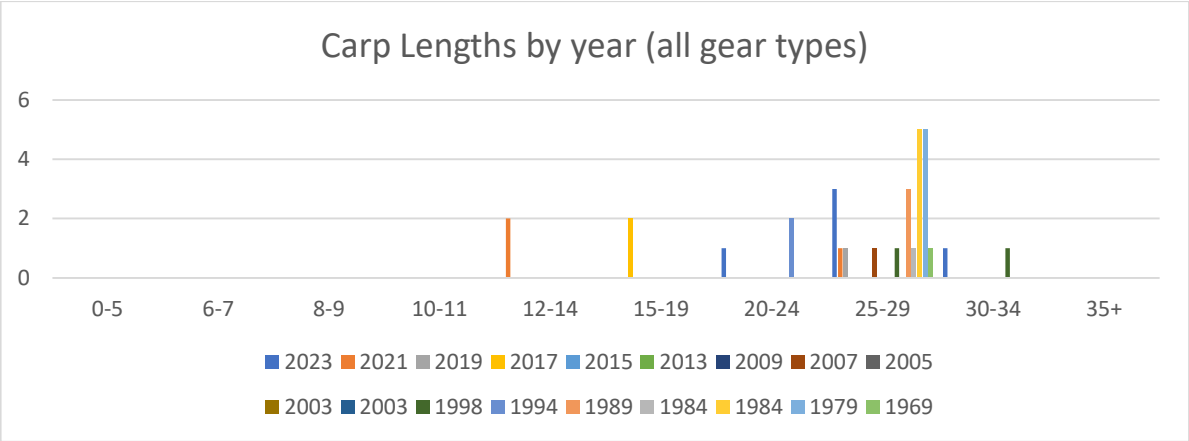


Figure 1 - Carp lengths (in) by Year, MN DNR survey data (Gill Net, Trap Net) combined with WSB's 2023 electrofishing data.

A CPUE estimate provides managers with a snapshot of the population of carp within a lake or system at the time of the survey. It is recommended to repeat this type of survey in 1-3 years to monitor for changes. Because carp are present in the system, the estimated biomass estimate at this time may change as the population of carp may boom in some years when conditions are right. Low water years such as the one experienced in 2023, may create the right conditions by exposing a greater percentage of the lake to littoral area. Conversely, high water years may provide passage through inlets or outlets for carp to recruit from nearby basins.

If future monitoring suggests carp are successful at recruiting young fish to the system, management activities may be considered to maintain or lower carp abundance to reduce the chance of a large increase to the population. Monitoring the population with boat electrofishing to target adults and/or regular fall trap net surveys to target the presence of young fish would capture changes in the carp population and size structure to guide management in the future.

CLFLWD
WATERSHED DISTRICT

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44 Lake St. South , Suite A
Forest Lake, MN 55025

Date: October 19, 2026
To: City of Forest Lake Parks and Recreation Commission
From: CLFLWD Board of Managers
Subject: Letter of Support for Carp Bow Fishing Tournament

Re: Letter of Support for a Forest Lake Lake Association (FLLA) 2027 Forest Lake Carp Bow Fishing Tournament

To City of Forest Lake Parks Commission:

By this letter, the Comfort Lake-Forest Lake Watershed District (CLFLWD) would like to express support for the proposed FLLA 2027 Carp Bow Fishing Tournament. Common carp are an aquatic invasive species (AIS) that are detrimental to water quality because their feeding habits disturb lake beds and suspend sediment and nutrients into the water column. The Minnesota Department of Natural Resources (MN DNR) has documented common carp in all its Forest Lake fish surveys since 1969.

The tournament would provide two main benefits to CLFLWD in our effort to enhance and protect the water quality of Forest Lake. First, the carp harvest would provide insight into the carp population including total number of fish and their size distribution. Secondly, it would remove an invasive species that has a negative impact on water quality at no cost to taxpayers.

We hope the tournament is well received, and we look forward to continued partnership.

Sincerely,

Jim Schottmuller, Acting President
CLFLWD Board of Managers
651-395-5850
info@clflwd.org

Jim Schottmuller, Vice President · Dave Bakke, Secretary · Doug Toavs, Assistant Treasurer
Blake Roberts, Manager · Ted Hansen, Manager