2025 RWMWD Carp Management Report

February 12, 2026

Prepared for: Ramsey-Washington Metro Watershed District

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Summary

In 2025, Carp Solutions continued its efforts to monitor and control the common carp population in the Ramsey-Washington Metro Watershed District. Backpack electrofishing equipment was used at the Gervais Mill Pond barrier to remove 102 migrating carp. PIT antennas were used at the barriers at the outlet of Lake Owasso to guide the removal of carp. A total of 81 carp were removed from the outlet of Lake Owasso, 3 being recaptured with Passive Integrated Transponder (PIT) tags. Prior to the 2025, spring spawning run PIT tagging efforts in Gervais and Kohlman were conducted resulting in the implantation of 31 in Kohlman and 10 in Gervais. PIT antennas were placed below the Gervais Mill Pond and Kohlman Basin barriers to track spring spawning runs out of Gervais and Kohlman. Trap netting surveys to sample the native fish populations and detect juvenile carp were conducted on Casey Lake and Wetland A. Trap netting in Casey Lake yielded no young of year or juvenile carp and only four in Wetland A. The boat electrofishing survey on Gervais Mill Pond resulted in the capture of a single carp. Goldfish surveys were also conducted on Alum Pond, Hanlo's Pond, Markham Pond, Wakefield Lake, and Wicklander Pond. No goldfish were captured in Alum or Wicklander Pond or Wakefield Lake but 41 were sampled in Markham Pond and 16 in Hanlo's Pond.

Methods and Results

Lake Owasso Block Net and PIT Antenna

A Passive Integrated Transponder (PIT) antenna was placed at the Lake Owasso outlet on April 16, on the lake side of the outlet pipe in order to determine when carp were aggregating (map in Figure 1). The physical carp barrier on the Lake Wabasso

side of the outlet was examined and reinforced after winter on April 23. A remote access camera was also placed overlooking the barrier for 24/7 visual access of carp aggregations between the culvert and the carp barrier. The first PIT tagged carp was detected at the antenna on April 23, with 10 unique carp being detected before the end of April, including eight unique PIT tagged carp on April 28. Based on this high number of detections, the block net was installed around the Lake Owasso outlet structure on May 6th. However, carp activity was somewhat limited for the rest of May, with only 11 more unique carp being detected, and aggregations were not large enough to trigger the net and remove carp. The first significant aggregation was observed on June 3rd, and the net was triggered and 23 carp were removed. Two more removals were conducted on June 11th and 17th, for a total of 81 carp being removed or approximately 680 lbs, including 3 that had been implanted with PIT tags (Table 1). A sample of 67 of these 81 carp were measured for length, which ranged from 21.5 to 30.1 inches and had an average of 26.2 inches (Figure 2). The block net was entirely removed on June 17th. Due to the low number of recaptured PIT tagged carp, a population and biomass density estimate from this removal data would be highly inaccurate.

After it was installed on April 16, the PIT antenna at the outlet pipe remained active until it was removed on November 26. During this period, 63 unique PIT tagged carp were detected, mostly between June 15 and July 15 although activity continued into November, including a pulse in late July (Figure 3). Of these 63 PIT tagged carp detected at the outlet PIT antenna, 40 were detected when the net was installed, including 3 (7.5%) that were removed. Carp were most active in the evening and night, especially right before sunrise (Figure 4). Each individual tagged carp was detected on between 1-40 individual dates, with a median number of 11 dates (Figure 5).

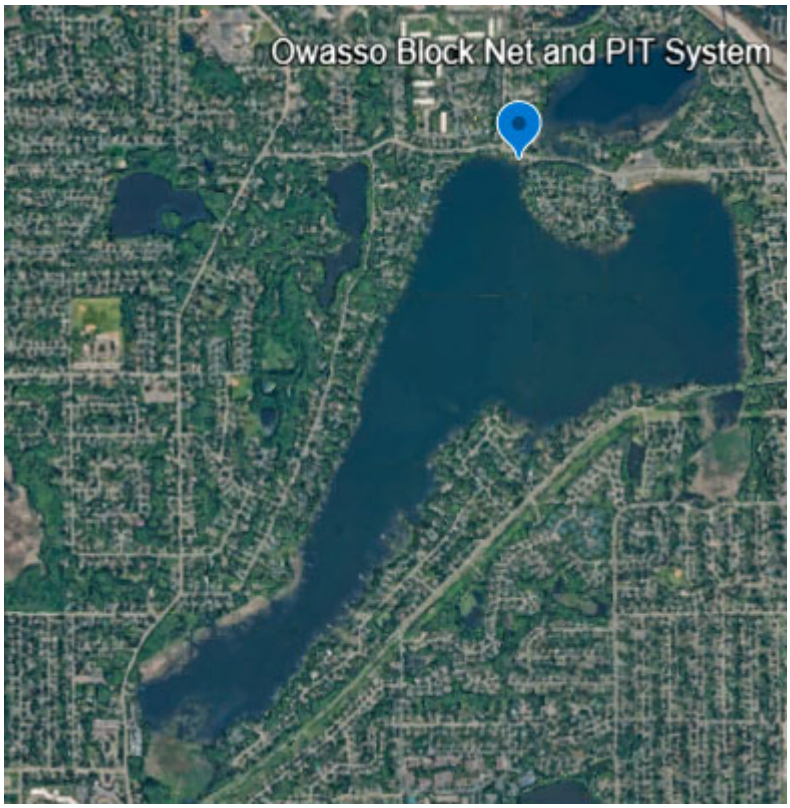

Figure 1: The location of the barrier at the Owasso outlet barrier, and the PIT antenna at the outlet.

Table 1: Summary of the spring removals in Owasso by date.

Ifyj	Hfyhm	UNY Wjhfux	F{jwflj Qjslym-ns.
;484757:	7835	735	7;3<
;4664757:	9535	635	7;36
;46<4757:	6=35	535	7:3=
Ytyfq	=635	835	
F{jwflj	7<35	635	7;37

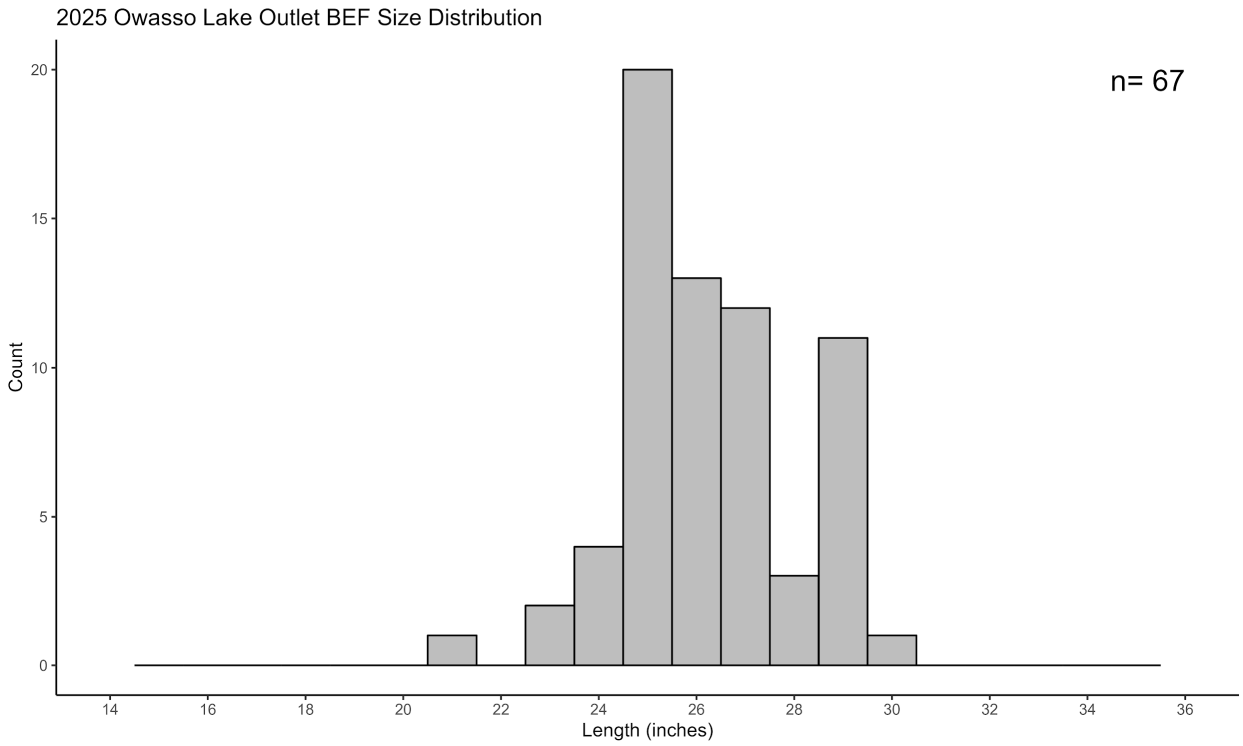

Figure 2: Length distribution of sampled carp (n = 67) captured at the Owasso Lake outlet by backpack electrofishing

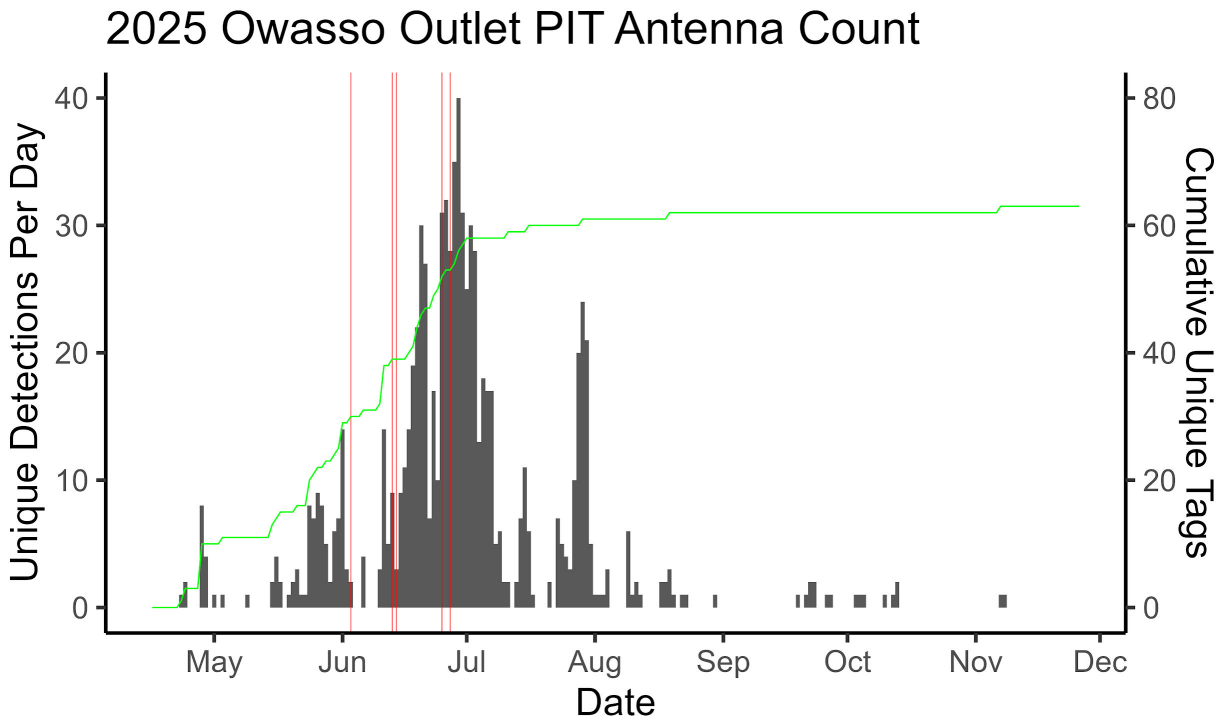

Figure 3: The number of unique PIT tags detected per day at the PIT antenna at the Lake Owasso outlet. The solid green line indicates the cumulative number of PIT tags detected.

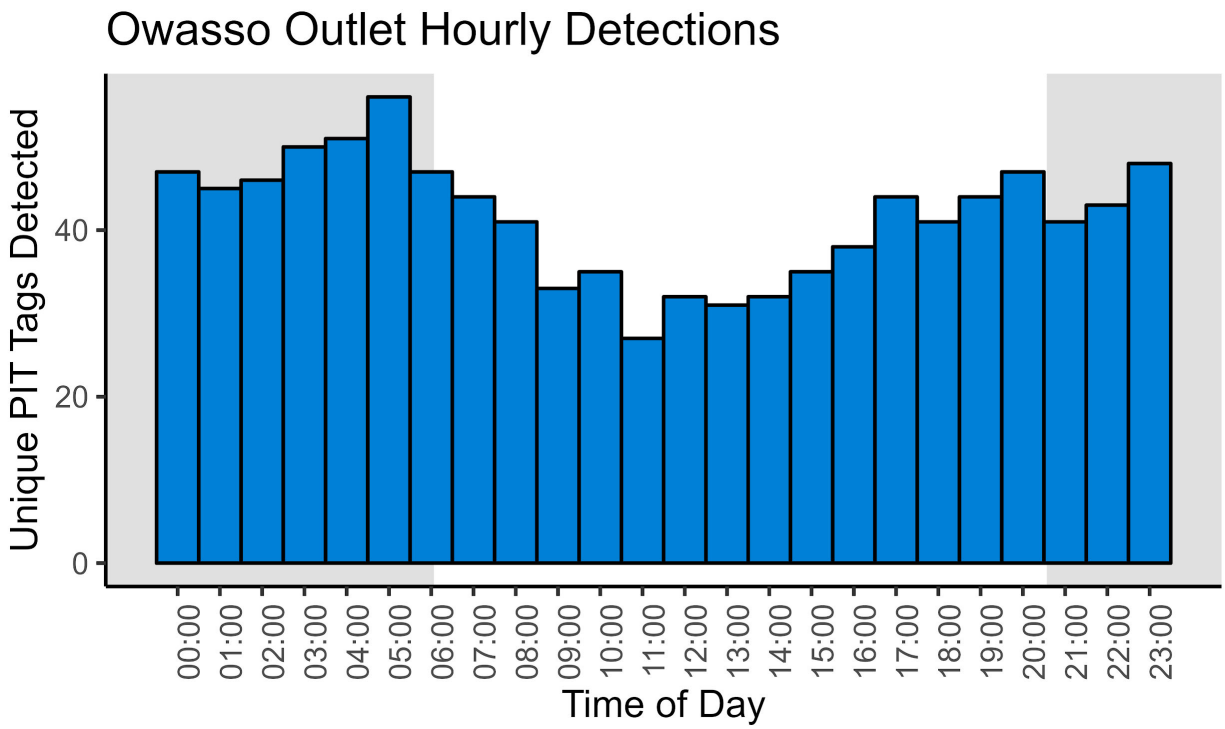

Figure 4: Aggregated hourly PIT detections at the Lake Owasso outlet. Gray portions represent night hours.

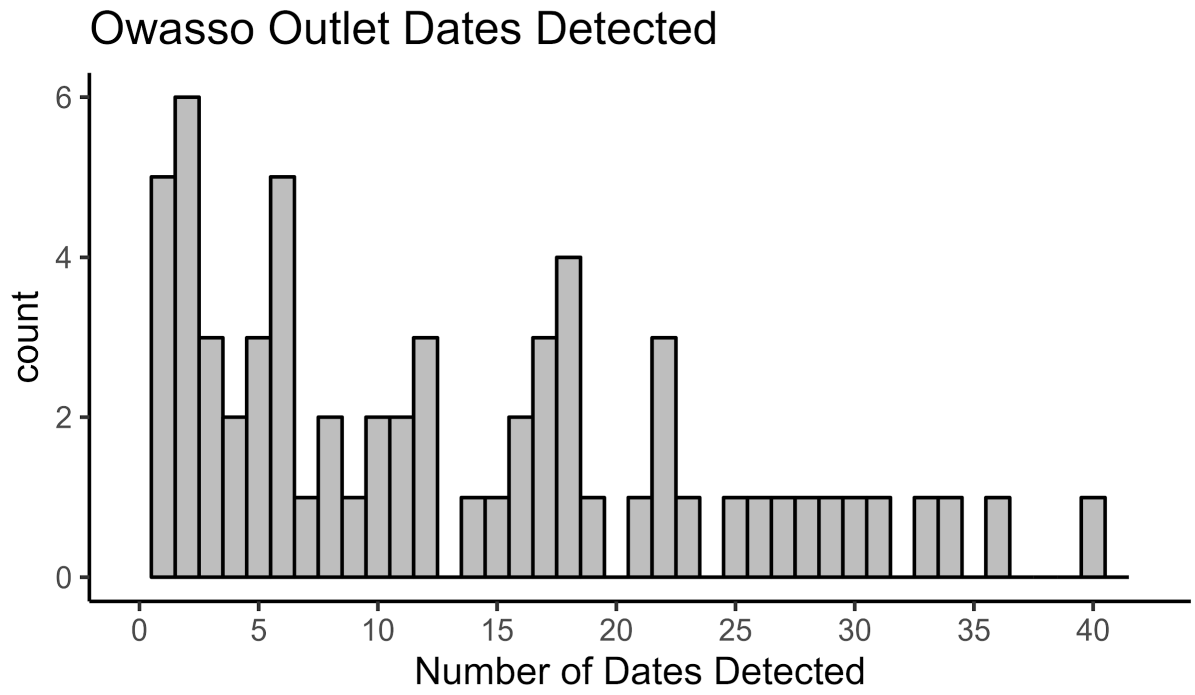

Figure 5: The number of days individual tagged carp were detected at the Owasso outlet PIT antenna.

Gervais and Kohlman Lakes PIT Tagging

In order to track carp movement out of Gervais and Kohlman Lakes, two days of boat electrofishing were planned for each lake to capture and tag as many carp as possible in the spring and implant them with PIT tags. These two days of boat electrofishing were conducted on April 29th and May 5th. An additional day of boat electrofishing was conducted on May 8th on Gervais Lake to implant more tags. During the two days on Kohlman Lake, 31 carp were captured and implanted with PIT tags (Table 2). These 31 carp ranged from 15.8 to 30.7 inches with an average of 23.6 inches (Figure 6). Over the three days of boat electrofishing, 10 carp were captured, implanted with PIT tags, and released (Table 3). These 10 carp ranged from 22.8 to 34.5 inches with an average of 30.0 inches (Figure 7).

Table 2: Data from the two days of boat electrofishing on Kohlman Lake in the spring of 2025.

Date	Carp caught	Time shocking (min)	CPUE	Average Length (inches)
4/29/2025	29	82	21.35	23.4
5/5/2025	2	40	3.00	25.6
Average	10.3	40.5	15.31	23.6
Total	31	121		

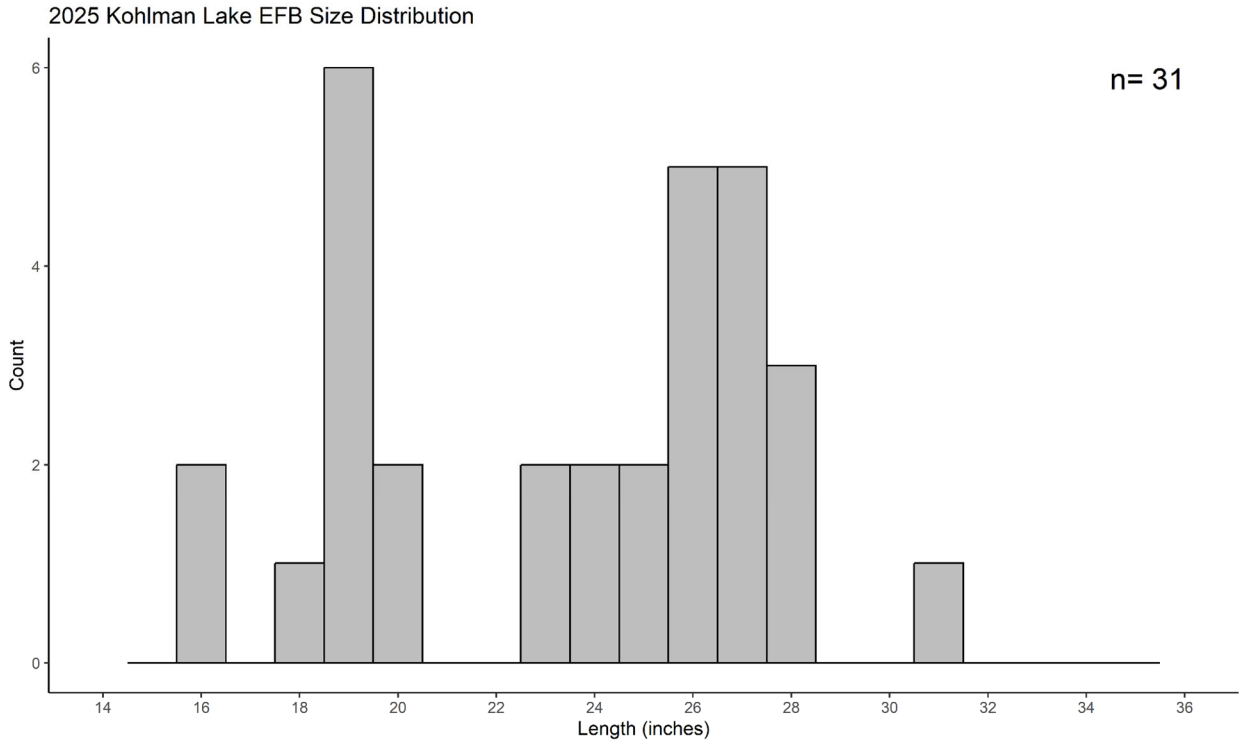

Figure 6: Length distribution of carp (n = 31) captured by boat electrofishing, implanted with PIT tags, and released in Kohlman Lake in the spring of 2025

Table 3: Data from the two days of boat electrofishing on Gervais Lake in the spring of 2025.

Date	Carp caught	Time shocking (min)	CPUE	Average Length (inches)
4/29/2025	2	63	1.89	32.7
5/5/2025	2	67	1.79	27.9
5/8/2025	6	128	2.80	29.8
Average	3.3	86.3	2.32	30.0
Total	10	259		

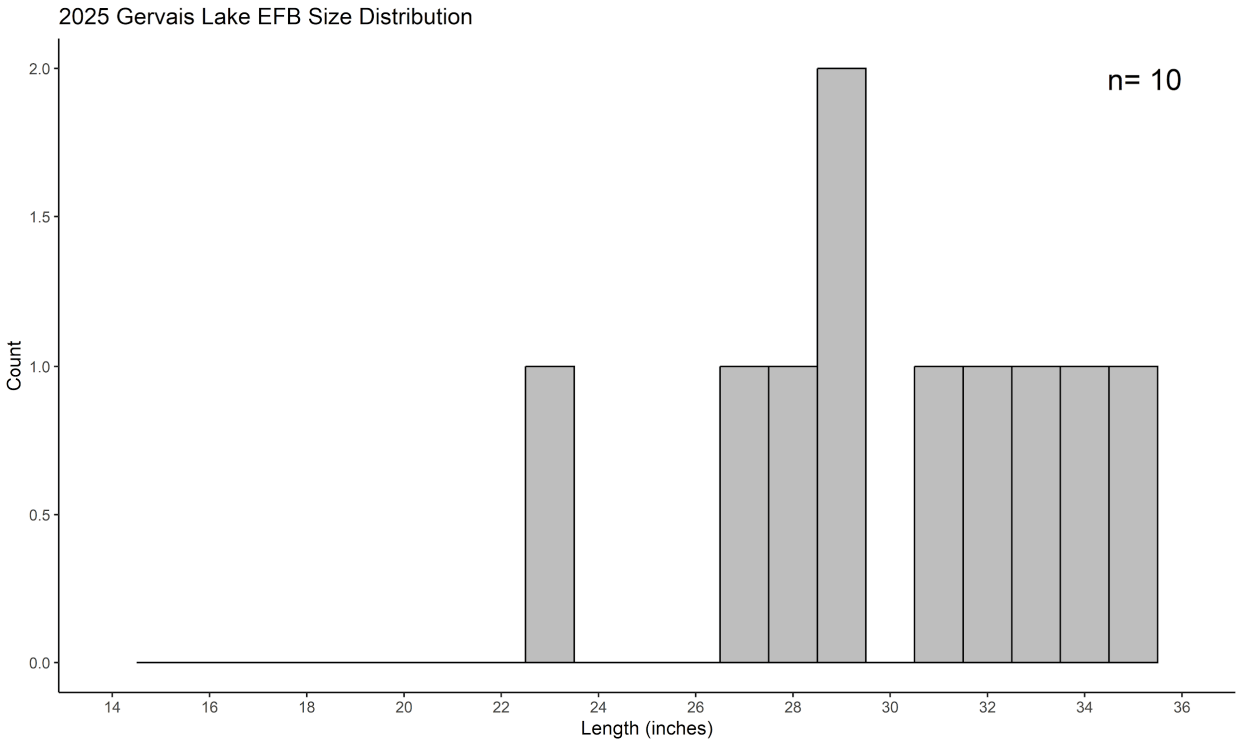

Figure 7: length distribution of carp (n = 10) captured by boat electrofishing, implanted with PIT tags, and released in Gervais Lake in the spring of 2025

Gervais Mill Pond Carp Removal

In addition to the block net at Lake Owasso, backpack electrofishing was used to remove carp at the Gervais Mill Pond outlet barrier. A barrier has been used at the outlet of Gervais Mill Pond to prevent carp from migrating out of the Gervais Chain of Lake towards the nursery lake of Gervais Mill Pond for a number of years. Because of the high flow at this site, the barrier has to be repaired or replaced frequently. After the barrier was destroyed in the summer of 2024, it was reinstalled further upstream on March 27th. A PIT antenna system was installed downstream of this barrier on May 1st and left until December 10th. In 2025, five removals were conducted at this barrier in

June, resulting in the removal of 102 carp, or approximately 900 lbs (Table 4). Of these 102 carp, a sample of 67 were measured for length. These lengths ranged from 19.4 to 31.9 inches with an average of 26.7 inches (Figure 7). During the more than seven month period, only two of the 42 carp that had been implanted in Gervais and Kohlman Lakes and Gervais Mill Pond were detected at the PIT antenna. Both of these carp had been tagged in Kohlman Lake on April 29, 2025 and were detected in May and June of 2025 (Figure 8). Neither of these two PIT tagged carp or any others were recaptured during the removals at the barriers even though both were detected on days when carp were removed at the barrier.

Table 4: Summary of the spring removals in Gervais Mill Pond by date.

Ifyj	Hfyhm	UNY Wjhfux	F{jwflj Qjslym ns.
;484757:	8835	535	7;39
;4684757:	7<35	535	7;3=
;4694757:	835	535	7837
;47:4757:	6735	535	7<3>
;47<4757:	7<35	535	SF
Ytyfq	65735	535	
F{jwflj	673=	535	7;3<

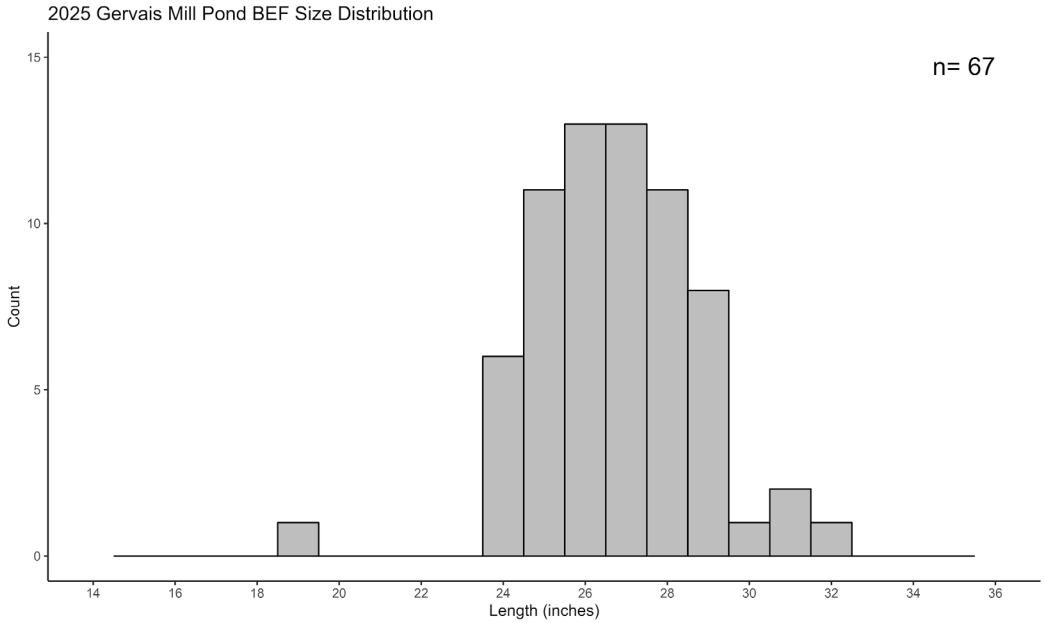

Figure 7: Overall length distribution of sampled carp (n = 67) collected from Gervais Mill Pond. The red line indicates the median length of 28.7 inches.

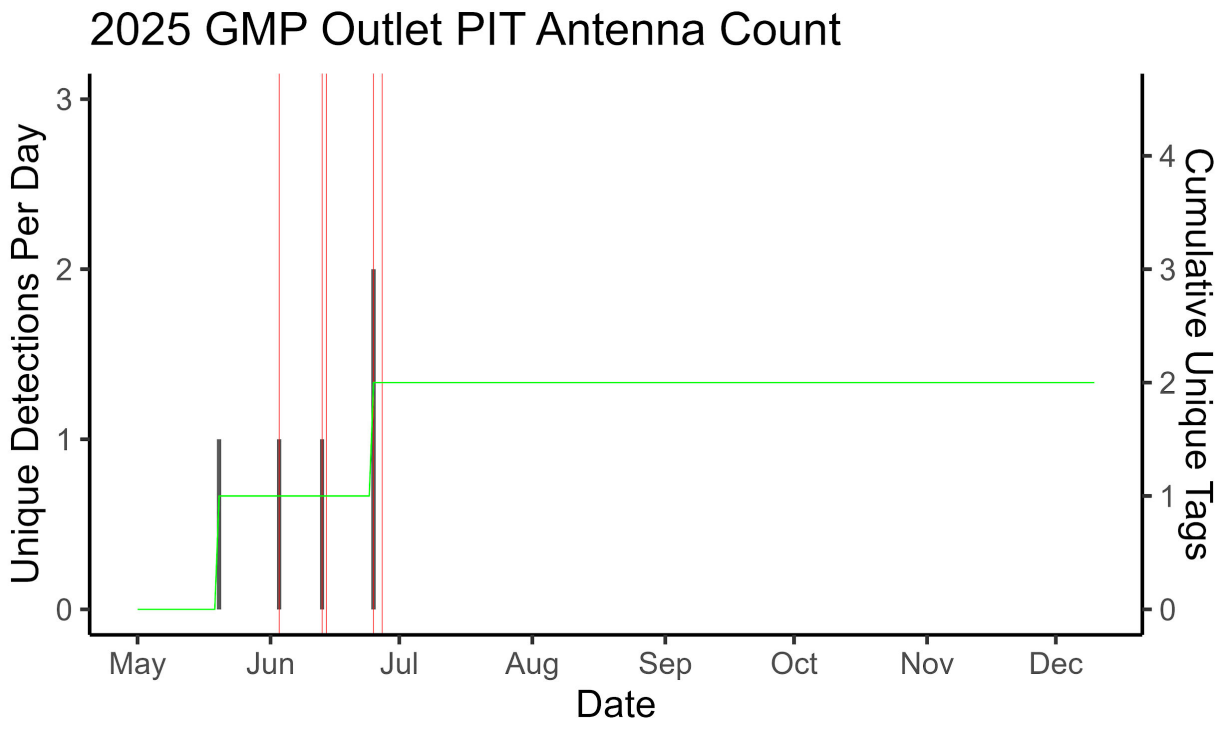

Figure 8: The number of unique PIT tags detected per day at the PIT antenna at the outlet of Gervais Mill Pond. The solid green line indicates the cumulative number of PIT tags detected.

Kohlman Basin PIT antenna

In order to track carp migration from Kohlman Lake towards Kohlman Basin, Markham Pond, and Casey Lake, a PIT antenna was installed below the barrier near US61 on May 1st. This antenna was left in place until December 10. During this period, two PIT tagged carp were detected at this antenna, both in June (Figure 9). As in previous years, this site was checked for carp multiple times throughout the spring, but no aggregations were observed, so no removals were attempted.

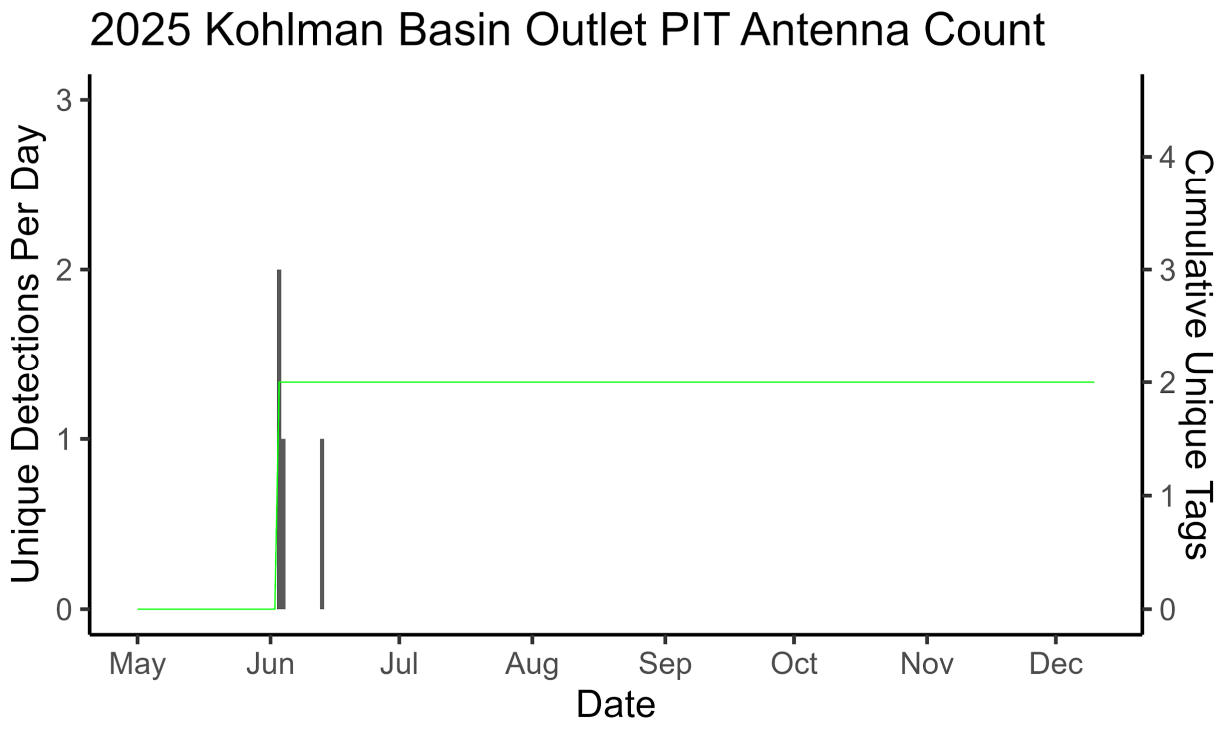

Figure 9: The number of unique PIT tags detected per day at the PIT antenna at the Kohlman Basin outlet. The solid green line indicates the cumulative number of PIT tags detected.

Gervais Mill Pond Boat Electrofishing

On August 4th, 2025 a single day of boat electrofishing survey was conducted on Gervais Mill Pond. This survey was performed in order to create an updated population and biomass estimate for carp within the pond. The survey consisted of three transects consisting of an average of 11 minutes of effective shocking time. When current was passed through the water, stunned fish floated to the surface and carp were collected using dip nets. Other species were identified, but not collected during this process. Collected carp were measured for length, had their left pelvic fin clipped, and were implanted with a Passive Integrated Transponder (PIT) tag before they were released back into the water. During this survey a single 29.1 inch long carp was sampled (Figure 10). The carp catch rate (CPUE) of this survey was 1.83 (Table 5). Because only a single carp was caught in a single survey, it is not possible to accurately estimate the carp population in Gervais Mill Pond. However, it does appear that the biomass density is below 100 kg/ha. Other species observed during the survey included black bullhead (*Ameiurus melas*), bluegill sunfish (*Lepomis macrochirus*), fathead minnow (*Pimephales promelas*), golden shiner (*Notemigonus crysoleucas*), green sunfish (*Lepomis cyanellus*), hybrid sunfish (*Lepomis hybrid*), largemouth bass (*Micropterus salmoides*), pumpkinseed sunfish (*Lepomis gibbosus*), and yellow bullhead (*Ameiurus natalis*).

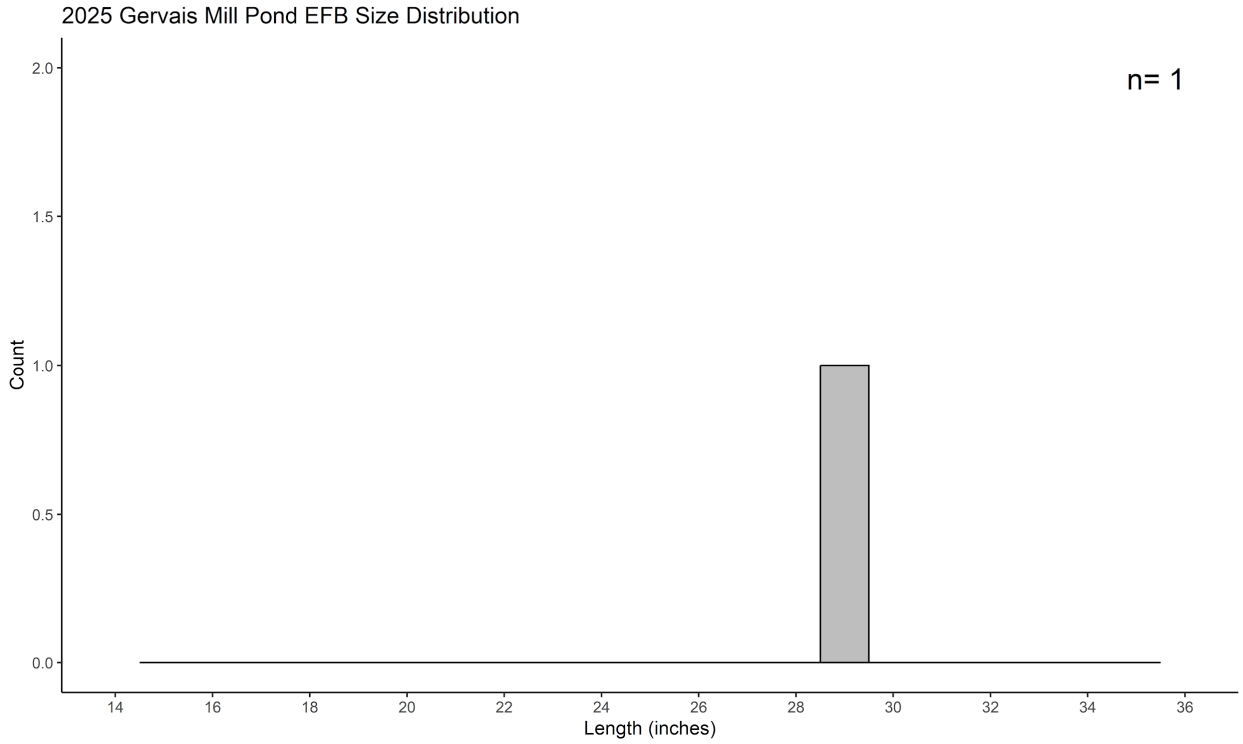

Figure 10: Size distribution of carp during 2025 boat electrofishing survey of Gervais Mill Pond.

Table 5: Summary of boat electrofishing survey of Gervais Mill Pond in 2025.

Date	Carp caught	Time shocking (min)	CPUE	Average Length (inches)
8/4/2025	1	33	1.83	29.1

Trap Net Surveys

Seven trap netting surveys were conducted between August and October of 2025 on Alum Pond, Casey Lake, Hanlo's Pond, Markham Pond, Wakefield Lake, Wetland A, and Wicklander Pond. During each trap net survey, three to five small mesh nets (¼" mesh, 2'x3' frame with 2' diameter hoops) were randomly placed around the perimeter of the lake and left overnight. The following day, fish captured in each net were identified to species. The first 50 individuals of each species in each net were measured for length. Any individuals of a species that surpassed 50 were counted without measuring. All captured fish were released as required by the MNDNR permit. Wetland A was surveyed to decide if removal by box nets was warranted there. Casey Lake was surveyed to determine whether or not juvenile carp were present in this potential nursery site and to evaluate the native fish community. In addition to determining carp nurseries, surveys were performed in Alum, Hanlo's, Markham, Wakefield, and Wicklander pond/lake for the presence of goldfish and to evaluate the native fish community.

Carp Nursery Surveys

Casey Lake

Trap net surveys of Casey Lake were conducted on September 3rd and 4th of 2025. Five nets were placed around the public shoreline of the lake (Figure 11). Species sampled during this survey include green sunfish (*Lepomis cyanellus*) and pumpkinseed sunfish (*Lepomis gibbosus*) (Table 6). These sunfish were all between 3-5 inches in length (Figure 12).

Figure 11: Map of trap net locations during 2025 trap netting survey of Casey Lake.

Table 6: Species totals per net from the trap net survey on Casey Lake. CPUE stands for catch per unit effort, in units of fish captured per net. No fish captured in net 5.

Ywfu Sjy(	Lwjjs Xzskxm	Uzr uprsxjji Xzskxm
6	6	=
7	5	:
8	5	6
9	6	9
Ytyfq	7	6=
HUZJ-Kxm ujwSjy.	539	83;
F{jwflj Qjslym-ns.	939:	83>9

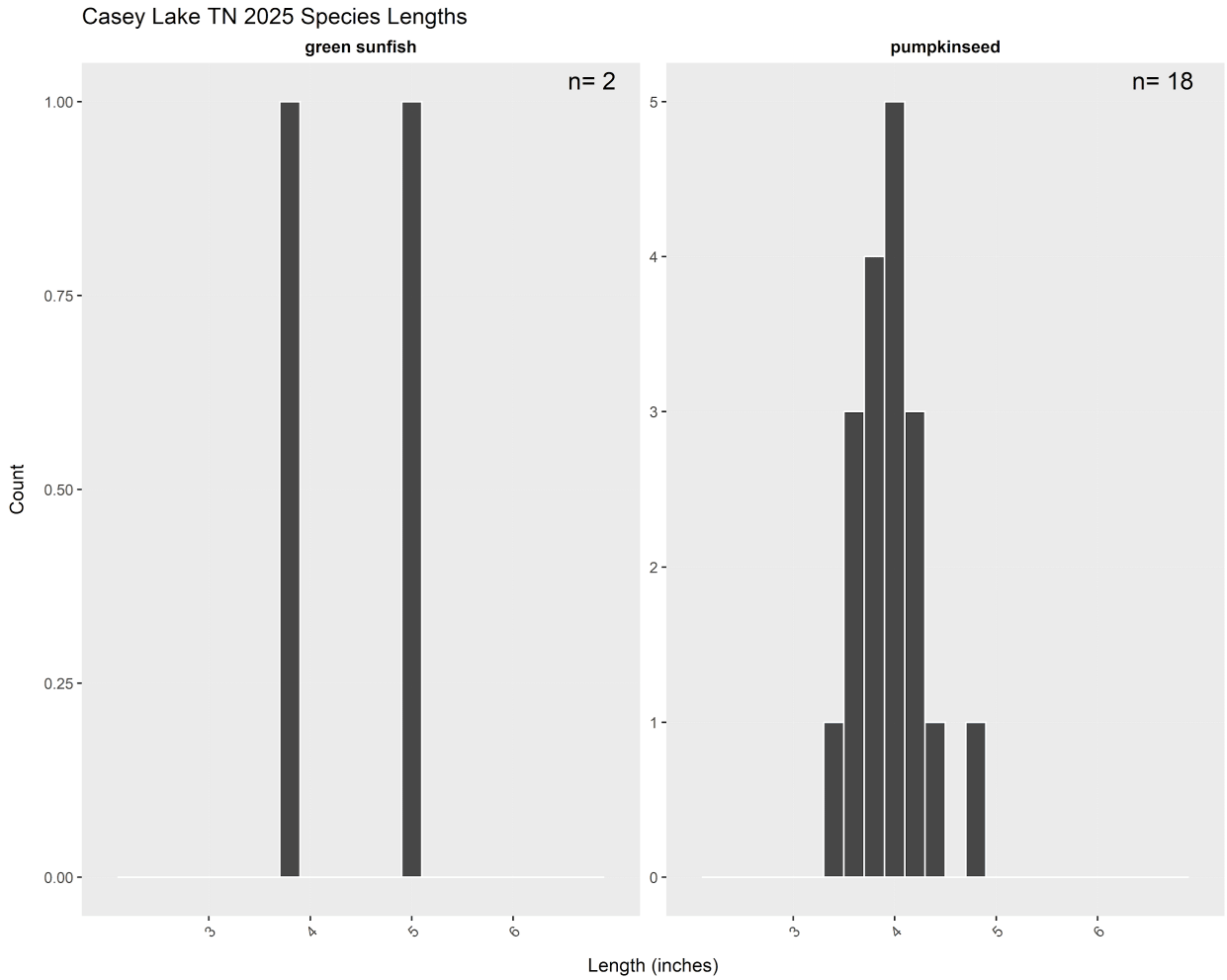

Figure 12: Length distribution of fish sampled during 2025 trap net survey of Casey Lake.

Wetland A

The Wetland A survey took place on July 23 and 24 as a follow up for the 2024 survey that caught 94 carp. The net locations are shown in Figure 13. The species observed during the survey included black bullhead (*Ameiurus melas*), common carp (*Cyprinus carpio*), green sunfish (*Lepomis cyanellus*), hybrid sunfish (*Lepomis hybrid*), and yellow bullhead (*Ameiurus natalis*) (Table 7). Four carp, ranging from 5.9 to 14.3 inches in length with a mean length of 10.6 inches, were captured (Figure 14). In order to test if carp removal with box nets was feasible, RWMWD placed two bait bags in the wetland with around 15 pounds of cracked corn in both nets. After three days, about 10 pounds had been consumed from each bag. No more corn was consumed when the bags were checked three days later. Based on the relatively low corn consumption and the small number of carp captured in the trap nets, no box netting was conducted.

Figure 13: Map of the trap net locations for Wetland A

Table 7: Species totals per net from the trap net survey on Wetland A. CPUE stands for catch per unit effort, in units of fish captured per net. No fish were captured in net 5.

Ywfu Sjy(	Gqfhp Gzqqmjfi	Htr r ts Hfwu	Lwjjs Xzskxm	M~gwi Xzskxm	^jqt| Gzqqmjfi
6	6355	7355	6355	66355	5355
7	7355	5355	5355	6>355	5355
8	6:355	5355	5355	5355	8355
9	<355	7355	6=355	69355	6355
Ytyfq	7:355	9355	6>355	99355	9355
HUZJ-Kxm ujw Sjy.	:355	53=5	83=5	=3=5	53=5
F{jwflj Qjslym-ns.	93<<	653::	739:	8356	=367

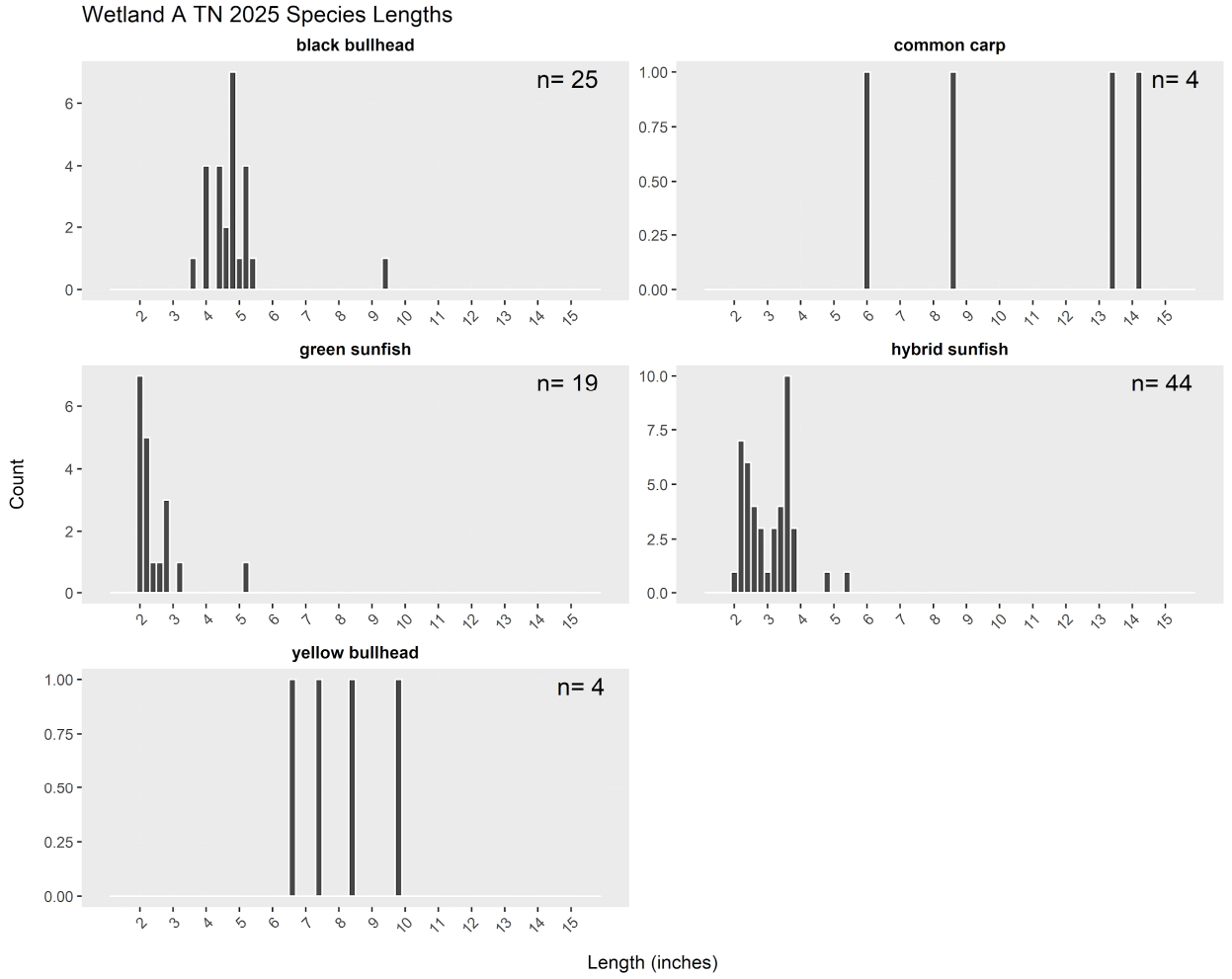

Figure 14: A comparison of the distribution of sizes of collected fish from trap net surveys in Wetland A.

Goldfish Surveys

Alum Pond

Trap net surveys were conducted on September 8 and 9 of 2025. Three nets were placed in the deep portion of the pond (Figure 15). The species observed during this survey include black bullhead (*Ameiurus melas*), brown bullhead (*Ameiurus nebulosus*), and hybrid sunfish (*Lepomis hybrid*) (Table 8). Sampled fish were fairly small, with none found over 10 inches (Figure 16).

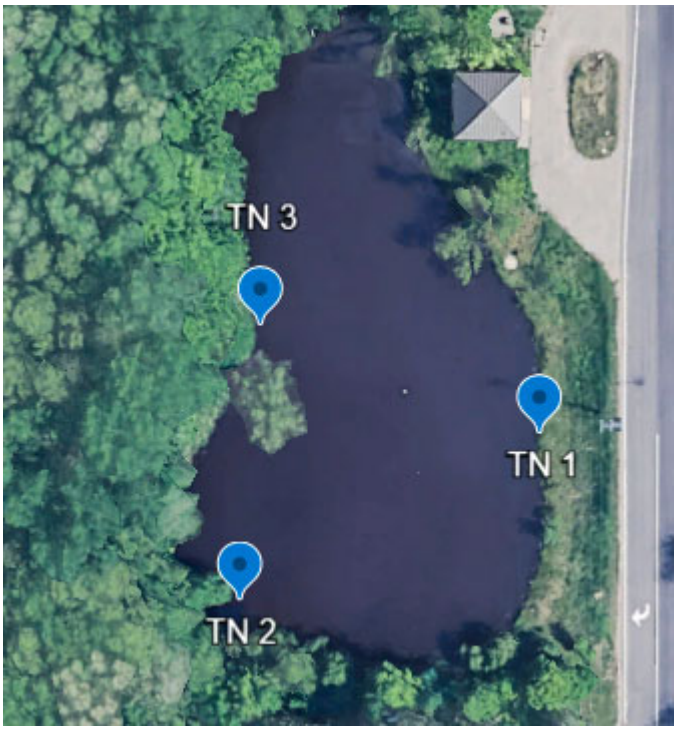

Figure 15: Map of trap net locations in Alum Pond for 2025 survey.

Table 8: Species totals per net from the trap net survey on Alum Pond. CPUE stands for catch per unit effort, in units of fish captured per net. No fish were caught in nets 1 and 2.

Ywfu Sjy(	Gqfhp Gzqqmjfi	Gwt|s Gzqqmjfi	M~gwni Xzskxm
8	7635	635	635
Ytyfq	7635	635	635
HUZJ-Kxm ujw Sjy.	975	575	575
F{jwflj Qjslym-ns.	95	<3;=	:3<6

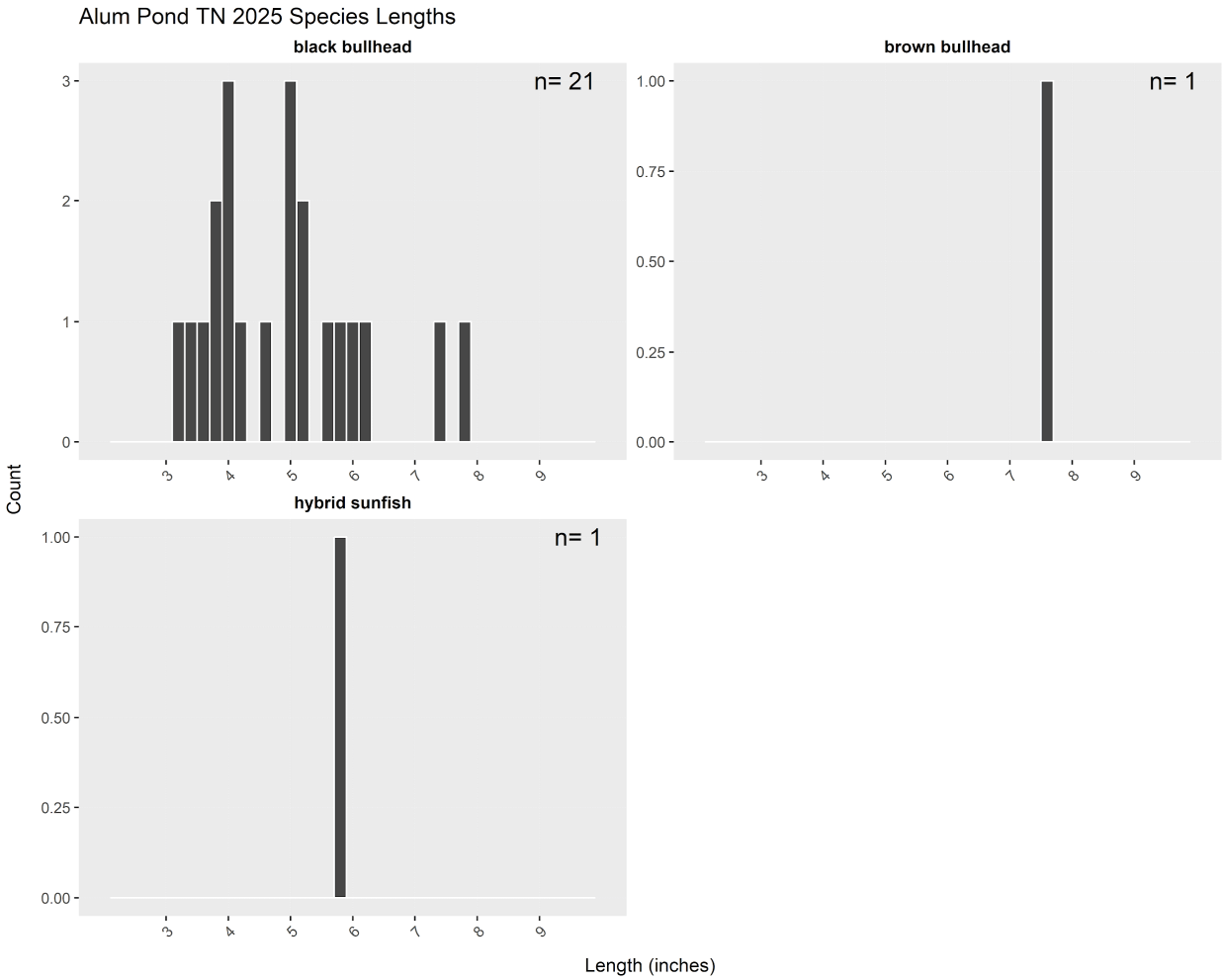

Figure 16: Length Distribution of fish sampled during Alum Pond trap netting survey.

Hanlo's Pond

Trap net surveys of Hanlo's Pond were conducted on September 22 and 23 of 2025. Five trap nets were placed around the pond (Figure 17). Species sampled during the trap net survey include black bullhead (*Ameiurus melas*), bluegill sunfish (*Lepomis macrochirus*), goldfish (*Carassius auratus*), and hybrid sunfish (*Lepomis hybrid*). During the survey, 16 goldfish were sampled (Table 9). The lengths of these goldfish ranged from 2.2 to 3.1 inches with a mean length of 2.58 inches (Figure 18).

Figure 17: Location of trap nets during 2025 survey of Hanlo's Pond.

Table 9: Species totals per net from the trap net survey on Hanlo's Pond. CPUE stands for catch per unit effort, in units of fish captured per net.

Ywfu Sjy(	Gqfhp Gzqmjfi	Gqzjlmqp Xzskxm	Ltqikxm	M~gwi Xzskxm
6	5355	6;355	7355	95355
7	8355	9355	6355	7;355
8	5355	<355	5355	69355
9	6:355	5355	67355	;5355
:	6355	66355	6355	95355
Ytyfq	6>355	8=355	6;355	6=5355
HUZJ-Kxm ujw Sjy.	83=5	<3;5	8375	8;355
F{jwflj Qjslym -ns.	83:8	9357	73:=	73<=

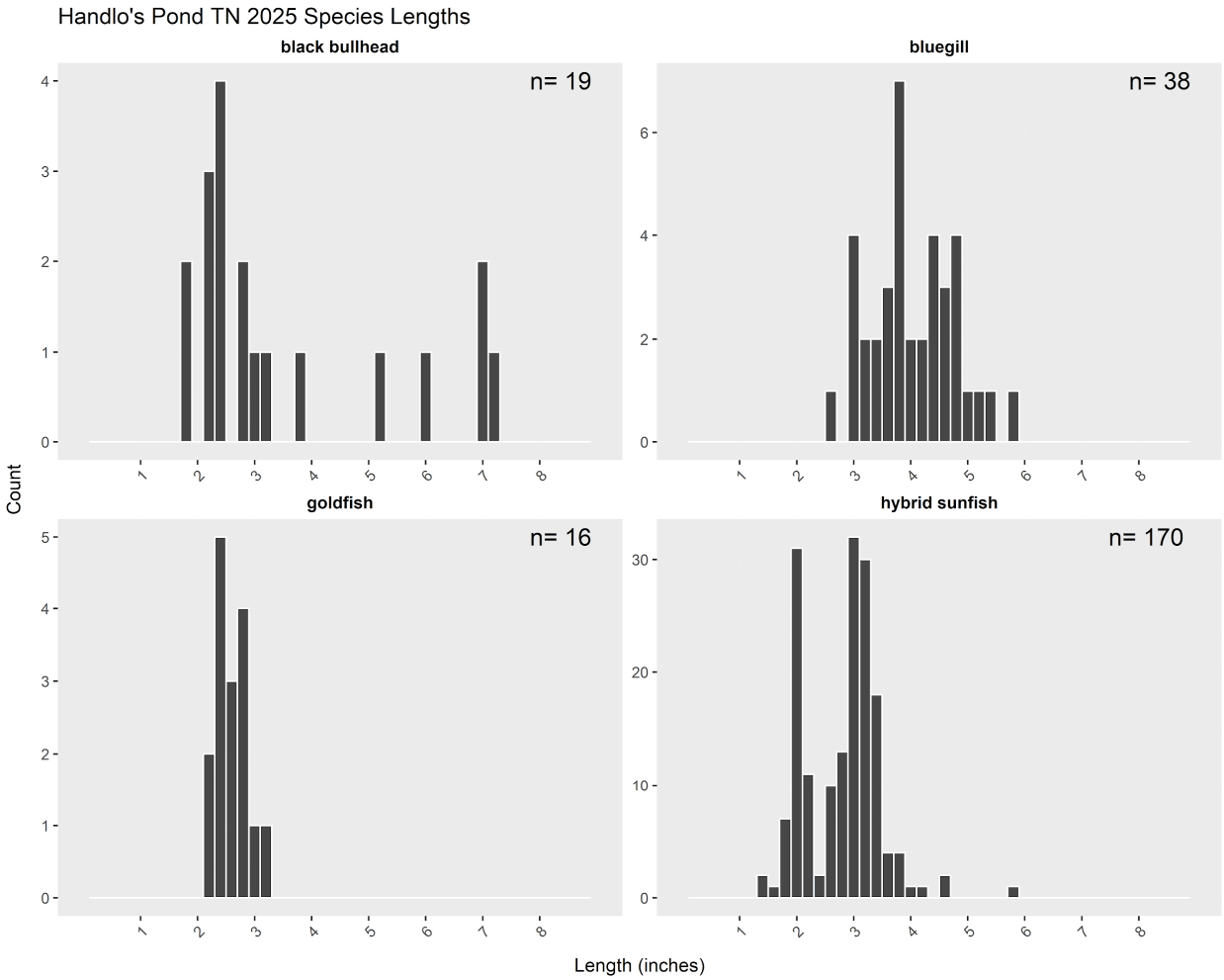

Figure 18: Length distribution of species sampled during 2025 trap net survey of Hanlo's Pond.

Markham Pond

Trap netting surveys were conducted on Markham Pond on August 8 and 9 of 2025. Five trap nets were used around the pond (Figure 19). Species sampled during the trap net survey included goldfish (*Carassius auratus*), golden shiner (*Notemigonus crysoleucas*), green sunfish (*Lepomis cyanellus*), and hybrid sunfish (*Lepomis hybrid*). A total of 41 goldfish were sampled during the survey (Table 10). The lengths of goldfish sampled ranged from 1.14 to 2.32 inches with a mean length of 1.78 inches (Figure 20).

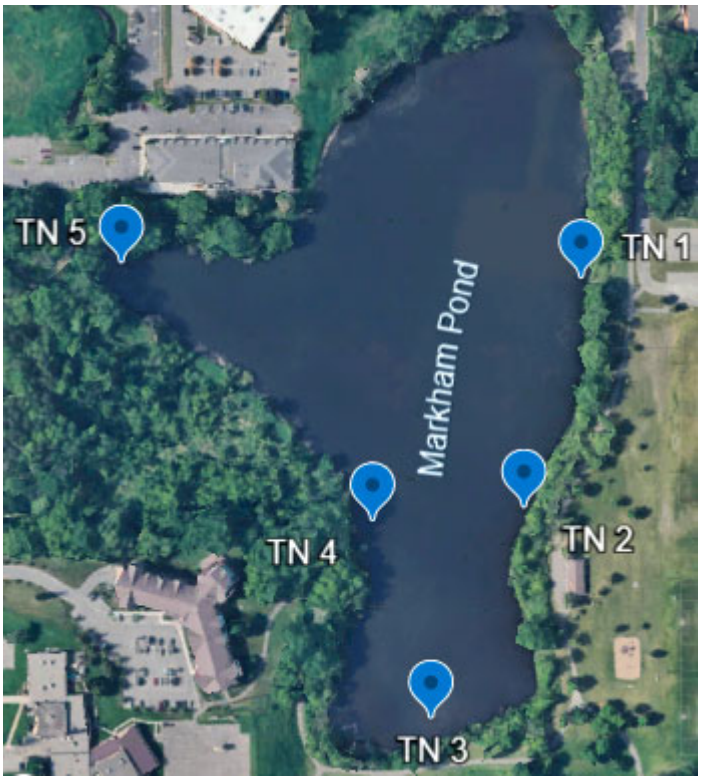

Figure 19: Location of trap nets during 2025 survey of Markham Pond.

Table 10: Species totals per net from the trap net survey on Markham Pond. CPUE stands for catch per unit effort, in units of fish captured per net.

Ywfu Sjy(	Ltqikxm	Ltqijs Xmrsjw	Lwjjs Xzskxm	M~gwi Xzskxm
6	66355	5355	:355	6355
7	6355	5355	9355	5355
8	6;355	5355	<355	5355
9	68355	9355	7;355	5355
:	5355	5355	6:355	5355
Ytyfq	96355	9355	:<355	6355
HUZJ-Kxm ujw Sjy.	=375	53=5	66395	5375
F{jwflj Qjslym -ns.	63<=	935:	837:	;37;

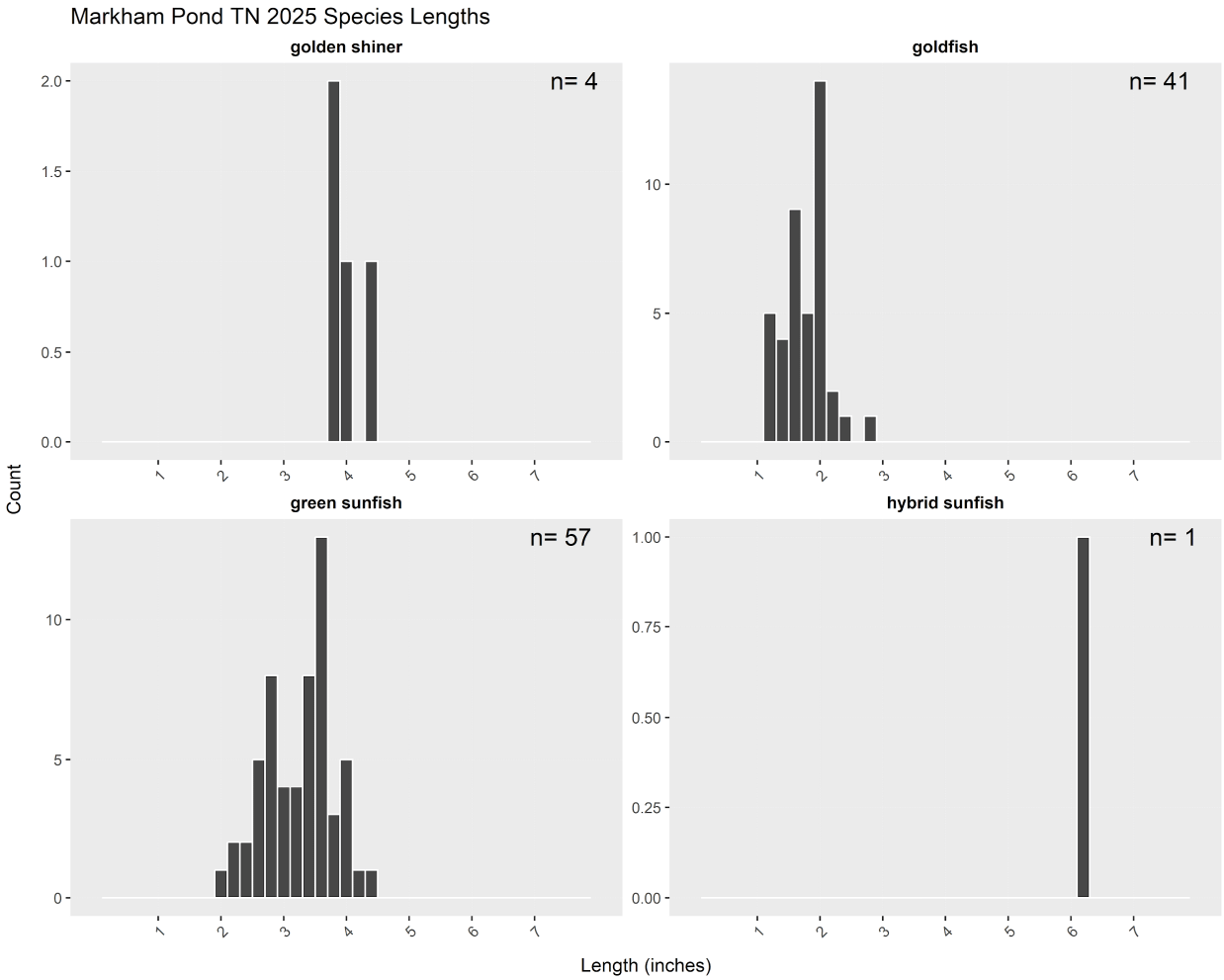

Figure 20: Length distribution of species sampled during 2025 trap net survey of Markham Pond.

Wakefield Lake

The trap net survey of Wakefield Lake was conducted on August 11 and 12 of 2025 with five trap nets being spread around the lake (Figure 21). Species sampled in the surrey included bluegill sunfish (*Lepomis macrochirus*), green sunfish (*Lepomis cyanellus*), hybrid sunfish (*Lepomis hybrid*), and pumpkinseed sunfish (*Lepomis gibbosus*) (Table 11). Sampled fish ranged from 2-6 inches in length (Figure 22).

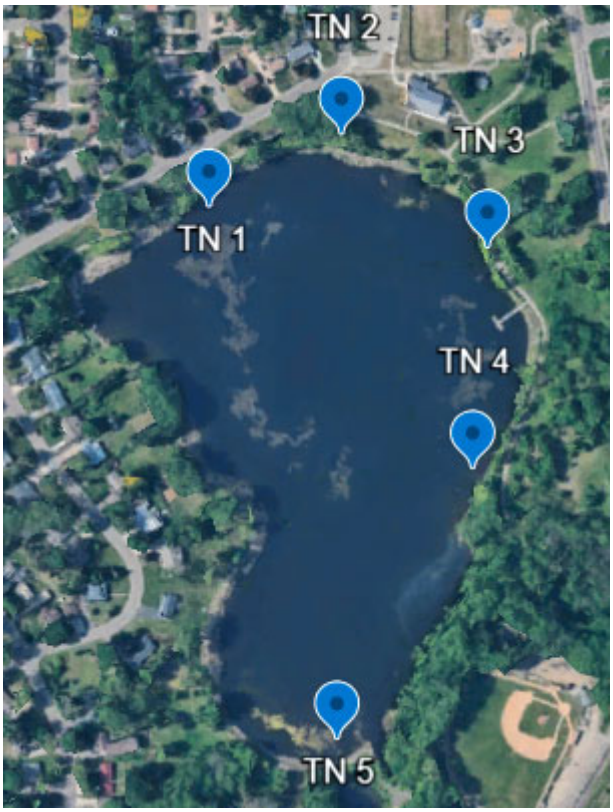

Figure 21: Map of trap net locations during 2025 survey of Wakefield Lake.

Table 11: Species totals per net from the trap net survey on Wakefield Lake. CPUE stands for catch per unit effort, in units of fish captured per net.. No fish were captured in nets 2 and 5.

Ywfu Sjy(	GqzjlrqqXzskxm	Lwjjs Xzskxm	M~gwi Xzskxm	Uzr uprsxjji Xzskxm
6	635	635	535	535
8	7;35	635	>35	6:35
9	9>35	735	6535	88535
Ytyfq	<;35	935	6>35	9=35
HUZJ-Kxm ujw Sjy.	6:375	53=5	83=5	>3;5
F{jwflj Qjslym -ns.	8397	8357	93=6	93:7

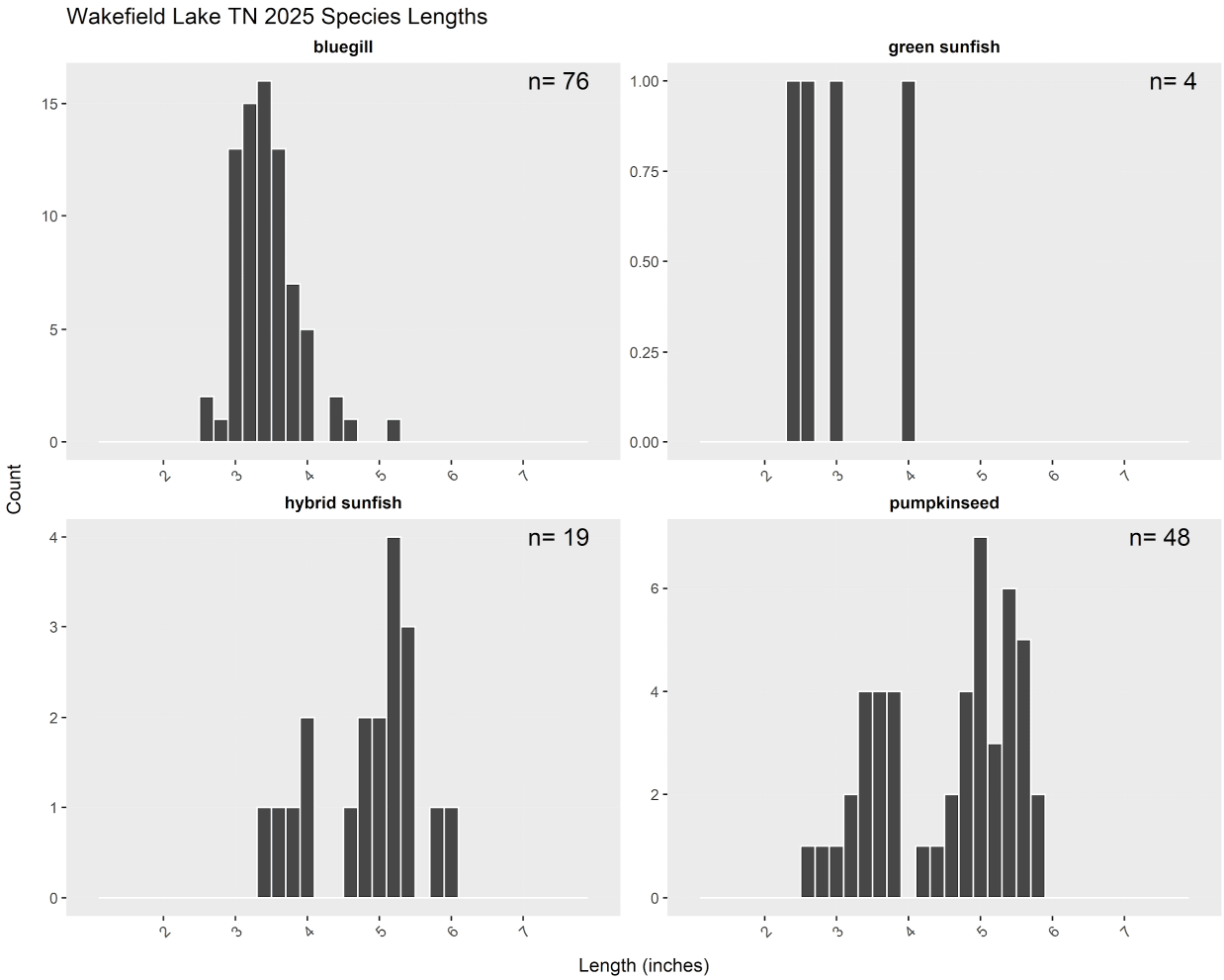

Figure 22: Length distributions of species sampled during 2025 trap net survey of Wakefield Lake.

Wicklander Pond

The trap net survey of Wicklander Pond was conducted on July 28 and 29 of 2025. Five trap nets were installed around the pond (Figure 23). Species sampled during the survey included black bullhead (*Ameiurus melas*), creek chub (*Semotilus atromaculatus*), golden shiner (*Notemigonus crysoleucas*), and green sunfish (*Lepomis cyanellus*) (Table 12). The sampled fish ranged from 2-7 inches in length (Figure 24).

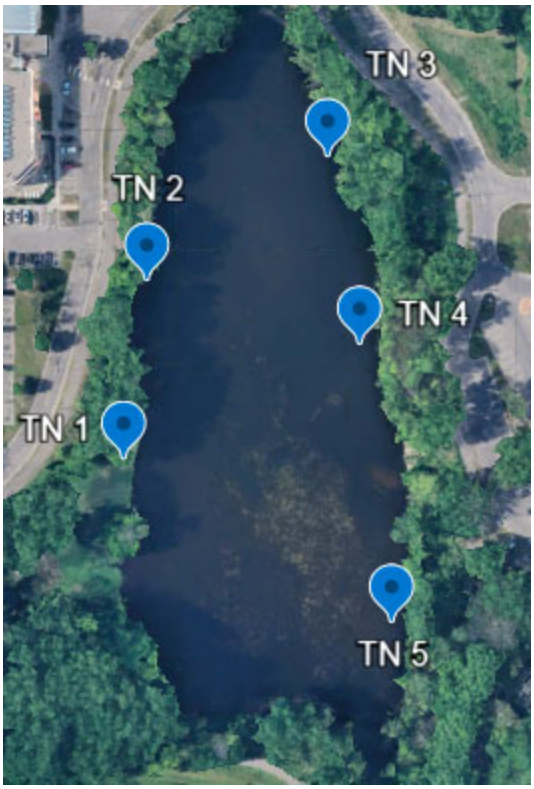

Figure 23: Map of trap net locations during 2025 survey of Wicklander Pond.

Table 12: Species totals per net from the trap net survey on Wicklander Pond. CPUE stands for catch per unit effort, in units of fish captured per net.

Ywfu Sjy(	Gqfhp Gzqqmjfi	Hwjjp Hmzg	Ltqijs Xmrsjw	Lwjjs Xzskxm
6	5355	5355	5355	66355
7	5355	6355	<355	6:355
8	69355	5355	5355	=355
9	7355	5355	5355	5355
:	6=;355	5355	76355	69:5355
Ytyfq	757355	6355	7=355	69=9355
HUZJ-Kxxmujw Sjy.	95395	5375	:3;5	7>;3=5
F{jwflj Qjslym -ns.	:366	73<;	839:	83;9

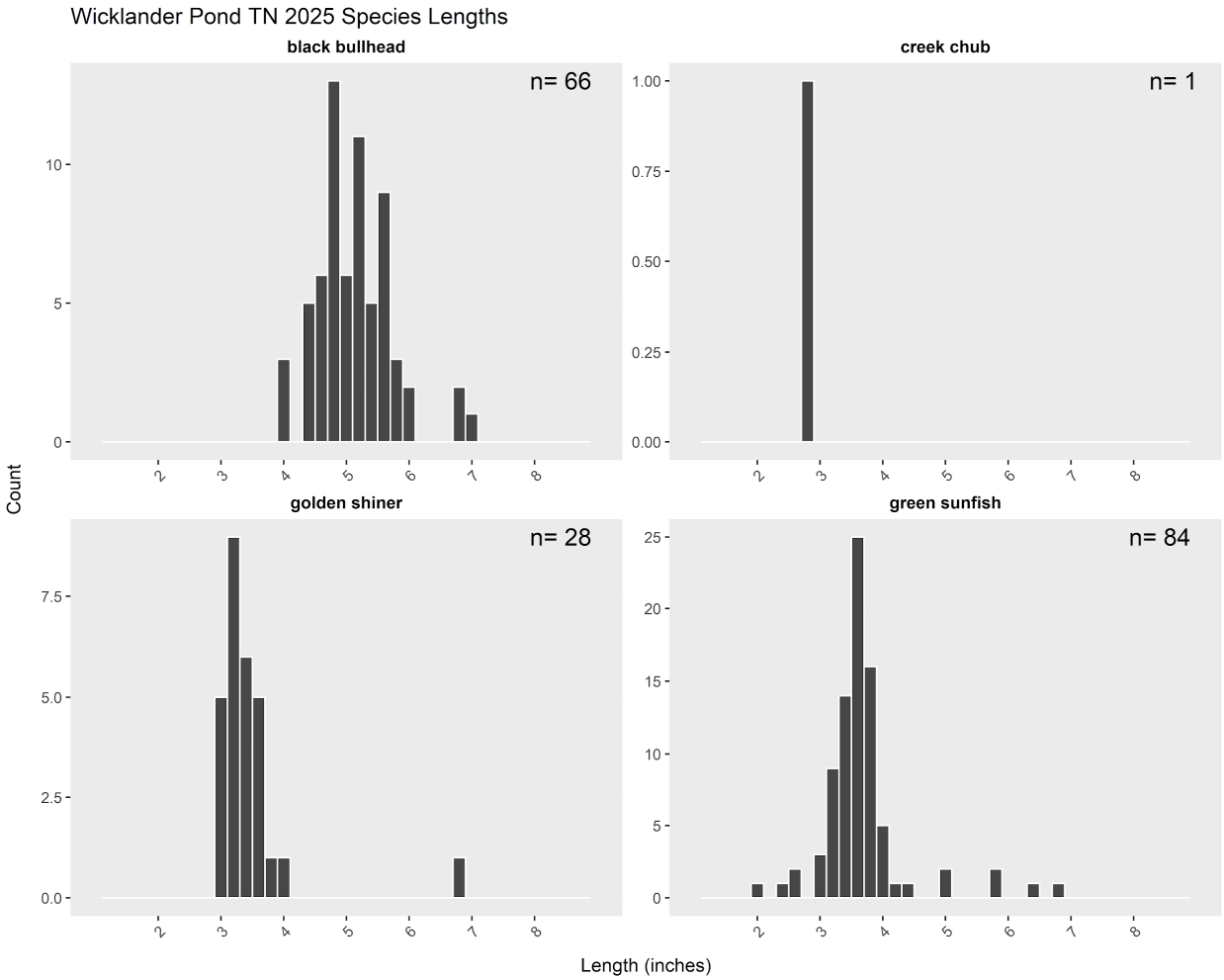

Figure 24: Length distributions of species sampled during 2025 trap net survey of Wicklander Pond.

Discussion

Owasso Lake

In 2022 and 2024, the block net around the outlet of Owasso Lake was an effective means of removing the carp attempting to migrate towards Wabasso Lake with a total of 1,445 carp being removed. A remote access camera and PIT antenna system were used to monitor the carp activity at the outlet pipe inside the net and guide tripping to maximize the number of carp captured. This technology was used in 2025 as well, along with a CATCH, a device that could be used to trip the net remotely. Despite these improvements, carp did not aggregate in as large numbers as in previous years, so the overall catch of 81 was significantly lower than previous years. These numbers were reflected by the reduced number of PIT tags detected. In 2025, only 40 PIT tagged carp were detected when the net was installed compared to 98 in 2024 and 97 in 2022. Interestingly, an additional 23 PIT tagged carp were detected after the net was removed until the end of November. Going along with the overall decrease in the number of tags,

the percentage of detected carp removed (7.5%) also declined in 2025 compared to 28.9% in 2022 and 35.4% in 2024. These declines in the overall number of PIT tagged carp detected at typical spring migration sites and the corresponding declines in the percentage of carp removed was also observed at multiple other sites around the greater Twin Cities metro area in Minnesota. However, these declines at Owasso Lake in particular are also likely due to the greatly reduced number of carp present in Owasso Lake. After two successful seasons of spring removals at the outlet of Owasso, the carp population was estimated to be only 1,449 with a final biomass density of 34.4 kg/ha at the end of 2024. This estimated biomass density was already far below the 100 kg/ha biomass threshold below which carp have a negligible effect on aquatic macrophyte cover (Figure 25). However, in order to prevent carp recruitment in the future, it is important to block the spawning migration out of Owasso Lake down into Wabasso Lake and ultimately into Grass and West Vadnais Lakes. If these carp make it into Grass and West Vadnais Lakes after those lakes experience a winterkill (which is likely in the winter of 2025-2026), a significant recruitment event could occur. These young carp that grow up in these shallow lakes could then move upstream back into Wabasso and Owasso Lakes or downstream into the Phalen Chain of Lakes. Thus, continuing to block this migration is important for long-term carp management. Removal of these carp as they attempt to migrate continues to reduce their population and reduce the risk of significant recruitment.

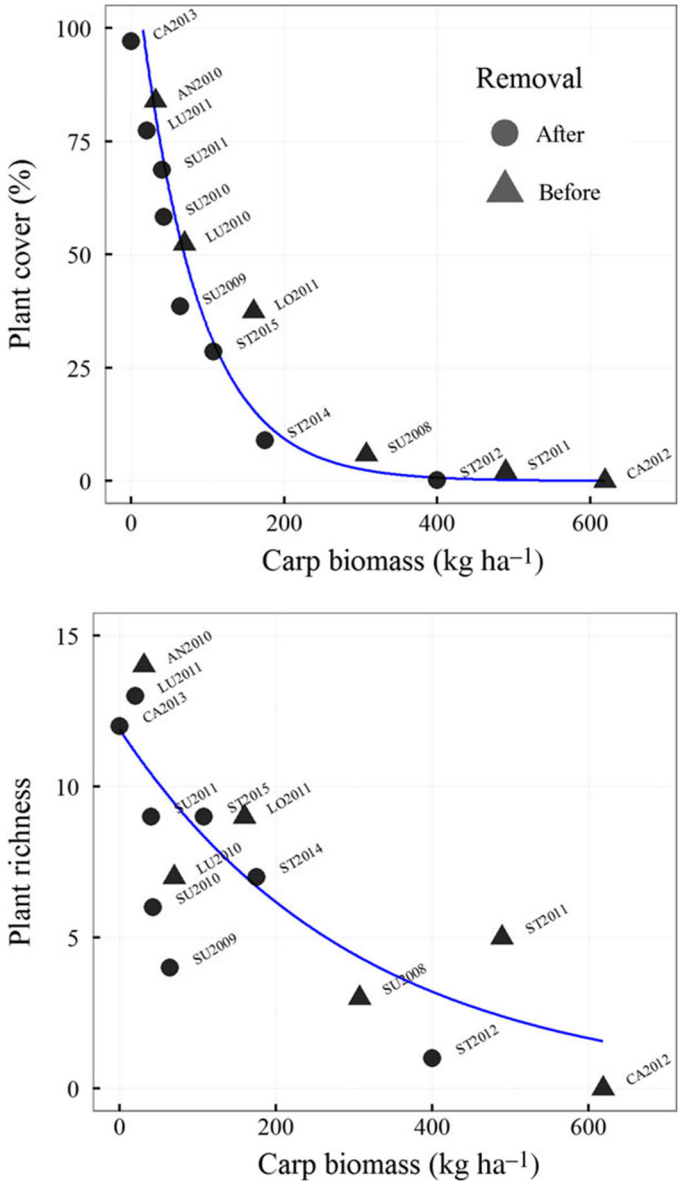

Figure 25: Relationship between common carp biomass and aquatic macrophyte cover in the littoral (top) and plant richness (bottom) in small Minnesota lakes. From Bajer et al. 2016.

Gervais Mill Pond

Although the physical barrier in the outlet stream of Gervais Mill Pond has continued to prove troublesome due to high flows at the site, it continued to be an effective site to remove migrating carp. In 2025, a total of 102 carp were removed at the barrier with backpack electrofishing, a slight improvement from the 100 carp removed in 2024. As in previous years, the remote access camera at the barrier was helpful to inform when carp were aggregating below the barrier so that a removal could be performed. Interestingly, only two of the 41 (4.9%) carp implanted with PIT tags in Gervais and Kohlman Lakes were detected at the PIT antenna. Since neither of these PIT tagged carp were captured, no estimate of the size of the carp migration was

possible. Thus, overall, backpack electrofishing at the Gervais Mill Pond barrier continued to be an effective means of carp removal in the Phalen Lakes chain.

Although the new barrier location continued to provide an effective removal site, the barrier itself was still troublesome. The relocation of the barrier did not solve the issue of erosion around the barrier. While this barrier did not suffer the same issues with high flows undermining the barrier, the current did cut around the sides of the barrier. The barrier was routinely maintained and reinforced, with the barrier being extended and the banks being reinforced. Carp were captured both upstream and downstream of the barrier after the erosion damage was repaired. The carp captured above the barrier could either have passed around the barrier in 2025 before it was repaired or have been residents of Gervais Mill Pond itself.

On August 4th a single day of boat electrofishing was performed in Gervais Mill Pond. The single carp that was sampled in the survey was 29.1 inches long and clearly an adult. This carp could either have circumvented the stream barrier in the spring or be a resident of the pond. The presence of adult carp in the pond is concerning as this pond could be used as a nursery if enough carp made it through the barrier. Fortunately, this pond has a strong native micropredator population and does not suffer from severe winter kills due to the aeration system installed in the pond. Any future recruitment events should be curbed by the native predators.

Gervais and Kohlman Lake Boat Electrofishing

Spring boat electrofishing was conducted on Gervais and Kohlman Lake in 2025 for the purpose of implanting Passive Integrated Transponder (PIT) tags in carp. The 10 carp in Gervais Lake and 31 carp from Kohlman Lake that were captured and implanted with PIT tags were useful for tracking spawning migrations and will also help provide for future mark-recapture estimates. Although these carp were captured using boat electrofishing similarly to standard surveys, no population or biomass density estimates were generated from this data. Estimates from spring electrofishing can be inaccurate due to carp aggregating prior to spawning runs causing biased sampling compared to post spawning run surveys performed in the summer and fall.

Carp Nursery Surveys

Casey Lake

In 2025 the continued biennial survey of Casey Lake was performed for carp monitoring via trap nets. As in the previous surveys, there were no carp sampled. Compared to the previous survey of the lake in 2023, there was a noticeable reduction in the number of sunfish sampled. In 2025, only 20 sunfish were sampled compared to 2023 when 762 sunfish were sampled. This steep decline in micropredator populations suggests a disturbance since the last survey. Regardless of the cause of the

disturbance, this low micropredator abundance opens up potential for successful carp recruitment if they find a way into Casey Lake from Kohlman Lake.

Wetland A

Following the sampling of 94 carp in the 2024 trap net survey of Wetland A, a follow up survey was conducted. This survey was to help determine if carp removal via baited box nets was needed. This survey was also combined with a baiting test, where cracked corn was placed into bait bags and placed at potential box net sites. Due to relatively low bait consumption and a small catch of four carp in the trap nets, box netting of Wetland A was not conducted. If future monitoring shows a sufficient carp population and baiting consumption is high removals could be attempted. The wetland has continued to remain isolated from Grass Lake without a large rain event occurring.

Goldfish Surveys

Alum Pond

Although no goldfish were captured during the 2025 trap net survey of Alum Pond, the native fish diversity was very low. Only one hybrid sunfish, one brown bullhead, and 21 black bullheads were sampled. This low diversity, winterkill tolerant assemblage would not control goldfish reproduction in this pond, especially if more goldfish are introduced.

Hanlo's Pond

The trap netting survey in 2025 on Hanlo's Pond confirmed the reports of a goldfish population in the pond with 16 goldfish being sampled. Currently the goldfish population doesn't seem to be very large, most likely due to the relatively large abundance of sunfish species that, as with carp, are likely limiting recruitment success. This population is likely to expand significantly if a severe winterkill were to occur. Goldfish are extremely tolerant to low dissolved oxygen levels unlike many native species and would be left without native micropredators to curb recruitment. Fortunately, if a severe winterkill did occur, since Hanlo's is a Fishing in the Neighborhood (FIN) pond, it is regularly stocked with several sunfish species. Nonetheless, the goldfish population should be continued to be monitored and attempts at removal via baited box nets could be attempted if the population increases substantially.

Markham Pond

As in previous surveys, the 2025 trap net survey of Markham Pond showed an established population of goldfish. Compared to the 2023 survey which captured 109 goldfish, there were only 41 captured in 2025. The average size of goldfish did not change significantly between 2023 (1.9") and 2025 (1.78"). Although the species

sampled were different, the native fish diversity was low in both surveys, especially of goldfish (and juvenile carp) predators such as bluegill, pike, and largemouth bass. As with Hanlo's Pond, baited box nets could be used to capture and remove the goldfish if the population increases substantially.

Wakefield Lake

The trap net survey did not sample any goldfish, but did show a healthy population of a variety of sunfish species. Although no goldfish were sampled during the survey, Wakefield should continue to be intermittently monitored for a population of goldfish given the previous observations. Currently, any goldfish in the lake should have limited population growth due to the strong sunfish populations predating on goldfish eggs and larvae.

Wicklander Pond

Following a visual site check of Wicklander Pond in 2024 where goldfish were observed, a trap net survey was conducted in 2025. During this survey, no goldfish were sampled. Given the visual observation of goldfish in the previous year it is likely that a small goldfish population is present although it was not represented in the survey. The native fish community was relatively limited, with a limited number of predators present. This means that the goldfish population could increase quickly, especially after a winterkill.

Management Recommendations

Lake Owasso

A continuation of the current management plan for Lake Owasso is advised for 2026. This includes monitoring the barrier at the Lake Owasso outlet during the spring migration for potential removals. The current physical barrier at the Lake Owasso outlet should be repaired if needed in the spring of 2026. Due to the reduced activity at the outlet and hence far reduced catch, we recommend not installing the block net until a large carp aggregation is observed. Unless water levels are very low, removals can also be carried out at the barrier itself. A series of boat electrofishing surveys to estimate the carp population and to implant more PIT tags should be considered.

Lake Wabasso

The existing barrier at the outlet should be maintained to prevent the migration of carp and facilitate further opportunistic removals during the spawning run. Since the last electrofishing survey in 2023 did not capture any carp, the barriers have apparently been secured, and the carp population in Owasso Lake appears to be quite low, further surveys or removals are not necessary unless conditions change

Gervais Lake

Given the 2024 biomass density estimate 72.5 kg/ha (90% CI: 8.3-136.7 kg/ha) of Gervais Lake, intensive carp management is not needed. A traditional boat electrofishing survey should be considered in 2026 or 2027. Further PIT tag implantation should be done during these surveys to further help mark-recapture estimates from Gervais Mill Pond spring removals as well as future tracking efforts. Currently, continuation of opportunistic spring removals at Gervais Mill Pond and the Kohlman Basin outlet sites is all that is required to keep the carp population in check.

Kohlman Lake

Similar to the connected Gervais Lake, intensive carp management is not needed on this lake. Like Gervais Lake, occasional boat electrofishing surveys and the implantation of PIT tags are recommended. As has been done in the past, maintenance of the barrier at the outlet of Kohlman Basin into Kohlman Lake to prevent spawning is critical. Like other barriers in the watershed, this barrier also provides the opportunity for removals when the carp run. Since the carp biomass density is well below the management threshold of 100 kg/ha, no removals are needed beyond the opportunistic removals at the barriers.

Gervais Mill Pond

Annual maintenance of the Gervais Mill Pond barrier and opportunistic spring removals should be continued as this provides a relatively easy means of lowering carp populations of downstream lakes. Frequent barrier checks should be done in order to prevent carp making it through the barrier like in the spring of 2025 and if a problem is found, promptly fixed.

Casey Lake

As with previous surveys, no carp were sampled in the 2025 trap net survey. This lake should continue to be monitored in the future with biennial trap net surveys as this lake was previously a carp nursery.

Wetland A

Given the seemingly reduced population of carp in Wetland A, intensive management of the carp population is not currently required. Wetland A should be monitored in the future periodically to check for an increased carp population. This should either be done biennially or if a large rain event creates a connection between Wetland A and Grass Lake. If a significant population is observed, baited box netting could be performed to reduce the population.

Goldfish Management

Alum Pond

Although no goldfish were sampled during the trap net survey in 2025, Alum Pond should be monitored closely. Given the low diversity of native species, especially micropredators like bluegills, goldfish populations in the pond could grow rapidly without egg and larval predation. If goldfish are visibly observed, trap net surveys and potentially box net removals could be conducted.

Markham Pond

Given Markham Pond's history of established goldfish populations, it may be an ideal candidate for a pilot box net removal to attempt to lower the population. Baiting tests should be conducted before netting is carried out. At a minimum biennial goldfish surveys using trap nets should be continued to monitor the population.

Hanlo's Pond

Reports of goldfish in Hanlo's Pond were confirmed with the 2025 trap net survey of the pond. Currently it would appear that the goldfish population is limited with only 16 sampled during the survey. The goldfish population should be monitored using periodic trap net surveys and if the population increases significantly baited box net removals could be conducted.

Wakefield Lake

The 2025 trap net survey did not capture any goldfish in Wakefield Lake, however given the visual reports of goldfish the lake should continue to be monitored. Periodic trap net surveys should be done to help identify if the goldfish population increases significantly. Currently the native micropredator populations in the lake should limit the recruitment success of the current goldfish population.

Wicklander Pond

The 2025 trap net survey of Wicklander Pond did not sample any goldfish. Given the visual observation of goldfish as well as the limited and winterkill susceptible population of native micropredators, monitoring of the pond should be continued. Periodic trap net surveys could be used to detect any significant increases to the goldfish population. If a large goldfish population is observed, removals using baited box nets to lower the population could be conducted.

Grass Lake

The biennial boat electrofishing surveys should be conducted on Grass Lake in 2026 in order to monitor the carp population.

West Vadnais Lake

The biennial boat electrofishing surveys should be conducted on West Vadnais Lake in 2026 in order to monitor the carp population and ensure that carp did not reenter and recruit in the lake.

Citations

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