FISH SURVEY REPORT

Lake Tishomingo

Prepared For:

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Introduction

A survey of the fish community and other physical, biological, and chemical factors directly affecting the fish community was completed at Lake Tishomingo on April 25, 2023. The major objectives of this survey and report are:

1. To provide a current status report on the fish community of the lake.
2. To compare the current characteristics of the fish community with established indices.
3. To provide recommendations for management strategies to enhance or sustain the sport fish community.

Water Chemistry

When managing an aquatic ecosystem the quality of water should always be considered first. If a lake or pond is perfectly constructed with abundant food and habitat, but has poor water quality, the fishery will ultimately suffer and never reach it's full potential. Although oxygen is typically not a year-round issue there are certain situations that can cause oxygen to drop to detrimental levels. If parameters such as pH or alkalinity are too low or too high it can put tremendous stress on the organisms living in it or even create a toxic environment all together. Other important parameters to consider are nitrogen and phosphorus levels. Nitrogen and phosphorus are two major nutrients that drive the plant growth in an aquatic ecosystem. If the ratio of nitrogen to phosphorus is below 17:1 there is potential for blue-green algae to become abundant. These species of algae can create a stressful environment for fish due to disruption of the food web.

Table 1. Selected lake and water quality parameters.

	Surface	Ideal Range
Acres	125	-
Temperature (F)	62.9	-
Dissolved Oxygen (ppm)	10.8	5.0+
pH	7.8	6-9
Alkalinity (ppm)	82	20+
Total Hardness (ppm)	90	20+
Total Phosphorus (ppm)	0.02	0.01-0.09
Total Nitrogen (ppm)	1.21	1.0-10.0

The results of selected physio-chemical parameters from Lake Tishomingo are presented in Table 1. Dissolved oxygen, pH, alkalinity, and hardness levels were all in acceptable ranges. The lake had sufficient oxygen down to 18 feet deep (Figure 1). The nitrogen to phosphorus ratio is 60:1 on the surface. This indicates there is low potential for abundant blue-green algae growth during warmer months of the year. Overall, water quality parameters indicate Lake Tishomingo appears to be capable of supporting a healthy fish population.

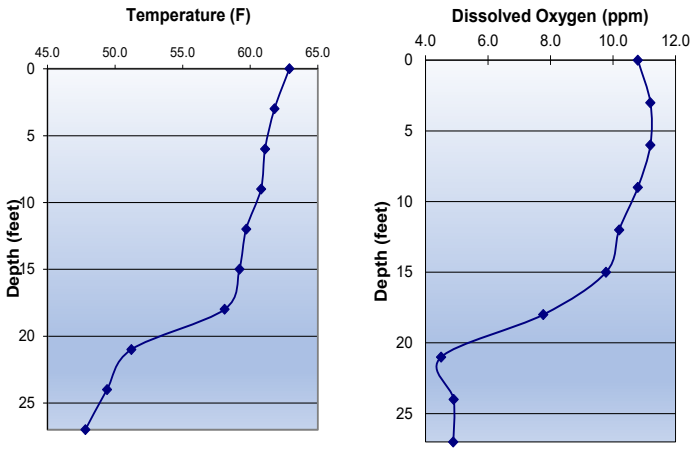
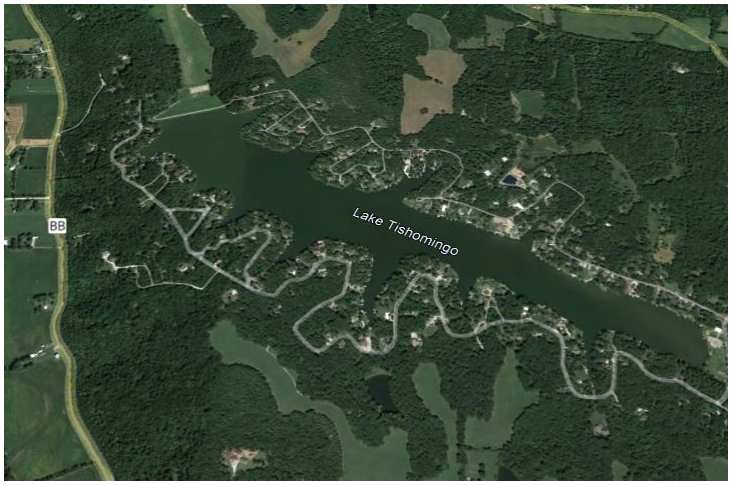


Figure 1. Temperature and Dissolved Oxygen profiles.



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Fish Collection

Fish sampling was done with the use of an electrofishing boat. Electrofishing is simply the use of electricity to capture fish for the evaluation of population status. Electrofishing equipment used in this survey consisted of a 16-foot aluminum boat equipped with a Midwest Lake Electrofishing Systems Infinity Box powered by a 6500-watt portable generator and two booms mounted with Wisconsin style rings. Electrofishing was done around selected areas of the lake and totaled 1.25 hours of shocking.

All fish collected were placed in water filled containers aboard the sampling boat for processing. Each fish collected was measured to the nearest half-inch. Five fish in each half-inch group were weighed to determine average and relative weights. Relative weight is a condition factor used to determine the overall plumpness of an individual fish. Relative weight values from 90-100 indicate good condition while anything under 90 is considered in poor condition. It can be assumed that fish with higher relative weights are finding enough food and are growing at a higher rate than fish with a lower relative weight.

A total of 355 fish weighing 219.26 pounds and representing ten species was collected from Lake Tishomingo. The relative abundance of these species can be found in figure 2 and a full data table can be found at the end of this report. The data collected are adequate for management implications; however, there will be unanswered questions regarding aspects of the fish population and other related factors of the biological community in the lake. All fish numbers used in the report are based on the samples collected and should not be interpreted to be absolute or estimated numbers of fish in the lake.

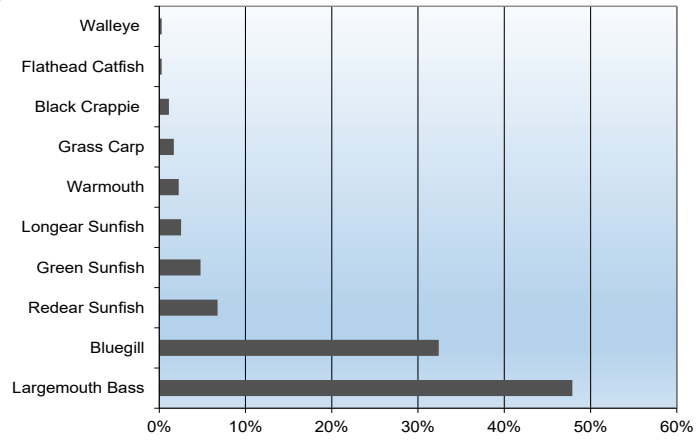

Figure 2. Relative abundance of species collected.

Walleye caught during survey.

Largemouth Bass caught during survey.

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Predator-Prey Relationship

Even the most diverse systems can be broken down into predator-prey relationships. Often times the Largemouth Bass-Bluegill relationship is the most important. Bluegill are a great prey item for Largemouth Bass because they spawn multiple times a year and are continually creating food for Largemouth Bass. Managing for one species typically involves influencing both and as one of these populations change the other typically changes with it. In a balanced state both Largemouth Bass and Bluegill can experience proper growth rates.

Bluegill

<u>Lake Tishomingo</u>—Bluegill

Bluegill ranged in size from less than 3.0 to 9.0 inches (Figure 3). Approximately 40% of Bluegill collected were 3.0 inches or less, indicating reproduction did occur in 2022. There was a spike in abundance of 8.0+ inch Bluegill collected. This led to a proportional stock density (PSD) of 33, which is inside the desired range of 20-40 for Bluegill (proportion of quality fish within a population). The relative weight values of Bluegill collected at Lake Tishomingo ranged from 78 to 114 (Figure 4). Almost all relative weights were above 90. This indicates the Bluegill should be growing well.

Bluegill in Lake Tishomingo appear to be suffering from high levels of predation from a suite of predators in the lake. This high level of predation has created a high quality Bluegill population, but a weaker forage base. Overabundant predators feed heavily on the smallest individuals. Fish that survive to grow large enough to escape predation grow quickly due to lower competition for resources. During the survey there were more Largemouth Bass caught than Bluegill. This will always result in slow growing predators. In addition to the abundant Largemouth Bass there are Walleye, Flathead Catfish and Black Crappie present as well. All of these predators are putting tremendous pressure on the Bluegill population. The Bluegill population needs to be much higher in abundance than the predator populations.

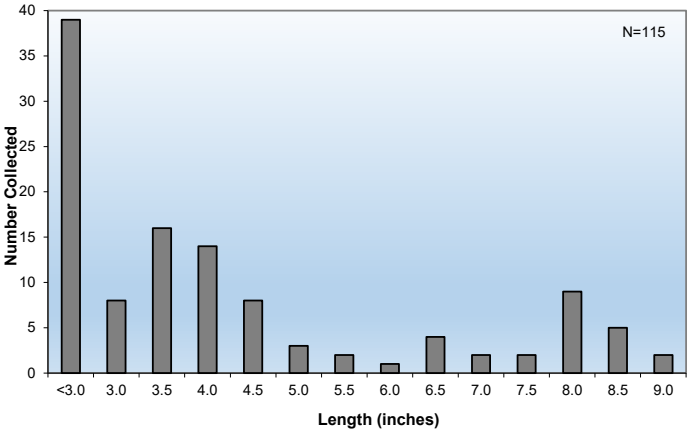

Figure 3. Length frequency distribution of Bluegill

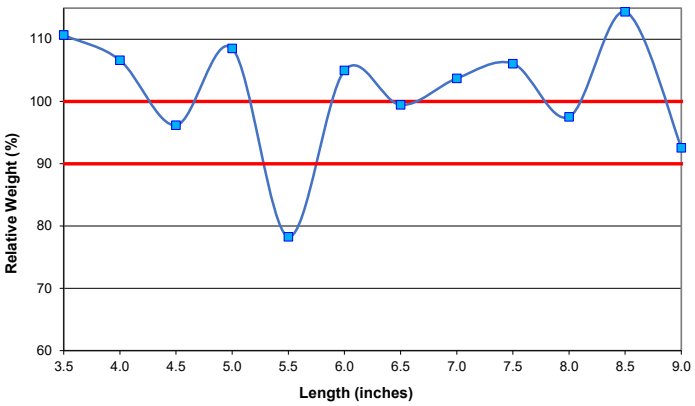

Figure 4. Bluegill relative weights

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Predator-Prey Relationship

Largemouth Bass are an opportunistic predator that will eat just about any species of fish they can catch. To keep a Largemouth Bass growing properly there needs to be several different sizes of forage available. This allows the bass to continually find the optimal size of prey as it continues to grow. When the optimal size of prey is available the fish can conserve energy, resulting in a higher growth rate. If the prey is too small a Largemouth Bass could potentially spend more energy chasing a meal than it gains by eating it. This results in skinny and slow growing fish. Managing a forage base to create a variety of sizes is key to creating a healthy and balanced Largemouth Bass population.

Lake Tishomingo—Largemouth Bass

A total of 170 Largemouth Bass ranging in size from 5.5 inches to 20.0 inches was collected (Figure 5). Approximately 35% of Largemouth Bass collected were less than 9.0 inches. This indicates reproduction and recruitment is extremely high. The majority of Largemouth Bass sampled were between 8.0 to 12.0 inches. This led to a PSD of 47 for Largemouth Bass, which is within the desired range of 40-60. Relative weights ranged from 66 to 104 (Figure 6). The majority of relative weights fell below the 90 mark. This is an indicator that most Largemouth Bass are not finding enough food.

Largemouth Bass

The Largemouth Bass population at Lake Tishomingo is extremely abundant and mostly underweight. Still, there are fish that are well distributed across all size classes. This is a good sign Largemouth Bass are still growing and replacing large individuals that age out each year. Anglers should be experiencing high catch rates with the chance of catching some nice fish in the 16.0-20.0 inch range.

The biggest concern currently is the number of Largemouth Bass present and the spikes in abundance around 8.0, 12.0, and 14.0 inches. Ideally the population would have a more flatline distribution with a few fish in each size class.

In addition to the Largemouth Bass population, other predators are competing for the forage base as well. Black Crappie is likely the most prevalent and impactful. Flathead Catfish can have a huge impact on a lake as well.

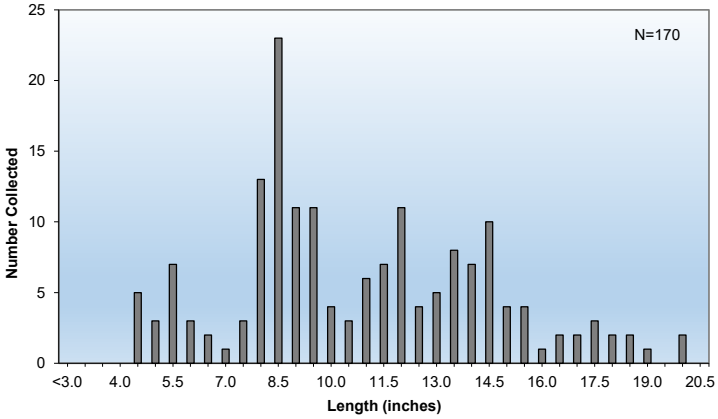

Figure 5. Length frequency distribution of Largemouth Bass

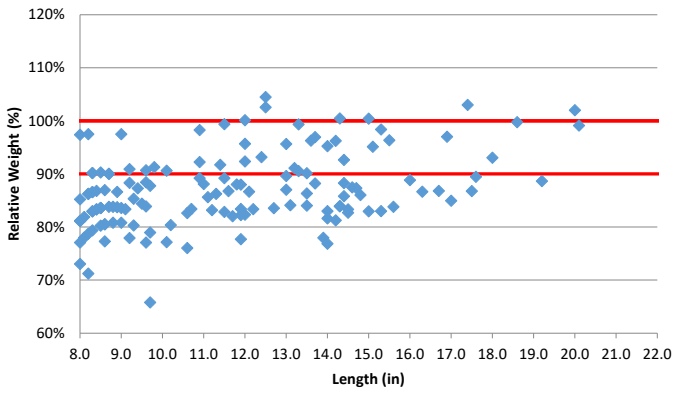

Figure 6. Largemouth Bass relative weights

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Harvest

Harvesting fish is often one of the most important and under utilized management practices in a pond or lake. Harvesting, or culling, fish is simply the act of intentionally removing fish from a specific population to decrease competition among the remaining individuals. The culture of catch and release bass fishing started in the 1970's and still has a strong hold on fisherman today. There is a misconception that taking a fish out of a system will be detrimental to the population and if released someone could catch that fish again after it has "grown up." The reality is in some situations there is too much competition and the next time that fish is caught it could be the exact same size a year later. By removing that fish, and others, it leaves more food available for the remaining individuals to continue to grow each and every year.

Ponds and lakes can both become overrun with predators or prey. Each scenario presents a different set of problems. In a predator (Largemouth Bass) dominant system prey populations are decimated and the lack of food results in slow or stunted growth. In a prey (Bluegill) dominated system spawning and recruitment success of other species can be negatively impacted due to egg predation or direct competition with young-of-year fish, along with slow growth within the population.

Fixing these issues requires targeted annual harvest. In an unbalanced system generally only one species requires a heavy amount of the harvest, while in a balanced system fish should be removed from most populations to maintain a continuous level of growth.

Example of Stunted Largemouth Bass

Lake Tishomingo currently has an overabundant Largemouth Bass population. The extremely high catch rate and the spike in abundance from 8.0-14.0 inches is evidence of this (Figure 7). A catch rate of 60-70/hr is what we typically see in a well balanced population. The catch rate during this survey was 136/hr. Even though there are still individuals in larger size class currently, if the population is not reduced there is a risk of Largemouth Bass becoming stunted in the lake.

Anglers should be encouraged to harvest Largemouth Bass and Black Crappie. Black Crappie are much more abundant than this survey would indicate due to their prevalence for deep water and the limitation of electrofishing. These two species are having the biggest impact on the forage base. One Flathead Catfish was also collected. They can have a huge impact on the lake if there is any number of them present. Unless there is a group of anglers that target them anglers should remove them when caught.

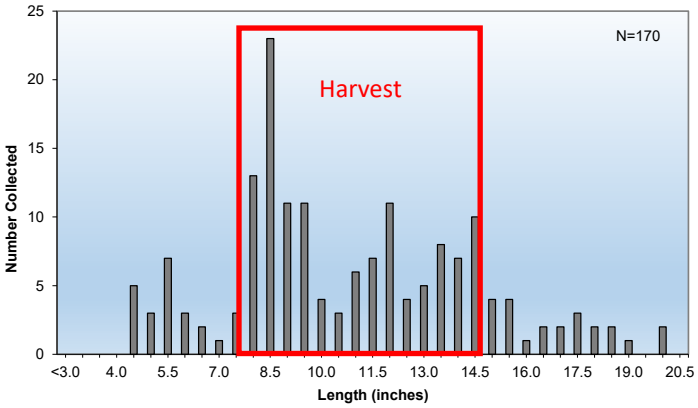

Figure 7. Largemouth Bass length frequency

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Structure and Habitat

Structure and habitat are an extremely important factor to consider no matter what body of water is being managed. Just like anything else, the amount of structure in a lake should be kept in moderation. Too much or too little can lead to predictable scenarios. When very little or no structure is available Largemouth Bass spend too much time roaming around looking for food instead of saving energy and waiting near a piece of structure for food to swim by. The other end of the spectrum allows so many places for Bluegill or other prey species to hide that Largemouth Bass can't efficiently catch their prey. In both scenarios Largemouth Bass tend to have low relative weights even with proper harvest rates in place. In most cases roughly 20% of the shoreline containing structure is sufficient. This number can vary depending on the complexity of the cover.

Adding structure to a pond can be beneficial in a variety of ways. It can be a great way to increase the survival of small juvenile fish. This provides a forage base with a wide range of sizes available for your predators. Another benefit of adding structure to a pond is that they attract fish. Strategically placing structure can give you places that you can reliably catch fish.

Fish structure can take many different forms . Aquatic vegetation, brush piles, Christmas trees, and a variety of man-made structures can all be utilized by fish. All of these different structure types have different benefits that make them good management options. Aquatic vegetation

Pickerelweed

Largemouth Bass utilizing a Mossback Root Wad Kit

grows on its own but can be hard to manage at times. Brush piles and Christmas trees are often free, but will break down over time and need to be replaced. Manufactured structure can be costly initially, but will last a lifetime. Variety is important when assessing structure in a body of water. Adding structures of varied complexity and in varied depth can help to provide habitat to a variety of fish at different stages of life.

Lake Tishomingo has a variety of habitat types currently. There are docks around most of the shoreline, some of the coves have tress, there are some artificial habitats under a few docks, and in the warmer months the lake grows various native species of vegetation.

Vegetation certainly plays the largest role in protecting the forage base. In years past vegetation has been very dense and problematic. Still, maintaining some vegetation will be important.

In addition to vegetation, hard structures should be utilized to increase habitat. This can be bound up brush piles, clusters of Christmas trees, or artificial habitat. Dock owners can put habitat under their docks. Areas away from swimmers and boaters can also be used as sanctuary areas for the small Bluegill. The major benefit of more hard structure is that it is present all year around.

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Summary/Recommendations

It appears that the fishery at Lake Tishomingo contains a diverse fish assemblage with quality Largemouth Bass, Walleye, Black Crappie, and Redear. Overall, the lake appears to be close to a balance and anglers should be able to catch some quality fish. Still, there are signs that the lake is shifting towards an overabundant predator dominated system. Largemouth Bass were the most prevalent species caught during the survey. This is a large red flag. Prey species need to be much more abundant than predators. If this continues the big adult Largemouth Bass will eventually age out and the smaller bass will not be growing well enough to replace them. The Bluegill population has signs of heavy predation. Size classes 5.0-7.5 are very scarce. This is due to predators eating most Bluegill before they reach 5.0 inches.

The most important step moving forward will be harvesting Largemouth Bass and Black Crappie. Reducing predators will help the forage base rebound and will help growth rates of the remaining individuals. In a lake of this size it takes a significant number of fish to make an impact. Angler participation will be important. Additionally, electrofishing removals can be conducted to help remove enough Largemouth Bass.

Walleye and Black Crappie have been stocked in recent years. This means harvest will be that much more important, because additional predators are being added to the lake. In general, any management practices done to improve the Largemouth Bass growth will also improve the lake for Walleye. There are currently a maximum of 13.5 walleye per acre present. Walleye will live approximately 10 years or so. If Walleye are a major goal for the lake a long term stocking strategy can be developed in order to ensure there are enough in the lake for anglers to realistically catch them occasionally, but not end up with way too many in the lake. Stockings can be planned out based on how long they will live, so we can calculate how many will be in the lake at any given time.

Black Crappie should not need to be stocked once an established population is present. Black Crappie do not always reproduce every year, but when they do reproduce they produce a tremendous amount of offspring. Currently with the lake being too dense with predators the focus should be more on harvest of Black Crappie than stocking them.

Habitat will play a large role as well. Shallow water habitat will help to protect more small Bluegill. Individual dock owners can contribute by putting artificial habitat under or near their docks. The lake grows some fine leaf pondweeds and naiads in the summer months. Some of this vegetation should be left where tolerable in order to help protect the forage base. Docks are contributing some habitat, but there is no complexity with a dock. Fish can use the dock to find shade or ambush prey, but they don't protect any fish the way brush piles, dense artificial habitat, or vegetation does.

Consideration of stocking Gizzard Shad was mentioned. This could lead to numerous issues within the fishery. The risk is much higher than the reward. The lake is already producing 20.0 inch Largemouth Bass. With proper management of the fishery Largemouth Bass can grow even larger with Bluegill as the main food source. If stocking forage species is desired Bluegill would be the most beneficial. Without significant harvest and robust habitat these stockings will have little impact.

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The following recommendations, **listed in order of importance**, will help protect and enhance the fishery in Lake Tishomingo:

1. Harvest as many Largemouth Bass under 14.0 inches as possible for the next 3 years.
    - Consider hosting multiple tournaments a year in order to remove bass
    - Consider having Aquatic Control preform Largemouth Bass removals
2. Allow vegetation growth in non-nuisance areas to provide good complex habitat
3. Add hard structured habitat to areas away from swimmers and boaters
    - Combination of brush piles, Christmas trees, and Mossback Habitat
    - Large sanctuary areas can be made in these areas
    - Dock owners can put habitat under their docks
4. Consult with Aquatic Control Biologist on Walleye and/or forage stockings
5. Black Crappie Bag Limit: 20 per day
6. Bluegill Bag Limit: 15 per day
7. Redear Bag Limit: 5 per day
8. Remove all Flathead Catfish when caught
9. Conduct a Fisheries Analysis Survey in 2026.

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Other Species Present

Black Crappie (*Pomoxis nigromaculatus)*

Black Crappie are members of the Centrarchidae(Sunfish) family. Black Crappie can be difficult to manage in a pond ecosystem and in many cases are advised against in systems less than 10 acres. This is due to the tendency of Black Crappie becoming overabundant and stunted in smaller systems. In situations where Crappie are stocked, Black Crappie are usually the more advisable species due to lower reproduction in comparison to White Crappie. Black Crappie eat a variety of organisms while developing into adulthood, and then as adults tend to only eat small fish. Black Crappie tend to sit deeper in the water column and often do not show up well in electrofishing surveys.

Black Crappie

Redear

Redear Sunfish (*Lepomis microlophus*)

Redear Sunfish are a member of the Centrarchidae(Sunfish) family. Redear Sunfish are not as fecund (reproductively successful) as Bluegill and rarely become overabundant. They can grow to large sizes and are regularly sought after by panfisherman. Redear Sunfish primarily feed on mollusks and invertebrates and have been shown in many cases to reduce levels of parasitism in fish populations.

Grass Carp (*Ctenopharyngoden Idella*)

Grass Carp are in the Cyprinidae (Minnow) family. Grass Carp are an invasive nonnative species that have been introduced to many waters across the United States and cause a variety of problems. Triploid Grass Carp are often stocked in pond and lake ecosystems to help manage aquatic plants. These Triploid Grass Carp on non-reproductive, which eliminates the risk of them becoming overpopulated. Grass Carp are rarely, if ever stocked with the goal of improving the overall fishery.

Common Carp

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Other Species Present

Longear Sunfish (*Lepomis megalotis*)
Longear Sunfish is in the Centrarchidae (Sunfish) Family. Longear Sunfish will eat invertebrates, zooplankton, and a variety of small food items. Longear Sunfish can be considered undesirable because they can compete with Bluegill for food resources.

Longear Sunfish

Warmouth

Warmouth (*Lepomis gulosus*)
Warmouth is in the Centrarchidae (Sunfish) Family. Warmouth have large mouths and feed on small fish and insects. Warmouth are considered an undesirable species because they compete with other more desirable predator species such as Largemouth Bass and White and Black Crappie.

Flathead Catfish (Pylodictis olivaris)
Flathead Catfish is in the Ictaluridae (Catfish) Family. Flathead Catfish are most commonly found in medium to large river systems, but can also be found in lakes and reservoirs. Flathead Catfish are known as voracious predators that can grow to very large sizes (over 100lbs). They commonly feed on different sunfish species, Gizzard Shad, Bullhead ssp, and other larger species of forage. Flathead Catfish should rarely be stocked in pond ecosystems due to their aggressive feeding behavior.

Flathead Catfish

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Other Species Present

Walleye (*Sander vitreus*)

Walleye is a member of the Percidae (Perch/Walleye) family. Walleye will not reproduce in smaller bodies of water, or in bodies of water that lack proper substrate. In many bodies of water, Walleye will need to be stocked in order to keep viable numbers. Walleye will compete with Largemouth Bass and other predators for food resources, which will be something that needs to be taken into account. Walleye can be great sport fish when well managed and can be great table fare.

Walleye

Green Sunfish

Green Sunfish *Lepomis Cyanellus*

Green Sunfish are a member of the Centrarchidae (Sunfish) family. Green Sunfish can be aggressive and competitive with Bluegill and other species for food and resources therefore they are generally considered an undesirable species. Green Sunfish look superficially like Bluegill. They can easily be distinguished by their larger mouths and more rounded pectoral fins.

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Fish Collection Tables

SIZE GROUP (IN)	NUMBER	PERCENTAGE	AVERAGE WEIGHT (lbs.)	TOTAL WEIGHT (lbs.)	WS	RELATIVE WEIGHT
BLUEGILL						
<3.0	39	33.91%	0.01	0.39	-	-
3.0	8	6.96%	0.02	0.16	0.02	-
3.5	16	13.91%	0.03	0.48	0.03	111
4.0	14	12.17%	0.05	0.63	0.04	107
4.5	8	6.96%	0.06	0.48	0.06	96
5.0	3	2.61%	0.10	0.29	0.09	109
5.5	2	1.74%	0.10	0.19	0.12	78
6.0	1	0.87%	0.17	0.17	0.16	105
6.5	4	3.48%	0.21	0.84	0.21	99
7.0	2	1.74%	0.28	0.56	0.27	104
7.5	2	1.74%	0.36	0.72	0.34	106
8.0	9	7.83%	0.41	3.69	0.42	98
8.5	5	4.35%	0.59	2.94	0.51	114
9.0	2	1.74%	0.58	1.15	0.62	93
TOTAL	115			12.69		
LARGEMOUTH BASS						
4.5	5	2.94%	0.03	0.17	0.04	-
5.0	3	1.76%	0.05	0.15	0.06	-
5.5	7	4.12%	0.07	0.47	0.07	-
6.0	3	1.76%	0.09	0.27	0.10	-
6.5	2	1.18%	0.12	0.24	0.13	-
7.0	1	0.59%	0.14	0.14	0.16	-
7.5	3	1.76%	0.18	0.55	0.20	-
8.0	13	7.65%	0.21	2.75	0.25	86
8.5	23	13.53%	0.25	5.68	0.30	83
9.0	11	6.47%	0.29	3.38	0.36	82
9.5	11	6.47%	0.36	3.94	0.43	84
10.0	4	2.35%	0.43	1.73	0.50	86
10.5	3	1.76%	0.49	1.48	0.59	84
11.0	6	3.53%	0.61	3.65	0.68	89
11.5	7	4.12%	0.69	4.85	0.78	88
12.0	11	6.47%	0.78	8.57	0.90	87
12.5	4	2.35%	0.99	3.95	1.02	96
13.0	5	2.94%	1.02	5.09	1.16	88
13.5	8	4.71%	1.20	9.61	1.31	92
14.0	7	4.12%	1.26	8.80	1.47	86
14.5	10	5.88%	1.42	14.21	1.64	86
15.0	4	2.35%	1.66	6.65	1.83	91
15.5	4	2.35%	2.06	8.24	2.03	101
16.0	1	0.59%	2.00	2.00	2.25	89
16.5	2	1.18%	2.16	4.31	2.48	87
17.0	2	1.18%	2.46	4.92	2.73	90
17.5	3	1.76%	2.79	8.36	3.00	93
18.0	2	1.18%	3.16	6.31	3.28	96
18.5	2	1.18%	3.45	6.89	3.58	96
19.0	1	0.59%	3.57	3.57	3.89	92
20.0	2	1.18%	4.65	9.30	4.59	101
TOTAL	170			140.23		

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GREEN SUNFISH

<3.0		0.00%		0.00
3.0	2	11.76%	0.06	0.11
3.5	3	17.65%	0.03	0.09
4.0	6	35.29%	0.04	0.25
4.5	2	11.76%	0.07	0.14
5.0	1	5.88%	0.08	0.08
5.5	2	11.76%	0.12	0.24
6.0	1	5.88%	0.15	0.15
TOTAL	17			1.06

WARMOUTH

7.0	4	50.00%	0.32	1.28
7.5	1	12.50%	0.39	0.39
8.0	1	12.50%	0.47	0.47
8.5	2	25.00%	0.64	1.28
TOTAL	8			3.42

HYBRID SUNFISH

8.0	1	100.00%	0.48	0.48
TOTAL	1			0.48

LONGEAR

<3.0		0.00%		0.00
3.0	1	11.11%	0.02	0.02
4.0	1	11.11%	0.05	0.05
4.5	2	22.22%		0.00
5.5	1	11.11%	0.15	0.15
6.0	2	22.22%	0.27	0.54
6.5	2	22.22%	0.23	0.45
TOTAL	9			1.21

REDEAR

5.0	2	8.33%	0.09	0.17
5.5	1	4.17%	0.12	0.12
6.0	4	16.67%	0.17	0.68
6.5	4	16.67%	0.20	0.80
8.0	1	4.17%	0.34	0.34
9.5	2	8.33%	0.72	1.44
10.0	3	12.50%	0.86	2.58
10.5	4	16.67%	1.01	4.04
11.0	3	12.50%	1.06	3.18
TOTAL	24			13.35

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GRASS CARP

21.0	1	16.67%		0.00
21.5	1	16.67%		0.00
21.6	1	16.67%		0.00
22.7	1	16.67%		0.00
23.5	1	16.67%		0.00
31.0	1	16.67%		0.00
TOTAL	6			0.00

FLATHEAD CATFISH

24.7	1	100.00%	6.55	6.55
TOTAL	1			6.55

WALLEYE

20.0	1	100.00%	2.74	2.74
TOTAL	1			2.74

BLACK CRAPPIE

9.0	2	50.00%	0.42	0.84
9.5	1	25.00%	0.52	0.52
11.0	1	25.00%	0.75	0.75
TOTAL	4			2.11

Species	Scientific Name	N	%N	Size Range (in.)	Total weight (lbs.)	%Wt.	N/hr.
Largemouth Bass	Micropterus salmoides	170	47.89%	4.50-20.0	140.23	63.96%	136
Bluegill	*Lepomis macrochirus*	115	32.39%	<3-9.0	12.69	5.79%	92
Redear Sunfish	Lepomis microlophus	24	6.76%	5.0-11.0	13.25	6.04%	19
Green Sunfish	Lepomis cyanellus	17	4.79%	3.0-6.0	1.06	0.48%	14
Longear Sunfish	*Lepomis megalotis*	9	2.54%	3.0-6.5	1.21	0.55%	7
Warmouth	Lepomis gulosus	8	2.25%	7.0-8.5	3.42	1.56%	6
Grass Carp	Ctenopharyngodon idella	6	1.69%	21.0-31.0	36.00	16.42%	5
Black Crappie	Pomoxis nigromaculatus	4	1.13%	9.0-11.0	2.11	0.96%	3
Flathead Catfish	Pylodictis olivaris	1	0.28%	28.5	6.55	2.99%	1
Walleye	Sander vitreus	1	0.28%	20	2.74	1.25%	1
Total		355			219.26		

N = number of individuals
%N = percent number of a species as compared to the total number of fish collected
%Wt = percent weight of a species as compared to the total weight of all fish collected
N/hr. = catch rate of species (number of fish of a species collected per hour of electrofishing effort)