FISH SURVEY REPORT

Aquatic Control Lake

Prepared For:

Aquatic Control HOA

418 W SR 258

Seymour, IN 47274

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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 Aquatic Control Lake on November 15, 2018. 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 and averages for Indiana lakes and with past surveys on Aquatic Control Lake.
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 water quality parameters.

	Surface	Bottom
Temperature (F)	43.1	43.2
Dissolved Oxygen (ppm)	12.2	11.8
pH	8.2	8.2
Alkalinity (ppm)	153.9	136.8
Total Hardness (ppm)	119.7	136.8
Total Phosphorus (ppm)	0.12	0.11
Total Nitrogen (ppm)	0.85	1.31

The results of selected physio-chemical parameters from Aquatic Control Lake are presented in Table 1. Dissolved oxygen, pH, alkalinity, and hardness levels were all in acceptable ranges. The lake had relatively uniform temperature and dissolved oxygen throughout the water column (Figure 1). The nitrogen to phosphorus ratio is 7:1 on the surface and 12:1 on the bottom. This indicates there is potential for abundant blue-green algae growth during warmer months of the year. Overall, water quality parameters indicate Aquatic Control Lake appears to be capable of supporting a healthy fish population.

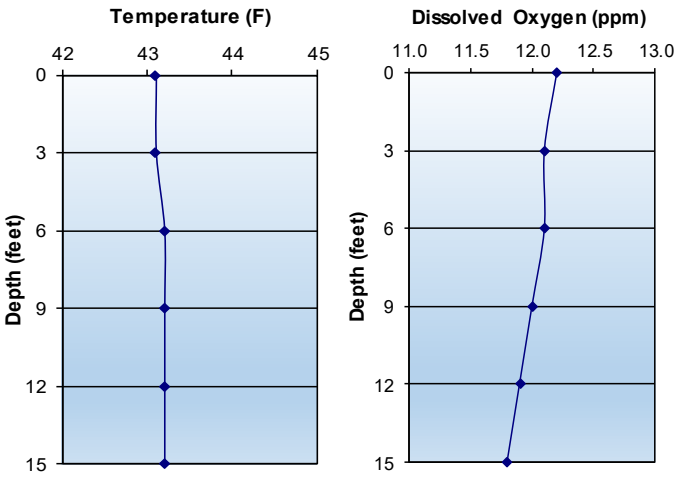

Figure 1. Temperature and Dissolved Oxygen profiles.

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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 the entirety of the shoreline and totaled one hour 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 169 fish weighing 68.73 pounds and representing twelve species was collected from Aquatic Control Lake 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.

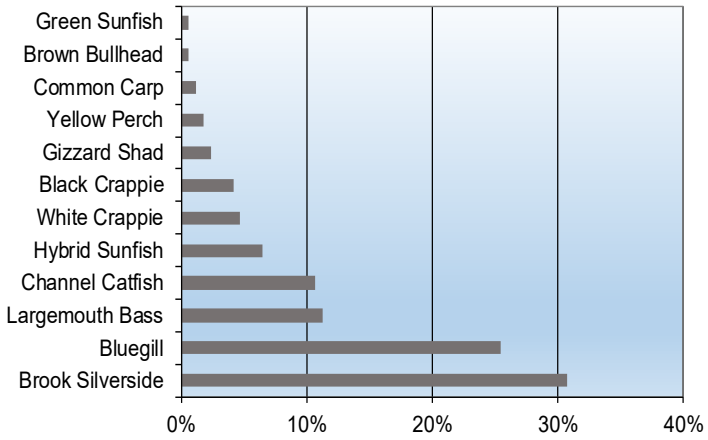

Figure 2. Relative abundance of species collected.

Largest Largemouth Bass caught during survey.

Largest fish 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

Aquatic Control Lake —Bluegill

Bluegill ranged in size from less than 3.0 to 6.5 inches (Figure 2). Approximately 23% of Bluegill collected were 3.0 inches or less, indicating moderate reproduction occurred in 2018. There was a small number of quality Bluegill collected. This led to a proportional stock density (PSD) of 14, which is below the desired range of 20-40 for Bluegill (proportion of quality fish within a population). The relative weight values of Bluegill collected at Aquatic Control Lake ranged from 66 to 85 (Figure 3). This, along with the absence of any individuals above 6.5 inches, likely indicates the Bluegill population is overabundant and is experiencing slow growth.

The predator population is likely too small to keep up with the constant reproduction of Bluegill throughout the summer. Without a sufficient number of predators Bluegill can often outcompete each other for valuable resources. Growth slows down or stops completely competition among individuals becomes too high. To remedy this issue the population needs to be reduced significantly to allow the same amount of food to be distributed across fewer individuals.

This can be accomplished by physically removing large quantities of Bluegill or by stocking more predators to keep them in check. In a lake of this size and condition stocking more predators is likely the best option.

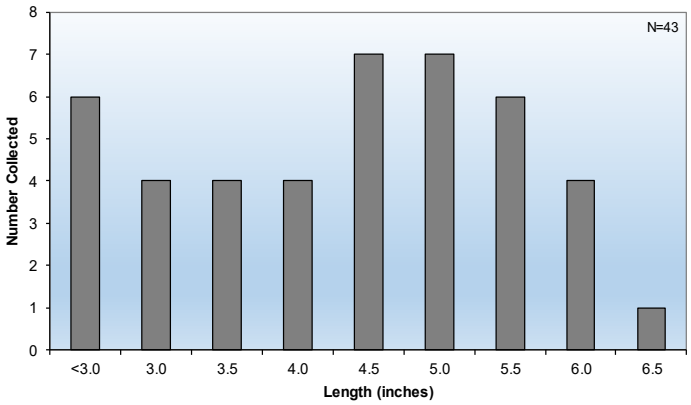

Figure 2. Length frequency distribution of Bluegill

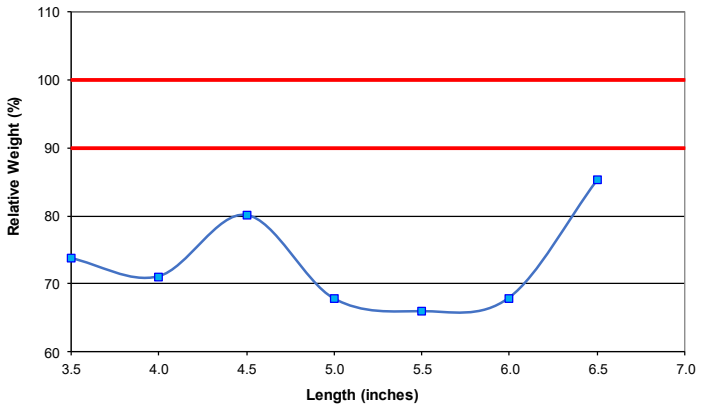

Figure 3. Bluegill relative weights

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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.

Largemouth Bass

Aquatic Control Lake —Largemouth Bass

A total of 19 Largemouth Bass ranging in size from less than 3.0 to 18.5 inches was collected (Figure 4). There were no Largemouth Bass collected between 3.0 and 11.5 inches. This indicates reproduction and recruitment are suffering. The majority of Largemouth Bass sampled were between 11.5 to 18.5 inches. This led to a PSD of 92 for Largemouth Bass, which is well above the desired range of 40-60. The PSD has continued to increase due to low recruitment. Relative weights ranged from 84 to 113 (Figure 5). The majority of relative weights fell above the 90 mark. This is an indicator that most Largemouth Bass are finding enough food to support proper growth.

It appears that the overabundant population of small Bluegill and/or Gizzard Shad are leading to good growth rates but could be interfering with Largemouth Bass spawning and recruitment. Both Bluegill and Gizzard Shad have been known to disrupt spawning success when found in excessive numbers. To aide this problem supplemental stockings of Largemouth Bass are recommended to combat low recruitment and the overabundant Bluegill population.

Although important, Bluegill are not the only prey species Largemouth Bass will take advantage of. Having a diverse forage base can offer a surplus of food at different times of year as different species spawn at different times. Brook Silverside are abundant in Aquatic Control Lake and provide an additional prey species for predators to utilize. These fish are long and narrow and spend most of the time towards the surface of the water. Predators such as small Largemouth Bass and both White Crappie and Black Crappie likely feed on this small fish throughout the year.

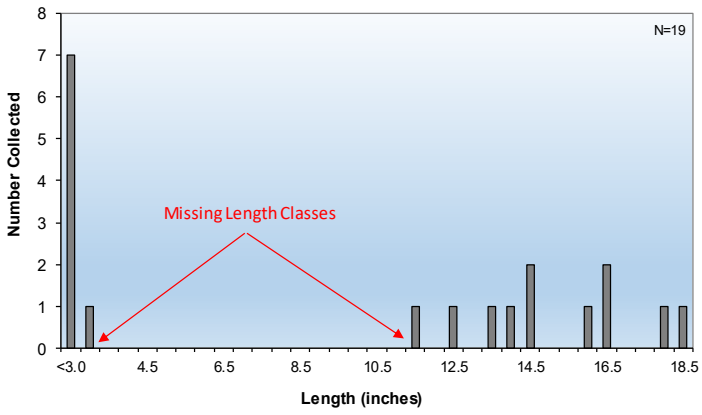

Figure 4. Length frequency distribution of Largemouth Bass

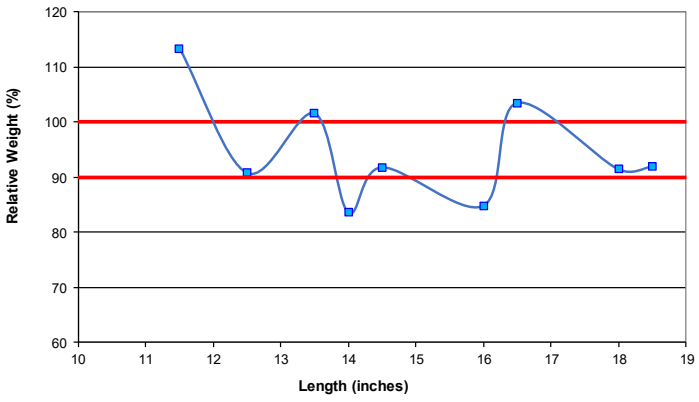

Figure 5. Largemouth Bass relative weights

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Predator-Prey Relationship (Gizzard Shad)

Gizzard Shad were also found in Aquatic Control Lake. This is another commonly known forage species that can make up a large percentage of a predators diet when available at smaller sizes, but can often come with more negatives than positives. The first issue caused by Gizzard Shad is the reduction in recruitment. Gizzard Shad are a filter feeding species that consume large amounts of phytoplankton and zooplankton. Unfortunately, this is exactly what all larval fish eat as soon as they are hatched. When Gizzard Shad are in large abundances they can compete with these larval fish for food and greatly impact recruitment of species such as Largemouth Bass.

In some lakes Gizzard Shad can reproduce very quickly and grow extremely fast. These may sound like great attributes for a forage fish, but often times Gizzard Shad grow too large for Largemouth Bass to consume. While the juvenile size classes of Gizzard Shad are beneficial as forage, they provide no benefit at adult size classes and can have negative impacts on water quality. Without a large enough predator to consume them these fish will never transfer their biomass up the food chain into a more desirable fish. Due to these issues the Gizzard Shad population should be closely monitored and the following management options should be considered.

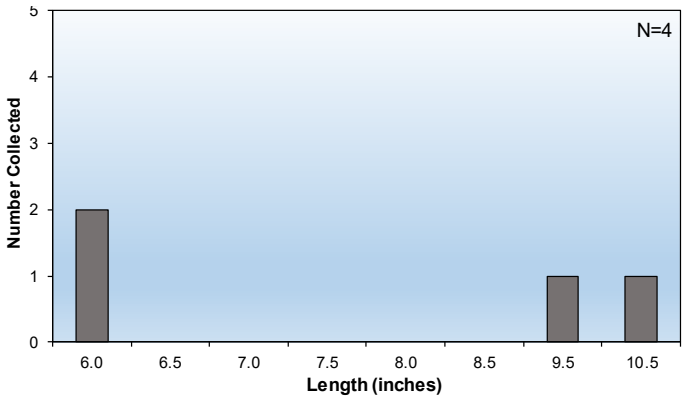

Figure 6. Length frequency distribution of Gizzard Shad

Brook Silverside

Gizzard Shad

Management Options

There are only a few options when trying to manage Gizzard Shad populations. One method is chemical eradication. This can be very costly on large lakes and results in dead fish throughout the lake. The other method commonly used to manage Gizzard Shad in impoundments is the supplemental stocking of large predators such as Hybrid Striped Bass or Muskellunge. By introducing a large apex predator some of the adult sized Gizzard Shad can then be consumed. This does not always improve the recruitment issue previously discussed, but it does provide an additional angling opportunity to the lake. If the Gizzard Shad population is large enough these stockings can be done with little to no impact on the existing Largemouth Bass fishery.

Aquatic Control Lake Gizzard Shad

Currently, the Gizzard Shad population appears to be relatively small in Aquatic Control Lake (Figure 6) and would not support an additional top predator. Predators have continued to control the Gizzard Shad population, but the individuals present in recent surveys are typically larger individuals.

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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.

Example of Stunted Largemouth Bass

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.

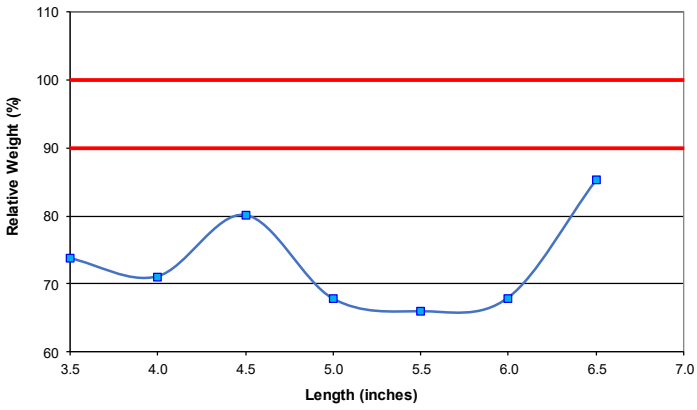

Figure 7. Bluegill relative weights

Aquatic Control Lake currently has an overabundant Bluegill population. The lack of individuals over 6.5 inches in length and the extremely low relative weights is evidence of this (Figure 7). Anglers should be encouraged to harvest Bluegill whenever possible. Over time this should result in seeing larger and healthier Bluegill. Additionally, thinning the Bluegill population will likely result in better spawning and recruitment success in Largemouth Bass. The abundant Bluegill are likely outcompeting young-of-year Largemouth Bass for food which isn't allowing them to survive through the harsh winter.

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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

American Pondweed

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.

Aquatic Control Lake is extremely lacking in cover. Even with an abundant Bluegill population and a small Largemouth Bass population the Largemouth Bass have very average relative weights. This is likely because they are spending their energy roaming around opposed to sitting tight next to a piece of structure. This issue may also be contributing to the lack of recruitment. The young-of-year bass are also spending a lot of energy evading predators which may be resulting in winter mortality. Allowing some aquatic vegetation to grow will be the most efficient form of structure for this lake, but adding brush piles, Christmas trees or man-made structures in shallow areas will certainly help.

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Supplemental Forage Stocking

Stocking supplemental forage is a great pond management tool that can be used to achieve a couple different goals. If a prey base such as the Bluegill population is being heavily predated on temporary forage stockings can be used to take pressure off the population while other management practices are put in place. Once the Bluegill population rebounds stockings can cease. A more common goal with supplemental stocking is to bolster and diversify a forage base that is already in place to maximize the amount of food available to Largemouth Bass or other predators. The most common species used are Fathead Minnows and Golden Shiners. Fathead Minnows are great for initial stockings in a pond due to their small size, while the larger Golden Shiners are better for an already established pond. Both of these species rarely produce a self sustaining population and will need to be stocked annually to have the greatest impact on the fishery.

Golden Shiner

Supplemental Fish Food

Using a fish feeder with a high protein feed is an excellent way to push the limits of a pond in regards to fish production. By adding a huge additional food source to the pond the carrying capacity is being raised. Often the immediate effect of this management tool is growing really large Bluegill. While having large Bluegill is great there are additional benefits that work their way up the food chain. Larger Bluegill produce more and larger eggs while spawning. This is important because larger eggs have a much higher survival rate. The more offspring the Bluegill are producing each time they spawn results in a much larger forage base for Largemouth Bass to take advantage of. Even when managing for a balanced fishery using a fish feeder is always a great idea, but when looking for trophy Largemouth Bass or trophy Bluegill it is a must.

Texas Hunter fish feeder

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Summary/Recommendations

It appears that the fishery at Aquatic Control Lake contains a diverse fish assemblage with quality Largemouth Bass, White Crappie, Black Crappie, and Channel Catfish. The Bluegill population appears to be dominated by small, slow growing individuals. Largemouth Bass reproduction and recruitment continue to suffer. This is likely due to the overabundant population of small Bluegill or Gizzard Shad. Protecting Largemouth Bass and harvesting Bluegill should help shift the population towards a balanced state. The Gizzard Shad population has remained consistent, but should continue to be monitored to ensure that the population doesn't increase dramatically and negatively affect the fishery. Stocking of Hybrid Striped Bass could effectively alter the size structure and number of individuals in the Gizzard Shad population, potentially making more Gizzard Shad available for other predators. Hybrid Striped Bass have also been shown to predate on other forage fish which could reduce competition and improve growth in these forage species. Undesirable species including Common Carp and Brown Bullhead should continue to be removed when caught. These species compete directly with desirable species for food resources, and have the potential to negatively impact Largemouth Bass, and Bluegill spawning areas. The lake also continues to lack structure. Installing artificial structure will provide excellent cover for young Largemouth Bass and could increase the number of juveniles that survive to adulthood. Individual lot owners can improve fishing near their docks by adding structure under or near their dock. Furthermore, adding a fish feeder to their dock will also attract fish to the area. Both of these practices will improve fishing in the immediate area and improve the fishery as a whole.

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

1. Stock 800 4.0 to 6.0 inch Largemouth Bass to supplement poor reproduction and recruitment.
2. Protect Largemouth Bass by restricting harvest for the next two years.
3. Stock 100 5-7" Hybrid Striped Bass for the next two years to help reduce overabundant forage species.
4. No harvest restrictions are necessary on Bluegill harvest at this time, and harvest is encouraged. Harvest of this species may reduce competition, allowing more Bluegill to reach larger sizes.
5. Install additional structure in the lake to provide cover for young fish. This may consist of fallen trees, brush or rock piles, or man-made reefs. If interested in artificial structure, fish feeders, or feed please contact Aquatic Control.
6. Conduct a Standard Fish Survey in 2021 in order to monitor the effects of the above recommendations and assess needs for further management activities.
7. Continue to remove all Common Carp and Brown Bullhead when caught. Currently, these species pose no serious threat to the fishery, but harvest will help aide in maintaining populations.
8. No restrictions are needed for harvest of crappie. Crappie are prolific spawners and can maintain their own population without harvest restrictions.

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Other Species Present

Channel Catfish (*Ictalurus punctatus)*

Channel Catfish are members of the Ictaluridae family and were found to have a relative abundance of 0.00% and made up 0.00% of the catch weight. Channel Catfish can be problematic to a fishery if overabundant, but in small or moderate abundances, rarely cause problems. They are often desirable sportfish and can be good table fare. Channel Catfish are typically not represented very well in electrofishing surveys, and can often be more abundant than the data shows. Channel Catfish often do not have a high level of natural reproduction in small ponds and some lakes, and therefore need to be stocked if desired in many cases.

Channel Catfish

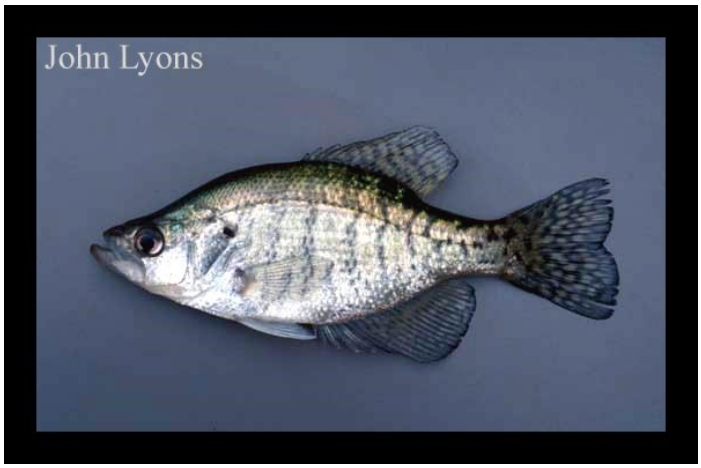
Hybrid Sunfish

Hybrid Sunfish (Lepomis spp. X Lepomis ssp.)

Hybrid sunfish are members of the Centrarchidae (Sunfish) family and were found with a relative abundance of 0.00% and made up 0.00% of the catch weight. Hybrid sunfish are often a cross between Green Sunfish and Bluegill when stocked from a hatchery. Though this is the most common cross, many different species of sunfish can hybridize if both are present. Hybrid sunfish can be desirable because they can grow to very large sizes quickly, but over time they can cause problems because through generations of reproducing some of the offspring revert back to fish resembling Green Sunfish. Any hybrid sunfish caught should be removed.

White Crappie (Pomoxis annularis)

White Crappie are members of the Centrarchidae(Sunfish) family and were found to have a relative abundance of 0.00% and made up 0.00% of the catch weight. White Crappie are difficult to manage in a pond setting and are often advised against in systems that are less than 10 acres. This is due to Crappie ssp. tendency to become overabundant and stunted in smaller systems. In situations where Crappie are to be stocked into a smaller body of water, Black Crappie would be the preferred species because they tend to have a lower rate of reproduction. White Crappie eat a variety of organisms while developing into adulthood, and then as adults tend to only eat small fish. Crappie ssp. tend to sit deeper in the water column and often do not show up well in electrofishing surveys.



White Crappie

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Other Species Present

Black Crappie (*Pomoxis nigromaculatus)*

Black Crappie are members of the Centrarchidae(Sunfish) family. Black Crappie had a relative abundance of 0.00% and made up 0.00% of the catch weight. 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 Crappie ssp. 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. Crappie ssp. tend to sit deeper in the water column and often do not show up well in electrofishing surveys.

Black Crappie

Yellow Perch

Yellow Perch (Perca Flavescens)

Yellow Perch are in the Percidae (Perch/Walleye) Family and have a relative abundance of 0.00% and made up 0.00% of the catch weight. Yellow Perch consume a variety of organisms, including invertebrates, insects, and small fish. Yellow Perch are often desirable as a sportfish and are good table fare. Yellow Perch will not often have strong reproduction in pond settings and can compete with species like Bluegill and Largemouth Bass. Yellow Perch also tend to stay deeper in the water column and therefore do not show up well on electrofishing surveys.

Common Carp (*Cyprinus carpio*)

Common Carp is in the Cyprinidae (Minnow) Family and had a relative abundance of 0.00% and made up 0.00% of the catch weight. Common Carp are a non-native, invasive species that can cause several problems. They consume a lot of food resources and tend to uproot aquatic vegetation, reducing water quality. Common Carp are also known to have detrimental effects on reproduction of many fish species by damaging spawning grounds. Common Carp should be removed when caught in order to reduce their impact on the fishery.

Common Carp

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Other Species Present

Brown Bullhead (*Ameiurus nebulosus*)

Brown Bullhead is in the Ictaluridae (Catfish) Family and had a relative abundance of 0.00% and made up 0.00% of the catch weight. Brown Bullhead will eat a variety of food items such as macroinvertebrates, small fish, detritus, etc. Brown Bullhead are not generally considered a desirable fish species. They can become very abundant and compete with more desirable species. They do not grow very large and are not often used as table fare.

Brown Bullhead

Green Sunfish

Green Sunfish *Lepomis Cyanellus*

Green Sunfish are a member of the Centrarchidae (Sunfish) family and were found to have a relative abundance of 0.00% and made up 0.00% of the catch weight. 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.)	RELATIVE WEIGHT
BROOK SILVERSIDE					
3.5	10	19.23%	0.01	0.10	
4.0	42	80.77%	0.01	0.42	
TOTAL	52			0.52	
BLUEGILL					
<3.0	6	13.95%	0.01	0.06	-
3.0	4	9.30%	0.02	0.08	123
3.5	4	9.30%	0.02	0.08	74
4.0	4	9.30%	0.03	0.12	71
4.5	7	16.28%	0.05	0.35	80
5.0	7	16.28%	0.06	0.42	68
5.5	6	13.95%	0.08	0.48	66
6.0	4	9.30%	0.11	0.44	68
6.5	1	2.33%	0.18	0.18	85
TOTAL	43			2.21	
LARGEMOUTH BASS					
<3.0	7	36.84%	0.01	0.07	-
3.0	1	5.26%	0.01	0.01	-
11.5	1	5.26%	0.89	0.89	113
12.5	1	5.26%	0.93	0.93	91
13.5	1	5.26%	1.33	1.33	102
14.0	1	5.26%	1.23	1.23	84
14.5	2	10.53%	1.51	3.02	92
16.0	1	5.26%	1.91	1.91	85
16.5	2	10.53%	2.57	5.14	104
18.0	1	5.26%	3.00	3.00	92
18.5	1	5.26%	3.29	3.29	92
TOTAL	19			20.82	

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CHANNEL CATFISH

15.0	1	5.56%	0.89	0.89
15.5	3	16.67%	1.01	3.03
16.0	2	11.11%	1.14	2.28
16.5	1	5.56%	1.26	1.26
17.0	3	16.67%	1.20	3.60
17.5	4	22.22%	1.55	6.20
19.5	1	5.56%	2.46	2.46
20.0	2	11.11%	2.39	4.78
20.5	1	5.56%	2.76	2.76
TOTAL	18			27.26

HYBRID SUNFISH

3.5	1	9.09%	0.03	0.03
4.0	1	9.09%	0.03	0.03
4.5	2	18.18%	0.05	0.10
5.0	5	45.45%	0.07	0.35
5.5	1	9.09%	0.08	0.08
6.0	1	9.09%	0.14	0.14
TOTAL	11			0.73

WHITE CRAPPIE

4.0	1	12.50%	0.02	0.02
6.5	1	12.50%	0.10	0.10
7.0	1	12.50%	0.12	0.12
7.5	1	12.50%	0.13	0.13
9.0	2	25.00%	0.30	0.60
9.5	1	12.50%	0.38	0.38
14.5	1	12.50%	1.10	1.10
TOTAL	8			2.45

BLACK CRAPPIE

5.5	1	14.29%	0.08	0.08
6.0	5	71.43%	0.10	0.50
10.0	1	14.29%	0.48	0.48
TOTAL	7			1.06

GIZZARD SHAD

6.0	2	50.00%	0.08	0.16
9.5	1	25.00%	0.29	0.29
10.5	1	25.00%	0.36	0.36
TOTAL	4			0.81

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COMMON CARP

24.0	1	50.00%	5.76	5.76
25.0	1	50.00%	6.31	6.31
TOTAL	2			12.07

BROWN BULLHEAD

10.5	1	100.00%	0.59	0.59
TOTAL	1			0.59

GREEN SUNFISH

4.0	1	100.00%	0.04	0.04
TOTAL	1			0.04

Species	Scientific Name	N	%N	Size Range (in.)	Total weight (lbs.)	%Wt.	PSD	N/hr.
Brook Silverside	*Labidesthes sicculus*	52	30.77%	3.5-4.0	0.52	0.76%		52
Bluegill	*Lepomis macrochirus*	43	25.44%	<3.0-6.5	2.21	3.22%	14	43
Largemouth Bass	*Micropterus salmoides*	19	11.24%	<3.0-18.5	20.82	30.29%	91	19
Channel Catfish	*Ictalurus punctatus*	18	10.65%	15.0-20.5	27.26	39.66%		18
Hybrid Sunfish	*Lepomis spp. X Lepimis spp.*	11	6.51%	3.5-6.0	0.73	1.06%		11
White Crappie	*Pomoxis annularis*	8	4.73%	4.0-14.5	2.45	3.56%		8
Black Crappie	*Pomoxis nigromaculatus*	7	4.14%	5.5-10.0	1.06	1.54%		7
Gizzard Shad	*Dorosoma cepedianum*	4	2.37%	6.0-10.5	0.81	1.18%		4
Yellow Perch	*Perca flavescens*	3	1.78%	5.5-6.5	0.17	0.25%		3
Common Carp	*Cyprinus carpio*	2	1.18%	24.0-25.0	12.07	17.56%		2
Brown Bullhead	*Ameiurus nebulosus*	1	0.59%	10.5	0.59	0.86%		1
Green Sunfish	*Lepomis cyanellus*	1	0.59%	4.0	0.04	0.06%		1
Total		169			68.73			

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)