

LAKE RAMSEY

Survey Results and Management Recommendations

10-2015

**LOCHOW RANCH
POND AND LAKE MANAGEMENT**
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Introduction

We are pleased to present you with preliminary recommendations based upon our fisheries and vegetation survey of your property and our discussions. Our recommendations are based on the survey results while incorporating the goals that have discussed for this property. We are recommending management strategies that will help us best achieve these goals.

As stated in previous conversations, Lochow Ranch Pond and Lake Management is providing general information needed to begin managing your water resources. Please remember that these are general recommendations and the slot sizes, stocking rates, harvest suggestions, feeding rates, and other parameters will change year by year. If you decide to manage the fishery in-house, we will be happy to provide any of the products, services, or advice necessary to make your management successful.

In addition to our per-trip work, our company offers a complete yearly lake-management program that includes, but is not limited to, an electro-fishing survey, annual reports, and monthly updates while covering all labor and mileage costs associated with vegetation control and other lake-management services.

General Lake Observations

This lake was measured using satellite maps at approximately 360 acres at full water level. The new side is approximately 150 acres, the old side is close to 200 acres, and the small area measures about 10 acres. At the time of the survey, the lake was approximately 4 inches low. The average water depth was approximately 5.5 feet on the old side and 12 to 13 feet on the new side and the maximum depth was approximately 21 feet. The visible structure is small amounts of fallen timber and dock pilings. The primary drainage structure is an overflow structure with no bottom drain. The water visibility was 12 inches with a muddy color. Overall use for this lake is relatively high for an HOA lake.

Survey Results

Electro-fishing surveys are one of the most effective lake-management tools available today. This type of sampling is an accurate way to determine the species and amounts of fish in a lake. With the information gathered during our electro-fishing survey, we calculate the relative abundance and condition of all species. We also determine the overall health of the largemouth bass fishery by taking length and weight measurements on a sample of fish. While this sampling method does not measure and analyze every fish in your pond or lake, it is the best way to get an accurate snapshot of how the fishery as a whole is doing.

Largemouth Bass

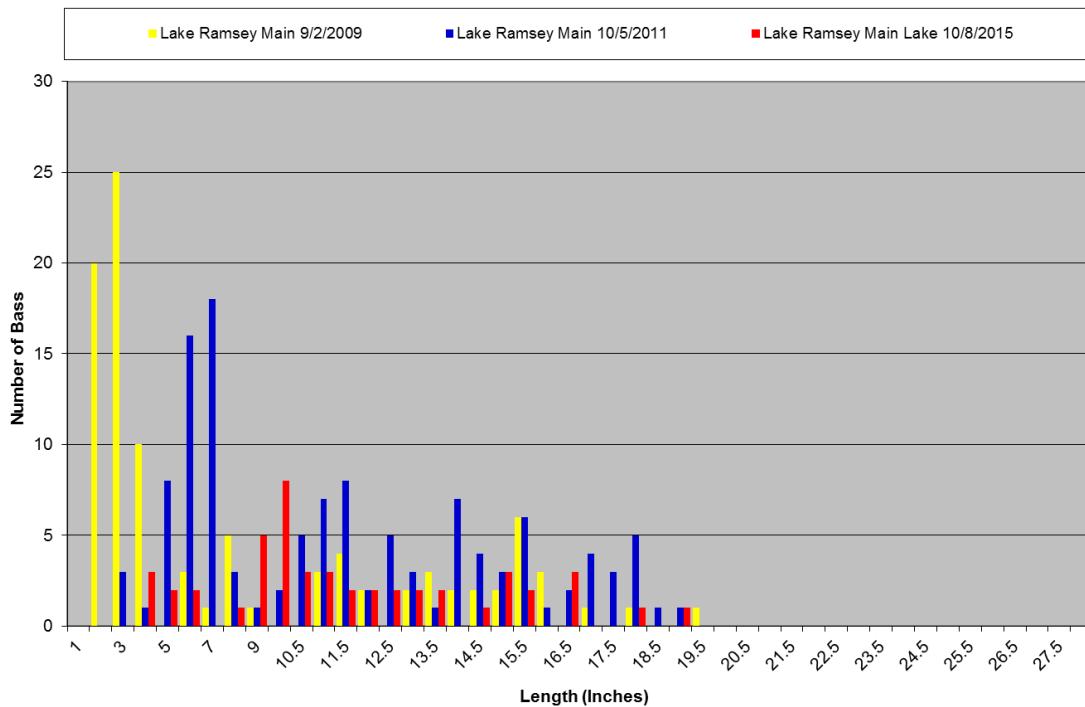
Because largemouth bass are the number one freshwater sport fish in the southern U.S., most of our management is geared toward quickly growing these bass to their greatest potential. When managed properly, bass in lakes managed by Lochow Ranch Pond and Lake Management grow, on average, 2 pounds per year. We have seen some bass grow up to 4 pounds in a single year. Bass have incredible appetites and require 10 pounds of live forage (fish) to grow 1 pound. For this reason, adequate forage diversity is important to maintain a healthy bass population. Not only are the number of forage species and number of individual fish important, but the size of the available forage is also important.

The first graph shows the number of bass sampled in each inch class. This information is important because it allows us to determine whether the bass population is well balanced or stunted at certain sizes.

The second graph shows the relative weight of the sampled bass. These data are found by comparing the weight of the sampled bass to the weight of a healthy, well-fed bass of the same length. These data are significant because they show the relative health of the sampled fish as a percentage. With this information, we can determine which sizes of bass lack forage or are overpopulated. These two graphs are shown for all lakes that were surveyed and in which bass were weighed and measured.

Length Distribution

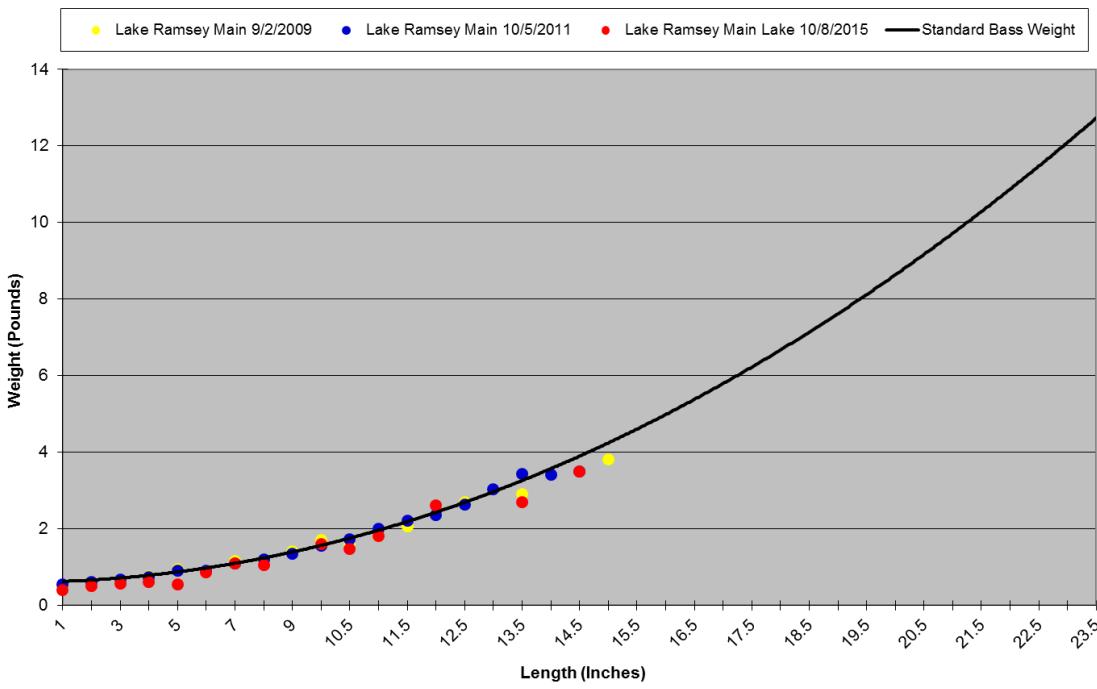
Bass Distribution by Length



Relative Weight

Bass Relative Weight

Relative weight (Wr) is a comparison of sampled bass weights to state average bass weights.



Forage

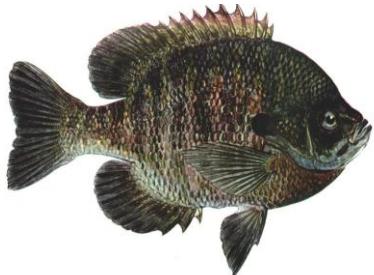
Keep in mind that when managing a pond or lake for largemouth bass, we are actually managing for the forage fish the bass will eat to provide the greatest amount of forage possible with the greatest range of sizes. Bass should eat the largest meal they can and will expend less energy when chasing one large forage fish than when chasing many small forage fish. The energy saved is converted directly to growth. The following charts show the types of forage fish found and comparative sizes.

Forage Chart

FORAGE SPECIES RELATIVE ABUNDANCE					
<i>Species</i>	<i>Fry</i>	<i>Small</i>	<i>Medium</i>	<i>Large</i>	<i>Jumbo</i>
Coppernose Bluegill			Occasional	Occasional	
Native Bluegill			Occasional	Occasional	
Redear Sunfish				Occasional	
Gizzard Shad			Common	Common	Common

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Coppernose Bluegill

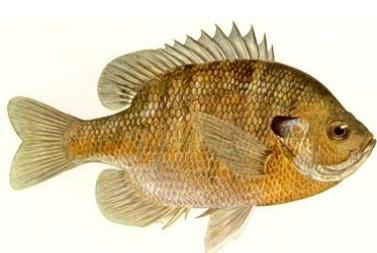


Coppernose bluegills are the backbone of the largemouth bass fishery. They are important as bass forage because they reproduce several times during the warm months; this provides a constant supply of different-size forage year-round for the bass.

Coppernose bluegills frequent ponds and lakes with docks, logs, and weeds that provide shelter for these fish. Large bluegills stay in deep water during the day and move to near-shore areas in mornings and evenings to feed. Bluegills feed on natural foods, especially small crustaceans, insects, and plant material. On high-protein fish feed they can grow to 2 pounds in just two years. They are spunky, spectacular fighters when hooked. Their flesh is delicious, making them one of the most sought-after sunfish. They are originally from the southeastern U.S., very close to the original range of the Florida largemouth bass.

While the coppernose and native bluegills are similar, coppernose are known for growing much larger than both the native and hybrid bluegills and also for bearing more offspring in a spawning season.

Native Bluegill



Bluegills are the backbone of the largemouth bass fishery. They are very important as bass forage because they reproduce several times during the warm months. This provides a constant supply of different size forage year-round for the bass.

Native bluegills frequent ponds and lakes with docks, logs, and weeds that provide shelter for these fish. Large bluegills stay in deep water during the day and move to near-shore areas in mornings and evenings to feed. Bluegills feed on many natural foods, especially

small crustaceans, insects, and plant material. On high-protein fish feed, they can grow to 2 pounds in only a few years. They are spunky, spectacular fighters when hooked. Their flesh is delicious, making them one of the most sought-after sunfish.

Redear Sunfish



Redear sunfish spawning habits are similar to those of the bluegill although this species does not have as long a prolonged spawning period. The redear prefer feeding on aquatic snails; hence, the name "shellcracker" is often associated with this species. Redear are stocked not only as sport fish, but also to solve worm infestations commonly found in sport fish. Redear eat the snails that are a host to

a part of the life cycle of worms found in fish flesh and in doing so promote a healthy fish population.

Gizzard Shad



Gizzard shad are closely related to threadfin shad, but grow much larger. Adult gizzard shad can grow to more than 14 inches and can weigh more than 2 pounds. Unless the existing bass population averages more than 5 pounds, we do not recommend gizzard shad because they can harm the bluegill and threadfin populations by competing for zooplankton (small microscopic animals such as protozoan).

Because gizzard shad grow larger than other species, they have an advantage when feeding. Often when present in lakes that do not have adequate bass populations, gizzard shad will overpopulate and become the dominate species.

Other Species

When managing for largemouth bass, the bass and forage fish are not the only important items. Other species can have a positive or negative impact depending on types of certain fish, abundance of certain fish and combination of certain fish. In most cases, occasional occurrences of other species in lakes do not effect the management greatly. Only when certain species are extremely abundant are drastic management actions required to ensure the success of the bass fishery.

Other Species Chart

OTHER SPECIES RELATIVE ABUNDANCE					
Species	Fry	Small	Medium	Large	Jumbo
Crappie			Occasional	Occasional	Occasional
Channel Cat			Occasional	Occasional	Occasional
Grass Carp			Abundant	Abundant	Abundant

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Crappie



We do not recommend crappie in lakes smaller than 25 acres because crappie often spawn earlier than largemouth bass, which gives them a competitive advantage over small bass. With an early start, numerous crappie will survive and easily overpopulate and then become stunted when they are overpopulated without enough food to support the population. In larger lakes and in small lakes with intensive management; however, crappie can be both fun to catch and delicious to eat. The black crappie and white crappie are easily

confused with one another but can often be distinguished by the distinct vertical bars on white crappie. These bars are plainly visible on the side of the fish. The best way to differentiate the two species is by counting the dorsal fin spines. White crappies have a maximum of six hard spines while the black crappie has seven or more.

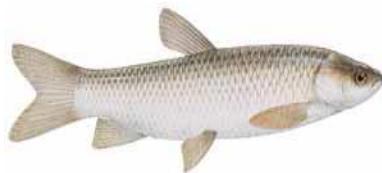
Channel Catfish



Channel catfish are one of the most sought-after fish in the southern U.S., behind only bass and crappie. Channel cats are easy to catch on trotlines as well as on rod and reel. They eat a wide variety of baits including liver, worms, shrimp, chicken, cheese, and stink bait. They have an appetizing flavor when cooked.

Catfish can compete heavily with other sport fish if not managed properly. If allowed to spawn and take over, the entire predator fish population suffers and the result is stunted fish. Excessive numbers of catfish can cause nutrient recycling because of the constant agitation of sediments by the fish.

Grass Carp



In Louisiana, grass carp must be certified as triploid — sterile and unable to reproduce. Their feeding habits make them perfect for vegetation control. Reportedly they can consume up to 300 percent of their body weight per day in plant material. While it can take 1 to 2 years to notice their benefits, in many situations grass carp can be a long-term approach to controlling aquatic weeds and can help reduce the use of herbicide.

Fisheries Discussion

Our 2015 survey shows the bass to be in noticeably worse condition when compared to previous surveys. The bass are 15% below target weight and show a decrease in density. Crappie were present in low numbers and have also seen a reduction in average weight. Channel catfish numbers seem to be close to appropriate for a lake this size at this time. Catfish were found to be at normal weights due to property owners feeding floating fish feed. Catfish can be harvested when caught to ensure they remain in proper balance. The forage species (bluegill, redear, gizzard shad) were present in poor numbers. Areas of the lake with docks and brush piles contained the most fish while shoreline with little to no cover such as the north shoreline had no fish.

During our survey we harvested approximately 35 grass carp but additional harvest is much needed. We found good success in electro-fishing and gill netting carp. Our survey did turn up 2 different size classes of carp. Further inspection found these two size classes to be from different stockings. The first group of carp stocked has grown to large adult fish while the second group is stunted due to the lack of food.

Over the years the grass carp population has removed all forms of vegetation from the lake. This has led to less habitat for fish and turbid water. Such a fast reduction in habitat decreased the majority of hiding place for forage fish leaving them more accessible to predation. Predators such as bass and crappie quickly consumed as many baitfish as possible leading to the predator/prey relationship becoming unbalanced. With the majority of baitfish being consumed and more turbidity in the water forage fish reproduction has been greatly reduced. This has led to no growth in the bass population.

We recommend removing approximately 2,000 grass carp from the lake. An exact number should be determined by frequent surveys and monitoring. We can effectively remove grass carp with frequent electro-fishing surveys and gill nets. We would like to complete the removal process within one year. If not completed in a timely manner the fishery will continue to spiral downhill. We are very confident that both vegetation and the fishery will improve once the removal processes has been completed. A new stocking of grass carp will be needed to control new vegetation growth once submerged vegetation regrowth is seen.

We feel the baitfish and bass populations should be restocked once grass carp numbers are under control. This will be a substantial stocking as the current population is in need of much improvement.

We recommend adding more brush piles (large piles in water 3-8 feet deep) to increase fish habitat. We prefer brush as studies have proved it provides better habitat for juvenile fish. Brush piles will also increase angler catch rates and provide cover for bass during the spawn. If brush is not available pvc can be used but it must be packed tightly together in order to simulate brush. We do not recommend adding any forms of cover that are hollow. Hollow structures promote catfish spawning and will lead and overabundance of catfish.

Management Recommendations

Our recommendations are summarized and listed in priority of importance in the following table. Management activities marked with an asterisk are of utmost importance and should be addressed before any other management occurs. A description of all recommended management activities appears below the table.

Lake	Harvest	Stock	Other Recommendations
Lake Ramsey	Excess Grass Carp (2000)	Coppernose Bluegill	Add Brush Piles
	Crappie (when caught)	Redear Sunfish	Monitor Water Turbidity
	Catfish (when caught)	Threadfin Shad	

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Harvest Catfish

Catfish compete heavily for food with other sport fish. If allowed to spawn and take over, the entire predator fish population suffers and the result is stunted fish. Catfish fisheries are best managed as “put-and-take,” which means the original stock are left alone until their number has been reduced to a point at which it is difficult to catch them.

Harvest Crappie

Crappie often spawn earlier than largemouth bass, giving crappie a competitive advantage over small bass and allowing the fry crappie to eat the forage that bass require to grow to fingerling size. With the early start, numerous crappie often survive to adulthood and easily overpopulate. Crappie will become stunted when they are overpopulated and forage is inadequate for the population or when not enough predators are present to thin the crappie population. This lake is large enough to sustain a quality crappie population. With continued harvest the crappie will only continue to grow.

Add Brush Piles

A sound and affordable management project would be to cut brush and trees, weigh them down with concrete and sink them so that they will be 1 or 2 feet under water. If only branches are to be used, they can be set in buckets of concrete. This structure will provide a dense habitat necessary for younger fish. This was discussed at length during the visit and many different configurations would be successful (Christmas trees, brush, branches, above water, below buoys, etc)

Costs

Lochow Ranch Pond and Lake Management offers a yearly management program that takes away all inconvenience for the landowner. Once a retainer client, we will come to the property once a month on average to service fish feeders, stock fish, clear ponds, fertilize and complete any other lake management chores including electro-fishing surveys and vegetation control. Our base per month fee covers all labor and mileage charges with only materials being an additional cost. We can also provide services on a per-trip basis, which could be more economical if only a few visits per year are needed. Our current per-trip service rates and product prices mentioned are shown in the following tables.

SERVICE TYPE	RATE
Vegetation control	200.00 hour
Electro fishing	400.00 hour
Consulting	200.00 hour
Other management	200.00 hour
Mileage (one way)	4.00 per mile

Conclusion

Thank you for choosing Lochow Ranch Pond and Lake Management. We strive to provide the best service and advice to manage your fishery to its full potential. We hope that you will follow our plan and run the course with our long-term trophy-growing and weed management strategies. If so, you will have a quality, well-balanced, aesthetically pleasing fishery that continues to add value to your property.