

April 28, 2021

Mr. Lance Martin
lanceallymartin@gmail.com

Dear Mr. Martin:

Enclosed, please find your copy of the Management Plan we recently completed for Woodland Lake.

Woodland Lake is presently functioning as a dynamic, balanced fishery. As such, our management recommendations center primarily on reducing the total number of adult predators (largemouth bass and crappie), introducing supplemental forage (threadfin shad), and improving the conditions for the production of forage through enhancing the lake's fertility level and supplemental feeding:

- Maintain the current fertilization regime.
- Initiate a supplemental feeding regime.
- Largemouth bass (14" and less) should be harvested, up to a total of ~2,260 pounds per year.
- Stock 4 loads of threadfin shad in Spring 2021.
- Stock 2,500 hybrid striped bass in Spring 2021.
- Conduct an electrofishing balance assessment (Annual Evaluation) roughly one year from this date.

Mr. Martin, we appreciate you having us back to evaluate Woodland Lake. The lake appeared to be in moderate condition at the time of our visit. The size distribution of the bass population continues to progress with the most abundant size class in this years evaluation being 14 inches. The continuation of harvesting bass 14 inches and less will be necessary to insure the predator to prey ratio remains balanced. The crappie population appeared to be in excellent condition with an abundance of crappie in the 10 to 15 inch size class. All crappie will need to be harvested. During the evaluation we noticed an abundance of bass and crappie less than 10 inches. I have recommended stocking hybrid striped bass, which WILL NOT spawn in an effort to control some of the smaller bass and crappie fingerlings. The hybrid striped bass also introduce an excellent angling opportunity to Woodland Lake. As far as the forage population, there were no threadfin shad observed during the evaluation. A combination of multiple predators and a harsh winter have absolutely depleted the threadfin shad population in Woodland Lake. Establishing a healthy shad population that consists of both threadfin and gizzard shad is important in creating a forage base that is abundant enough to supporting a large lake with multiple predator species. The gizzard shad population appeared to be plentiful, but the threadfin shad population will need to be supplemented. The bluegill population was doing well with majority of the bluegill being around the 4 inch size class. Lastly, I would like to remind you the importance of supplemental feeding from automatic fish feeders. A forage base that has access to a consistent supply of food will be healthier and able to have greater success at reproduction. We are always available to discuss these recommendations or answer any other questions you might have.

Good fishing,

Cody Fuller
731-571-7547

Management Plan
For
Woodland Lake

April 12, 2021





Introduction

As an integral part of the ongoing management program for Woodland Lake, Southeastern Pond Management conducted a comprehensive evaluation of the 118 acre impoundment on April 12, 2021. A representative sample of the fish community was collected by electrofishing to accurately assess the present state of balance. In addition, a water chemistry test was conducted to determine total alkalinity. The degree of aquatic weed infestation was also recorded. Results of these assessments provide the basis for this management plan.

The goal of this management plan is to create and maintain a balanced fish community in Woodland Lake. The following evaluation report and management plan details and explains our recommendations with the following goals in mind:

- ◆ Create conditions favorable for the consistent production of “quality size” and “trophy size” largemouth bass (Table 1).
- ◆ Create conditions favorable for the consistent production of “quality size” bluegill (Table 1).
- ◆ Generally maintain a high level of water quality as well as an aesthetically pleasing environment for aquatic recreation.

Table 1.

	LMB	Bluegill
“Quality Size”	16-20”	7-10”
“Trophy Size”	20”+	10”+

It is important to note that quality fishing will not be accomplished “overnight”. As you read through this plan, bear in mind that the specific activities we have recommended are not one-time inputs, but rather a collection of ongoing management activities that will establish and maintain long-term quality fishing. Proper pond management, like the management of any natural resource, is an ongoing process. Each management input is recommended individually; however, it should be noted that the *management program* suffers if all activities are not implemented. Feel free to contact us and further discuss management ideas you may have.

Previous evaluations of Woodland Lake have resulted in the thoughtful outline of management options in an effort to approach your stated management goals. Our latest findings, as well as management recommendations, result from our most recent visit and are contained within the following pages.



Electrofishing equipment was used to collect a fish sample from Woodland Lake, April 2021.



Lake Assessment

At the time of our visit, total water alkalinity in Woodland Lake was measured at **35** parts per million (ppm). This level of alkalinity is well above the minimum recommended threshold of 20 ppm, and represents conditions suitable for effective fertilization. Woodland Lake has been fertilized in the recent past.

Bass harvest was reported as moderate. This level of harvest has proven adequate. Harvest, and its importance in structuring fish communities will be discussed in more detail in the Recommended Management Activities section of this report.

During the evaluation, we did not observe any problematic aquatic vegetation. Aquatic weeds and problems associated with them will be discussed in the Aquatic Weed Identification section of this report.

Woodland Lake appeared to have light plankton bloom at the time of our visit.



Woodland Lake, April 2021.



Fish Community Balance

Ponds and the animals they support are governed by a predator-prey relationship. The interactions of predator and prey are characterized by a concept we refer to as *balance*. By definition, suitable balance in a fish community is characterized by a healthy distribution of both predator and prey over a wide range of age and size classes. In order to assess the relative balance of a fish community, the species functioning as predators and the species functioning as prey must be defined. **Predators** are species which rely on other fish as their primary food source. **Prey** species rely on sources other than fish for their food source.

Classic balance in small impoundments is defined by several parameters, not the least of which involves a suitable ratio (by weight) of predator to prey. Further, the key to maintaining balance in a sport fish pond is a healthy size distribution of both predator and prey. If one size-class becomes overly abundant or lacking, a condition of imbalance results. By analyzing an electrofishing sample it is possible to determine the state of balance within a given fish community.

In fisheries science, the *condition* of individual fish is used as another indicator of the overall balance of the entire fish community. Relative weight (Wr) is an index used to categorize the condition of fish within a given population. Calculated Wr values greater than 100 indicate

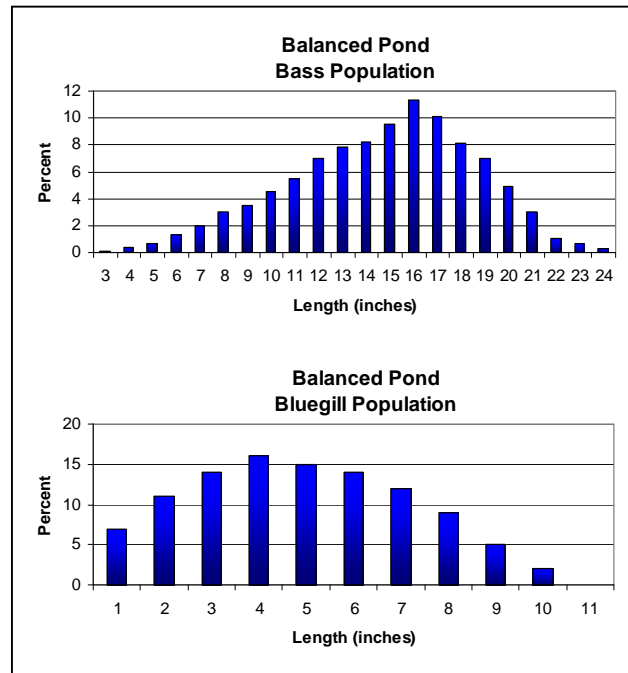


Figure 1. Length distribution of bass and bluegill in a typical balanced pond.

plump, robust fish. Wr values less than 100 suggest that individuals are in less than excellent condition, perhaps the result of some predator:prey imbalance. Wr values less than 85 would indicate malnourished fish; a sign of intense competition for forage.

Figure 1 depicts balanced populations of predator and prey in a typical sport fish pond. Note that all sizes are well represented; no noticeable gaps are present.



Predator and prey fish are measured and weighed to analyze the overall balance of the fish community.



Fishery Assessment

The fishery in Woodland Lake was sampled with standard boat-mounted electrofishing equipment. The sample contained largemouth bass, crappie, catfish, bluegill, redear sunfish (shellcracker) and gizzard shad. Currently, largemouth bass, crappie and catfish are functioning as the primary predators in Woodland Lake. The bluegill, shellcracker and shad are the prey.

Largemouth bass ranging in size from 5 to 21 inches in total length were collected in moderate abundance. The length distribution of largemouth bass (Figure 2) reveals the presence of bass over a wide range of size classes. This represents significant improvement from 2019, most likely the result of improved bass harvest.

The average relative weight of adult bass in our most recent sample additionally reflects notable improvement over 2019. This year’s average relative weight was 103, as compared to 2019, 99 (Figure 4).

Largemouth bass 14 inches and smaller represent the primary targets for harvest over the coming months. We harvested 53 pounds of bass during the evaluation.

Bluegill and shellcracker were collected ranging in size from 2 to 9 inches in total length. Figure 3 depicts the length distribution of the bluegill population. Of note, an abundance of intermediate (3-5”) bluegill and other forage was collected. Further, mature adult bluegill were relatively scarce in the sample.

Crappie were collected ranging from 7 to 15 inches in moderate abundance. The crappie population appears to be in great condition, with our largest crappie weighing just over 2 pounds. Consistent harvest will need to be continued to ensure the population does not over populate and stunt their growth.

Overall, we characterize the fish community in Woodland Lake as balanced. A more detailed explanation of balanced ponds in general, and Woodland Lake in particular is located in the Current State of Balance section of this report.

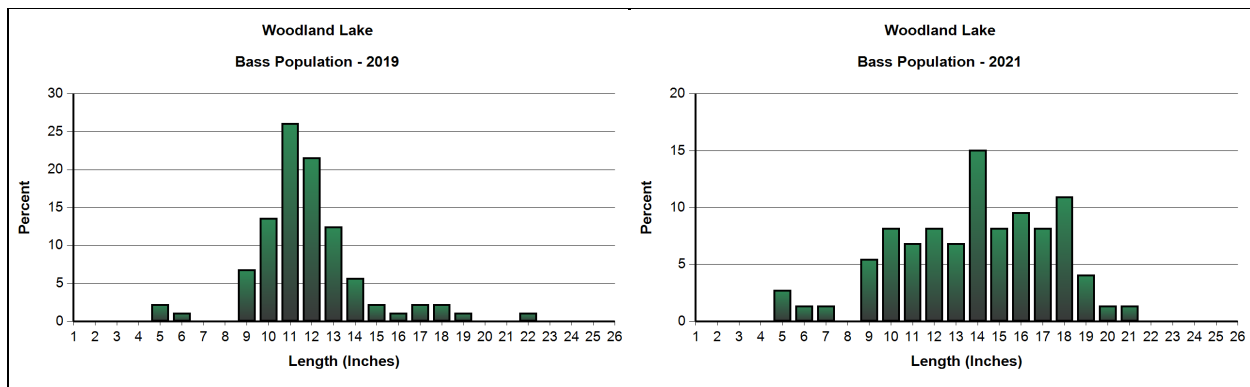


Figure 2. Comparison of the length distribution of bass collected in Woodland Lake in April 2019 and April 2021.

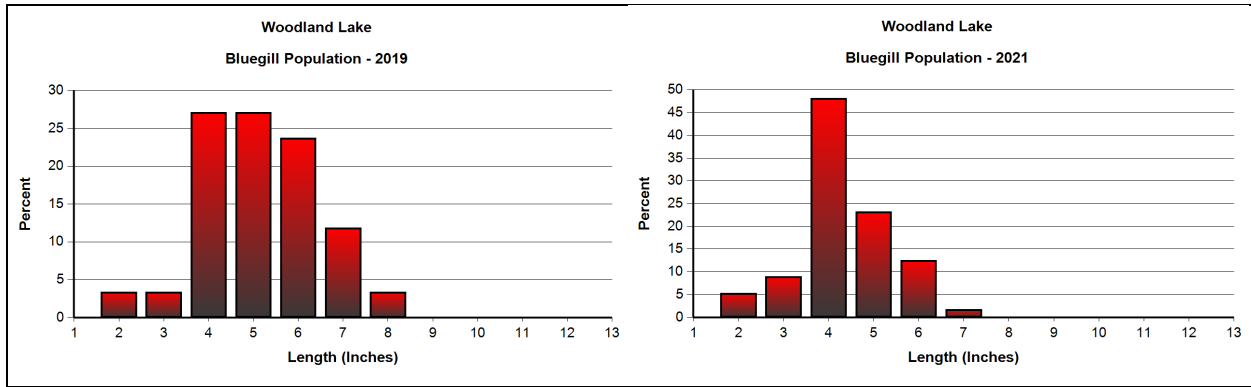


Figure 3. Comparison of the length distribution of bluegill collected from Woodland Lake in April 2019 and April 2021.

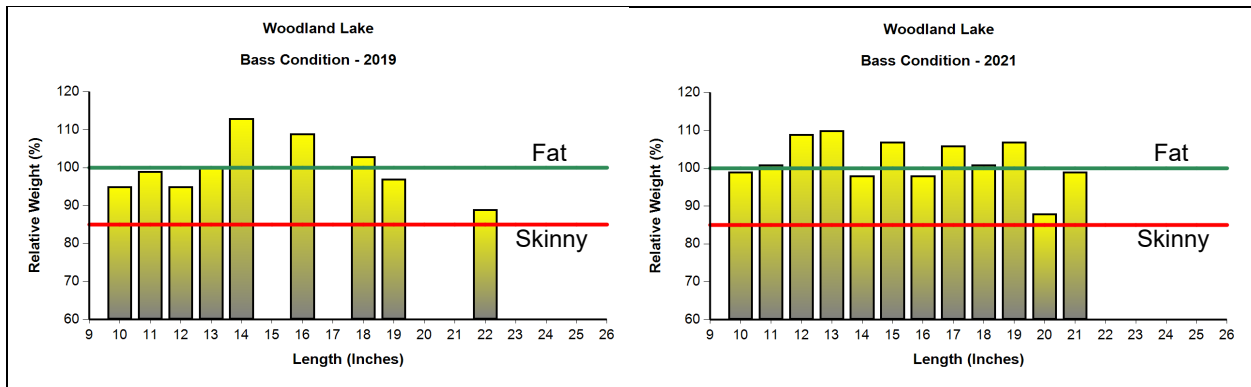


Figure 4. Relative weight distribution of adult largemouth bass collected from Woodland Lake in April 2019 and April 2021.



Balance

Most pond management activities are centered on creating or maintaining a balanced fish community. A balanced sport fish pond is preferred by most anglers because it provides quality bass and bluegill, both in terms of number and size. A balanced fish community is characterized by a wide size distribution of bass, bluegill and other forage species; adequate reproduction of all species is present.

As mentioned previously, our recent electrofishing sample from Woodland Lake contained a healthy distribution of bass across many different size groups. Additionally, the majority of the bass were in good condition with relative weights ranging from 95 to 110.

The presence of intermediate size (3-5") prey is critically important in sport fish ponds. These individuals are the size preferred by the more abundant, younger bass in a typical population. A high relative abundance of intermediate size prey is often an indication of a balanced pond.

When a state of balance exists, intermediate size prey are among the most abundant segment of the overall fish community. Under these conditions, bass typically grow quickly, and are capable of

reaching their full growth potential.

During our electrofishing sample, we observed a healthy forage base, particularly the distribution of intermediate sized prey. In order to maintain the predatory:prey balance and the continued growth of bass in Woodland Lake, it will be necessary to ensure that conditions for the production of forage such as fertilization, supplemental feeding and selective bass harvest are sustained or even enhanced.

In a typical fertilized sport fish pond, bass harvest is required in order to prevent overcrowding. The old idea of "throw him back and catch him when he gets bigger" is not a sound approach in small impoundments. If sufficient harvest does not occur, a bass-crowded condition is the likely result. This usually leads to a low quality bass fishery.

Strategies to improve the quality of the bass and bluegill fishing are discussed in the Recommended Management Activities section of the report.



A balanced pond supports an abundance of bass, bluegill and other forage species of all sizes.



Competing Predator Species

The presence of predator fish species other than largemouth bass may have an impact on the balance of the fish community. The severity of the impact depends largely on the species present and its density relative to the entire fish community. Some predator species may prove to be beneficial to certain management goals at moderate densities; however, most species negatively affect management goals to some degree. Generally, the more fish species present in a pond, the more complicated and less predictable pond management practices become. Once established, it is often difficult to completely remove an undesirable predator from a pond; however, harvesting every individual caught will increase the availability of prey for largemouth bass. In order to maintain a balanced pond with competing species, the bass must become a larger component of the predator community. An additional forage species, such as threadfin shad, typically reduces the negative effects of additional predators.

Competing predator species can be introduced in a number of ways. A pond can be contaminated with different fish species by a feeder stream, especially if the pond basin is not poisoned before stocking. Occasionally, adjacent waters flood and connect a pond introducing different species. For example, oxbow lakes are often flooded on a regular basis by an adjacent stream or river. This greatly reduces the effectiveness of many management practices. Many times, competing predator fish are brought in from other waters by fishermen themselves. Several competing predator fish found in small impoundments are listed below:

Black and/or white crappie are commonly introduced by fishermen in ponds, however they are not a desired predator species in small impoundments less than 50 acres. Not only do crappie compete with adult bass for food, but also with juveniles because they typically spawn before bass. Furthermore, their reproduction is often highly erratic. Maintaining balance with an abundant crappie population can be difficult in small impoundments.

Catfish are often stocked with bass and bluegill to add angling opportunity. Unfortunately, catfish are also direct competitors of largemouth bass and



Crappie



Channel Catfish

can have an impact on the forage community if they are allowed to reach large sizes. Catfish recruitment is usually low in ponds with an established bass population. Therefore, a small population of catfish can be sustained in small impoundments if an abundant forage base is maintained.

Spotted bass caught from public waters are often mistaken for largemouth bass and introduced in sport fish ponds. Spotted bass compete fiercely with largemouth bass in small impoundments. Not only do the adults compete for food, but spotted bass typically spawn earlier, thus giving the fry a survival advantage. Often this early advantage allows spotted bass to dominate the bass population in smaller systems. Once spotted bass become established, targeting spotted bass when harvesting becomes an ongoing management practice.



Spotted Bass



Gar



Bowfin



Green Sunfish

Other predator species, such as **gar**, **pickerel**, **bowfin**, etc., are often considered “rough” or “trash” fish. The presence of these fish in a pond usually indicates flooding of an adjacent river or major tributary. They are often difficult to remove with angling. They do not seem to become as abundant as crappie or spotted bass in a bass/bluegill pond, but have a negative impact nonetheless.

Other species such as **green sunfish** and **warmouth** commonly inhabit sport fish ponds. These species typically are introduced by small feeder creeks. Green sunfish, in particular, have the ability to enter ponds without a feeder stream, possibly by way of aquatic birds. Each of these fish can function as predators by eating small bluegill

and other forage in ponds. They can also compete with bluegill for food and spawning sites. Fortunately, their impact is usually minimal as they rarely exceed 6 or 7 inches and typically do not become abundant in a pond with an established bass population. However, these species can become problematic if allowed to multiply before a healthy bass population is present.



Fish Harvest

One of the keys to a balanced fish community, as well as the growth of trophy largemouth bass in your pond, is the selective removal of largemouth bass. Largemouth bass, when present with bluegill as their primary source of forage, produce an annual surplus which must be harvested in order to maintain balance. We generally recommend harvesting the smaller, more abundant size range of bass at a rate of **25 to 35 pounds per acre per year**. Bass harvest rates are designed to reduce the level of predation on the bluegill population as well as increase the growth rate and condition of the remaining bass. Recommended harvest quotas often change in response to population changes and should be re-evaluated annually. Harvesting largemouth bass can be accomplished by the following methods:

(1) **Hook and Line Harvest:** Largemouth bass of the appropriate size should be removed whenever they are caught up to the harvest goals. A record should be kept of the total number and weight of bass removed during each fishing trip. Larger bass, those presently exceeding the size limit, may be "protected" since these represent the potential trophy bass in the pond.

(2) **Electrofishing Harvest:** Selective bass harvest through electrofishing is a particularly effective management tool. This method of harvest may be quite productive if hook-and-line efforts are not



A measuring device should be kept handy to determine the correct size bass to harvest.

adequate. The cost for this service is based on time spent (hourly). We will keep close records of the total number and weight of individuals removed.

One important point is that bluegill and shellcracker harvest is strictly optional in balanced ponds. It is not necessary to harvest a certain weight of bluegill per acre to maintain the predator/prey balance or to prevent bluegill overpopulation. The bass will more than adequately control bluegill numbers. Typically, a generous amount of adult bluegill can be harvested in a well-fertilized, balanced lake. However, over-harvest of bluegill may be a concern, depending on the number of anglers and fishing pressure. We often recommend limiting bluegill harvest to **10 per person per day** in bass-crowded ponds to prevent over-harvest. In severely bass-crowded ponds, we recommend **suspending bluegill harvest** until the population increases through management efforts.



Bass must be harvested at the proper rate each year in order to maintain a balanced fish community in small impoundments.



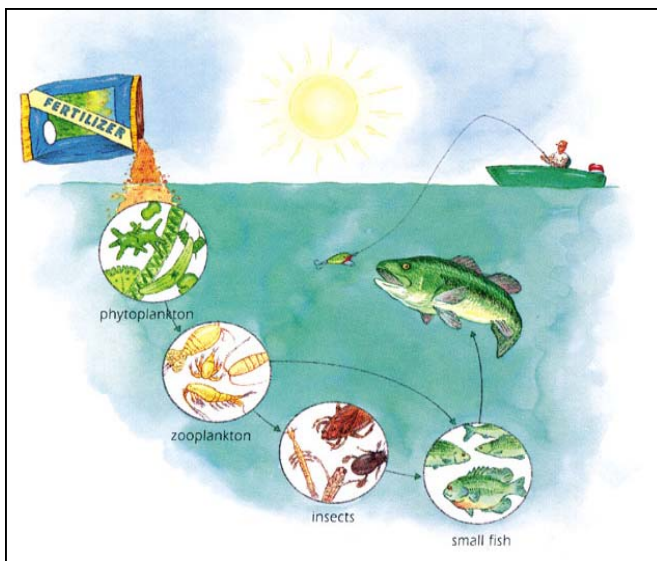
Fertilization

The concept of *carrying capacity* describes the total biomass (i.e., weight) of fish a pond is capable of producing. A given body of water, subject to varying levels of fertility, has a finite limit, or carrying capacity, in terms of the overall biomass which it can support. Lake fertility limits the number as well as the average and maximum size of fish present.

The limiting nutrient in most freshwater systems, as it relates to plankton production and a generally high level of fertility, is phosphorous. Phosphorous must be added on a regular basis during the growing season in order to stimulate significant plankton growth. Plankton, both plant and animal, are the base of the food chain in ponds. Infertile ponds, those with low alkalinity and relatively little nutrient input, are characterized by low levels of plankton production. In effect, this limits the amount of food available to the small insects and insect larvae which are the next link in the food chain. The *ripple effect* of low fertility is observed far up the food chain, all the way to the primary predators, largemouth bass. In order to create and maintain a high level of plankton production, thus providing conditions most favorable for fish production, fertilizing on a regular basis is required.

Fertilization takes place during the growing season, from March through October. Fertilization is the most basic and important element necessary to create an environment conducive to the production and growth of sport fish.

Fertilizer should be applied according to the Standard Pond Fertilization Schedule:



Food chain of a typical fertilized pond.



SportMAX® Water Soluble Fertilizer takes all the fuss and mess out of properly fertilizing your pond. A well fertilized pond should have 18 to 24 inches of visibility.

Standard Pond Fertilization Schedule

- ◆ Beginning in early March, make three applications at two week intervals.
- ◆ Make the next three applications at three week intervals.
- ◆ Thereafter, apply once per month or whenever visibility exceeds 18-24 inches.
- ◆ Cease fertilization by the end of October.

Simply put, the most efficient and effective pond fertilizer on the market today is SportMAX® Water Soluble Pond Fertilizer (10-52-4). Since you have elected to handle the fertilization of your own lake, **we can supply you with a season's worth of material, prior to the scheduled start of the season.** SportMAX® comes conveniently packaged in heavy duty, water-resistant plastic bags; ideally, it may be stored in a barn or equipment shed sufficient to keep the direct elements away.

SportMAX® is easy to use; proper application involves simply pouring the material directly from the bag into the open water — no mixing... no mess!

Recommended application rates for SportMAX® range from 4 to 8 pounds per acre. Particularly in the early season, the higher rate is often necessary to stimulate a plankton bloom. Generally by the middle part of the season, the lower rate is adequate.

The cost of a season's worth of SportMAX® Water Soluble Pond Fertilizer, including delivery to your lake, is listed in the Recommended Management Activities section of this report.



Supplemental Forage Stocking

The harvest of largemouth bass at the proper size and rate can be quite challenging in sport fish lakes, especially if they are not fished extensively. When the annual largemouth bass harvest falls short of the recommended quota, stocking supplemental forage becomes extremely important in efforts to maintain an adequate forage base. An abundance of forage must be available at all times in order to maximize the growth of top-end predators such as largemouth bass. The feeding behavior and movement patterns of adult predators change frequently. The presence of a variety of forage types, occupying different habitats within the pond, tends to maximize predator:prey encounters and improves overall foraging efficiency.

If managed correctly, a lake with a reproducing **gizzard shad** population can be ideal for producing exceptionally large bass. Unfortunately, unchecked gizzard shad populations inevitably “lock-up”, as reproduction ceases and their population becomes dominated by large adults. In these cases, corrective measures, typically in the form of a selective rotenone treatment, are necessary. Interestingly, we have found that the presence of **threadfin shad** (*Dorosoma petenense*) often extends the time period in which gizzard shad continue to reproduce. Introducing threadfin shad with gizzard shad creates a more natural environment for each species by providing a healthy competition for the available food. As a result, the amount of time between corrective rotenone treatments can be extended.

The benefits to stocking threadfin shad are

numerous. The combination of a relatively small adult size, coupled with their ability to reproduce in large numbers, make threadfin shad a near perfect food for the most abundant size group of largemouth bass. Most often, results of successfully establishing threadfin shad into a lake will be observed in improved growth rates for all size groups of bass. In addition, by partially shifting bass predation from bluegill to shad, more bluegill will reach the important *intermediate* size range. Finally, through subtle interactions lower in the food chain, threadfin shad effectively reduce bass *recruitment*. In other words, fewer bass fingerlings survive to adulthood, thereby reducing the annual bass surplus. The bass that are *recruited* into the adult population will enjoy an increased abundance of prey, which leads to enhanced growth rates and a larger maximum size.

Threadfin shad frequently exhibit a distinctive schooling behavior, most often in open-water areas. In fact, the shad’s primary defense against predators is its ability to seek out open water, away from where predators are more likely to be waiting to ambush prey. Once the bass figure out this behavior, the jig is up. Ponds with abundant shad populations frequently enjoy excellent top-water fishing action, oftentimes in or around schools of shad in open water.

Threadfin shad typically have two distinct spawning periods: one in the Spring and again in early Fall. Stocking should occur immediately prior to spawning. Stocking rates are designed to establish a sustainable population of threadfin shad and vary depending on the size of the lake and its state of balance.



Threadfin shad are ideal forage for increasing the growth and condition of largemouth bass and compete favorably with gizzard shad. Adult threadfin shad range from 3 to 7 inches.



Supplemental Feeding

Feeding bluegill pellet food is a proven management practice used to increase the number of “quality” and “trophy” size bluegill in ponds. Feeding produces unusually large and healthy bluegill and increases their reproductive potential. In addition, feeding concentrates fish for improved catch rates and provides entertainment from watching the fish eat. Given these benefits we recommend initiating an intensive feeding program in your pond.

In an effort to benefit the entire bluegill population, fish food should be applied from at least 1 feeding station for every 5 acres of water. Each feeding station should dispense feed at a rate of 5-10 lbs/day during the growing season (March - October). The daily ration should be divided into 3 short feeding periods, such as: early morning, late morning, and late afternoon. Several short periods are necessary to reduce feed waste because bluegill have small stomachs and will not consume much at once. Most commercial floating catfish fingerling pellets are suitable for feeding bluegill. These types of feeds are readily available on the market; Purina® makes an excellent pellet, under the name, “Game Fish Chow”. Game Fish Chow is made up of several different pellet sizes that can be consumed by a wide size range of bluegill.



Optimally, choose a floating ration with multiple pellet sizes.

For an additional boost to the bluegill population, feeding in the winter is an option. Winter feeding keeps the bluegill plump and healthy during a period when natural food is not readily available. To improve consumption in the cold months, a sinking feed may be used. Sinking feed can be purchased during the winter at most dealers that normally stock fish food. Several feeding periods should be maintained for the winter also. However, the timer on the feeder should be changed in late October to adjust for the shorter day length.



Supplemental feeding attracts bluegill to certain areas so they are easier to catch.



We market Texas Hunter automated fish feeders. Simply put, these feeders are the finest of their kind. Texas Hunter directional feeders are offered in three sizes (LM135 - 70 pound capacity , LM175 - 100 pound capacity, and LM435 - 250 pound capacity) and they are only available in green. They are powered by rechargeable 12-volt batteries and come equipped with a solar charger. Texas Hunter directional feeders may be conveniently mounted with adjustable legs on the bank, or on with fixed dock legs on piers.



Aquatic Weed Control

Aquatic weed growth can be a serious problem in recreational ponds. Weeds use up important nutrients in fertilizers that are intended for fish production, as well as interfere with normal activities such as fishing and swimming. In addition, excessive weed growth detracts from the aesthetic value of a pond, particularly if it is the focal point of a recreational area.

There are three approaches we use to prevent or reduce unwanted aquatic weeds. They can be placed in 3 different categories: chemical control, biological control, and sunlight-limiting control. Often, an integrated approach involving a combination of these tools offers the most effective solution.

Chemical control involves the use of aquatically approved herbicides to reduce or eradicate aquatic weeds. Although chemical control can be costly on large areas, it is usually the best method for a quick response.

The most common form of biological control is stocking grass carp. Grass carp are often introduced into ponds at low stocking densities as a preventive measure before weeds become established. However, once weeds have become established, a higher density of grass carp is needed to control them. Grass carp readily eat a variety of common weeds, do not reproduce, and are fairly inexpensive. Typically, grass carp become less effective when they reach 6 to 7 years old and must



Herbicide application is typically the quickest form of weed control.



Grass carp are often introduced for long-term control (top). Pond dyes temporarily limit sunlight to retard aquatic weed growth (bottom).

be restocked. One drawback to grass carp is their propensity to train on pellet food intended for bluegill; thereby reducing the effectiveness of a supplemental feeding program.

There are also a variety of water colorants or dyes that can be added to ponds before weeds become established that limit sunlight penetration and “shade out” certain types of weeds. A regimented fertilization program is often the most effective form of sunlight-limiting control. Typically, phytoplankton blooms stimulated early in the spring through fertilization can shade out potential weed growth before it becomes a problem.



Dam and Shoreline Maintenance

Dam and shoreline maintenance should be addressed periodically to ensure the integrity of the dam and overall recreational value of the pond. The dam should be kept free of trees; roots may eventually tunnel into the dam, creating weak spots. If mature trees are already present, they should not be cut down, as dead and decaying roots are potentially more harmful. Generally, trees less than 4 inches in diameter at breast height do not have roots penetrating the core of the dam and should be removed before they become a threat to the structure of the dam.

In an effort to prevent erosion the entire dam should be covered with a manageable grass. Large rock is recommended at the waterline along the dam face if there is the potential for erosion from wave action. The spillway should also have some type of erosion prevention. The amount and frequency of water flow should determine the type. The bottom and sides of the spillway should be lined with large rock or concrete if water flows across it often. For

spillways that are used less frequently, well maintained grass provides sufficient erosion protection. Spillways should be checked periodically and any debris should be cleared.

Additionally, the shoreline and surrounding watershed should be vegetated to prevent erosion and muddy water. If necessary, livestock should be provided limited access to the pond. Heavier vegetation should be trimmed or treated with herbicide.

Beavers and muskrats can cause aesthetic and structural damage to sport fish lakes. Large rock placed along the waterline of the dam will usually prevent beavers and muskrats from boring in. Trees can be protected by wrapping steel mesh around the base of the tree to a height of about 4 feet. Otters often visit ponds from nearby creeks and can have a significant impact on the fish population. Droppings with scales and fish bones are evidence of otter visits. These nuisance animals should be removed as soon as detected. Techniques include body-gripping traps, snares, foothold traps, and shooting. Permits and licenses may be required.



Beavers and muskrats can bore in to the side of the dam and weaken its structure. Emergency spillways should be lined with concrete if they receive heavy flow (inset).



Annual Evaluation

In addition to ongoing management, your pond should be checked on a regular basis. Our annual maintenance plan includes an aquatic weed assessment, a water test to determine lime requirement, and an electrofishing balance check to assess the fish community.

Regular electrofishing evaluations are necessary to assess the effectiveness of a management program. Electrofishing allows us to stay on top of the pond's condition in order to make necessary changes in management recommendations.



Annual electrofishing evaluations determine the effectiveness of management practices.



Summary of Management Recommendations

Woodland Lake is functioning as a balanced system that has a high level of fertility. Several management inputs are necessary to maintain a state of balance as well as increase the total density of sport fish. The management activities we are recommending for Woodland Lake will center on reducing the total number of adult predators, introducing supplemental forage, and enhancing the conditions for the production of forage.

To maintain a high density of sport fish as well as help control aquatic vegetation, we recommend **maintaining an intensive fertilization program** in Woodland Lake. **SportMax® Water Soluble Pond Fertilizer (10-52-4)** should be applied according to the *Standard Pond Fertilization Schedule*.

For Woodland Lake, **harvest bass 14 inches and smaller** at a rate of **20 pounds per acre per year (2,260 lbs./yr.)**. The recommended bass harvest rate and size will likely change over the next few years as the fish community responds to management inputs.

We recommend **limiting bluegill harvest** in Woodland Lake to a “consumptive” level, meaning **ONLY** bluegill and shellcracker which are intended for table fare should be removed; the over-harvest of adult bluegill, particularly during the spawning season, may lead to a decrease in the total number of mature, adult bluegill and a corresponding decline in angling catch per unit of effort. **Annual electrofishing evaluations** will help determine if fish harvest recommendations should be adjusted.

Supplemental forage in the form of threadfin shad should be stocked in order to enhance the growth and condition of the largemouth bass.

We recommend **initiating an intensive supplemental feeding program** in Woodland Lake. Fish food should be applied from feeding stations at a rate of at least 5 lbs/feeder/day from March through October.

Aquatic weed control will also be an integral part of the management program for Woodland Lake. We did not observe any problematic aquatic vegetation during our visit. However, pennywort has been a problem in the past and has the potential to multiply quickly and should be monitored closely, particularly during the growing season. We feel that the quickest and most efficient way to control aquatic weeds in Woodland Lake, if they should become a problem in the future, is by herbicide application.

Finally, **additional cover in the form of brush or rock piles** would increase the catch rates of sport fish in Woodland Lake.

The management activities we recommend over the course of the next twelve months are listed in the following pages. In an effort to assist in the prioritization of these management inputs, we have developed a simple color-coding system. You will note this system in the bottom right-hand corner of the respective Management Recommendations to follow:



Highest priority. Generally, require immediate attention.



Secondary in importance to Level 1. Directed toward achieving your stated management objectives.



Increase enjoyment and/or functionality of your pond but have less impact on the overall management program.



ANNUAL HARVEST

ANNUALLY
2021

Current Status: Owner Responsibility

- Approved Declined Done

Date Approved: _____

Date Done: _____



MANAGEMENT ACTIVITY:
Harvest ~2,260 pounds of LMB (14" inches and less)

COST:
Hook and line: N/A
Electrofishing: \$350.00/hour.*

*An additional mileage charge will be added.

LEVEL 1

FERTILIZATION

ANNUALLY 2021

Current Status: Owner Responsibility

- Approved Declined Done

Date Approved: _____

Date Done: _____



MANAGEMENT ACTIVITY:
Continue fertilization program

COST: Cost of Fertilizer

LEVEL 1

SUPPLEMENTAL FEEDING

SPRING 2021

Current Status: Awaiting Owner Approval

- Approved Declined Done

Date Approved: _____

Date Done: _____



MANAGEMENT ACTIVITY:
Install 1 Texas Hunter LM-175 directional fish feeder
Feed at a rate of 5-10 pounds/day

COST: \$ 908.00*

* This price includes a Texas Hunter LM-175 directional fish feeder, solar charger, rechargeable battery, assembly, and installation. An additional delivery charge will be added.

LEVEL 2

THREADFIN SHAD

SPRING 2021

Current Status: Awaiting Owner Approval

- Approved Declined Done

Date Approved: _____

Date Done: _____



MANAGEMENT ACTIVITY:
Stock 4 loads (~40,000) adult threadfin shad

COST: \$ 2,000.00/load*

* This price does not include delivery.

LEVEL 1



HYBRID STIPED BASS

SPRING 2021



COST: \$ 3.50/fish*

* This price does not include delivery.

Current Status: Awaiting Owner Approval

Approved Declined Done

Date Approved: _____

Date Done: _____

MANAGEMENT ACTIVITY:
Stock 2,500 large hybrid striped bass

LEVEL 3

ANNUAL EVALUATION

SPRING 2022



COST: \$ 950.00*

* This price includes comprehensive written Management Report. An additional mileage charge will be added.

Current Status: Awaiting Owner Approval

Approved Declined Done

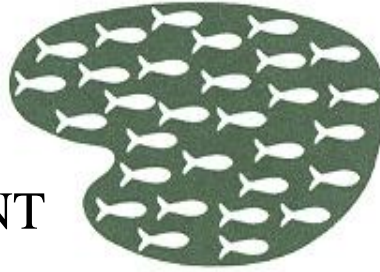
Date Approved: _____

Date Done: _____

MANAGEMENT ACTIVITY:
Annual electrofishing evaluation

LEVEL 1

SOUTHEASTERN
POND
MANAGEMENT



“Managing Your Liquid Assets”

Southeastern Pond Management

Birmingham Office

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Calera, AL 35040
(205) 664-5596

Auburn Office

9944 Highway 280 West
Auburn, AL 36830
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