

LAKE OUACHITA FISHERIES MANAGEMENT PLAN

Based on Public Input from Facilitated Workshops, the AGFC Website, Mail-In Questionnaires, and Fisheries Science

Prepared by
Fisheries Division
Arkansas Game and Fish Commission

In Consultation with
Lake Ouachita Citizen Advisory Group

May 2007

Plan Mission Statement:

Provide quality fishing opportunities for all sportfish species in Lake Ouachita through habitat improvement, fishery enhancement, and increased angler involvement and communication. Conduct fishery management through an open public process that adapts to changing conditions and seizes new opportunities as they occur.

Introduction

Lake Ouachita is a 40,000-acre Corps of Engineers (COE) reservoir near Hot Springs in western Arkansas. Its primary project purposes are hydropower and flood control. The reservoir's sportfisheries (black bass, crappie, striped bass, walleye, catfish, and bream) are managed by the Arkansas Game and Fish Commission (AGFC) under the authority of Amendment 35 to the Arkansas Constitution.

To better understand and address the overall desires of the Lake Ouachita fishing public, AGFC contracted an independent facilitator to assist with developing an all-inclusive fisheries management plan for Lake Ouachita. Dynamic Solutions Group (DSG), an independent consulting firm, was retained to facilitate the process. Their agent, Mr. Spencer Amend, was the primary facilitator for the plan development.

Purpose of the Plan

The plan was developed to address, as extensively as possible, the desires and expectations of the fishing public of Lake Ouachita in regards to the overall management of the lake's sport fishery. The deliverable elements of the plan are based on scientific fisheries management principles and are intended to maintain and enhance the wide variety of fishing options available on Lake Ouachita.

Development of the Plan

AGFC Fisheries Division identified a group of Lake Ouachita "stakeholders" in regards to their interest and availability to serve on an oversight committee. A Lake Ouachita Citizens Advisory Group (LOCAG) was formed during July 2006 to help the Commission with formulation of the management plan. A charter (see LOCAG Charter in appendices) was proposed by DSG and adopted by the LOCAG to direct their work. Guiding principles in the Charter for LOCAG members were:

- a. Represent and provide perspectives of all anglers who fish Lake Ouachita and others who have an interest in Lake Ouachita fisheries resources.
- b. Assist in the completion of the Lake Ouachita Fisheries Management Plan.
- c. Advise and assist with the implementation of the Lake Ouachita Fisheries Management Plan.

- d. Help evaluate the success of the Lake Ouachita Fisheries Management Plan.
- e. Provide information and perspectives to help with needed modifications to the Lake Ouachita Fisheries Management Plan.

The LOCAG is expected to serve as an ongoing oversight committee for several years. Periodic review of the plan following initial formulation and implementation will be needed. Membership may change over time. Initially, the LOCAG consisted of about 35 members.

Original Draft Lake Ouachita Fisheries Management Plan

The first draft of the Lake Ouachita plan proposed goals, objectives, and strategies for Lake Ouachita with consideration of public input and fishery science. Public comments were collected during two August 2006 facilitated public workshops held in Mount Ida and Fountain Lake. These meetings were advertised to the public and their participation was encouraged. The Commission updated its website to include information regarding the LOCAG meeting in August as well as reports detailing the input from both public meetings. Additionally, the public had a website link to submit their advice and comments. Preliminary outlines of management plan strategies were circulated among the LOCAG for advice. Fisheries management personnel then incorporated that advice into the original draft management plan document.

Final Draft Lake Ouachita Fisheries Management Plan

The original draft Lake Ouachita Fisheries Management Plan, dated October 17, was distributed first to the members of the LOCAG and thereafter by mail to the attendees of the first two workshops with known addresses and through the AGFC website to the general public.

Numerous comments and suggestions concerning the original draft management plan were received during the third, and last, facilitated public workshop (held at Lake Hamilton High School in November 2006) and from those who replied to a follow-up survey questionnaire that was distributed in November 2006 to over 200 individuals who had been active in the management plan development process. This final draft incorporates many of the comments and suggestions received from all sources during this public process. Copies of these comments and suggestions will be included as an appendix to this document.

Organization of the Lake Ouachita Fisheries Management Plan

For organizational purposes, the plan is divided into the three (3) major categories that relate to the major components of any fishery: **People, Fish, and Habitat.**

People Goals, Objectives, and Strategies

- I. Achieve Lake Ouachita fisheries management goals and objectives in an open and transparent process involving all anglers, the Corps of Engineers, U.S. Forest Service, Entergy, and fishing-related businesses.**

Objectives

- A. Interact annually or more often as needed with the LOCAG.
- B. Maintain an interactive informational website.
- C. Determine angler satisfaction and preferences through an angler creel survey.
- D. Maintain open lines of communication/cooperation between other state and federal agencies.
- E. Encourage anglers to participate in fish management activities such as fish stockings, habitat improvement projects, and fish sampling.
- F. Facilitate and assist with competitive fishing events.
 - 1. Provide a live-release barge available on “first come-first served” basis.
 - 2. Encourage and educate anglers on best weigh-in practices to reduce mortality associated with bass tournaments.
 - 3. Work with COE to establish tournament permitting and reporting program.
 - 4. Encourage participation in Arkansas Tournament Information Program (ATIP).
 - 5. Provide technical assistance to major tournament events as time and manpower allow.

- II. Seek open communication, understanding, acceptance, and appreciation between varied angling groups.**

Strategies

- A. Host an annual LOCAG meeting to review Lake Ouachita Management Plan implementation and listen to angler perspectives and views.

- B. Post *Annual Lake Ouachita Fish Population Sampling Report* on AGFC website.
- C. Post ATIP reports for Lake Ouachita on AGFC website.
- D. Post District 8 and Black Bass Program newsletters on AGFC website.
- E. Maintain postal mailing list for those without internet access.
- F. Provide presentations to sport fishing groups and civic organizations on the fishery management of Lake Ouachita.
- G. Work with AGFC Communications Division to develop informational outreach on Striped Bass, Black Bass, Best Fish Handling Practices, Aquatic Vegetation Control, and other topics of interest to improve angler understanding of the ecological and social parameters effecting Lake Ouachita fisheries.
- H. Actively solicit feedback from the public on the condition of the fishery.

III. Increase Enforcement efforts to reduce the impact of fishing violations on the sportfish in Lake Ouachita.

Objectives

- A. Focus Enforcement effort during critical periods.

Strategies

1. Insure Wildlife Officers are patrolling the lake with emphasis on fishing regulations during peak periods.
 2. Devote the equivalent of one Wildlife Officer during period of highest fishing activity (March 15 – May 15) to Lake Ouachita only.
 3. Continue to visit fish cleaning stations at Crystal Springs, Tompkins Bend, Brady Mountain, etc., regularly.
 4. Enhance fishing enforcement efforts during the spawning season.
 5. Evaluate the need for and develop special enforcement operation plans for peak angling times on Lake Ouachita.
- B. Focus Enforcement effort on fishing activities.

Strategies

1. Increase fishing license checks.
 2. Increase checks for compliance with length limits.
 3. Increase checks for compliance with possession limits.
- C. Maintain or increase Enforcement emphasis on fishing in Lake Ouachita during the rest of the year.
1. Increase and enhance year round Enforcement efforts by boat.
 2. Utilize special Enforcement operations with angler focus if necessary.

Fish Goals, Objectives, and Strategies

Achieve a balanced, quality, and diverse sport fishery using science-based fisheries management principles. Largemouth bass, the most targeted sportfish and a key indicator of fish community balance, will be the principal management focus for shoreline fishes.

- I. Largemouth bass fishery goal: Achieve a quality largemouth bass fishery attractive to anglers. Management will seek to balance bass density with improved growth rates commensurate with forage and habitat conditions.**

Objectives

- A. Improve size structure and growth rate of native (Northern) largemouth bass. Specific metrics to achieve:
1. Achieve a Relative Stock Density to 30%. (Note: Relative Stock Density (RSD) for largemouth bass is the percent of Stock-size bass (all largemouth bass that are 8 inches long or longer) that are 15 inches long or longer).
 2. Achieve average length-at-age of 16 inches at Age 4+.

Strategies

1. Maintain current 13-inch minimum length limit until adjustments are needed to achieve the above objectives.
2. Maintain current 6 bass per day creel limit.

3. Encourage bass tournament directors to conduct their events when water temperatures are below 83 degrees.
 4. Increase enforcement presence for compliance.
 5. Evaluate achievement through annual electrofishing and cove-rotenone sampling.
 6. Evaluate achievement through the Arkansas Tournament Information Program (ATIP).
 7. Evaluate achievement through dialogue and discussions with anglers.
- B. Improve the catch success of largemouth bass anglers. Specific metrics:
1. Achieve at least 0.2 bass/angling-hour catch-rate for largemouth bass over 13-inches as determined by creel survey (for anglers identifying themselves as black bass anglers).
 2. Achieve a catch-rate of 600 hrs per largemouth bass over 5 lbs. (Note: as measured by ATIP data, the average hours required to catch a largemouth bass over 5 lbs. in Lake Ouachita since 1990 is 669 hours).
 3. Evaluate through a 3-year creel survey beginning in December 2007.
 4. Achieve average weight of 1.85 lbs. per largemouth bass caught in tournaments (ATIP target).
- C. Maintain adequate recruitment rates of young largemouth bass to sustain a viable, quality bass fishery.

Strategies:

1. Stock largemouth bass through the Lake Ouachita nursery pond as part of the three-year rotation. Preferred method: Hatchery system will stock (40,000) northern largemouth bass fingerlings into the nursery pond in late May or early June. Fingerlings will be raised on minnow forage to average of 5- to 6-inch fish before summer release directly into the lake. (Note: Currently scheduled for 2007 pond crop). Or, natural broodstock will be secured either through electrofishing or tournament weigh-ins and stocked directly into nursery pond. All broodfish and fingerlings will be drained into the lake at time of release. (Note: Wild spawning can be expected to produce an estimated 250,000 one- to two-inch fingerlings). Culture method will be at the discretion of District Fisheries Biologist:

2. Stock an additional 60,000 hatchery fingerlings by boat in years when nursery pond is used to raise bass to 5-6 inches, as is planned for 2007.
 3. Stock 100,000 northern largemouth bass fingerlings by boat in 2008. A total of 604,602 northern largemouth bass stocked in five years from 2004-2008.
 4. Stock additional largemouth bass fingerlings when cove-rotenone results indicate lower than average spawn success (50% of historic average).
 5. Work with the COE to maintain stable water level during spring spawning season when feasible.
 6. Determine relationship between spawning success and the density of Age 1 largemouth bass the following spring.
 7. Determine the efficacy of stocking largemouth bass to supplement natural reproduction by bio-marking stocked fingerlings with a long-range target contribution to recruitment (survival to Age 1) of 15 percent.
- D. Determine the suitability and efficacy of using Florida-strain largemouth bass in Lake Ouachita to improve bass growth performance and the catch-rate of bass over 5 pounds by anglers.

Strategy

1. Introduce Florida largemouth bass (FLMB) into the Rabbittail/Buckville area of the lake. Stock 93,700 minimum per year for eight years by boat. (Note: This design facilitates genetic evaluation in the Rabbittail arm of the lake).
2. Compare growth differences between largemouth bass within the stocking site with known native strain largemouth bass from other areas of Lake Ouachita.
3. Determine the rate of Florida allele introgression into the native genome component within the stocking site with a target of 40 percent occurrence of Florida alleles in the study area by the end of the 8-year introduction effort.

II. Spotted bass fishery goal: Provide a viable spotted bass fishery relative to the lake's habitat conditions.

1. Protect spotted bass adults with 13-inch minimum length limit effective January 1, 2007

III. Smallmouth bass fishery goal: Establish a self-sustaining population of “reservoir” strain smallmouth bass designed to produce a trophy fishery.

Strategies

1. Stock 100,000 fingerling smallmouth bass annually until 2010 in designated stocking zone between Blakely Dam and Point #1.
2. Maintain catch and release regulation for smallmouth bass and discourage anglers from moving smallmouth bass from stocking zone into tributaries.
3. Evaluate stocking success through electrofishing, cove-rotenone, creel census and monitor genetic introgression (the spread of Tennessee-strain smallmouth bass genes) into the native smallmouth bass populations in the Upper Ouachita River and its South Fork.

IV. Striped bass fishery goal: Achieve a viable and balanced striped bass fishery. Management will seek robust growth rates focused on providing large fish at a population density attractive to anglers. Specific striped bass population metrics:

Objectives

1. Achieve an average length-at-age of 26 inches by Age 4.
2. Achieve Relative Weight Index, W_r , of 95%. (Note: Relative weight index (W_r) is the ratio of a fish’s weight to the weight of a standard fish of the same length and species. Striped bass relative weights fluctuate seasonally in reservoirs throughout the U.S. with summer being typically a time of reduced feeding activity due to thermal stress and lower dissolved oxygen concentrations). Lake Ouachita W_r calculations will come from striped bass captured during cooler weather months prior to gonadal development (October-February).
3. Maintain striped bass angler catch-rate of 0.10 fish/angling-hour as determined by creel survey (for anglers identifying themselves as striped bass anglers).

Strategies

1. Stock striped bass as follows:
 - **3 to 4 fingerlings per surface acre**
When Lake Ouachita adult striped bass average relative weight (W_r)

exceeds 95% and length-at-age 4 is minimum 24 inches. Potential annual stocking: 120,000 to 160,000 fingerlings at discretion of Fisheries Division.

- **2 fingerlings per surface acre**
When W_r is between 95% and 92% and length-at-age 4 is below 24 inches (annual stocking of 80,000).
 - **1 fingerling per surface acre**
When average W_r falls between 92% and 82% (annual stocking of 40,000).
 - **No stocking**
When combination of W_r below 82%, other health concerns, and low forage base data will result in no stocking for one year. Stocking will resume when stocking conditions as described above are favorable.
 - Following rare striped bass hatchery production failure resulting in no striped bass being available to stock and adult striped bass in the reservoir have suitable length-weight condition factors, the stocking rate in the next year will be 3 to 4 fingerlings per acre (120,000 - 160,000).
2. Retain 3 fish daily creel limit for striped bass.
 3. Determine mortality rates of stocked striped bass fingerlings to Age 2 to help estimate stocking success.
 4. Implement an angler diary program with striped bass guides to collect fishery information.
 5. Monitor population through annual gill netting surveys during spring striped bass spawning projects to estimate relative abundance.
 6. Evaluate striped bass angler success and harvest rates through creel survey.

V. Crappie fishery goal: Support an abundant number of crappies available for angler harvest. Management will treat both species as one stock.

Strategies

1. Stocking via nursery pond crop rotation. Stock 15 broodstock per acre or 300 adults for pond spawning as planned for 2008.

2. Evaluate through fall electrofishing, cove-rotenone samples, and creel survey.

VI. Walleye fishery goal: Provide a viable walleye population available for angler harvest.

Strategies

1. Stock via nursery pond crop rotation. Stock fry into pond and raise to fingerling size before release. Estimated release at 150,000 to 300,000 fingerlings.
2. Surplus hatchery production will be stocked as fingerlings in years when walleye are not in nursery pond.
3. Evaluate through cove-rotenone samples and creel survey.

VII. Catfish fishery goal: Provide a viable catfish population available for angler harvest.

Strategies

1. Annually stock 20,000 catchable-size (12- to 14-inch) channel catfish from Jim Collins Net Pen Facility on Lake Ouachita.
2. Annually stock 60,000 yearling (8-inch) channel catfish from hatchery system.
3. Stock 5,000 yearling-size blue catfish in 2008.

VIII. Forage fish goals: Maintain self-supporting population of forage fishes.

Strategies

1. Maintain the current mix of forage fish species (including sunfishes, minnows, gizzard and threadfin shad, etc.). No new non-native forage species introductions.
2. Supplemental stocking of threadfin shad is not an option until AGFC finds an alternate source other than Lake Hamilton. (Note: AGFC's primary source for threadfin shad is Lake Hamilton but that waterbody has been infested with yellow bass. To avoid spreading this undesirable species to Lake Ouachita, no threadfin shad will be stocked until another viable source for threadfin shad is identified).

3. Evaluate forage fish population through annual cove-rotenone samples.
4. Explore the efficacy of using hydro-acoustics to improve threadfin shad population assessments.
5. When an effective shad sampling method is developed, use shad population metrics and fish condition indices to help establish stocking levels for predator sportfish.

Habitat Goals, Objectives, and Strategies

Achieve the types, quality and quantity of aquatic habitat in Lake Ouachita that will support a healthy, balanced and robust sport fishery.

Objectives

- A. Manage a mix of submerged aquatic vegetation to achieve no more than 20% of the lake's surface area.

Strategies

- A. Reduce the proportion of *Hydrilla sp.* and Eurasian water milfoil in favor of more desirable native species.
- B. Stock 10,000 yearling grass carp into targeted areas in cooperation with the COE in 2007. Future grass carp stockings will be based on *Hydrilla sp.* coverage with cover data provided by COE.
- C. Endorse COE use of approved aquatic herbicides in selected areas such as swim beaches, boat launches, and marinas.
- D. Endorse COE insect bio-control programs.
- E. Provide technical and logistical support for COE native plant restoration projects.

II. Increase the abundance of woody structure in Lake Ouachita.

Strategies

- A. Utilize AGFC habitat barge for placement of woody cover, particularly in the western portions where aquatic vegetation is limited, beginning in fall of 2008, according to COE guidelines.

B. Participate in COE tree-hinging program.

C. Develop a woody structure habitat enhancement plan by spring, 2008.

AQUATIC NUISANCE SPECIES STATEMENT

A multi-member task force is working to develop a comprehensive aquatic nuisance species plan for the State of Arkansas. The plan will inform and direct control and management of nuisance plants, animals, and pathogens. There are members of the LOCAG on this task force. The LOCAG, Corps of Engineers, AGFC, and other entities will cooperate to implement the plan on Lake Ouachita when it has been finalized then formally adopted by the Governor of Arkansas and the National Aquatic Nuisance Species Task Force (target 2008).

GENERAL STATEMENT ON COLLABORATIVE ADAPTIVE MANAGEMENT

It is the current policy of the Fisheries Division of the Arkansas Game and Fish Commission to utilize a form of adaptive resource management as an important approach for sportfishery management within the state. This is a process for systematically and continually assessing complex fishery resources, resource management decisions, and management actions to better obtain specific objectives and produce best-management practices. This process also helps provide information that can continually improve management of the state's fisheries. In other words, the division is committed to constantly assessing and re-assessing the results of management actions and adapting to these findings or to changing conditions. Therefore, the objectives and strategies of this plan may be modified as new knowledge or better science becomes available.

In collaborative adaptive management, the above process actively includes as many stake-holders as possible to link a wide range of individual experiences and values with the actual science and technology of fisheries management. It is our goal to continue to seek the participation of the Lake Ouachita Citizens Advisory Group in the on-going assessment and management of the fisheries in Lake Ouachita.