

## 2019 State Updates

### Arkansas

The majority of activities on small impoundments in Arkansas in 2018 were routine sampling. However, there were a couple non-routine activities in the state from multiple districts and the Black Bass Program.

#### District 3 – Northeast Arkansas

In addition, to routine spring largemouth bass sampling of 6 lakes under 500 acres. District Biologists performed tandem baited hoop net sampling on Lake Ashbaugh a 500 acre lake. District biologists and staff have deployed a total of 158 structures creating 56 new habitat sites at Lake Hogue a 280 acre lake. Biologists and staff deployed 15 structures creating 15 new habitat sites surrounding a shoreline fishing pier on Lake Frierson a 335 acre lake. Biologists and staff deployed 45 structures enhancing 16 existing habitat structures on Lake Walcott a 31 acre lake located at Crowley's Ridge State Park.

#### District 5 – Southeast Arkansas

Lake Grampus a 308 acre lake was invaded by water hyacinth in 2014 and in subsequent years it has almost completely covered the lake. The lake was treated with diquat in April 2018 and 2,4-D in October and November 2018. Water hyacinth persisted after the spring spraying but was mostly knocked back after the fall spraying. The total cost for 2018 was \$13,358.88.

Lake Wallace a 347 acre lake was treated for water hyacinth in 2018. It was treated with diquat and glyphosate in May and diquat and 2,4-D in October. Water hyacinth persisted after the spring spraying but was mostly knocked back after the fall spraying. The total cost for 2018 was \$15,537.83.

#### District 6 – South Central Arkansas

In October 2017, a lake renovation project was initiated to deepen shoreline areas along the 80-acre Lake June to improve fish habitat, angling opportunities, and limit nuisance aquatic vegetation growth. By June 2018, 1,098 m (3,600 linear feet) of shoreline had been excavated at 5 different locations around the lake to an average width of 14 m (45 feet). In all, approximately 55,455 m<sup>2</sup> (183,000 ft<sup>2</sup>) of deepened habitat was created. Water depth in these areas was generally increased from ~ 0.5 m to ~2.0 m.

A total of 65 pallet pyramids were placed in the lakebed, resulting in 4 separate artificial reefs. 100 willow trees were cut down in the lake bed and attached to 20 pallet pyramids to increase habitat complexity. Pallets and 55-gallon drum halves were used to construct 25 "catfish clubhouses" at 6 different locations in the lake, and pallets were used to create 11 pallet stacks immediately downstream of the Hwy 53 Bridge. During shoreline excavation activities a number of old sawmill logs, cypress stumps, and dead trees were encountered. Four large and several smaller brush piles were constructed using these materials as they were encountered. During spillway and levee construction dozens of trees had to be removed from the back side of the levee. These trees were used to create a row of complex woody debris along most of the length of the levee and secondary spillway.

Nine pea-gravel spawning beds ranging from 400 to 1200 ft<sup>2</sup> were constructed at several locations around the lake. In total, 1,947 m<sup>2</sup> (6,248 ft<sup>2</sup>) of pea-gravel beds were constructed. Additional spawning habitat was created by using circular cattle feed tubs and ½" PVC pipe. Four to five inches of pea gravel was placed in the bottom of the tub, and 5 lengths of pipe were run through holes cut into the top of the tub to create overhead cover. Fifty three of these "modular spawning pods" were constructed and placed to create three artificial reefs. These reefs were paired with pea-gravel spawning beds of similar size. Once the fishery has fully re-established, standardized angling will be used to compare fish usage between the two different spawning habitats. Finally, 13 "double-decker" spawning pods were placed along the boat ramp parking lot and walkway to the fishing pier. Additionally, the old spillway was removed and re-built, the levee was re-graded, and a new water control structure was installed. Plans called for a 200-foot primary spillway, a 400-foot secondary spillway, a 750-foot earthen levee, and a 12-inch manually controlled drain pipe.

### **District 10 – Central Arkansas**

A small-scale pilot study to examine the relative effectiveness of various Mossback brand artificial fish habitat structures compared to cedar trees as being fish attracting/holding structures. Additionally, a basic cost/benefit analysis will be performed to examine the long term costs associated with maintaining these structures.

Lake Cargile, a 143 acre AGFC owned lake located in Conway County, was chosen as the study lake due to its smaller size and close proximity to available cedar trees. Eighteen treatment sites will be established throughout Lake Cargile and documented with GPS coordinates. Sites will be selected using side scan sonar and referencing a bathometric map of the lake to ensure each site is devoid of habitat, is of similar distance from the shoreline, and has consistent water depths (6-8 ft.). All treatment sites are located at least 100-m apart, to reduce the influence of other treatment locations. Three treatments (Mossback MB1 Trophy Trees, cedar trees and control (no structure)), with six replicates each, will be randomly assigned to a numbered treatment site (1-18). Four Mossback MB1 Trophy Trees will be placed within close proximity to each other (< 1-m) at each of the six Mossback treatment sites. The surface area coverage of these structures will be approximately 9.2-m<sup>2</sup> (6.1-m x 1.5-m), with an approximate volume of 11.9-m<sup>3</sup> (6.1-m x 1.5-m x 1.3-m) (surface area: 100 ft<sup>2</sup> (20'x 5'), volume: 433 ft<sup>3</sup> (20'x 5'x 4.33')). The same approximate surface area and volume of cedar trees will be used for the cedar tree treatment. No structure will be placed in the control treatment. Abundance sampling will be conducted using boat mounted electrofishing examining abundance of gamefish species (Bluegill, Redear Sunfish, Channel Catfish, Black and White Crappie, and Largemouth Bass) at all treatment sites once per season (Spring, Summer, Fall and Winter). Sampling in additional years will be conducted to assess if soak time has a significant impact on the density of game fish related to the structures. Proposed project was initiated in winter of 2017 and will run through 2021.

### **Black Bass Program**

Largemouth Bass were freeze branded and stocked into Lakes Hogue and Cox Creek 250-acres and 258-acres, respectively. Florida Largemouth Bass fingerlings were freeze branded and stocked into Lakes Gurdon and Bois D' Arc 57-acres and 644-acres respectively. Lakes Hogue and Gurdon received

standard length fingerlings (~50mm) in June and all four lakes received advanced length fingerlings (~100mm) in September. Four to six electrofishing samples were completed at each lake. Survival of stocked bass ranged from 2.3% to 26.8% while survival of wild spawned bass ranged from 38.6% to 65.2%. Spring percent contribution from stockings ranged from 0% to 11%. Initial costs of standard fingerlings were \$0.02 at each hatchery while the cost to produce an advanced fingerling was \$0.18 at Joe Hogan Hatchery and \$0.36 at Andrew Hulseley Hatchery. After accounting for overwinter survival, the cost of an age-1 standard bass in the spring ranged from \$0.08 to \$0.13. The price per age-1 advanced bass in the spring ranged from \$2.60 to \$12.01. Additional research is needed to further replicate this study and tease out the effects of stocking time on advanced fingerlings.

### **Derby Program**

The Derby Program held 203 derbies in 2018. These derbies were held at 185 different lakes across the state. The program reports 24,183 people participated and 28,382 fish were caught.

### **Louisiana**

In Louisiana, technical advice to owners of ponds and small lakes is a part of the responsibility of the Inland Fish Division. Division biologists make several site visits assisting residents of the state on problems ranging from construction and stocking requirements, to harvest and disease identification. The biologists also answer numerous phone inquiries about various pond-related problems. Aquatic vegetation has become a problem in most small impoundments. Biologists provide advice and technical assistance as well as aquatic plant identification assistance for pond owners on request. Inland Fish division also issues triploid grass carp permits to individuals that have aquatic vegetation problems.

Louisiana has not provided fish to private pond owners since 1988. Private pond owners are given a fingerling producers list where they can purchase fish. Also, a pond management guide is offered to these individuals for helpful management ideas. This producer's list and pond management booklet is on our web site [www.wlf.louisiana.gov](http://www.wlf.louisiana.gov).

The Office of Fisheries has developed a community fishing program for LDWF. Within this program, LDWF identifies potential opportunities to bring fishing access to municipal areas as well as suburban and rural communities. LDWF believes fishing should be a readily accessible activity to all Louisiana residents and that the development of community fishing opportunities significantly increases access to quality fishing. LDWF will only support community fishing opportunities that allow open access to the public, with particular attention to access typically in short supply; shoreline angling and accessibility to the handicapped. For the purposes of this program, a public waterbody is one that is no more restricted to the general public than to any other group or individual. The objectives of this program are as follows:

1. Increase the number of recreational fishing opportunities and participation in recreational fishing each year
2. Develop cooperative relationships with local government and community organizations to provide community fishing opportunities
3. Develop and/or maintain a fishery that will provide the opportunity to catch fish

4. Provide training and educational opportunities to teach children and adults how to fish and enjoy other related aspects of nature
5. Develop and increase anglers' and nonanglers' environmental awareness and conservation ethics in the community

The Get Out and Fish! Program seeks to increase the number of people with access to quality fishing. The program intends to recruit new anglers to the sport of fishing and promote outdoor activities for future generations. In order to accomplish this mission, public water bodies that meet the required specifications will be chosen by LDWF biologists and stocked on a regular basis for up to one year. LDWF will promote the launch of each new site with a Get Out and Fish! Event.

A total of 13 ponds/lakes throughout Louisiana have been implemented in the Get out and Fish program from 2015 – 2018. This program is a huge success with numerous fishermen of all ages coming out to fish and harvesting fish that were stocked. Species that were stocked consisted of Adult channel catfish and rainbow trout. Below is a list of species stocked in 2018:

Park Name	Date Stocked	Species Stocked	Number of Pounds
BREC Burbank Park	2018	channel catfish	1900
Elmore D. Mayfield Park	2018	channel catfish	4200
Girard Park	2018	rainbow trout	400
Girard Park	2018	channel catfish	1600
Grambling City Park	2018	rainbow trout	200
Grambling City Park	2018	channel catfish	1800
Kiroli Park	2018	rainbow trout	500
Kiroli Park	2018	channel catfish	2000
Purple Heart Memorial Park	2018	rainbow trout	600
Purple Heart Memorial Park	2018	channel catfish	2600
Sidney Hutchinson Park	2018	channel catfish	1000
Southside Regional Park	2018	channel catfish	2000
Turner Pond	2018	channel catfish	4000
William T. Polk City Park	2018	rainbow trout	400
William T. Polk City Park	2018	channel catfish	2000
Zemurray Park	2018	rainbow trout	400
Zemurray Park	2018	channel catfish	900

**Species stocked in small ponds/lakes in Louisiana less than 25 acres in 2018:  
(Not in the Get Out and Fish Program)**

Florida Largemouth Bass	690 (Fingerlings)
Largemouth Bass	240 (Adults)
Channel Catfish	2,992 (Fingerlings)
Bluegill	8,875 (Fingerlings)
Redear sunfish	3,375 (Fingerlings)

**Plans for 2019 - Rainbow stocking locations:**

Purple Heart Memorial Park - 300 pounds  
Girard Park - 200 pounds  
Southside Regional Park –200 pounds  
Sidney Hutchinson Park - 200 pounds  
Zemurray Park– 300 pounds  
William T. Polk Park – 200 pounds  
Kiroli Park - 400 pounds  
Grambling Park - 200 pounds  
Elmore D. Mayfield Park - 500 pounds  
Turner’s Pond - 500 pounds

**North Carolina****Trout Stockings**

The North Carolina Wildlife Resources Commission (Commission) has expanded winter trout stockings from the mountain region to small impoundments across Piedmont region. This allows anglers of all experience levels an opportunity to fish for trout without having to travel to the mountains. Generally, the ponds chosen for trout stockings are less than 10 acres, have easy access, and staff willing to monitor activity and host trout fishing events. This includes some ponds located within state, city or county parks that also participate in our Community Fishing Program. A small number of ponds were stocked in 2017, during which the program received a positive response from the public and the participating parks. In one case, Cabarrus County Parks staff reported that during a 10-day period in December 2017, 312 one-day fishing passes were sold at Frank Liske Park, compared to the normal rate of 50 passes within the entire month of December. The program was expanded in 2018 and continues to grow. In 2018, an estimated 13,612 trout were stocked into 26 small impoundments across 6 districts. As this program is in the beginning stages in the Piedmont, no official assessment of angler response has been conducted. A published fact sheet on trout stocking in District 6 can be viewed on the Commission’s website:

<https://www.ncwildlife.org/Portals/0/Fishing/documents/2018%20Winter%20Trout%20Stocking%20in%20CFP%20Ponds%20FINAL.pdf>

**NC Pond Management Guide, revised 2018**

An updated Pond Management Guide has been published by the NC State Extension Service in cooperation with the North Carolina Wildlife Resources Commission. The guide has been revised to include updated graphics, information on the permitting process, and any new or relevant information regarding pond management. This 44-page guide includes information on a variety of pond management topics including the following; site planning and pond construction, stocking and harvesting, pond management, solving problems, and sources of additional information. The updated guide can be viewed on NC State Extension’s website, under publications:

<https://content.ces.ncsu.edu/pond-management-guide>).

**Sandhills Trail Camera Project**

Biologists for the Commission used camera traps to assess angler use in small ponds in the Sandhills Game Land located in the south-central portion of North Carolina. Limited access to these ponds,

despite being located within a game land, made it difficult to assess angler use through typical methods such as creel surveys. From October 1, 2015 to September 30, 2016 cameras were set to take one photo every 15 minutes from 7:00 am to 6:00 pm at three small lakes, Indian Camp Lake (5 acres), Crappie Lake (20 acres) and Kinney Cameron Lake (35 acres) in the Sandhills Game Land. Images were analyzed using time lapse image enumeration software. For each image, the number of users were counted and demographics, including age and gender, were recorded. The type of use (i.e., bank, kayak, canoe, or jon boat angling, hunter, horseback rider or unknown) were also recorded. A total of 41,851 images were collected during the study. Results indicate that male anglers were the predominant uses, but that ponds varied in demographics and type of use. Overall, the camera traps provided valuable total use data without the logistical hurdles of traditional creel surveys. However, camera traps were less effective at collecting demographics data due to limited resolution or focus at some sites. A published report of this study can be viewed on the Commission's website: ([https://www.ncwildlife.org/Portals/0/Fishing/documents/Sandhill%20Lakes%20Trail%20Camera%20Project\\_FINAL.pdf](https://www.ncwildlife.org/Portals/0/Fishing/documents/Sandhill%20Lakes%20Trail%20Camera%20Project_FINAL.pdf)).

### **Community Fishing Program**

The Community Fishing Program (CFP) is a statewide program in which the Commission partners with local governments to provide fishing opportunities in small impoundments across the state. The Commission provides 75% of the operating funds through the Sport Fish Restoration Fund, while the local government funds 25% and provides the fishing site. Participating organizations receive stockings of catchable-sized Channel Catfish throughout the summer months. This program is managed as a put-grow-and-take fishery. Since its creation in 1989, the CFP program has continued to grow and has recently outgrown production capacity. In addition, there are many unknowns associated with the CFP regarding adequate stocking rates, angler use, and economic advantages. To more efficiently and effectively manage these small ponds for catfish, a CFP management was created in 2015. This plan outlines the need for biological and human dimensions research as well as guidelines for approving new CFP sites, and how to improve education and outreach efforts for the CFP. In 2019, the Commission plans re-address this plan and focus on reducing the number of catfish stocked over the years to free up hatchery space.

### **Small Impoundments for Education**

North Carolina State University students along with Commission biologists have surveyed Lake Raleigh (90 acres) every other year since 2006 with NCSU students doing most of the work. In October 2018, students collected close to 1,000 fish. Students gain hands on experience collecting field data and performing a population analysis. This year's results indicate that water quality remains good and Largemouth Bass and Blue Gill populations are balanced and exhibit ideal relative weights. The students recommended potential small-scale Channel Catfish stockings and feedings along with updated kiosks providing information on fish species and fishing techniques. This opportunity continues to be a rewarding learning experience for students on how to sample and manage small impoundments.

## **Oklahoma**

### **OKC Region**

- Submitted alligator weed samples from several private lakes in OKC to USACE for genetic testing. Samples were run at Texas Christian University and found that our haplotype is similar to samples from several other Southeastern states.

- Dahlgren State Fishing Lake (Lexington Wildlife Management Area) renovation is complete. The lake level has returned to normal. Fishing pier, walking trails, boat ramp, parking lot were constructed and are ready for use.
- Trail cameras were installed at a Close to Home Fishing Program pond in Edmond, OK to evaluate fishing pressure. 196 anglers fished the pond from May through July. Total hours fished came to 201.5. Anglers fished on average 1.03 hours. Most of pressure occurred during week days.

#### **East Central Region**

- Installed several channel catfish spawning boxes at Stigler City Lake.
- Collected and transported several thousand threadfin shad to supplement prey at Onapa Lake for Florida largemouth bass growth.
- Stocked three thousand - nine inch Florida largemouth bass into Onapa Lake. Mitochondrial DNA analysis via fin clips revealed that good percentages of F<sup>1</sup> and F<sup>x</sup> fish are contributing to the fishery.

#### **Southcentral Region**

- Lake Gene Neustadt, a 462 acre impoundment has been stocked with saugeye for stunted crappie control and added sportfish. Being evaluated by Oklahoma State University and OK Dept. of Wildlife Conservation for effectiveness.

#### **State Hatchery Section**

- Approximately 15,000 hybrid bluegill are ready for stocking this spring into multiple Close to Home Fishing Program ponds statewide. Fish have attained 7 inches in 2.5 years. Emphasis on fish stocking at these urban sites changed from channel catfish to sunfish. More cost effective, hardier and easier to catch by novice anglers.

#### **Northwest Region**

- Renovations / repairs are ongoing at Lake Watonga, a 55 acre State Fishing Lake in Roman Nose State Park. Spillway and dam repairs are underway. Total drain of lake to rework bottom contours. Winter trout season is suspended.
- Several small impoundments (≤ 500 A) are being studied for their white bass populations. Abundance as well as age and growth metrics are being collected.

#### **Oklahoma Land Access Program**

- New hunting and fishing private land access program funded by USDA-NRCS grant. To date 60,000 acres of hunting lands, 50 acres of private waters (pond / lake) and 3 stream miles have been signed up statewide.

#### **Tulsa Region**

- In the process of signing on the City of Tulsa to the Close to Home Fishing Program.
  - Four existing ponds. Three in parks and one is a flood control structure.

#### **Southeast, Central and Northeast regions**

- Normal activity. Nothing special.

## Tennessee

- We are still managing 18 state fishing lakes, approximately 13 Community Fishing lakes, along with hosting approximately 80 youth fishing events.
- As for the state fishing lakes we are still doing the annual/routine surveys, but the latest is, we are finalizing a license survey conducted on certain lakes to determine “free” users in order to get a better idea on “total” angler usage at the lakes. We have also conducted walleye stockings at two lakes, and a new hybrid striped bass stockings at another lake, along with a Florida LMB stocking at a renovated 100 acre lake. We are currently working with an Engineering firm to construct a new water control structure at one of our 200 acre lake.
- Habitat work was once again conducted in 2018 on the state fishing lakes. Approximately 200 fish attractors were placed into state fishing lakes. The common structure types are as follows: bamboo structures, PVC pipe structures, corrugated pipe structures, and stake “beds”.
- Grass carp are still being stocked into several lakes that have aquatic vegetation issues. The stocking rate is averaging approximately 2/acre with good results so far, along with some herbicide treatment.
- Other ongoing with the state lake are the repair of buildings, boat ramps, pier additions/renovations, roads, drainage culverts, fertilization, herbicide applications, along with tree removal on dams.
- As for the Community Lakes Program, we are working with 13 city/county governments to enhance and provide a fishers to the local folks. This consist of surveying the waterbodies as needed, and stocking what we and they can, based on survey results. As of now, most stockings consist of bluegill (for LMB crowded lakes), catfish or grass carp for vegetation control.
- As for the Youth Fishing Events, we are providing approximately 80 events with channel catfish (~40,000 lbs.), which are averaging 180 youth fishing per event. These events include both the catfish and/or trout (~5,000 lbs), depending on the location and event.
- In the future, we will be working with the R3 committee, and working to do our own survey to see how we can enhance the experience with these youth events, to increase anglers, and license buyers. This also goes along with how to increase the state lake/community lake users.

## Texas

### Small Impoundments in Texas

In Texas, public water bodies range from a fraction of an acre to over 100,000 acres in size; however, this summary focuses on bodies of water under 500 acres. These smaller impoundments are typically managed by local governments (cities, townships and counties) and serve the purpose of flood control, water supply and recreation. Some reside within state parks and are great venues for those looking for an all-around outdoor package. State park ponds provide free fishing opportunities under a free fishing initiative program. Anglers fishing within a state park are not required to possess a fishing license. This was designed to entice people to become involved in fishing while visiting state parks. Many small impoundments are focal points in small communities and serve as a great attraction for local residents. Others are spread throughout major metropolitan areas and serve as close-to-home opportunities for fishing and outdoor recreation. Most of these waters are managed with regular fish stockings to sustain fishing activity. Almost 700,000 Channel Catfish and over 334,000 Rainbow Trout were stocked into



Texas waters in 2018; many into small impoundments to provide excellent fishing opportunities for Texas anglers.

The Texas population is expected to double by 2050, with most residents living around major cities. As demographics shift, fisheries managers need to work to maintain fishing relevant for future generations. With most residents centered on areas with small impoundments, these waters can serve as our best tools to provide fishing opportunities close to home. Also; with fluctuating water levels affecting access at many major Texas reservoirs, these small lakes, at times, become the most reliable fishing holes for Texas anglers. In the future, these small impoundments may become invaluable fishing resources as water issues become more challenging. TPWD, in conjunction with local authorities, is focused on managing these impoundments to provide fishing opportunities for everyone. For management purposes small impoundments have been classified into several categories to identify with certain programs/initiatives.

### **Small Lakes**

These are typically small impoundments between 75 and 500 acres, constructed as water supply reservoirs for smaller cities or are nested within state parks. These reservoirs may have regulated access and more restrictions than our larger reservoirs to preserve water quality and wildlife populations. When appropriate, TPWD will manage these small lakes similar to large reservoirs by applying fishing regulations, restoring fish habitat and angler access to enhance fishing opportunities. Stockings may not be applied as rigorously as in some smaller impoundments since the larger size and habitat availability will aid self-sustaining populations. Creel surveys and general fish population monitoring efforts are typically conducted as needed in these small lakes.

### **Community Fishing Lake (CFL)**

A CFL is a small impoundment designation, defined as public impoundment 75 acres or smaller located totally within incorporated city limits or a public park, or any impoundment lying totally within the boundaries of a state park. Nearly 800 CFLs have been registered statewide, with many new ones being added every year, mainly around large metropolitan areas, where development is high. Many CFLs are stocked annually with Channel Catfish and/or Rainbow Trout. Special fishing regulations apply to CFLs, which differ from statewide fishing regulations. While stocking and regulation have been the primary management action for this classification of lakes, other management efforts have been applied at several locations. These waters regularly serve as host sites for state programs, angler outreach events and other educational purposes.

### **Neighborhood Fishin' (NF) Program**

Neighborhood Fishin' has become a trademark for urban fishing in Texas. Its goal is to recruit and retain new anglers in the major population centers of our state. This successful program has grown significantly thanks to funding coming from a prestigious, professional-level bass fishing tournament designed to benefit the Texas Parks and Wildlife Department (TPWD). The tournament, now called the Toyota Bassmaster Texas Fest, has generated \$3.25 M in funding to support youth fishing initiatives, including the Neighborhood Fishin' program. The program and tournament are supported by numerous

local government and private partners, including Gulf States Toyota and the Bass Anglers Sportsman's Society. Total program operating costs are about \$550K per year at current levels.

Neighborhood Fishin' consists of 19 small (1-6 acre) community park lakes (CFLs) located in 11 major metropolitan areas. Lakes are stocked on a seasonal, biweekly regime of Channel Catfish or Rainbow Trout eleven months during the year. With the program surpassing 15 years since inception, TPWD continues to pursue an extensive marketing campaign. We estimate that approximately 100,000 anglers use these lakes every year and about 50% are new anglers. For information on Neighborhood Fishin', please visit [www.neighborhoodfishin.org](http://www.neighborhoodfishin.org)

### **Diversified Community Angling (DCA)**

DCA is an initiative designed to provide a more advanced quality fishing opportunity for anglers. Small impoundments, mainly CFLs, serve as host sites for these unique fisheries. These impoundments are intensively managed for different species utilizing management practices such as highly-restrictive harvest regulations, fertilization, aeration, forage stockings and habitat and access enhancement. The goal is to develop and manage for diversified angling opportunities to existing and potential anglers in Texas. This will create quality urban fishery options not directed towards harvest opportunities, like provided by Neighborhood Fishin'; but more towards catch and enhancing sport fishing skills. DCA impoundments portray the following characteristics:

- A. Self-sustaining/productive lakes (larger size, habitat)
- B. High-quality, non-harvest-oriented fishery; focus on recreational opportunity
- C. Controlled and improved access
- D. Improved infrastructure and fish habitat via effective partnerships
- E. Marketable to more experienced anglers

Currently pilot sites in different cities are at various stages or progression under their exclusive management plans. The goal is to successfully implement these management plans and evaluate impacts on anglers within five years of implementation. Afterwards, the plan is to make this initiative marketable and will become the focus of expansion under developed partnerships with local stakeholders.

### **Other**

- Inspired by the Recreational Boating and Fishing Foundation's "60 in 60" challenge, Texas is committed to increasing participation in angling and improve state fishing revenue. The R3 initiative aims at recruiting new anglers, retaining active anglers, and reactivating lapsed anglers. TPWD put together a R3 task force to research strategies to implement marketing and management specifically in urban areas, where the maximum return on investment can be achieved. Small impoundments will serve as important venues in these future management efforts.
- The TPWD Texas Freshwater Fisheries Center (TFFC) outreach pond in Athens is stocked and used for fishing events, reaching well over 10,000 participants annually.
- TPWD offers valuable small impoundments management information for the private sector in its web site at: [http://www.tpwd.state.tx.us/landwater/water/habitats/private\\_water/](http://www.tpwd.state.tx.us/landwater/water/habitats/private_water/)
- Information on TPWD fishing programs, please visit: <http://www.tpwd.state.tx.us/fishboat/fish/>

## Virginia

Catfish spawning boxes have been placed at around a half dozen small impoundments across the state. During the spawning season, nest boxes tend to have almost 100% occupancy and egg masses/fry have been documented in many instances. Channel catfish that have been stocked in several small impoundments have been fin clipped for multiple years in an effort to ascertain whether recruitment via natural reproduction is occurring. Time will tell whether natural reproduction is contributing to the fishery or not.

Lake Connor in Halifax County currently has a hydrilla monitoring program in place that utilizes GPS and GIS mapping tools to aid in triploid grass carp vegetation management.

Black crappie and white crappie have been stocked in several small impoundments located in southside Virginia in an attempt to smooth out variable recruitment that has impacted fishing success. It's still too early to tell if these supplemental stockings have had any impact or not.

Keokee Lake (92 acres) was constructed in 1975 and at that time standing timber was left throughout the lake that has been a navigational hazard since then. During 2018, the lake was drawn down 3.5' to facilitate the removal of the exposed tops of 3,182 trees. That work was completed by fall of 2018 and the lake has refilled now allowing better navigational access throughout the lake. Keokee Lake was also limed in late winter of 2018 as part of a long-term biannual liming program to address water quality needs.

Bark Camp Lake is a joint DGIF and USFS impoundment located in the Jefferson National Forest. Dam Safety renovations were completed in 2018 to bring the impoundment up to new federal dam safety standards. As a part of the renovations, additional bank access was created as well as the addition of a mobility limited walkway to the dam for angling access.

FishLocalVA aims to promote and develop fisheries in population centers throughout Virginia. This effort intends to employ targeted advertising and program evaluation. We are taking an adaptive management approach that views every action taken as an activity that can be learned from to develop the next steps. We are starting in Henrico County and intend to expand into the City of Richmond and Chesterfield County in 2020. After that, we will look to expand further, with statewide implementation expected around 2022.

This effort will build upon ongoing stockings of trout, bass, and catfish, as well as habitat improvement activities. Each participating county or city will have a brief management plan created that will identify the strategies employed to maximize recreational opportunity in the bodies of water within. Outreach will assist with developing clearer signage as well as with creating advertising materials. DGIF believes that making people aware of the high quality fishing opportunities available to them in their own backyard will have direct benefits to the Agency's Recruitment, Retention, and Reactivation efforts.

A five year study to evaluate walleye stocking densities in three small impoundments is winding down as we completed year five of stockings and are on year four of tagging. It is likely that tagging will continue for three more years to allow for all the year classes to recruit to sampling gear.

Preliminary data indicated that the walleye populations are much smaller than once thought in these impoundments. Mark recapture estimates are quite variable from year to year, but range from as little as 136 fish (1 fish/acre) to just over 476 fish (4 fish/acre) in these study lakes. Given the small population size, these populations are much more susceptible to population declines from angler harvest, environmental changes, and stocking success.

The effects from differential stocking rates appears to be variable among lakes. The walleye population in our control lake (Brittle) has declined considerably and could be due to changes in SAV, upper watershed development increasing filling in and turbidity of the lake, or some other factor(s). At Lake Orange, which has the highest stocking rate, we have observed a considerable increase in numbers of fish. At Burke, the population seems stable and similar to historical catch data. I think we are going to find that stocking rates need to be developed and tweaked on a lake to lake basis depending on the lake characteristic and that no set stocking rate will be ideal for every small impoundment.