Tennessee Chapter American Fisheries Society Newsletter

Winter 2015 - 2016

President's Message

It's been almost a year since I have seen many of you in person. Wow how time flies when you are having fun! The EXCOM has been active this year and I am thankful for a great team to work with. We are happy to report that a $10,000 investment deposit was made with AFS in May 2015 and we are anxiously awaiting a dividend report on that investment. Additionally, a liability insurance policy was purchased through AFS to protect our chapter and also to allow us better access to meeting venues in the future. These are both initiatives that were strongly recommended by national and are financially responsible decisions for our chapter. Notes from all EXCOM meetings are now on the website so please take time to look them over so you can see what we have been up to!

Through your contributions both during the auction and meeting participation in 2015, we were able to award $1500 to assist with the costs of 8 kids fishing events throughout the state serving over 1,900 people. At least two of these events were new in 2015 and it is exciting to see enthusiasm spread about these events that are inspiring a new generation of anglers. Also, in regards to education, EXCOM voted to offer a $200 award to each of the student subchapters to be used however they may need, pending an application submission with details of the need. We have not received requests for funds yet but we are hoping that the subchapters will be able to use this money for campus outreach activities, student awards/incentives, equipment needs or other ongoing activities. We want to invest in our students and encourage them as they seek to be the fisheries professionals of tomorrow. You may remember that we voted to donate $200 to the Jimmie Pigg Memorial Outstanding Student Achievement Award sponsored by the Warmwater Streams Committee. Applications for the 2016 award were due December 1st and the winner will be announced at the SDAFS meeting in West Virginia in February. I am so pleased that you were willing to be a part of this scholarship opportunity. Expanding our efforts in education and outreach was a challenge passed down from SDAFS last year and our chapter is doing a great job!

I immensely enjoyed hosting the 2015 TNAFS meeting last year at the Tennessee Aquarium in Chattanooga and I appreciate everyone that braved the wintery weather to join us. That said, I am so glad that President Elect Chris Morton is handling all of the details for the 2016 meeting and doing so much work to get us ready! Registration is now open and we are accepting online payments at our Square Marketplace website. Visit http://sdafs.org/tnafs/2016-tnafs-annual-meeting/ for meeting registration details. I can't wait to see you all at Montgomery Bell State Park, March 15-16!
Thank you for the opportunity to serve the chapter as President this past year. It has been an honor.
Sincerely,

Kathlina Alford

Chapter Annual Meeting: March 15-16, 2016, Montgomery Bell State Park

Registration:

Registration is now open! **Early registration ends February 1, 2016** so register before that date to ensure you get the discounted rate. Regular registration closes March 8, 2016 and after that time registration will be considered "at the door".

Early Registration: $60 professional/$30 student
Regular Registration: $70/$40
At The Door: $85/$55

Payments can be made online at https://squareup.com/market/tnafs and registration forms and all meeting information can be found on the TNAFS website http://sdafs.org/tnafs-annual-meeting/

Lodging:

The group rate is $84.92/night and we currently have a block of 50 rooms reserved until **February 1, 2016**. Please reserve your room before that date to ensure you get the group rate!

Reserve by phone: (800) 250-8613 or
Online:
https://guestrez.megahotel.com/Hotel/Reservation/Index/P8A43
Group Code: 8027

Abstracts:
Abstracts should be sent to Christ Morton, chris.morton@tn.gov and details on formatting and submission requirements can be found on the TNAFS website http://sdafs.org/tnafs/abstract-submission-2016/

Banquet:
The awards banquet and auction will be held Tuesday evening, March 15, 2016. Each person will receive two drink tickets for alcohol and after that it will turn to a cash bar until 10 pm. Guest tickets to the banquet can be purchased for $30 https://squareup.com/market/tnafs

Auction:
An auction will be held during the Tuesday night banquet to raise money for kids fishing events across the state in 2016. If you have items for the auction please contact Chris Morton chris.morton@tn.gov

Kids Fishing Day, Cannon County

Nominations and Awards

The Tennessee Chapter of the American Fisheries Society Nominations and Awards Committee is soliciting nominations for the following awards:

1) Lifetime Achievement Award
2) Outstanding Fisheries Scientist
3) Distinguished Service Award
4) Friends of Fisheries Award

Criteria for these awards are:

Lifetime Achievement Award
Nominees should either be retired or within five years of retirement and have had a long history of significant contributions.

Outstanding Fisheries Scientist
To be bestowed on biologists in their early to mid career for making significant contributions over several years or in the past year.

Distinguished Service Award
To be bestowed on individuals that served as a Chapter officer for more than five years or served the chapter as chair of a long-standing Chapter committee for more than five years.

Friends of Fisheries Award
This award shall be made to non-Chapter member(s) who have distinguished themselves by service or commitment to the Chapter or the fisheries resources of Tennessee.

Also, the Tennessee Chapter of the American Fisheries Society Nominations and Awards Committee is soliciting nominations for the following Chapter officer position: President-elect.

All nominations should be emailed to tennesseeafs@gmail.com **by Feb. 1st**. The chapter also needs an awards chair for this year.

TWRA Region I Fisheries

We continued maintenance of deep water fish attractors established lakewide and established additional shallow water fish attractors in September and October. Those programs are very popular with anglers. We have also initiated a cypress tree planting project for Kentucky Reservoir – we are growing the trees to larger sizes and planting them on mud flats.

As you know the state record for LMB was broken this past year and Chickamauga Reservoir has received much attention since it was stocked with Florida LMB. Reservoir crews have established additional state-wide FLMB stocking sites and have collected LMB fin clips from approved stocking sites to determine the current distribution of the FLMB allele. Those collections are

being processed and the analysis should be available within the year. Approximately 180,000 FLMB were stocked in Kentucky Reservoir in three embayments.

The silver carp populations continued to increase on the Mississippi River and sampling can be very dangerous. As reported last year, silver carp have been collected in all Mississippi River tributaries, below the spillway at Reelfoot Lake and below Cheatham Dam. We have also collected silver carp below Pickwick Dam and commercial fishers have continued to collect bighead/silver carp in the Big Sandy area. The Agency is currently working with commercial fishers and private industry to determine commercial sale of Asian carp to China or to local markets. Several wholesale fish dealers have been established along the Mississippi and Ohio Rivers in Kentucky. Although the leading distribution edge has been documented to Pickwick Dam, densities have not increased in the area

The stream crews completed assigned surveys (sampled 30 streams and small rivers) and have established the "leading edge" of silver carp distribution in the major rivers, creeks, and streams feeding Kentucky Reservoir. Unfortunately, the crews collected silver carp in the 150 to 225 mm range in Kentucky Reservoir this year. Fish were collected as far south as Beech River, but the largest numbers were collected in the Big Sandy river area. Efforts will be made next year to determine if these fish are migrating through the locks at Kentucky Dam or are naturally reproducing in the Tennessee River. Asian carp will be our biggest management issue for the future and we are working with private industry and commercial fishers to develop harvest plans.

Trap netting surveys documented good white crappie recruitment at Kentucky and Barkley Reservoirs and Reelfoot Lake; electrofishing surveys showed good populations of largemouth bass on Kentucky, Barkley, and Pickwick Reservoirs.

Sauger populations improved in 2014 and 2015 but anglers were not able to take advantage of the increased densities because of high discharge rates during the entire sauger season.. We initiated a sauger stocking program in 2011 and that has continued each year. Hopefully 2017 will provide good fishing conditions.

The state lakes and hatchery crews have worked to improve state lake facilities and visitation remains good. The Humboldt Hatchery is the largest in Tennessee and has been assigned the Florida Largemouth Bass program. The crew is currently constructing a rearing facility and plan to have the facility operational by March 1 2016. Florida LMB will be reared at the facility to about two-inches and then stocked at approved stocking sites. The Agency also plans to obtain brood fish in the future and spawn fish at Humboldt. Sauger, catfish, blacknose crappie, sunfish, Florida LMB are the primary species raised at Humboldt and trout and alligator gar are also received and stocked from the hatchery. New stocking strategies may allow the hatchery to begin rearing striped bass and/or hybrid striped bass.

Tim Broadbent

Kids Fishing Day, Cannon County

Region 3 Reservoir Fish Management

The TWRA Region 3 Reservoir Crew continues to be involved with continued research as well as new studies pertinent to the nine reservoirs managed within this region. It is exciting to see the amount of effort and attention placed upon reservoirs in Reg 3 by our angling public; from smallmouth bass fishing at Dale Hollow, trolling for walleye, hooking into a large striped bass, catfishing on the TN River, crappie fishing in the spring, to largemouth bass fishing at Chickamauga Reservoir.

The management of the Florida bass stocking program implemented on Chickamauga Reservoir in the year 2000 continues to be a major part of our reservoir management efforts. Approximately 2.6 million FLMB fingerlings have been stocked into Chickamauga since the project was started. A considerable amount of effort has been expended gathering data via electrofishing, roving creel surveys and tournament weigh-ins in order to observe genetics, growth rates, catch rates, angling

pressure, age & growth, condition factors and abundance. Largemouth bass currently in Chickamauga have greater growth rates and are achieving greater weights than the pre FLMB stocking population at Chickamauga. Genetic information collected from fin clips was obtained from 48 largemouth bass that weighed at least 8 lbs. in 2013. The majority (75%) of these largemouth bass were classified as hybrids (Pure Northern X Pure Florida) thus lending credit to the proclaimed hybrid vigor and growth rates. Pure Florida bass and pure northern bass have contributed only minimally as individuals A new state record largemouth bass was caught on February 13, 2015 by Gabe Keen while bass fishing at Chickamauga Reservoir; it was determined to be a 12 year old hybrid. This new record broke an existing 60 plus year record! Chickamauga has gained national attention the last few years in regards to the superior bass fishing being realized there while consistently attracting major bass tournaments. Additionally, TWRA has decided to expand the FLMB stocking into four more reservoirs along the TN River across the state. Two of these reservoirs are in Region 3, Watts Bar and Nickajack Reservoirs. The first stockings were realized this year (2015). The TWRA Region 3 Reservoir crew will be busy in the years to come as we continue to evaluate the largemouth bass fisheries and the impacts of the FLMB stockings.

Of concern continues to be the advancement of the Alabama bass within reservoirs in Reg 3 and possibly statewide for that matter. Alabama bass were first observed in Parksville Reservoir in 2001 during spring electrofishing surveys. Alabama bass continue to make up over 60% of the black bass composition according to spring electrofishing surveys at Parksville. Alabama bass are seriously compromising the largemouth bass there which historically made up nearly 100% of the black bass at Parksville with an occasional smallmouth bass reported. Parksville will forever be known as the epicenter for the unsanctioned introduction and advancement of the Alabama Bass in Tennessee. The previous record Alabama bass was caught in the Ocoee River below Parksville Dam which is a tributary to Chickamauga Reservoir. The current record is once again from Parksville caught on March 10, 2014 and weighed 7 lbs., 0oz. Alabama bass have also been confirmed in Watts Bar Reservoir which were captured during recent spring blackbass electrofishing surveys. Alabama bass have proven to have dire consequences on other black bass populations where they are not native in other states like Georgia, especially on smallmouth bass. The increase of representation of Alabama bass has to have been facilitated all or in part by the transportation made possible by anglers hoping to create new and perhaps better fisheries. In contrast to the increase of Alabama bass, the spring electrofishing surveys conducted on the Reg 3 TN River reservoirs have shown sharp declines in abundance of the native northern spotted bass. This would appear to be a consequence of some limiting environmental factor since it is occurring in multiple reservoirs along the TN River. New regimes in spring time water levels possibly affecting spawning success and preferred habitat could be a contributor.

Annual stockings of walleye in Watts Bar and Chickamauga in lieu of sauger appear to be working as we realize increased catches of walleye by anglers. Recent gill netting surveys conducted on Watts Bar Reservoir yielded multiyear classes and walleye with great condition factors. Walleye have proven to be much more dependable to rear in our statewide hatcheries while also offering greater opportunities for fishing due to greater size, longer life spans and more year around angling opportunities. Walleye also continue to be stocked in Dale Hollow and Center Hill on an annual basis which provides great walleye fishing opportunities. Anglers continue to be excited about the possibility of a sustainable walleye fishery at Watts Bar and Chickamauga Reservoirs.

Crappie fishing success remains consistent on many of our Region 3 Reservoirs. Blacknose crappie continue to be stocked on Dale Hollow and Center Hill Reservoirs on an annual basis. An effort to establish a blacknose crappie brood source and fishing opportunity failed at Great Falls Reservoir after 3 consecutive years of stocking with no success upon evaluations by electrofishing and roving creel surveys. This same effort is now being expended at Parksville Reservoir with the same goals in mind. Black crappie composition continues to rise on TN River reservoirs probably due to increases in water clarity favoring the black crappie over white crappie. White crappie continue to exhibit great year classes during high springtime water level years. This was evident in our fall trapnetting surveys on Watts Bar Reservoir in 2010 and 2003 which had historic catch rates for white crappie. As anticipated, the white crappie year class from 2010 showed up well in our roving creel surveys starting in 2013 at Watts Bar.

The Region 3 Reservoir crew continues to work on providing habitat and fish attractors to increase angling opportunity and success. Great densities of forage bases, mainly shad, continue to be the staple for consistent growth rates in our gamefish populations. We are also involved in several outreach projects and host one of the largest kid's free fishing day events in the state; the annual "Chuck Copeland Memorial Kid's Fishing Rodeo" held annually on Watts Bar Reservoir at Spring City, TN where over 600 kids are in attendance annually. This year the TV show "Tennessee Uncharted" was on hand to film this event as well as some of our FLMB stocking efforts which will air during season 2 which just now started. We have also placed several kiosks at high volume boat ramps in an effort to get more information out to our boating public. This has allowed distribution for awareness for the Aquatic Nuisance Species (ANS) Program, boating safety and angling information.

We continue to be excited about the management and angling opportunities realized within Region 3

Reservoirs. Not just in Region 3 but excellent angling opportunities are available statewide due to the great resources, fisheries management, our hatcheries and other contributing factors. Many challenges are on the horizon as we evaluate effects of ANS, monitor non-native introductions such as Alabama bass, strive to maintain angler expectations and continue evaluations of new programs like the FLMB stocking projects. Management of reservoirs and connecting with anglers are constantly evolving and demanding more diverse management strategies and recommendations as we move forward. We are excited about those challenges and the resiliency that the reservoirs have shown in Region 3 over time.

Mike Jolley

Tennessee CFI Report

Conservation Fisheries, Inc. (CFI) continues to propagate, stock, and monitor Smoky and Yellowfin Madtoms, Citico Darters, and Spotfin Chubs in Tellico River. Evidence of reproduction was observed for all four species in 2015 and again included good numbers of Smokies & Citico Darters as in all recent years. After years of propagation difficulties, this marked the first year for releases of significant numbers of Ashy Darters. On a subsequent night snorkel monitoring survey a lone tagged individual was observed--the first documentation of the species surviving in Tellico River!

Snorkel monitoring in Citico Creek

Quantitative snorkel monitoring of restored Citico Darter and Smoky and Yellowfin Madtom populations in Abrams Creek was continued a fourth year by Great Smoky Mountains National Park and CFI. Results will be compiled and compared to earlier years as well as data from similar application of the protocol for the second year at seven sites in Citico Creek this year. The data collected will provide baseline information and quantify long-term population trends and reproductive success, providing a model for similar future monitoring in Tellico River, and possibly elsewhere with similarly cryptic fish. As part of a long term "fish passage" plan to manage gene pools and in conjunction with the monitoring, a few individuals of each of these species were translocated for the first time from Abrams to Citico and vice versa. The releases to Abrams were part of a coordinated media event exemplifying aquatic conservation activities and publicly announcing the formation of the Little Tennessee River Native Fish Conservation Area. For more information see: http://irmafiles.nps.gov/reference/holding/520389 and http://www.littlet.org/.

Yellowfin Madtom

Efforts to propagate and restore Elk River Boulder Darters to Shoal Creek continued. Nearly 1200 juveniles were tagged and stocked. Monitoring in Shoal Creek in 2015 was minimal due to summer water conditions and time availability, with only a few Boulder Darters observed at three sites. At least 13 new brood stock (plus 3 juveniles) were collected from Richland Creek in October, the most we have ever observed at that locality, suggesting that that population is currently doing well. Only a single release of 2014 year class Emory River Spotfin Chubs was made in April, with none further planned for several years while population status is evaluated. None were observed during monitoring. The lack of recruitment observations suggest that the stocked fish may not be able to successfully reproduce, possibly due to the habitat differences between Emory River and Shoal Creek and associated population ecological adaptations. If the failure of Spotfin Chubs to establish a reproducing population is verified, a new reintroduction effort with a population from a more ecologically similar stream (Buffalo River) may be attempted in the future.

Efforts continued on the project initiated last year to hold, propagate, and maintain an ark/refugium population of Tuxedo Darters collected at the sites determined to be impacted by the return to historicaloperations of Lake Cumberland. CFI only minimally assisted TVA and COE with monitoring this year but collected a few additional broodstock from localities where low numbers were collected last year. A far greater field effort was devoted to collection of fish for tissue samples (fin clips) for a study of genetic diversity in the species throughout its range in the Big South Fork Cumberland River (by Dr. Rebecca Johansen

at APSU). This required a multi-day float from Station Camp Creek in Tennessee down to Bear Creek in Kentucky as well as paddling upstream to another locality (hey, it really WAS the only practical way!). At least 184 Tuxedo Darters were observed by snorkelers and 117 were collected with handnets and clipped at 10 sites spanning 12 river miles. This far outnumbers the sum total of all observations prior to 2015 and would appear to indicate substantial improvement in population status when compared to data from similar floats in 1996 and 2005. Minimal efforts to propagate the species in 2015 failed to produce any spawns and thus a more intensive effort will be undertaken in 2016.

Spotfin Chub

This year marked the first collections of Olive Darters and Sickle Darters for broodstock for two new propagation projects. Olives were taken from the Oconaluftee River in hopes of producing young to stock in the restoration reach of the Cheoah River in NC. Sickles were collected from Little River in Blount County to attempt to restore to Tellico River. CFI has never propagated any close relatives of either species, so a steep learning curve may be encountered. Funding was provided by the Cheoah Fund and TVA, respectively.

Hatchery spawning and/or rearing included the following additional species/populations in 2015: Sicklefin Redhorse, Tangerine Darter, Marbled Darter, Barrens Topminnow, Ashy Darter, Slackwater Darters, Spring Pygmy Sunfish, Kentucky Arrow Darter, Cumberland Darter, and Bluemask Darter. CFI attempted to further refine already-developed captive propagation techniques for the production and collection of Diamond Darter eggs and larvae, but utilized the closely related Crystal Darter as a surrogate to avoid collection of any additional Diamond Darters until success with the surrogate species is obtained. Unique (for CFI) larval microhabitat conditions and prey item(s) resulted in survivorship and development of a few subadults, a success that can hopefully be replicated and expanded in 2016 and then applied to Diamond Darters in the future.

A final significant new reintroduction effort was initiated this year with the collection of Yellowfin Madtom nests from the Powell River (TN & VA) to produce fish to stock in the North Fork Holston River beginning in 2016. The groundwork for this effort was laid with the designation of a nonessential experimental population (NEP) for the species in that river in 1988 by Richard Biggins. Better late than never…

Website info: www.conservationfisheries.org & http://www.facebook.com/pages/Conservation-Fisheries/377299094501.

Pat Rakes, Conservation Fisheries Inc.

Report from PAEC

Parham & Associates Environmental Consulting (PAEC) has enjoyed another year of working on a diverse range It has been an interesting and exciting year for us at Parham & Associates Environmental Consulting. We have completed several large database projects for natural resource agencies. These projects covered the database design, development, data input, and analysis for more than a quarter million animal observations. While the creation and manipulation of data, databases, and GIS maps continues to be a large part of our business, Brett Connell and I have greatly expanded our High Definition Stream Survey and High Definition Fish Survey efforts.

High Definition Stream Survey (HDSS) is a stream survey system that integrates GPS, video, depth, side-scan sonar, and water chemistry sensors to allow many miles of stream (typically 15 miles) to be surveyed in a single day, with data collected approximately every meter (Figure 1). By using this multi-attribute data collection technique, we have the ability to change from guesses and broad extrapolations about the condition of the study area to high-resolution (1m) maps of the stream and stream channel. The range of data collected is highly useful for GIS mapping, hydrologic modeling, and habitat identification applications.

The HDSS information can be used to:

- Provide broad coverage about habitat quality for Index of Biological Integrity (IBI) type assessments.
- Delineate Threatened and Endangered species habitat and find locations of optimum habitat for reintroduction.
- Help identify and prioritize potential restoration areas to increase the cost effectiveness of restoration efforts.
- Locate and quantify areas of high erosion to apply the Bank Erosion Susceptibility Index (BESI) scores to support the EPA Watershed Assessment of River Stability & Sediment Supply (WARSSS) methods.
- Rapidly collect data to support the EPA Wadeable Stream Habitat assessment,

Maryland's Stream Corridor Assessment, or Rosgen's BEHI, among many others.

- Compare habitat conditions in before and after impact analysis for dam removal or other habitat manipulation efforts to see if river habitat is improving or declining.

- Provide a permanent database of stream conditions that is reviewable in meetings to show actual conditions to all participants (as opposed to having to get everyone in the field).

- Create a data-intensive GIS layer that can be joined with pre-existing layers such as property lines, county lines, digital elevation models, soils, land cover, flood plains, infrastructure, and many others.

We completed several hundred miles of surveys in the southeastern region and have surveyed streams from Maryland to Hawaii. Currently, we are starting an 82-mile survey of the Harpeth River to support integrated water resource management for the middle Tennessee River as well as beginning the post-dam removal surveys for Big Canoe Creek in Alabama.

Figure 1. An example output from Big Canoe Creek Survey before removal of Goodwin's Mill Dam.

High Definition Fish Survey (HDFS) provides a method to rapidly survey the fish over long distances in clear water streams and rivers. The HDFS uses geo-referenced, high-definition underwater video to replace snorkelers doing visual surveys. The big advantages to this approach include faster data collection, reviewable survey footage, less disturbance to the fish, and a wider range of sampling conditions. We have captured excellent footage of numerous different fish species spawning including darters, shiners, redhorse and smallmouth bass (Figure 2) and can identify most fish observed (Figure 3). The surveys may be random, timed, or baited and the videos may be used to assess habitat, size classes, and density depending on the survey approach. The combination of HDSS habitat surveys and HDFS (fish) surveys makes it easy to create very powerful habitat suitability maps of long stream segments.

Jim Parham

Kids Fishing Day, Cannon County

Student Sub Unit at Tennessee Tech

In the past year, seven Tennessee Tech Student Fisheries Association (SFA) members attended the Southern Division American Fisheries Society meeting in Savannah, GA. In addition, seven members were in attendance at the TNAFS meeting in Chattanooga, TN. Of those seven, two gave oral presentations. This summer we continued our tradition of hosting the Annual Kids' Fishing Derby at Cane Creek Park in Cookeville, Tennessee. A record number (191) of kids participated, and we hope to surpass 200 participants next year. We assisted the Army Corps of Engineers with boat ramp improvements and cleanup on Cordell Hull reservoir. Recently, SFA assisted with Lake Sturgeon monitoring on the Tennessee River, and we plan to help with the upcoming Cumberland River samples as well. We helped TWRA survey a private small impoundment and prepared the final report with management recommendations for the landowner. We look forward to the SDAFS meeting in Wheeling, WV and the TNAFS meeting at Montgomery Bell State Park.

Thomas Johnson