Meeting Minutes of the Trout Committee of the Southern Division American Fisheries Society

Meeting was convened on Tuesday, May 19, 2020 using Skype for Business.

A brief roll call and mic check was made to accommodate the meeting format.

The meeting was called to order by David Thorne at 10:15 AM.

Old Business:

Approval of 2019 Minutes:

2019 meeting minutes were sent out through email. Dave Dreves suggested that the round table discussion be added to the meeting minutes. With no other objections, Jim Habera makes a motion to approve the minutes. Dave Dreves seconded, and the motion passes.

Treasurer's Report- Christy Graham:

After all the expenses and credits of East Coast Trout the balance was $7,597.36. The committee agreed to donate $1,000.00 to the Wild Trout Symposium, bringing the total balance to $6,597.36. Christy agreed to email out the treasury report. Matt Kulp asked what would happen to the $1,000.00 that was donated to the Wild Trout Symposium since the meeting was canceled this year. Jake Rash offered to send out an email to determine what would happen with the money. With no further discussion, Matt Kulp made a motion to accept the treasury report. Jim Habera seconded, and the motion passed.

Membership List Update:

Georgia has appointed Sarah Baker as the new trout representative for their state. Welcome, Sarah. Moving forward, Brad Fink will be the future representative for Virginia. Dave Dreves requested the electronic membership be sent around to update contact information.

A Translocation Summary of Brook Trout:

Matt Kulp wanted to check on the status of the translocation publication. Steve Reeser agrees to forward with collecting information. He will send out an email with a deadline to begin collecting information.

New Business:

East Coast Trout Meeting:

David Thorne thanked Matt Sell and Alan Heft for putting the meeting together. Matt Sell said there were around 100 participants in attendance. Everyone he spoke with had very positive feedback. Matt Sell and Jim Habera are looking for possible ways to host the East Coast Trout Talks on our website. A possible solution may be to use a Google platform for storage with a link on our website.
Action item: find a platform to host the East Coast Trout Talks.

Distinguished Service Awards:

Jim Habera has the distinguished service awards for 2020. The consensus is to wait until 2021 to announce the award recipients at an in-person meeting. These awards will not take away from 2021's awards.

2021 Meeting Location:

David Thorne and Steve Reeser have discussed deferring this year's meeting location to next year. Steve Reeser agrees to set up the meeting at Hungry Mother State Park. The 2021 meeting will be held May 18th and 19th. The theme of the meeting will be R3. Please contact Steve Reeser if this year's room cancellation refund is not correct.

Website Updates:

Jim Habera has the website update through last year. He has added a distinguished service award tab. Jim will add this meeting to the website in the next few months.

Update on R3/COVID-19:

-David Thorne said West Virginia is open to free fishing for all residents.
-Jim Habera said Tennessee did not make their license free and their license sales are up two million.
-Matt Sell said that Maryland banned recreational fishing but has since reopened. They have formed an R3 committee, and it is beginning to gain a lot of ground in the state.
-Brandon Simcox gave an update on Tennessee's R3 effort. They are sending out an email to anglers informing them of stockings. To coincide with this, they are conducting creel surveys to assess the effectiveness of the email chain. They have also launched a fishing forecast on stockings for mainly tailwaters. It is getting a lot of views. Where it is placed on the website and how it is promoted is making a big difference on how many people see it. A group of Tennessee's trout biologist were awarded a grant to further the email and text campaign.
-Steve Reeser suggested that these are the things that he would like the next meeting to be centered around. Virginia is doing a trout slam marketing plan. A local artist drew a logo to be awarded to anglers who catch all 3 trout species in the same day. They also distributed several informative trout videos to Facebook and YouTube.
-Jake Rash said North Carolina has hired a R3 angling specialist. He is still getting settled into the position at this time. They also have restructured their license, removing the trout stamp and incurring a small price hike.
-Dan Rankin of South Carolina said they have experienced the same hike in license sales after a short closure.

Election of Officers:

-Chair Elect- David Thorne nominated Sally Petre. Second was given by Brandon Simcox. And Sally was proclaimed.

2020-2021 Officers

Chair: Justin Heflin (Kentucky)
Chair-elect: Sally Petre (Tennessee)
Past-chair: David Thorne (West Virginia)
Treasurer: Christy Graham (Arkansas)

-Christy Graham received word back from wild trout that could keep the money sent to them for this previous year's meeting or return it to the trout committee. It was agreed upon to allow wild trout to keep the money for the next meeting.

-Matt Sell posed the question of what to do with the money from East Coast Trout. He suggested that with state budgets getting tighter maybe we could use this money to offset the cost of state meetings. David Thorne suggested to sponsor upcoming students to national meetings. Matt Kulp offered up sponsoring an upcoming genetics paper. He also suggested sponsoring other publications. Thorne suggested to continue to think on the topic and revisit the topic at a later date. Sell said maybe we should hold on to it until a need arises.

-Members agreed to send in roundtable summary to be attached to the minutes.

-Matt Sell makes motion to adjourn the meeting
-The meeting was adjourned at 11:30 AM

Meeting Attendees:

David Thorne	West Virginia Division of Natural Resources
Christy Graham	Arkansas Game and Fish Commission
Jake Rash	North Carolina Wildlife Resources Commission
Justin Spalding	Tennessee Wildlife Resources Agency
Steve Reeser	Virginia Department of Wildlife Resources
Brad Fink	Virginia Department of Wildlife Resources
Larry Mohn	Shenandoah StreamWorks
Matt Sell	Maryland Department of Natural Resources
Allan Heft	Maryland Department of Natural Resources
Dan Rankin	South Carolina Department of Natural Recourses
Matt Kulp	Great Smoky Mountains National Park
Sally Petre	Tennessee Wildlife Resources Agency
Jim Habera	Tennessee Wildlife Resources Agency
Brandon Simcox	Tennessee Wildlife Resources Agency
Sarah Baker	Georgia Department of Natural Resources
Dave Dreves	Kentucky Department of Fish and Wildlife
Justin Heflin	Kentucky Department of Fish and Wildlife

Round Table

North Carolina Wildlife Resources Commission
Update to the Southern Division of the American Fisheries Society Trout Committee
2020 Annual Meeting
Virtual Meeting
19 May 2020
Report submitted by Jake Rash

R3

The NCWRC hired an Angler R3 Specialist in 2019. This program is just getting started, but we look forward to collaborating on efforts to maintain and grow the sport of fishing in North Carolina.

Communication: Popular Articles

The NCWRC produces its *Wildlife in North Carolina* magazine every two months. An article was published in fall 2019 to address common questions relative to our stocked-trout program. Here is citation and link for this article:

Rash, J. M. 2019. Taking stock: how and why hatchery trout are used to create fisheries in North Carolina. Wildlife in North Carolina 83(5):10–17. (link)

The North Carolina State Council of Trout Unlimited's produces a quarterly newsletter: *The Drift* (link). NCWRC staff have been frequent contributors to newsletter, which is shared with the nearly 5,000 Trout Unlimited members in North Carolina. The NCWRC articles shared since the previous Trout Committee update are as follows:

- NCWRC Trout Page (Spring 2019; link)
- Didymo in North Carolina: Working with Anglers to Learn More (Summer 2019; link)
- Hey, That's Not a Trout: A Little Info About Some of the Cool Fish You Catch Now and Again Fly Fishing (Fall 2019; link)
- Taking Advantage of WRC's Winter Impoundment Stockings (Winter 2020; link)
- Hey, That's Still Not a Trout: Getting to Know Your Knottyheads (Spring 2020; link)

Trout Angling Access Working Group

Sufficient public access for trout angling remains a major challenge for anglers in North Carolina, while finding ways to ensure long-term viability of public access is cited routinely by anglers and NCWRC staff as a priority issue. As such, staff have been working on possible solutions for many years, but momentum is building inside and outside of the agency for real solutions to this critical issue. In 2019,

the NCWRC began engaging a small group of key stakeholders through the creation of a Trout Angling Access Working Group to develop a collaborative and sustained approach to address the issue. Although the effort is in its early stages, initial meetings have been productive and established the foundation for additional efforts in 2020.

Socioeconomic Studies

Approximately 36,000 electronic surveys were sent to customers within the NCWRC license database between Jan–Mar 2020 to gain insight on potential classification changes and other Public Mountain Trout Waters (PMTW) issues from a random sample of trout anglers. We received 3,609 responses, but only 1,745 of the respondents fished in PMTW in 2019. Thus, our results reflect a sample size of 1,745 trout anglers selected randomly. Results are being interpreted and a final report is being prepared.

Identification of Natural Barriers

Thanks to numerous efforts throughout the years, identification of anthropogenic barriers to aquatic organism passage in high-elevation waters of North Carolina is fairly robust. However, the same cannot be said relative to identification and documentation of barriers that occur naturally. The NCWRC has been working with biologist at the Southeast Aquatic Resources Partnership (SARP) to develop geospatial methodologies to help identify these features, which are critical to Brook Trout conservation. This project is ongoing and holds promise. We hope to share results within 2020.

Brook Trout Genetics

The NCWRC has been collecting genetic information for the State's Brook Trout in conjunction with trout distribution efforts. Recently, the U.S. Geological Survey genotyped 7,588 Brook Trout representing 406 collections from across North Carolina at 12 microsatellite loci. Results of this effort found genetic diversity within populations to be low and that little, if any, gene flow occurs among populations. In addition, the majority of populations show limited evidence of introgression by northern origin hatchery strains. Approximately 500 additional individuals will be processed in 2020. These results represent a valuable information for management and restoration efforts of Brook Trout in North Carolina.

Brook Trout Restoration

The NCWRC has used recent genetic data to plan Brook Trout restoration activities. Two reintroductions were conducted in 2019 via the translocation of fish from selected source populations. Here is a link to a NCWRC YouTube feature:

https://www.youtube.com/watch?v=fRG0rOViHJs&feature=youtu.be

Whirling Disease

On July 27, 2015, *Myxobolus cerebralis* (the parasite that causes whirling disease) was confirmed in Rainbow Trout collected from Watauga River – the first documentation of the parasite in North Carolina. Subsequent testing of oligochaete hosts and wild trout stocks found the parasite in eight major river basins (Catawba River, French Broad River, Hiwassee River, Little Tennessee, New River, Savannah River, Watauga River, and Yadkin River basins). The NCWRC has initiated a three-year research project with researchers from Auburn University to explore the distribution (current and predicted) and life history characteristics of *Myxobolus cerebralis* in North Carolina. Additionally, a new species of *Myxobolus* has been documented within a Brook Trout population. Relevant publications since previous Trout Committee update:

Ksepka, S. P., J. M. Rash, N. Whelan, and S. A. Bullard. 2019. A new species of *Myxobolus* (Myxozoa: Bivalvulida) infecting the medulla oblongata and nerve cord of Brook Trout *Salvelinus fontinalis* in southern Appalachia (New River, NC, USA). Parasitology Research 118:3241–3252.

Salmincola spp.

Since September 2014, NCWRC biologists have documented new biological threats to salmonids within the State. Gill lice (Copepoda: Lernaeopodidae: *Salmincola*) have been found on Brook Trout and Rainbow Trout populations. Elsewhere within the United States, *S. edwardsii* and *S. californiensis* are known to parasitize salmonids of the genera of *Salvelinus* and *Oncorhynchus*, respectively. Taxonomic and molecular analyses of copepods confirmed the identification of both species in the State. In addition, anglers have been asked to report observations of gill lice during recreational outings, while the NCWRC will continue to sample Brook Trout and Rainbow Trout populations across the mountains of North Carolina to document the distribution and status of gill lice. Researchers at Auburn University will also continue to explore life history characteristics of these copepods.

Didymo

Researchers from Tennessee Tech University collected cells of the microscopic algae in Tuckasegee River while conducting regional surveys in late 2015 – the first time the organism has been documented in North Carolina. In 2018, Tennessee Tech University researchers began a study to determine didymo prevalence in Tuckasegee River and other potential waters throughout the State. Anglers were equipped with sample kits in 2019 to continue assessment of the algae's spatial distribution.

Contribution of Stocked Brown Trout and Rainbow Trout in Apalachia Reservoir: Angler Creel Survey

Located in the far western portion of North Carolina, Apalachia Reservoir has suitable trout habitat year-round and a clupeid forage base. Previous updates have discussed evaluations of the fishery, but we also explored the creel survey conducted during this project. We conducted a 12-mo, non-uniform probability creel survey to determine the return of stocked trout to anglers. Because the impoundment

had a remote location, we utilized game cameras at two boating access areas to improve our estimates of angler effort. These creel data supplemented limited biological information collected using conventional gears and allowed us to develop recommendations to better meet our management goals for the fishery. Relevant publications since previous Trout Committee update:

Rash, J. M., A. M. Bushon, D. L. Yow, and A. P. Wheeler. 2020. Using an Angler Creel Survey to Supplement a Stocked Trout Fishery Evaluation in a North Carolina Reservoir. Journal of Southeastern Association of Fish and Wildlife Agencies 7:13–19.

Winter Stockings of Trout in Selected Small Impoundments

In November 2016, the NCWRC stocked selected small impoundments in the mountain region with trout. Community collaborators and the NCWRC have had long-standing partnerships to provide angling opportunities in these waters, which have focused primarily on channel catfish stockings in warmer months. Such stockings have been (and remain) dependent upon the availability of trout beyond the numbers needed to stock traditional stocked-trout resources (e.g., Delayed Harvest Trout Waters and Hatchery Supported Trout Waters). These stockings have been incredibly popular with anglers, and in 2019, they were repeated, with increased expansion into the piedmont region of North Carolina.

General Aquatic Nuisance Species

The NCWRC has developed a website devoted to aquatic nuisance species (ANS): www.ncwildlife.org/ANS. Currently, this page provides specific information about whirling disease, gill lice, didymo, and hydrilla. Available information also provides details regarding minimal steps to help prevent the spread of ANS (these steps have also been incorporated into NCWRC signs and messaging): CLEAN equipment of all aquatic plants, animals and mud; DRAIN water from boats, live wells and all equipment; DRY all equipment thoroughly; and NEVER MOVE fish, plants, or other organisms from one body of water to another.

Citizen Science

Anglers have expressed interest in providing information relative to trout habitat. In conjunction with Trout Unlimited, the NCWRC launched an ArcGIS Survey123 project to allow anglers to document potential habitat improvement projects. Through this tool anglers, can take images, record notes, and share locations of potential improvement projects (e.g., improper culverts, failing stream banks, sources of sedimentation), with data stored in a geospatial database that is shared real-time with management partners.

Trout Distribution

The NCWRC continues its efforts to document the distribution of North Carolina's wild Brook Trout, Brown Trout, and Rainbow Trout populations. To date, over 700 Brook Trout populations have been identified. The NCWRC continues sampling efforts to identify new populations and evaluate assemblages associated with legacy data. In 2020, the NCWRC will have a two-person crew focused on these collection efforts.

Long-term Trout Monitoring

In 2012, the NCWRC initiated efforts to obtain routine data on wild trout populations. Initial long-term monitoring efforts were completed in 1996; however, recent data are desired to gain a greater understanding of wild trout population dynamics in waters managed by the NCWRC. Colorado State University and Clemson University researchers are working with the NCWRC to evaluate population dynamics and future monitoring strategies. As appropriate, the NCWRC will continue to seek to partner with fellow resource agencies to develop more robust data sets.

Lake Nantahala Kokanee Salmon Population

Kokanee Salmon *Oncorhynchus nerka* were stocked in western North Carolina reservoirs during the early 1960s, but Lake Nantahala was only system that successfully produced a self-sustaining population that persists today. In 2014, the state record fish (4 lb and 1 oz) was caught, but since that time angler have been reporting lower catch rates and the emergence of a Blueback Herring *Alosa aestivalis* population within the reservoir. Exotic to western North Carolina, Blueback Herring are a planktivorous competitor of Kokanee Salmon. In 2017 and 2018, NCWRC staff worked with Duke Energy biologists to couple hydroacoustic and gill-net surveys to evaluate this unique fishery. Staff have developed an ArcGIS Survey123 project to allow anglers to collect real-time information relative to their catches from Lake Nantahala and its Kokanee population. An experimental stocking of Kokanee in Lake Nantahala will occur in 2020 and will be monitored via gill-net collections and angler observations (Survey 123 project noted above). It is important to note that the Kokanee Salmon stocking in Lake Nantahala is a temporary deviation from our cold-water fisheries management program, which typically focuses exclusively on Brook Trout, Brown Trout, and Rainbow Trout*;* therefore, we will not consider stocking Kokanee Salmon in any other water bodies. Our intent for these experimental Kokanee Salmon stockings is to restore the historic population in Nantahala Reservoir and not to expand the range of Kokanee Salmon in North Carolina waters.

NCWRC Trout Page

The NCWRC continues to update its trout webpage to provide pertinent information concerning its trout management program in one place to help facilitate information exchange. The page can be found at **www.ncwildlife.org/trout**. Recently, a **Hatch Chart** developed in partnership with the North Carolina Council of Trout Unlimited was posted to help trout anglers match aquatic insect hatches in western North Carolina.

Evaluation of Advanced Fingerling Brown Trout Stockings in Bridgewater Tailrace

The NCWRC has worked to establish a put-grow-and-take Brown Trout fishery in Bridgewater Tailrace since 1995. These efforts have been successful in establishing a fishery; however, recent NCWRC surveys and angler reports indicate that success has been intermittent. Long-term water quality data suggested that thermal bottlenecks in the system may limit trout survival. In 2016, the NCWRC completed a five-year evaluation of a new management approach focused on stocking approximately 10,000 advanced Brown Trout fingerlings (200–255 mm total length) following the period of a potential thermal bottleneck. Study results indicated fast growth and a fishery comprised primarily of age-1 trout. On 1 August 2018, a new regulation for this fishery became effective: two-fish creel and 14-in minimum size limit. Relevant publications since previous Trout Committee update:

Wood, C. J., D. W. Goodfred, and J. M. Rash. 2020. Assessment of Stocking Advanced Fingerling Brown Trout in a North Carolina Tailrace. Journal of Southeastern Association of Fish and Wildlife Agencies 7:1–12.

Trout Age and Growth

The NCWRC lacks comprehensive trout age and growth data. To address this, otoliths from trout collected during the multi-year efforts with Auburn University to address trout health will be analyzed in partnership with Appalachian State University. This information will help develop spatial and temporal age data for North Carolina's self-sustaining trout populations.

Habitat Enhancement

The NCWRC is actively engaged with partners to identify and initiate coldwater habitat enhancement projects. Efforts span the range of trout distribution in North Carolina, which includes waters on public and private lands. Habitat enhancement activities remain a key aspect of trout management in the State.

Eastern Brook Trout Joint Venture

NCWRC has continued to be actively involved with the Eastern Brook Trout Joint Venture (EBTJV). Jake Rash serves as North Carolina's State Representative on the Steering Committee and as a member of the Science and Data Subcommittee.

Additional Publications from Previous Efforts

Previous research efforts and NCWRC activities have been reported in other SDAFS Trout Committee updates. This section provides additional information relative to those efforts.

Fischer, J. R., T. J. Kwak, H. J. Flowers, W. G. Cope, J. M. Rash, and D. A. Besler. 2019. Condition, diet, and trophic relations of stocked trout in southern Appalachian Mountain streams. Transactions of the American Fisheries Society 148:771–784.

Annual SDAFS Trout Committee Spring Meeting Update
May 19, 2020
Georgia DNR, Wildlife Resources Division
Report submitted by Sarah Baker

GA DNR Restructure
State has expanded five Fisheries regions into six. Durniak retired Aug 1st. Hakala was promoted to Region 1 Supervisor, and Rabern has been promoted to Region 2 Supervisor, leaving 2 Biologist positions vacant. Trout management remains under one region (Region 2).

- **Trout Biologist Hired**
    - Trout biologist Keefer retired in 2008; Position vacant since; Moran hired 09/18- left 09/19 to pursue PhD; Baker hired Dec 1, 2019
    - Focus will be trout; disease testing, genetics, routine monitoring, habitat enhancement, updating the 20-year-old Trout Management Plan

Hatchery Production Program

- **Hatchery Renovations**
    - Lake Burton Hatchery is underway, and the hatchery is completely offline. Estimated cost is $5.1 million for the hatchery and we have already spent 1 million on the replacing the 80-year-old dam and intake structure. We did not want to renovate a facility below this aging structure. Project scheduled to be completed in Jan 2021.
    - Goal of the project is not to increase production but make production more consistent in years of drought or low rainfall and replacing aging infrastructure to last another 50 years. The project includes the addition of dual drain circular tanks and the use of bulk liquid oxygen and low head oxygen units at the facility.
    - Will reduce trout program up to 30% for the 2020 stocking season and will have a similar impact to the 2021 season.
    - No formal request but may be looking for surplus fingerling or sub adult (6 -8 inch) trout in spring 2021 to put into the newly renovated Lake Burton Hatchery. Even a few thousand fish would give us something to work with as we learn how the renovated facility truly operates.
- **10-inch trout**
    - Began raising and stocking 10-inch fish in 2018, will continue in foreseeable future
    - Funding from license fee increase in 2018
    - Very popular with anglers
    - Cons: more trips, higher feed costs, cramped hatcheries.
    - Angler satisfaction outweighs all cons, even with forecasted budget issues related to the pandemic we will still try to grow these larger trout at reduced numbers to conserve on feed cost.
    - Must lower stocking target numbers for future (usually stock 1.0 – 1.1million)
- **BKT stocking**
    - GA program typically focuses on RBT with about 10% BNT
    - Very popular with anglers
    - When Burton is back online, we should be capable of accepting BKT eggs and or fingerlings. Hopeful to find a source.
- **Covid-19**

- Hatchery staff identified the locations of stocking points that had been closed due to COVID-19 which greatly impacted trout anglers; specifically, in the metro-Atlanta area. Staff did their best to continue trout stocking efforts in locations that were open and accessible to the public.

Angler Communication

- Weekly blog post by regional biologists on Georgia DNR Wildlife Resources Division website: https://georgiawildlife.blog/category/fishing/
- Trout Stream Interactive Map updated annually with information on accessibility, generation schedule links, regulations, and angling recommendations. https://gadnrwrd.maps.arcgis.com/apps/webappviewer/index.html?id=af50967627004b178ccd7264124fe5fd

Disease Prevention:

- Trout from private sellers continue to be sampled and sent to the Southeast Cooperative Fish Parasite & Disease Laboratory (Auburn University Fish Disease Lab/Coop) to be examined for whirling disease and gill lice.

Wild Trout Monitoring:

- Georgia DNR continues its efforts to document and evaluate the populations of wild Brook Trout, Brown Trout, and Rainbow Trout. A single file containing all historical records of sampling efforts is being created so as to help managers utilize these records for future analyses.

2020 Missouri Trout Update

Nathan Recktenwald
Missouri Department of Conservation
Fisheries Management Biologist
Nathan.Recktenwald@mdc.mo.gov
417-255-9561 ext.4742

- Our Rainbow Trout stocking has been reduced over the past year. Currently Roaring River Hatchery is still under renovation due to high water flows and Bennett Spring Hatchery has lost 1/3 of production due to aging infrastructure so the other hatcheries are running at/over full capacity to offset these issues. With the increase in crowding of trout at the hatcheries this also decreases water quality and increases disease potential. Shepherd of the Hills hatchery also suffered egg losses this year. These issues will result in stocking reductions for this year and next.
- The pandemic caused MDC to postpone stockings in most areas for approximately one month. Since this happened, MDC waived permit requirements during April. Most hatcheries kept production up and running through the pandemic.
- The Missouri Department of Conservation (MDC) will raise the prices of its annual trout permits and daily trout tags starting in 2020. According to MDC, the price increases are needed to better cover its costs of running hatcheries and providing more than 1.7 million trout each year for public fishing. The prices have not been raised since 1999.

  Starting in 2020, the cost of an annual trout permit will go from $7 to $10 for anglers 16 years of age and older and from $3.50 to $5 for anglers ages 15 and younger.

  Also starting in 2020, the cost of a daily trout tag to fish at three of Missouri's four trout parks -- Bennett Spring State Park, Montauk State Park, and Roaring River State Park -- will go from $3 to $4 for adults and from $2 to $3 for those 15 years of age and younger.

  Starting in 2020, MDC will begin a pilot program at Maramec Spring Park where the daily limit will be raised from four to five trout and the cost of a daily trout tag for adults will go from $3 to $5 and from $2 to $3 for anglers 15 years of age and younger. MDC has received public comments requesting the daily-limit return to five trout. Prior to 2004, the daily limit at the four parks was five fish measuring an average of about 10.5 inches. Today, the limit is four fish averaging about 12.5 inches. As a part of the Maramec Spring Pilot, the Department will maintain the current stocking size and daily stocking allotment. The possession limit will remain twice the statewide daily limit, except at Maramec Spring where the possession limit will be ten.

  "The five-fish-for-$5 pilot at Maramec Spring will allow us to survey anglers to determine their level of satisfaction," said MDC Director Sara Parker Pauley. "Gathering input from our anglers and area users is critical as we look at ways to recruit new anglers."

  The price increases were given initial approval by the Missouri Conservation Commission at its May 23 meeting. As part of the rulemaking process, MDC asked for public comments on the changes during July. The Commission considered input received and approved the price

increases and instructed MDC to initiate the pilot "five fish for $5" at Maramec Spring Park during its Aug. 23 meeting. **The effective date for all trout changes will be Feb. 29, 2020.**

A trout permit is required to possess trout, except in trout parks where a daily trout fishing tag is required during the catch-and-keep season. In addition, a trout permit is required for winter fishing in trout parks during the catch-and-release season and for fishing year-round in Lake Taneycomo upstream from the U.S. Highway 65 bridge. To fish for trout, anglers must also have a fishing permit or qualify for an exemption.

MDC raises trout at five fish hatcheries and releases about 1.7 million trout around the state for public fishing each year. According to MDC, the annual cost of fish food and staff labor to raise a trout in 2003 was about $1 per fish. The annual cost in 2017 had jumped to nearly twice that amount.

Those five fish hatcheries -- Bennett Spring, Montauk, Shepherd of the Hills, Roaring River, and Maramec Spring Park – also require regular maintenance, and several have been damaged numerous times in recent years by spring flooding. MDC has spent more than $11 million over the past decade on repairs and improvements to the hatcheries. MDC also reports that utility costs for the five hatcheries have increased by more than 25% since 2008.

- *MDC and Trout Unlimited partnered to offer Missouri anglers their first "Trout Slam"*
  The Missouri Department of Conservation (MDC) and Trout Unlimited encourage anglers to test their fishing skills and pursue a "Blue-Ribbon Trout Slam" from Missouri's nine blue-ribbon trout streams.
  "Missouri's blue-ribbon trout streams are areas in the state where trout reproduce naturally," explained MDC Fisheries Programs Specialist Andrew Branson. "The fish are wary of predators, which makes for an authentic and challenging experience for anglers."
  WHERE TO FISH
  The Blue-Ribbon Trout Slam honors anglers who catch a trout in at least 5 of MDC's 9 blue-ribbon trout streams:
    - Barren Fork Creek in Shannon County
    - Blue Springs Creek in Crawford County
    - Crane Creek in Lawrence County
    - Current River in Dent County
    - Eleven Point River in Oregon County
    - Little Piney Creek in Phelps County
    - Mill Creek in Phelps County
    - North Fork of the White River in Ozark County
    - Spring Creek in Phelps County

  HOW TO ENTER
  The Blue-Ribbon Trout Slam is divided into three levels:
    - **Bronze:** Catch a trout from 5 of the 9 blue-ribbon trout areas **and receive a** certificate and bronze pin.

- **Silver:** Catch a trout from 7 of the 9 blue-ribbon trout areas **and receive a** certificate and silver pin.
- **Gold:** Catch a trout from all 9 blue-ribbon trout areas **and received a** certificate, gold pin, and medallion.

All pins and medallions awarded to participants have been provided by Trout Unlimited.
Anglers need to possess a trout permit if they want to keep their trout. Trout of any size will qualify for the Blue-Ribbon Trout Slam, but trout under 18 inches must be released.
Anglers can complete a Blue-Ribbon Trout Slam entry form each time they catch a trout. They may also submit a picture of their trout if they wish, but it is not required.
Once participants accomplish one of the three Trout-Slam levels, MDC will verify their submissions and mail them their award. Additionally, anglers can have their successes listed on the MDC website.
"This Trout Slam is a great new program that will encourage anglers to get outside and discover nature throughout the year," said Branson.
For more information on the Blue-Ribbon Trout Slam, visit https://mdc.mo.gov/troutslam.
To learn more about Missouri's trout fishing areas, go to https://short.mdc.mo.gov/ZmT.

MDC and Trout Unlimited have partnered to offer Missouri's first Blue-Ribbon Trout Slam. The program honors anglers who catch a trout from at least 5 of MDC's 9 blue-ribbon trout streams.

- MDC created an email campaign to reactivate lapsed anglers:

Fishing License Email Reminders

MO Department of Conservation

$42,757 in Revenue!

OVERVIEW

- Email reminders went to over 50,000 lapsed anglers since 2016.
- Emails sent with different messaging:
  1. April 17, 2019 – Reminder message
  2. May 8, 2019 – Healthy message
  3. May 22, 2019 – Economic message
- Consumer did not receive additional emails after purchasing a license.
- Only cost of the campaign was staff time.

RESULTS

- 2,800 licenses sold
- 1,289 purchases on mobile
- Per email results:
  1. April 17-1,243 licenses sold; $19,916 in revenue
  2. May 8- 542 licenses sold; $8,218 in revenue
  3. May 22- 1,015 licenses sold; $14,623 in revenue

Reminder Message

Healthy Message

Economic Message

Serving nature and you

Contact Andrew.Branson@mdc.mo.gov

GRSM 2020 Fisheries Projects
20 January 2020
Matt Kulp

Project Updates

1. Anthony Creek Brook Trout Restoration (2.6km)
    a. Seven 3-pass removals on 26 sites in 2016 & 2017
    b. Removed 2,335 fish: 1,360 adults (58.3%) & 975 YOY (41.7%)
    c. Translocated 269 brook trout in Sept 2017 from Bunches Creek
    d. Translocated additional 237 fish from Deep Creek in 2018.
    e. THANK YOU to TWRA for assistance
2. Little Cataloochee Creek Restoration (2.8km)
    a. Sept 2017 antimycin treatment (NCWRC, NC TU assistance)
    b. Moved ~400 brook trout to fire tank from within Little Cataloochee system
    c. Treatment went extremely well
    d. Plan to follow up in 2018 and perhaps move fish down from tribs if needed
    e. TOTAL 13 streams and 30.3 miles restored to date
    f. THANK YOU to NCWRC for assistance
3. Antimycin Coming Back….
    a. USGS bought intellectual property rights and original strains of Fintrol
    b. Working with USFWS, USGS and EPA to reregister Antimycin and produce
    c. Kulp, Dave Hering (NPS) and Dan Rankin (SC DNR), Teresa Lewis (YSFWS) tasked with updating the SOP manual, which is appended to the label
    d. Should have production in summer/fall 2020
4. USGS Eastern Parks Mercury Study
    a. GRSM collected 254 smallmouth, brook, brown and rainbow from 17 sites
    b. BND & BKT fell below EPA human consumption criteria(<0.3 ug/g ww)
    c. Smallmouth bass were above criteria in most streams (0.134-0.487)
    d. Placed consumption advisories on lower LRV, Abrams Creek
5. Abrams Creek Fish Reintroduction Study (Banded Sculpin & Greenside Darter)
    a. Targeting greenside darter, banded/mottled sculpin [mottled not moved]
    b. Moved 100 Greenside and 509 Banded around campground in Oct 2017
    c. Moved 129 Greenside and 341 Banded around campground in Oct 2017
    d. Totals 229 Greenside's (target 109-318) and 850 Banded (target 400-836)
    e. Saws good reproduction and recruitment downstream for miles
6. Abrams Creek Fish Reintroduction Study (Blotchside Logperch)
    a. Josh working on grad project to ID preferred habitat in current and Abrams Ck
    b. TNACI working with Josh Cary on genetics collections
    c. Once complete, will request funding to propagate fish for reintroduction
    d. Thanks to TWRA for assistance!
7. Abrams Creek tribs Streambank

a. Working with TSMP to enhance/rehab roughly 36,000 feet of streams in Abrams Creek watershed at a cost of roughly $5-6 million
b. Historic channeling, ditching and land use have caused significant erosion and loss of access to floodplain
c. Goal is to permanently mitigate damages and reduce sediment load to Abrams

2020 West Virginia Report to the Trout Committee of the Southern Division of AFS
Submitted By:
David Thorne
West Virginia Division of Natural Resources

Sampling:

- Temperature and Habitat Suitability Study for the restoration of native Brook Trout in Canaan Valley – with Than Hitt of USGS-Leetown Science Center
- Trout Distribution, Status, and Genetics – 1 new documented native Brook Trout HUC12 and several confirmed streams
- Continued focus on Ohio Basin genetics for 2020-2022 with Wild Genomics lab at WVU

Native Brook Trout restoration with Reymann Farms Aquaculture facility:

- 2019 – Two streams augmented with approximately 250 locally sourced (HUC10) individuals
- 2020 – Two streams augmented and two streams restored with over 1,000 individuals – one of the restored streams is now the easternmost nBKT population in WV

Stream Habitat:

- An additional mile at Holly River State Park was enhanced within the stocked reach, which also holds good numbers of wild Brook Trout (introduced and prospering outside their accepted native range) – This brings the improved distance to nearly three miles of quality stream with native wood and rock features; pool metrics (area, depth, spacing) were used to gage success. Angler comments and opinions have been superlative.
- Spring Run is a high-quality stream below one of our hatcheries and has had a wild Rainbow Trout population for nearly 100 years. WVDNR purchased a mile of the stream under special regulations for Fly Fishing Only in 2018 and much of the habitat had been altered with various structures by previous owners/managers. We used large wood, quarried stone, and local river materials to improve habitat for anglers. Pools were improved and deepened, banks were stabilized, and some riffle habitat was created to help sustain all age classes of wild Rainbow Trout and a restored native Brook Trout population that exist there now. Angler use and success is increasing, population numbers remain similar to past years.
- Clover Run is a stocked stream on private land that needed much improvement to support a local veteran's charitable organization's efforts. WVDNR acquired a long-term access agreement and helped to stabilize banks and riparian area as well as add several wood and rock features to provide holding cover and angling access to the fishery. Several challenged angler access points were developed as well. Fishery and angler response has been positive. An additional reach with an adjacent landowner is planned for 2020.

Trout Plan:

- The plan is progressing more slowly than anticipated without dedicated leadership to the process
- WVU angler surveys – both field and online – are now complete and in the analysis stage. Technical and Stakeholder groups have been assembled, but issues with Covid-19 have stalled meetings and discussions. Hopefully these can get back on track soon.

2020 SDAFS Trout Committee Meeting (Virtual)
Roundtable (TN / TWRA)
Submited by: Jim Habera

1. Native Brook Trout restorations and enhancements:

· Rainbow Trout removal was essentially competed in 2019 for the Green Mountain Branch and Trail Fork of Big Creek restoration projects. Native Brook Trout from the Beaverdam Creek watershed will be reintroduced to Green Mountain Branch in September 2020. Adult Brook Trout from three genetically unique populations in the Big Creek system were collected in early October 2019 and taken to Brook Trout rearing facility at Tellico Hatchery. Progeny should be available for release into Trail Fork Big Creek in spring 2021. These projects will add over 6 km of allopatric Brook Trout distribution.

· A new Brook Trout restoration project (Rainbow Trout removal phase) was initiated in the upper 1 km of Shell Creek (Doe River watershed in Carter Co.) in 2019. This is a cooperative effort with the USFS and the Tennessee Aquarium Conservation Institute. Rainbow trout removal was completed in May 2020 and Brook Trout are scheduled to be introduced in early June.

· Native Brook Trout from two streams in the North Toe River system (NC) were collected and translocated to Phillips Hollow (Cherokee National Forest, Greene Co. TN) in September 2019. This is a multi-partner cooperative project facilitated by NCWRC (Jake Rash) and local private landowners in NC to reintroduce native Brook Trout to the Nolichucky River watershed in Tennessee. Seventy-six fish were successfully released in Phillips Hollow and survival/reproduction will be assessed during summer 2020. Once established, this population can be used for future restoration projects in the Nolichucky watershed.

2. Myxobolus screening:

· The presence of Myxobolus was confirmed in the Wilbur tailwater (Watauga River) in 2017, but a supplemental sample of YOY Rainbow Trout was collected and analyzed in 2019 (Southeastern Cooperative Fish Parasite and Disease Lab at Auburn). Interestingly, results for these fish were negative. Myxobolus was recently reconfirmed in a second sample (YOY Rainbows) from the South Holston tailwater. To date, only a few adult Rainbow Trout showing potential symptoms (cranial deformity) have been observed in these two tailwaters and there is no indication that whirling disease is present.

· Twelve of Tennessee's larger wild trout streams were also screened for Myxobolus in 2019 (n=380 fish). These streams had not previously been screened. Eight of these samples comprised Rainbow Trout, one included only Brown Trout, and three included both species. All results were negative.

3. Tailwater trout fisheries:

· A cooperative study with fisheries research unit at Tennessee Tech to assess fingerling-stocked Rainbow Trout survival, growth, and contribution to the fishery in the Norris and Ft. Patrick Henry tailwaters is proceeding. Adult-stocked rainbows are also included in the Ft. Patrick Henry assessment. Preliminary results indicate that there is now substantial natural reproduction in the Norris tailwater and exceptional growth of stocked fish at Ft. Patrick Henry.

4. New Winter Program Trout Fishery:

· A new Winter Trout fishery in Maryville's Pistol Creek/Greenbelt Lake was added in 2019 and was well received. TWRA's Winter Trout program provides trout fishing opportunities in or near urban areas and serves as an effective recruitment and reactivation tool.

5. New Angling Regulations:

· Trout harvested from:

South Holston tailwater

Wilbur tailwater (Watauga River)

Doe River and North River (wild trout streams)

may now be used as bait only in the waters from which they were harvested. Trout from these waters have tested positive for the whirling disease parasite Myxobolus cerebralis and this restriction is intended to prevent the introduction of the parasite to other trout fisheries.

6. Hatcheries:

· Gas infusion systems (GIS) are being installed at Buffalo Springs hatchery to address chronic issues with N2 supersaturation. The new GIS units strip N2 by much more efficiently replacing it with O2 than other systems (e.g., LHOs and packed columns). Nitrogen supersaturation at Buffalo Springs has limited production for years both directly and indirectly (through disease).

2020 Round Table for Kentucky Fish and Wildlife
Submitted by Justin Heflin

The Transportation re-organization – The process started in 2018 and was completed in 2019. It was a large change from how we hauled trout. The transportation branch was dismantled, and those positions were moved to each of the two state hatcheries. Two foreman positions and 8 tech positions were split between the hatcheries. The foreman are handling making the hauling schedules and coordinate with biologists. The end goal of the reorganization was to provide extra help in the hatcheries and provide cost savings to the division. It has been a smooth transition. Staff have settled into their new positions and new hires have completed their CDL training.

Regulation changes:

- Middle Fork Red River was changed from a seasonal catch and release to a put and take water. Temperatures on the stream have become borderline on the bottom half of the stream due to a small lake with a low head dam. There is also a large campground along the stream. We wanted to offer people the opportunity to harvest fish while they are camping.
- Cumberland Tailwaters cutthroat regulation went through. After the stocking of cutthroat trout, a regulation was put in place to protect the newly stocked fish. The regulation is 1 fish at 20-inch minimum size limit.

Cutthroat Trout- After the 2018 stocking Wolf Creek received eggs to hatch but did not have very good survival. The hope is for better survival next year. We have not been getting many reports of the fish being caught. We are not sure if they are not there or if they are being misidentified by anglers.

Proposed stocking changes:

- Switching Chimney Top Creek from brook and brown trout to rainbow trout. After several years of sampling and seeing minimal return of trout, we have elected to try a few years of rainbow trout stocking. The habitat (physical and temperature) is borderline. The hope is that rainbows will find the necessary physical habitat while staying in the thermal refuge of the upper reaches of the stream.
- Dog Fork is proposed to be stocked for the first time by the state in 2020. Trout were previously stocked by a private individual in the 1960's. After a major ice storm, the population disappeared. With the regrowth of trees, temperatures are below the thermal threshold. The hope is to restart a wild population in Dog Fork.

Louisville District Army Corps and Fish and Wildlife have been discussing a more natural temperature regimen to help preserve more cold water in the lake for walleye habitat. Carr Creek Tailwaters will no longer be stocked in June.