

Minutes of the AFS Southern Division Trout Committee Meeting
May 8-9, 2007
Devils Fork State Park, South Carolina

The 2007 meeting of the Southern Division of the American Fisheries Society Trout Committee was called to order at 8:00 AM by Mike Shingleton, chair. A quorum of 10 members were present, consisting of the following: Mike Shingleton (WV, chairman), Dave Dreves (KY, chair-elect/secretary), Jim Habera (TN), Doug Besler (NC), Lee Keefer (GA), Dan Rankin (SC), Mike Kruse (MO), Monte Seehorn (unaffiliated), John Boaze (Fish and Wildlife Associates), Jeff Durniak (GA). Others present: Hugh Barwick (Duke Energy) and Dave Coughlin (Duke Energy and SDAFS secretary-treasurer) and Ryan Hostetler (MO Department of Conservation).

Treasurer's Report: Chair Mike Shingleton gave the treasurer's report as treasurer Darrell Bowman has resigned from the Trout Committee due to leaving employment with Arkansas Game and Fish Commission. The current account balance is \$2,736.66. A motion to accept the report was made by Lee Keefer and seconded by Doug Besler. The motion passed unanimously.

Old Business

Mike Shingleton distributed minutes of the 2006 meeting. No revisions were suggested. Jim Habera made a motion to accept minutes as written and Mike Kruse seconded. The motion passed unanimously.

Dave Coughlin, SDAFS secretary-treasurer, gave an update. In the aftermath of Hurricane Katrina, a survey is being produced to ask how AFS should best respond to future disasters. SDAFS president Fred Heitman wants to emphasize professional certification over the next year.

Jim Habera gave an update on the AC/DC electrofishing gear comparison study. A gear comparison study had been done in the 1950's in waters with very high conductivity. This study is in very low conductivity stream (Roaring Creek). They did eight 3-pass depletions with each gear type. There were no significant differences in capture efficiencies between the two gear types.

Doug Bessler gave an update on the Eastern Brook Trout Joint Venture. Thirteen of 17 states have developed state action plans complete with budgets for intended work. A document will be produced from these state action plans and submitted as an application for funding to the National Fish Habitat Initiative. They are hoping to get approval for 5-6 projects to be funded at around \$170,000 total. Jeff Durniak suggested having proposals ready because of short timelines for submission when they solicit for applications.

New Business

A member list was passed around for members to make corrections.

Jim Habera discussed his recent efforts to update the archives by putting into digital format and summarize the history of the Trout Committee. Jim has produced a DVD and distributed copies to all present. It contains the meeting minutes by year, a summary file called "Committee Proceedings 1964-2007" and miscellaneous archived files. He plans to continue to update each year and will contact Fred Janssen to get it up on our website. Jim needs to be commended for a job very well done!

As a result of reviewing the archives, Jim Habera realized there was a real need to recognize those people who have made long term contributions to the Committee. He suggested the formation of a subcommittee to select deserving individuals for an award. Mike Kruse made a motion to create the committee to identify candidates and come up with the award. Mike withdrew the motion and yielded to Jeff Durniak. Jeff made a motion to create an award to be called the "Distinguished Service Award" which would be selected by a 3 member subcommittee consisting of Jim Habera as chair, Trout Committee past chair, and chair-elect. The annual budget would be \$300. The motion was seconded by Lee Keefer and was passed unanimously.

The 2008 Trout Committee Meeting will be hosted by Doug Besler in Asheville, NC on May 5-7.

Nominations and elections of new officers were held. Dan Rankin nominated Jeff Williams as treasurer. Motion was seconded by Doug Besler and passed unanimously. Treasurer is a 3 yr term. Jeff Durniak nominated Dan Rankin as chair-elect. Motion was seconded by Mike Kruse and passed unanimously.

Aqui-S trials have been suspended until at least the spring of 2008. Bill Couch (770-781-6888), hatchery manager at Buford Hatchery (GA) is coordinator for GADNR and has called the Investigation of New Animal Drug (INAD) coordinators to extend his support for Aqui-S. He is very knowledgeable about the situation if you have questions. Discussion ensued about the possibility of a Southern Division resolution. Dave Dreves volunteered to investigate the steps needed for such resolution. Lee Keefer commented that baking soda did alright anesthetizing brown trout but killed rainbows. Also, it was noted that 1 liter of club soda per 5 gal of water works well.

There was a request by Frank Fiss relayed through Jim Habera to update tailwater assessments for SARP. Discussion ensued about how SARP fits in with the National Fish Habitat Initiative. Consensus of the committee was to update assessments and be ready.

Tennessee Aquarium staff called Doug Besler and inquired about the interest in the Aquarium propagating Southern Appalachian Brook Trout for restocking efforts by various state agencies. Consensus was that their help is probably not needed as members are happy with the current method of transplanting wild fish from the same drainage. Also, diverse genetics of southern Appalachian brook trout makes development of a single brood source counter productive. Jeff Durniak suggested asking the Aquarium look at how they might fit in with the strategies outlined in the EBTJV.

Presentations

Lake Jocassee and Duke Energy/SCDNR's MOU – Hugh Barwick (Duke Energy)

Keowee-Toxaway Project system of reservoirs for energy production, hydropower, nuclear and peaking power pumped storage projects.

Lake Jocassee is managed primarily as a trout fishery, mostly brown trout, but has warmwater fish too, including several state records for black bass.

Entrainment of fish (mainly threadfin shad and blueback herring) in the system was a concern and related to reservoir elevation (low elevation in droughts increases entrainment).

MOU is a formal agreement that resulted from the need to study the reservoir system that was also part of the mitigation for entrainment caused by the Bad Creek Pumped Storage Project and is part of the operating license for the system. Involves monitoring and research tasks to understand the systems and model the fish populations and operating processes. Also includes monitoring mitigation from Bad Creek project on Howard Creek. Duke Power provides budget for SCDNR to do work in the system. Annual budget to DNR from Duke Power is about \$250,000. Used for everything from trout production to management/research.

Lake Jocassee Pelagic Trout Habitat 1973-2006 – Bill Foris (Duke Energy)

Reservoir has a maximum depth of 350 feet. Large volume and low surface area. Lake does not turnover every year due to the large volume and small surface area. Is classified as “oligomictic.” Penstock openings are taken at 30-60 feet deep (near surface, not hypolimnetic).

A rock weir in the Whitewater arm helps prevent mixing of warm inflows into the reservoir (constructed after the Bad Creek project was developed). Very low nutrients as a result of granitic watershed. Defined trout habitat as less than 20° C and greater than 5 mg/l dissolved oxygen. Maximum habitat for trout occurs in March or April because it takes a long time for hypolimnion to oxygenate due to limited mixing. Minimum habitat generally occurs in September and ranges from 9 to 90 meters of suitable habitat for trout. In September, elevation of 20° C varies little, but DO varies greatly from year to year. DO seems to mix greater when winters are cold early and stay cold for a long period of time. Used data from 1973-1988 to develop a model that predicts the amount of habitat available to trout in September. If predicted trout habitat is less than 5 meters, dam operations can be altered to protect trout habitat. So far, this has never been necessary.

Forage Fish Population Monitoring in Lake Jocassee – Dave Coughlan (Duke Energy)

Samples taken in November using purse seines reveal species distribution within the forage fish community and samples taken at other times using hydroacoustics permit quantifying the density of forage fish. Generally, high densities of forage fish in upper areas of Toxaway arm where nutrients are higher.

Roundtable

Missouri – Mike Kruse (via powerpoint)

Completed a statewide inventory of trout habitat in the fall of 2006. Results will be combined with information from a comprehensive water temperature monitoring project to evaluate current stocking, regulations, habitat improvement needs and to prioritize possible future land

acquisitions. Hatchery renovations continue, including installation of dissolved oxygen systems, predator screens, new raceways, and water supply improvements. Successfully completed an important land acquisition that includes 1.25 miles of Mill Creek, a Blue Ribbon Trout Area with a self-sustaining population of rainbow trout. Much of the purchase was completed with outside funds, including a \$100,000 contribution from trout anglers via the Missouri Trout and Coldwater Fund (see below). Habitat improvement projects have been completed recently, including a large installation of boulders in Maramec Spring branch this past winter. A recent decision to distribute retired broodstock to additional waters has proven popular with anglers and has provided much good publicity. One additional trout area has recently been established on Hickory Creek, including a winter catch and release season from November 1 through February. Research on the decline of Ozark and Eastern hellbenders continues and may involve captive propagation in Department trout hatcheries. Establishment of the Trout and Coldwater Fund within the Missouri Conservation Heritage Foundation has permitted trout anglers, trout angling groups, private individuals and businesses to contribute to coldwater conservation projects. To date, instream habitat projects, bank stabilization projects, and land acquisition projects have been selected for funding by the Board of Directors. Board membership includes representatives of the founding organizations: Trout Unlimited, Federation of Fly Fishers, Conservation Federation of Missouri. The number of Winter Trout Areas continues to increase based on a program where the Department of Conservation and local communities cost-share on the purchase of trout from private hatcheries. Trout are stocked into public impoundments where cooperative management agreements with local municipalities are in place. Impoundments are managed as delayed harvest fisheries (artificial lures and flies only, catch and release from November 1 through January 31).

South Carolina – Dan Rankin

Lake Jocassee stocking rates; trying to determine the proper stocking rates to maintain good growth. Restored two brook trout streams using antimycin. Large public support for restoration of brook trout in potentially five trout streams. Used habitat improvement (tree felling) to increase pool habitat on King Creek. Also restored Crane Creek. Used S. Appalachian brook trout from Georgia to restore the streams. Have used TU Embrace-A-Stream grants on these projects.

Georgia – Lee Keefer

Added the Toccoa River to the delayed harvest program, adding a DH stream in the west/northwest part of the state. Have typed 76 streams and identified 24 southern Appalachian brook trout streams. “Big Fish” program: 6% of catchables are 12-inch and longer and appreciated by anglers, takes another year to raise typical 9-inch catchables to 12 inches. Drought and high water temperatures hurt their hatcheries last summer. Lost about 200,000 fingerlings from their system, but were able to replace these with fingerlings from other states. Working on developing contingencies for managing future droughts. Trying to do 80% or more of their stocking before July so that hatchery stocks are lower in the summer and so that the fish are stocked into more suitable stream conditions. In years passed, more stocking was done on private land where stocking was permitted, but changes in ownership and posting have resulted in more stocking restricted to public lands. Cooperative work with TU, USFS, universities,

watershed groups on a variety of projects including water quality studies of ANC/pH. Done much work on brook trout streams in north Georgia. Chatooga River boating conflicts between anglers and boaters; USFS is gathering information on boaters/anglers and their experiences at various river stages. Non-game vehicle license plate tags, funds from sale are now dedicated to the appropriate program including TU tags go for trout conservation. Potentially holds \$50,000 to \$200,000 per year for trout conservation. Governor approved 19 million dollars for “GO FISH GEORGIA”, a marketing attempt to get tournament anglers to fish in Georgia. Five million dollars for boat ramps (local communities must cost share on boat ramps) to encourage tournaments on lakes and 14 million for a hatchery/visitor center (Tennessee using the “Tennessee Fishing Trail”; 20-30 sites around the states that could be destination fisheries, tied to economic development). Recognizes the economic value to communities of fishing tournaments.

North Carolina – Doug Besler

1 Hatchery Supported Creel Report. The North Carolina Wildlife Resources Commission completed a Federal Aid report and SEAFWA manuscript for a hatchery supported trout waters creel survey conducted in the late 1990s. Below is the manuscript abstract presented at the 2006 SEAFWA conference, Virginia Beach, VA.

Abstract: Roving creel surveys were conducted on nine hatchery-supported trout streams in western North Carolina between 1998 and 1999. The objective of this study was to describe angler use patterns and trip characteristics for selected waters in the hatchery-supported trout program. A total of 5,452 angler interviews were conducted during the two-year survey. Overall, anglers caught trout >203 mm (considered stocked) at an average rate of 1.38 trout/h. This catch rate exceeded the North Carolina Wildlife Resources Commission (NCWRC) programmatic goal of 1.00 trout/h. Hatchery-supported trout anglers were harvest oriented and creeled 75% of all stocked trout caught. Rainbow trout (*Oncorhynchus mykiss*), brook trout (*Salvelinus fontinalis*), and brown trout (*Salmo trutta*) were harvested in proportions similar to those stocked. Brook trout were most likely to be captured within two days of stocking, whereas rainbow trout and brown trout persisted longer in the streams before being harvested. The varied species stocking mixture used by the NCWRC appears to providing anglers with a diverse catch experience as well as meeting the NCWRC goal of extending trout catch over time. Overall, approximately 10% of effort, 15% of catch, and 16% of harvest occurred on opening day alone in 1998–1999. Most anglers fishing hatchery-supported trout waters were North Carolina residents, ≥16 years of age, male, and used natural bait. Most hatchery-supported anglers rated their trips as good, however, only 10% rated their trips as excellent. Angler trip rating satisfaction was moderately related to trout catch and was not related to trip length suggesting that moderate catch rates are important to hatchery supported trout anglers.

2. Brook Trout Distribution and Genetic Analysis. The NCWRC will begin 3-year study to complete remaining brook trout distribution and genetic analysis on private lands in western North Carolina. Temporary technicians will be hired to complete field work. Genetic analysis

will be contracted to Western Carolina University. It is estimated that approximately 100 additional populations of brook trout will be located during the study.

3. Trout Angler Opinion Survey. The NCWRC is currently conducting a trout angler opinion survey that will provide information on angler desires and perceptions. Completion of this survey is central to the development of a revised comprehensive trout management plan. The telephone survey of 1,500 trout anglers is being conducted by Responsive Management, Inc. A final report is expected by July 2007.

4. Effects of Stocked Catchable Trout on Native Fish Communities. The NCWRC will contract with NC State University in July 2007 to begin a three-year study to determine the effects of stocked catchable trout on native fish communities. Catchable trout stocking programs provide many hours of fishing opportunities for NC anglers. In some instances catchable trout are stocked into systems that provide important habitat for native fishes and mollusks, including rare, threatened, and endangered species. Adverse effects of trout stocking on native fishes from competition or predation have been suggested, but rarely evaluated. Completion of this work will help us provide stocked trout fishing opportunities in appropriate locations.

5. Efficiency of Electrofishing Depletion-sampling Removal Estimates. The NCWRC completed a Federal Aid research project on the efficiency of electrofishing depletion-sampling removal estimates. Below is the abstract from the recently completed report.

Abstract.—The North Carolina Wildlife Resources Commission (NCWRC) manages more than 1,700 km of publicly-accessible streams in western North Carolina that have self-sustaining trout populations. The NCWRC periodically samples these streams using electrofishing depletion sampling to generate trout population estimates. The objective of this study was to determine the efficiency of depletion-sampling removal model population estimates for headwater trout streams in North Carolina. Eighteen sites on six streams were sampled in July and August 2006 using both mark-recapture and depletion sampling population estimation methods. Overall, 1,021 trout were marked and on average 77% were recaptured (range, 48–100%). Depletion sampling population estimates were lower than mark-recapture population estimates at 17 of 18 of sites for all trout and at all sites for trout >90 mm TL (considered adults). These differences, however, were significantly different at only 39% of sites for all trout and at 17% of sites for trout >90 mm TL. Despite the lack of broad statistical significance, trend data in this study indicate that removal model population estimates consistently underestimated trout population size, compared to mark-recapture estimates, by an average of 33% for all trout and by 45% for trout >90 mm TL. Average stream width was positively related to capture efficiency bias, which suggests that capture efficiency decreases as stream width increases. Site slope was found to be negatively related to capture efficiency bias. Although mark-recapture population estimates may be a closer approximation to the true population size, there can significant logistical concerns associated with mark-recapture sampling: confining marked trout for a minimum of 24 hours, the need for high recapture rates, and working with small population sizes. Due to these concerns, blanket replacement of depletion sampling with mark-recapture sampling is unwarranted. Because depletion sampling population estimates in this study predictably underestimated trout abundances (100% of the time for trout >90 mm TL), depletion sampling should still be considered a valid relative measure of trout abundance when all controllable model assumptions are

satisfied. In addition, the ability to conduct rapid trout population estimates in remote locations that are comparatively inaccurate but predictable may outweigh the costs of trying to conduct mark-recapture experiments in remote locations.

6. Causative Factors for Loss of Wild Trout Populations on Private Lands. The NCWRC has contracted with NC State University on a three-year study to determine the causative factors of loss of wild trout populations on private lands. Western North Carolina contains over 4,000 miles of cold water streams capable of supporting brook trout (*Salvelinus fontinalis*). However, native brook trout stocks have undergone declines throughout the state as a result of degradations in habitat quality from stream and riparian modifications, changes in agricultural practices and land use, forest fragmentation, and urban development. This project will focus on the development of remote sensing and GIS-based models to analyze stream, watershed, and landscape relationships between native brook trout stock dynamics and the land use modifications occurring on public and private lands.

7. Eastern Brook Trout Joint Venture. The NCRWC has continued to be actively involved with the Eastern Brook Trout Joint Venture. As one component, the NCWRC will initiate several brook trout restoration projects in the fall of 2007.

8. Triploid Trout Production. The NCWRC is continuing its research on producing triploid brown trout and brook trout. The NCWRC currently has one pressure chamber and will order a second unit in 2007. To date, rates of triploidy have been near 100%. A complete switch of hatchery production to triploid trout is likely if the final testing proves successful.

Tennessee – Jim Habera

1. Didymo update - still have it in 4 of 5 east TN tailwaters. No news of it spreading at this time and fish and bugs are o.k. for now based on TWRA and TVA monitoring.
2. Reservoir trout research: contractor (Dr. Bettoli- TTU) will evaluate hatchery-supported trout populations in Dale Hollow, Watauga, South Holston, and Chilhowee reservoirs.

Specific study objectives are to:

- a) determine the most cost-effective methods to scientifically sample trout in reservoirs;
- b) estimate the volume of suitable trout habitat in each reservoir and model the relationship between hydrology, temperature, and oxygen profiles;
- c) estimate the survival and growth of stocked trout;
- d) estimate the relative abundance of prey species;
- e) identify, where feasible, factors limiting growth, survival, and returns to the creel of stocked trout.

3. Southeast Aquatic Resources Partnership is updating the assessment report on the 55 tailwaters in the Southeastern USA. Many TC members provided data on their state's tailwaters and will soon receive (or already have) a request to update those data. Thanks in advance for helping out again--just mark up and send it back to Frank (thanks for your participation in this project).
4. Four new brook trout streams identified last summer and one established by transplanting wild fish; now have 115 brook trout streams in TN outside GRSM.
5. Will sample 2 or 3 sites Slickrock Creek this summer (Slickrock Wilderness on TN/NC border). Wild brown trout population present but no quantitative abundance data ever collected (and qualitative data very limited—last survey from 1980)
6. Updating our management plan for the Norris tailwater (Clinch River); electrofishing and angler catch rates have been down, and anglers at a public meeting favor some sort of special regulations (e.g., a protected slot limit), so the new plan may include such a change.
7. The trout fishery in the South Holston tailwater (South Fork Holston River), particularly the wild brown trout component, continues to expand. Mean electrofishing catch rate for all trout >7" at 12 sites (2 hrs. total effort) was 324 fish/h in March 2007 (highest tailwater trout catch rate recorded to date in TN). Mean catch rate for fish in the 16"-22" protected slot was 27 fish/h (highest catch rate prior to the protected slot establishment was 20 fish/h).
8. The 2006 annual report is complete and can be downloaded at: www.twra4streams.org

Kentucky – Dave Dreves

Changes to Trout Program in 2007

It is now illegal to chum for or cull trout on the Cumberland tailwater.

There are many trout stocking changes relating to the impacts of the Wolf Creek Dam leak (see below). Almost all trout stockings were moved up by 2 months to help reduce the trout biomass present at any one time at Wolf Creek National Fish Hatchery. Some stockings will have to be moved from streams to tailwaters, since in some cases, the earlier stocking dates would schedule the stocking for a time of the summer when that particular stream may be too warm to support trout. More stocking adjustments may be necessary as water quality conditions dictate. However, the Corps of Engineers has approved funding to install a pumping system that would allow the hatchery to withdraw water directly from the tailwater and avoid using the headwater intakes if conditions warrant.

Cumberland Tailwater Research

We are facing some unique challenges regarding the Cumberland tailwater. Wolf Creek Dam has a chronic leak problem that has finally gotten to the point where remediation is necessary. In response the Corps of Engineers reduced the normal summer water level from 723 ft to 680 ft. So the loss of over 40 ft of cold water storage is of great concern for fisheries in both the lake and the tailwater. How wet the rest of the year is will determine the

extent of the reduced water quality in the tailwater this fall. There is also the serious possibility that there will be extremely low flows in the tailwater if it is too dry because the Corps will have to operate the level of Lake Cumberland in a narrow window of just a few feet. There is every possibility that extremely low flows will cause a major reduction in the length of our trout-holding water. The Corps is instituting intensive monitoring of tailwater flow and water quality (and also lake water quality). We will fill any gaps with our own temperature monitoring in the tailwater such that temp loggers will be at approximate 5-mile intervals.

We are continuing our evaluation of the brown trout fishery in the tailwater by marking this year's stocking of 8 in. fish. Two different strains (Plymouth Rock and Sheep Creek) were differentially marked and relative performance will be monitored. We are also continuing research to evaluate the effects of the 15-20 in protective slot limit and reduced creel limit regulations for rainbow trout implemented in 2004. Water quality in the tailwater remained pretty good throughout 2006 and so the trout population continues to be strong. Our fall electrofishing catch rates showed near all-time highs for brown trout greater than 15 in. The rainbow trout population continues to expand in response to the more restrictive regulations. We observed all-time high catch rates for all sizes of rainbows and for rainbow trout > 15 in. category.

Trout Management Plan

In late 2006, a committee was formed to begin the development of a statewide trout management plan. The committee met several times over the winter and defined the mission statement and is now working to define all of the goals. We hope to complete a draft plan by the end of the year.

West Virginia – Mike Shingleton

- WV completed its Brook Trout Conservation Strategy and submitted it to EBTJV. WVDNR secured a WHIP grant for \$150,000 from NRCS to do habitat work on the upper Shavers Fork River. This work should have something started sometime this summer.
- WV continues to increase the number of streams and miles being treated with limestone sand to combat the effects of acid precipitation. Working cooperatively with WVDEP, we are also looking to fix some of the problems associated with acid mine drainage and restore trout fisheries. With reauthorization of AML funding, WV will receive \$1 billion dollars over the next 15 years. The 'set aside' for correcting/improving water quality problems has been increased from 10% to 30%.
- The Monongahela National Forest plan revision has been completed and recommends additional wilderness areas. WVDNR does not support the addition or increase of any new proposed wilderness areas. WVDNR's original comments did support the expansion of 2 existing wilderness areas. The revised forest plan proposes the addition of 4 new areas and the WV Wilderness Coalition proposes 10 new areas. This issue has resulted in strong sentiments being expressed for and against additional wilderness areas by TU members and chapters in WV.

- WVDEP submitted legislative rules for implementing antidegradation procedures as part of the Clean Water Act. Additionally, WVDEP submitted changes for the Water Quality Standards. Both of these rules contained lists of trout waters (not listed previously) and met stiff opposition in the legislature from industry, mining, timbering, and farming interests. Neither rule was voted on and they are currently in ‘limbo’.
- The \$3 million renovation at Spring Run Hatchery is well underway. The effluent treatment system is complete and work on the new raceways is progressing. All work is scheduled to be completed by mid-summer. Work at the Reeds Creek Hatchery just begun to correct subsidence and leaking water problems around the raceways. Work will also begin sometime this summer at the Edray Hatchery (built 1933) to correct problems there and increase production if possible.

Conclusion

Roundtable ended with a discussion of how to encourage participation from agencies that have historically participated in the Trout Committee. Dave Dreves volunteered to draft a letter and send to such agencies.

Presentations (cont.)

Stream Buffers, What is Adequate? – Monte Seehorn

“Implications of changes in riparian buffer protection for Georgia’s trout Streams” Meyer et. Al. 100’ to 50’ buffer width would increase maximum temperature 2.9F in a wet summer and 4.2 in a dry summer. Fine sediment in riffles would increase 11%, YOY production would decrease 80%. Primarily 3rd and 4th order streams up to 20 square miles in watershed size, buffer widths were averaged, one 50 meter sample per stream, only one EF run per stream, only counted trout less than 6”. A number of assumptions were used that could cause the results to be criticized. “A Review of the Scientific Literature on Riparian Buffer Width Extent and Vegetation.” is an often-quoted review of buffers. Evidence from large clearcuts suggests that smaller buffers can be effective in protecting water temperature and water quality of small streams. Hall County Buffer Proposal, the entire 100 year floodplain will be included as an “undisturbed” buffer in drainages 100 acres or larger. Coweeta Buffer Study includes a control site and a two age shelterwood cut with either 0, 10 or 30 meter buffers.

Habitat Improvement Photos – Monte Seehorn

Group viewed a number of photos of stream habitat enhancement projects on a variety of projects.

Missouri Trout Habitat Assessment – Ryan Hostetler (MDOC)

This assessment is a visual classification system done in August. They classified stream reaches into two categories, either “pool” or “riffle/run”, and took lengths and widths with a rangefinder and mapped with GPS. They then looked at three features in each reach: 1) low velocity resting areas/feeding stations, 2) obscurrence, and 3) depth/diversity of depth. Each feature was then scored using a 3 tier ranking. All scoring was combined and the entire stream was given a cumulative score on a scale from 1 to 3 with “+” and “-“ in between. They also generated a map

with each reach's classification and a spreadsheet that listed percent total area by rank. Some benefits were further refinement of stocking rates and correlations with water temperature monitoring.

Monte Seehorn suggested that this is similar to the BVET technique developed by Andy Dolloff.