Catfish Management Technical Committee
American Fisheries Society - Southern Division

SDAFS – Catfish Management Technical Committee

State Report Format

State Reporting: Arkansas

Name of Representative to Technical Committee: Jason Olive

Date Submitted: January 2015

Project Name or Description: Catfish Management Plan Revision and Sampling Protocol Development

Contact Information:

Name: Jason Olive

Co-Authors: Ben Batten, Jeff Quinn, Jason Miller, Jimmy Barnett

Email: Jason.olive@agfc.ar.gov

Phone: 877-836-4612

Objective: To revise and update AGFC's catfish management plan and develop standard sampling protocols for use by regional biologists.

Current Status: In review

Abbreviated abstract:

The first statewide catfish management plan for Arkansas was developed in 2008. It was more of a stocking allocation plan than a management plan. Catfish management in Arkansas is still limited, but a large turnover in agency personnel has led to more interest in catfish sampling and management. The revised plan lays out goals and objectives for data collection and other management efforts. A standard sampling protocol is included in the new plan as an appendix. The protocols were primarily based on information from Bodine et al. 2013 as well as existing protocols from surrounding states.

State Reporting: Arkansas

Name of Representative to Technical Committee: Jason Olive

Date Submitted: January 2015

Project Name or Description: Tandem-baited hoop-net sampling evaluation

Contact Information:

Name: Phillip Malone (Arkansas Tech University)

Co-Authors: Dr. John Jackson

Email: pmsu08@live.com

Phone:

Objective: To determine optimal sampling protocols for Channel Catfish in medium to large reservoirs using tandem-baited hoop-nets, with particular emphasis on information gaps identified by Bodine et al. 2013.

Current Status: One year of data collection complete

Abbreviated abstract:

Sampling in 2014 was conducted on eight reservoirs (415-2,850 ha) during April-June to examine timing and sample size requirements for using tandem-baited hoop-nets to sample Channel Catfish. Analyses have not been completed.

State Reporting: Arkansas

Name of Representative to Technical Committee: Jason Olive

Date Submitted: January 2015

Project Name or Description: Low-frequency electrofishing sample duration evaluation pilot study

Contact Information:

Name: Jason Olive

Co-Authors:

Email: Jason.olive@agfc.ar.gov

Phone: 877-836-4612

Objective: To determine optimal sample duration of low-frequency electrofishing for Blue and Flathead Catfish in lotic systems

Current Status: Pilot complete. Designing expanded study for 2015.

Abbreviated abstract:

We examined differences in catch rate and length-frequency distribution for Flathead Catfish among three sample durations (5, 10, and 15 minutes) on two separate reaches of the lower Ouachita River in southern Arkansas during July-August 2014. We also examined differences in catch rate for Blue Catfish among the same three sample durations on one reach of the lower Ouachita River. Three separate livewells were set up in an electrofishing boat and three more were placed in a chase boat. Fifteen minute samples were conducted in randomly selected locations within each stream reach. Fish were placed in the appropriate livewell for each 5-minute time period. At the end of each sample run, fish were measured and data for each time period were kept separate. CPUE for Flathead Catfish for 5, 10, and 15 minute durations were 32, 35, and 37, respectively, for one stream reach; and 28, 27, and 28, respectively, for the other reach. CPUE for Blue Catfish for 5, 10, and 15 minute durations were 12, 12, and 11, respectively. These catch rates were much lower than normal due to higher than normal summer flows and lower than normal water temperatures during sampling. No significance testing was performed on CPUE data. Differences in Flathead Catfish length-frequency distribution among the three sample durations were evaluated using K-S tests. No significant differences were detected ($P > 0.2$). Plans are being made to conduct more samples on more rivers in 2015 to attempt to determine an optimal low-frequency sample duration for lotic catfish populations.

State Reporting: Arkansas

Name of Representative to Technical Committee: Jason Olive

Date Submitted: January 2015

Project Name or Description: Arkansas Statewide Catfish Exploitation Study

Contact Information:

Name: Jeff Quinn

Co-Authors:

Email: Jeffrey.quinn@agfc.ar.gov

Phone: 877-470-3309

Objective:

Determine exploitation of catchable size Channel Catfish stocked in Corps reservoirs, AGFC Lakes, and streams.

Current Status: Analyses ongoing.

Abbreviated abstract:

Adjusted 3-yr catch rate for catchable size Channel Catfish ranged from 7% on a large COE reservoir to 100% on two small AGFC-owned impoundments. Very few tags were returned after year 1 of the study. Mean catch rates were highest in AGFC lakes (n = 6), followed by rivers (n = 6), followed by COE reservoirs (n = 4).

State Reporting: Arkansas

Name of Representative to Technical Committee: Jason Olive

Date Submitted: January 2015

Project Name or Description: Channel Catfish sampling

Contact Information:

Name: Jason Olive

Co-Authors:

Email: Jason.olive@agfc.ar.gov

Phone: 877-836-4612

Objective: To collect baseline data on Channel Catfish populations in small impoundments in Arkansas and to determine relationships between tandem-baited hoop-net catch and stocking rate

Current Status: Ongoing

Abbreviated abstract:

18 lakes were sampled during April through August 2014. Median CPUE was 40 fish/net-night (range 0-490). Relationships between CPUE and stocking rate are still being evaluated. AGFC stocks approximately 400,000 catchable size Channel Catfish per year, and this program has never been evaluated. One district reported a very high bycatch of blue catfish in their lakes.

Catfish Management Technical Committee
American Fisheries Society - Southern Division

SDAFS – Catfish Management Technical Committee

State Report Format

State Reporting: Florida

Name of Representative to Technical Committee: Andy Strickland

Date Submitted: 1/12/15

Project Name or Description: NA

Contact Information:

Name: Andy Strickland

Co-Authors:

Email: andy.strickland@myfwc.com

Phone: 850-717-8740

Objective:

Current Status:

Abbreviated abstract: No management or research activities related to catfish species since our last meeting. There was a new state record brown bullhead caught in February of 2014. The fish weighed 7.02 lbs and was caught in Lake Iola in Pasco County.

Catfish Management Technical Committee
American Fisheries Society - Southern Division

SDAFS – Catfish Management Technical Committee

State Report Format

State Reporting: Georgia

Name of Representative to Technical Committee: Tim Bonvechio

Date Submitted: 1/16/2015

Project Name or Description: Flathead catfish removal on the Satilla River, Georgia.

Contact Information:

Name: Tim Bonvechio

Co-Authors: Jason Mitchell

Email: Tim.Bonvechio@dnr.state.ga.us

Phone: 912-285-6484

Objective: To evaluate the effects of long-term boat electrofishing removals on the annual survival, biomass, condition, relative abundance, size and age structure of flathead catfish in the Satilla River, Georgia

Current Status: Document year to year findings in reports and publications

Abbreviated abstract: Recent modeling indicates that increased exploitation on the flathead catfish *Pylodictis olivaris* might be an avenue for native species recovery. Flatheads were illegally introduced into the Satilla River resulting in negative impacts on native fishes. In an effort to aid in the restoration of native fishes, the Georgia Department of Natural Resources initiated an intensive electrofishing removal effort. From 2007 to 2014, 47,497 flatheads totaling 41,775 kg were removed along a 129 km stretch of the Satilla River. The size structure changed substantially from containing many large individuals (≥510mm TL) in 2007 to mainly small fish (≤250 mm TL) by 2013. Total biomass per effort has declined from 57.05 kg/hr in 2007 to 14.4 kg/hr in 2013, but increased to 44.5 kg/hr in 2014. Average size fish removed dropped from 2.64 kg in 2007, down to 0.59 kg in 2014. The age structure was also truncated, but there was evidence for higher recruitment and earlier maturation, which would require that intensive harvest be maintained to prevent the population from rebuilding within 2-5 years. Catch-curves revealed total annual mortality (*A*) rates ranged from 37-63%, for the past 8 years (2007-2014). Considering the life history of the flathead catfish, being a long-lived species that presumably cannot withstand excessive rates of exploitation (i.e., greater than 25% U), our results indicate that an electrofishing removal program is a reasonable management option for state agencies where this apex predator has been introduced, but continual removal may be required to maintain low biomass levels. The native redbreast sunfish fishery in the Satilla rebounded in 2013 and 2014 with a large number of anglers catching limits of large “Rooster Reds”. It takes a 1 lb or 11 inch redbreast sunfish to qualify for an angler award and there was 10 angler redbreast sunfish caught on the Satilla River this year.

State Reporting: Georgia & South Carolina

Name of Representative to Technical Committee: Tim Bonvechio & Scott Lamprecht

Date Submitted: 1/16/2015

Project Name or Description: Population Dynamics of Flathead Catfish in 2 Coastal Plain Rivers

Contact Information:

Name: Tim Bonvechio

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Name: Jason Marsik

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Phone: 843-209-1875

Name: Carl Bussels

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Phone: 803-622-4159

Objective: Study the Population Dynamics of Flathead Catfish in 2 Coastal Plain Rivers

Current Status: Writing manuscript

Abbreviated abstract: This study was designed to evaluate and compare the population dynamics of introduced flathead catfish (*Pylodictis olivaris*) populations from the Satilla River, Georgia with the Little Pee Dee River, South Carolina. Both of these lower coastal plain rivers are characterized as blackwater, lower productivity systems that historically supported very popular redbreast sunfish (*Lepomis auritus*) fisheries but invasion histories and the management regimes adopted by the two state agencies managing these populations has significantly contrasted. Despite this apex predator occupying similar coastal plain black water river systems, the population dynamics differed considerably. Presumably due to the ongoing intense removal, the Satilla River flathead population is characterized as having high relative abundance (CPE = 75 fish/hr), high Annual mortality (A = 63%), and fast growth (k = 0.19) with a truncated size and age structure containing mostly smaller (75% of sample $\leq$ 356 mm TL) and younger fish present with a maximum age of 12. On the contrary, the Little Pee Dee flathead population is characterized as having a high relative abundance (CPE = 85 fish/hr), low mortality (A = 31%), slow growth rates (k= 0.088) and a more balanced size and age structure, containing larger (58% of sample > 356 mm TL) and older fish up to age-26. Also, some gear comparisons were performed on the Little Pee Dee in an effort to further our knowledge of targeting flathead catfish with low frequency electrofishing gears. This study further expands our knowledge base on introduced flathead catfish population dynamics and provides a few models of how state agencies in the Southeast have managed a very challenging issue in regard to managing an introduced apex predator.

State Reporting: Georgia

Name of Representative to Technical Committee: Tim Bonvechio

Date Submitted: 1/16/2015

Project Name or Description: Catfish species composition shifts: Blue catfish expansion in Lake Oconee, Georgia.

Contact Information:

Name: Chris Nelson

Email: Chris.Nelson@dnr.state.ga.us

Phone: 706-557-3344

Objective: As blue catfish expansion (numbers & biomass) continues and age and growth of the population advance, impacts to the overall reservoir ecosystem are unknown. Management concerns such as future impacts and/or interactions with native catfishes, game-fish and forage species, as well as angling opportunities, warrant further investigation and consideration.

Current Status: On-going

Abbreviated abstract: Historical standardized sampling data indicates that the catfish species in Lake Oconee was dominated by channel and white catfish populations. However, recent sampling data provides insight that the introduced blue catfish has become the dominant catfish species and continues to expand (~55% of the total catfish species composition). Blue catfish were first detected by Georgia DNR in Lake Oconee in 1997 (Homer and Jennings 1997). Rapid expansion of blue catfish has led to shifts in species (decreases in channel catfish populations and the near elimination of the white catfish), as well as to increases in total catfish biomass in the reservoir. Furthermore, the expansion of blue catfish populations has produced a popular recreational fishery. Anglers have become more specialized at locating and catching blue catfish and the impacts of angling (effort, exploitation and size/creel limits) also raise future management questions and concerns. The current rod and reel angling record is 47 lbs 5 ounces, but jug line fish up to 70 lbs have been reported. The University of Georgia Cooperative Fish and Wildlife Unit has conducted two recent research projects (age, growth and size structure and feeding ecology of blue catfish) that will assist fisheries management in addressing such questions and concerns. Results will offer valuable knowledge and provide insight as to what role or impacts blue catfish are having in the reservoir ecosystem.

State Reporting: Georgia

Name of Representative to Technical Committee: Tim Bonvechio

Date Submitted: 12/27/14

Project Name or Description: Food habits of Blue Catfish (Ictalurus furcatus) introduced into Lake Oconee, Georgia

Contact Information:

Name: Geoffrey E. Mitchell

Co-Authors: Cecil A. Jennings

Email: gem94130@uga.edu

Phone: 415-793-7992

Objective: To determine the food habits and ecological role of introduced Blue Catfish in Lake Oconee, Georgia.

Current Status: Project Completed Spring 2013

Abbreviated abstract Blue Catfish (*Ictalurus furcatus*) is an important commercial and recreational species and is used widely for predator-control purposes within the United States; as a result, it has been introduced widely throughout the country. Because of its widespread introduction, there is a potential for this species to have negative effects on native aquatic communities. Blue Catfish are native to the Coosa river drainage in northwest Georgia, but recently have been discovered outside of this range. Blue Catfish were first discovered in Lake Oconee in 1997. In Lake Oconee, their abundance and growth rates have increased dramatically, but their food habits are unknown. Therefore, food habits of Blue Catfish were determined by examining the stomachs of 808 specimens from Lake Oconee's upper and lower regions during all seasons from summer 2012 to summer 2013. Stomach contents were analyzed using the Index of Relative Importance, which was calculated by determining the frequency of occurrence, percent composition by weight, and percent composition by number of each prey item. The dominant prey item during the summer was Asian Clams (*Corbicula fluminea*; 98%). Dominant prey items for the fall season shifted to a more diverse array of prey items including Asian Clams (46%), Mayflies (Ephemeroptera; 23%), Flies (Diptera; 16%), and Threadfin Shad (*Dorsoma petenense*; 15%). Winter dominant prey items shifted to Mayflies (45%), Threadfin Shad (35%), and Asian Clams (16%). Mayflies (84%) dominated the spring prey diet. The upper region fish relied heavily on Asian Clams (48%) and lower region fish relied on Mayflies (36%). The results show that the diet of introduced Blue Catfish in Lake Oconee, Georgia, is omnivorous. More importantly, the results also show that they are not preying intensely on native bi-valves and fish species. They actually feed intensively on the invasive Asian Clam during the summer and fall seasons. This finding is important because it demonstrated that introduced Blue Catfish may be helping to control another non-native invasive species. However, the competitive interaction between Blue Catfish and other native species is unknown. For example, Blue Catfish may be out-competing other species such as White Catfish (*Ictalurus catus*) and Channel Catfish (*Ictalurus punctatus*), whose populations have plummeted or been dynamic with the introduction of Blue Catfish. Future research focusing on the competitive interactions between Blue Catfish and White Catfish and Channel Catfish will be helpful in understanding the trophic dynamics among these native and introduced ictalurids.

State Reporting: Georgia

Name of Representative to Technical Committee: Tim Bonvechio

Date Submitted: 1/16/2015

Project Name or Description: Altamaha River Standardized Sampling

Contact Information:

Name: Don Harrison

Email: Don.Harrison@dnr.state.ga.us

Phone: 912-285-6483

Objective: Continue to monitor and manage the Altamaha River catfish composition

Current Status: On-going

Abbreviated abstract: Blue catfish were first documented in the Altamaha River in 2005 during a recreational creel survey and then collected the following summer during standardized ictalurid electrofishing samples. Since 2006, the CPUE of blue catfish has been steadily increasing and 62.1 blue catfish/hr were collected in 2014. Blue catfish were the second most abundant catfish species present in the Altamaha this year following flathead catfish (CPUE=99.3 fish/hr). Invasive species (flathead & blue catfish) were the two most abundant catfish species in the Altamaha River in 2014.

State Reporting: Georgia

Name of Representative to Technical Committee: Tim Bonvechio

Date Submitted: 1/16/2015

Project Name or Description:

Contact Information:

Name: Melanie Riley & Dennis Schmitt

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Phone: (706) 557-3103

Objective: Incorporate condition factors for blue catfish into typical SAS outputs for standardized sampling across the state of Georgia.

Current Status: On-going

Abbreviated abstract: Introduced blue catfish populations continue to grow and expand across the state and are found in a diversity of public water bodies from reservoirs to rivers. Upon request from field biologists, headquarters staff recently calculated standard weights for Georgia blue catfish and will be incorporating condition factors indices such as Kn's and Relative weights (WR's) for blue catfish (and all species) into Georgia's SAS output relative to standardized sampling.

Catfish Management Technical Committee
American Fisheries Society - Southern Division

SDAFS – Catfish Management Technical Committee

State Report Format

State Reporting: Kentucky

Name of Representative to Technical Committee: Dane Balsman

Date Submitted: January 2015

Project Name or Description: Bait Type Influences Catch and Bycatch in Tandem Hoop Net Sets in Reservoirs

Contact Information:

Name: Dane Balsman

Co-Authors: James Long, David Stewart, Jeremy Shiflet, Daniel Shoup

Email:dane.balsman@ky.gov

Phone: 502-564-7109 ext 4480

Objective: To minimize bycatch of turtles while maintaining adequate catch of channel catfish in standardized sampling.

Current Status: Manuscript Submitted for Review

Abbreviated abstract: Increasing sampling efficiency through increased catch of target species while minimizing catch of non-target specie (i.e., bycatch) is a central tenant of responsible fisheries management. Tandem hoop nets have become the primary gear for sampling Channel Catfish *Ictalurus punctatus*, but suffer from high incidences of bycatch, particularly aquatic turtles that usually drown as a result. We sought to determine if bait type, ZOTE© soap and ground cheese logs, would influence catch of Channel Catfish (CPUE and mean TL) and bycatch of fishes and aquatic turtles. We sampled with tandem hoop nets in 13 Kentucky reservoirs (5-73 ha) using a crossover design where one-half of sites within a reservoir were sampled with one bait type and the remaining sites sampled with the alternate bait and all nets were allowed to fish for two nights. Afterward, live fish were returned to the reservoir and the sites were resampled with the alternate bait and allowed to fish for another two nights. We found no difference in Channel Catfish relative abundance between bait types, but mean sizes of fish caught using ZOTE© soap were approximately 24 mm longer compared to cheese. Fish bycatch was similar between bait types, but tandem hoop nets baited with ZOTE© soap caught up to 61% fewer turtles that experienced up to 12% lower mortalities than those baited with cheese. Depth of net set, water temperature, and Secchi depth were environmental factors measured that affected catch and bycatch, but varied among species. Using ZOTE© soap as bait in tandem hoop nets appears to be a fairly simple and straightforward method for minimizing turtle mortality with this gear.

State Reporting: Kentucky

Name of Representative to Technical Committee: Dane Balsman

Date Submitted: January 2015

Project Name or Description: Evaluation of New Commercial and Recreational Fishing Regulations on Catfish Populations in the Ohio River

Contact Information:

Name: Jay Herrala

Email: jason.herrala@ky.gov

Phone: (502) 564-7109 x.4468

Objective:

1. Evaluate the effects of new commercial and recreational fishing regulations on blue, channel, and flathead catfish in the Ohio River.
2. Determine abundance (CPUE), size structure, and condition of blue, channel, and flathead catfish in the Ohio River.
3. Quantify age, growth, and mortality of the three species in each reach.
4. Model the catfish populations and estimate the impacts of harvest (predict how varying length limits may affect the population given the current amount of harvest).
5. Determine the attitudes and opinions of catfish anglers across Kentucky.

Current Status: Ongoing

Abbreviated abstract: Commercial fishing for catfish in the Ohio River has recently switched from harvest for flesh to harvesting trophy sized fish to sell to pay lake owners. At the same time, a high quality, primarily catch and release trophy catfish fishery has developed for recreational anglers in the Ohio River. This has lead to conflict between recreational anglers and commercial fishermen. Because of this, the Kentucky Department of Fish and Wildlife began looking at some basic population parameters of the three major catfish species (channel, flathead, and blue catfish) in the Ohio River beginning in 2004. The study was initiated to obtain baseline information on length frequency, weight, and age profiles of these three species and determine methods to catch each of these species.

A public meeting was held in October 2013 to present data that had been gathered during this project and discuss potential regulations that may be put in place. The proposal was then brought forth to the Fisheries Committee in November. After discussion between the committee members, the fisheries director, and the general public, the committee voted unanimously to pass the proposed regulations on to the full commission meeting in December 2013. In June 2014, the regulation was made law; however, an injunction on the regulation was filed by commercial fishermen shortly after its enactment and regulations on commercial fishermen were not enforceable until December 1, 2014. The regulation is as follows:

Recreational fishermen on the main-stem Ohio River will be allowed 1 blue catfish ≥35.0 in, 1 flathead catfish ≥35.0 in, and one channel catfish ≥28.0 in. Harvest of fish below their respective length limits will not be regulated.

The majority of commercial fishermen fishing in the Ohio River and its tributaries where commercial fishing is allowed will be allowed 1 blue catfish ≥35.0 in, 1 flathead catfish ≥35.0 in, and one channel catfish ≥28.0 in per day. However, 44 commercial fisherman that harvested over 10,000 lbs of catfish in at least 2 of the last 3 years along with an additional 6 commercial fishermen who will be chosen by a lottery drawing will be allowed to harvest 4 (in aggregate) blue and flathead catfish ≥40.0 in and channel catfish ≥30.0 inches in Kentucky's portion of the Ohio River and its tributaries open to commercial fishing below Cannelton Lock and Dam. Harvest of fish below their respective length limits will not be regulated.

Trotlines, hoop nets/commercial ride-alongs, low-pulse electrofishing, and recreational catfish tournaments were all used to sample catfish in the Ohio River in 2014. Results were very similar to those in 2013 suggesting that the population may be stable; however, yearly data since 2004 indicates that catch rates and size structure of catfish has continued to trend downward.

State Reporting: Kentucky

Name of Representative to Technical Committee: Dane Balsman

Date Submitted: January 2015

Project Name or Description: Monitoring of a Newly Established Blue Catfish Population in Taylorsville Lake and Evaluation of 15 Fish Creel Limit with a 1-Over-25 in Length Limit

Contact Information:

Name: David Baker

Email: david.baker@ky.gov

Phone: 502-564-7109 ext: 4451

Objective: To determine the relative abundance, size structure, growth, mortality, and exploitation of blue catfish in Taylorsville Lake to evaluate the status of this new catfish fishery and to reveal management options that would result in a sustainable high quality fishery with trophy potential.

Current Status: Ongoing

Abbreviated abstract: In 2002, a blue catfish stocking program began in Taylorsville Lake to identify the potential of developing a quality fishery that could possibly produce trophy size (≥35.0 in) fish. The initial stocking were very successful and the blue catfish fishery flourished. An exploitation study conducted in 2008 revealed that 81% of blue catfish caught are harvested from Taylorsville Lake. In March 2011, a new regulation was implemented allowing anglers to only harvest 15 catfish (blue and channel catfish combined) a day and only one of those could be ≥25.0 in.

During August 2014, Taylorsville Lake received its annual stocking of 23,500 blue catfish that averaged 7.0-14.0 in. These late summer stockings were designed to not only allow for larger fish to be stocked based on increase survivability and allows for naturally spawned age-1 fish to be detected during the July sample.

Low pulsed electrofishing was completed on both the upper and lower sections of the lake during July 2014. Overall, 543 fish were collected at 167.1 fish/hr which is the highest catch rate recorded since 2007. Fish were distributed from the 9.0-36.0 in size class; catch rates of the 12.0-19.9 in size group (119.4 fish/hr) were higher than the historical average (84.1 fish/hr) while the 20.0-24.9 in size group (7.1 fish/hr) remain lower than the historical average (11.2 fish/hr) for the fourth consecutive year. Fish in the 25.0-29.9 inch size group have remained stable since 2012 while fish ≥30.0 have been on a steady increase since 2010.

Relative weight values were calculated from 204 fish ranging from the 7.0-41.0 in size class. Overall, W_r values were 93 which indicate the condition of this fishery is good. The 7.0-11.9 inch (97) and 20.0-29.9 inch (95) groups were both good, while 12.0-19.9 inch group (89) were fair. Fish ≥30.0 inches had a W_r

value of 120 indicating this size group is in excellent condition. Relative weight values have been relatively consistent since 2007 across all size groups.

Blue catfish were retained during 2013 for the purpose of age and growth analysis. Age-2 fish dominated the 2014 sample with fish ranging from the 9.0-17.0 in size class. Blue catfish on average reach 20.2 in at age-5+, 25.0 in at 7+ and 30.0 in at 10+.

SDAFS – Catfish Management Technical Committee

State Report Format

State Reporting: Oklahoma

Name of Representative to Technical Committee: Chas Patterson

Date Submitted: 1/14/15

Project Name or Description: A stocking evaluation of grow-out channel catfish in Oklahoma's small impoundments

Contact Information:

Name: Chas Patterson

Email: cpatterson@odwc.state.ok.us

Phone: 405-325-7288

Objective: Determine catch rates, length frequencies, condition, and age structure on nine small lakes before and after experimental stocking rate manipulations. Calculate angler catch rates and satisfaction before and after stocking rate manipulations on nine small lakes.

Current Status: ongoing

Summary: Channel catfish *Ictalurus punctatus* are stocked in small impoundments throughout Oklahoma as put-grow-take or put-take fisheries. These stockings are necessary to sustain an acceptable sport fishery as natural recruitment of channel catfish in small impoundments is often low. Many small impoundments are stocked annually with grow-out (228 mm) channel catfish at rates as high as 99 fish/ha. Tandem hoop nets have been used to evaluate channel catfish populations on nine small impoundments annually since 2010. In addition, a catfish angler survey was conducted on these impoundments in 2011. Results from the netting data suggest CPUE is highly variable among reservoirs and growth is negatively correlated to relative abundance, suggesting density dependence. Consequently, stocking rates were adjusted in 2011 based on growth data. Angler survey results in 2011 indicated angler catch rates were not correlated with relative abundance data. In addition, angler satisfaction of fish caught was fairly similar among lakes although lowest at lakes with stunted populations. Lakes were stocked at the experimental rate through 2014 in an attempt to improve size distribution and angler

satisfaction. An angler survey was conducted in 2014 to determine satisfaction after three years of manipulated stocking rates. Final results are being analyzed.

Project Name or Description: Trophy blue and channel catfish regulation modeling

Contact Information:

Name: Randy Stewart, Jim Long, Dan Shoup

Email: dshoup@okstate.edu

Phone: 405-744-9671

Objective: Evaluate the potential effectiveness of length regulations for producing trophy blue and channel catfish.

Current Status: completed

Summary: We are beginning a modeling study to evaluate the potential effectiveness of length regulations for producing trophy blue and channel catfish. The project uses existing state agency data for 15 blue catfish and 11 channel catfish populations, some of which currently have trophy regulations in place (i.e., typically 1 fish over memorable size), others which have either no length requirement or a minimum length requirement (often around 12"). We are modelling each population to compare the equilibrium biomass of trophy-sized fish when the population is modeled with the most effective trophy regulation, minimum length regulation, and/or any current regulation (if it was not already covered by the best trophy or minimum length regulation). Results at this point are very preliminary, but it appears growth rate and harvest rate are very influential in whether trophy regulations are effective or not. Specifically, if the population has little potential to produce trophy fish in the first place due to slow growth, regulations have little effect. Similarly, fishing mortality rates higher than about 30% typically truncate the age structure such that no fish live long enough to reach trophy size.

Project Name or Description: The efficacy of Zote soap as tandem hoop net bait

Contact Information:

Name: Randy Stewart, Jim Long, Dane Balsman, Jeremy Shiflet, and Dan Shoup

Email: dshoup@okstate.edu

Phone: 405-744-9671

Objective: To evaluate the efficacy of Zote soap through increased catch of target species while minimizing catch of non-target species

Current Status: completed

Summary: Increasing sampling efficiency through increased catch of target species while minimizing catch of non-target specie (i.e., bycatch) is a central tenant of responsible fisheries management. Tandem hoop nets have become the primary gear for sampling Channel Catfish Ictalurus punctatus, but suffer from high incidences of bycatch, particularly aquatic turtles that usually drown as a result. We sought to determine if bait type, ZOTE© soap and ground cheese logs, would influence catch of Channel Catfish (CPUE and mean TL) and bycatch of fishes and aquatic turtles. To assess this objective, wWe sampled with tandem hoop nets in 13 Kentucky reservoirs (5-73 ha) using a crossover design where one-half of sites within a reservoir were sampled with one bait type and the remaining sites sampled with the alternate bait and all nets were allowed to fish for two nights. Afterward, live fish were returned to the reservoir and the sites were resampled with the alternate bait and allowed to fish for another two nights. We found no difference in Channel Catfish relative abundance between bait types, but mean sizes of fish caught using ZOTE© soap were approximately 24 mm longer compared to cheese. Fish bycatch was similar between bait types, but tandem hoop nets baited with ZOTE© soap caught up to 61% fewer turtles that experienced up to 12% lower mortalities than those baited with cheese. Depth of net set, water temperature, and Secchi depth were environmental factors measured that affected catch and bycatch, but varied among species. Using ZOTE© soap as bait in tandem hoop nets appears to be a fairly simple and straightforward method for increasing sampling efficiency minimizing turtle mortality with this gear.

SDAFS – Catfish Management Technical Committee

State Report

State Reporting: Mississippi

Name of Representative to Technical Committee: Jerry Brown

Date Submitted: January 2014

Project Name or Description: Wolf Lake Blue Catfish and Flathead Catfish stock assessment

Contact Information:

Name: Jerry Brown

Co-Authors: Ryan Jones and Dustin Rodgers

Email: jerryb@mdwfp.state.ms.us

Phone: 601-432-2200

Objective: To assess the Blue Catfish and Flathead Catfish population at Wolf Lake to estimate abundance, size structure, and growth rates.

Current Status: Completed

Abbreviated abstract: Low-frequency electrofishing was conducted at Wolf Lake during 2013 to access the Blue Catfish and Flathead catfish populations. Wolf Lake is a 1,000 acre oxbow of the Yazoo River that remains connected during high water events. The watershed primarily consists of agricultural land and the lake remains turbid throughout the year. A total of 133 Blue Catfish were collected ranging from 71 to 798 mm TL. Abundance (15.3 fish/mile) and size structure (PSD 57) results were included in the 2014 state report; however, pectoral spines were being processed for aging. We collected spines from a subsample of 87 Blue Catfish that were $\geq$ 250 mm TL. Ages ranged from 3-15 and annual mortality (0.16) was estimated by catch curve. Relative abundance for Flathead Catfish appears to be low at Wolf Lake and only one was collected during electrofishing. Flathead Catfish also comprised a low percentage of our total gill net catch in 2013 (3%) and 2014 (1%). Mean TL for Flathead Catfish during gill net sampling in 2013 and 2014 was 988 and 1105 mm, respectively.

State Reporting: Mississippi

Project Name or Description: Blue Catfish and Flathead Catfish assessment at Chotard and Albermarle Lakes.

Contact Information:

Name: Jerry Brown

Co-Authors: Trevor Knight and Dustin Rodgers

Email: jerryb@mdwfp.state.ms.us

Phone: 601-432-2200

Objective: To assess the Blue Catfish and Flathead Catfish populations in two Mississippi River oxbow lakes to estimate abundance, size structure, and growth rates.

Current Status: Ongoing

Abbreviated abstract: Chotard and Albermarle are two Mississippi River oxbow lakes located north of Vicksburg and are 1,123 and 657 acres in size, respectively. The lakes are connected to each other and remain connected to the river; therefore water levels fluctuate throughout the year. The catfish fishery was sampled in August 2014 with low-frequency electrofishing and a chase boat was used. A total of 43 Flathead Catfish were collected with lengths ranging from 219 to 733 mm TL. CPUE for all fish was 5.4 fish/mile and 4.8 fish/mile for fish $\geq$ stock. PSD and relative weight values were 55 and 93, respectively. Only eight Blue Catfish (<1 fish/mile) were collected and total lengths ranged from 249 to 497 mm. Structural indices and relative weight were not calculated due to the low numbers collected. Pectoral spines were removed from both species and are currently being sectioned with a low speed isomet saw for aging. Game fish populations have drastically declined in these, and other connecting Mississippi River oxbow lakes, in recent years. At this time it is unclear if the low catfish abundance and the decline in game fish populations are related. Winter gill net sampling is being conducted at Chotard and Ablermarle Lakes, which should provide additional data on catfish populations.

State Reporting: Mississippi

Project Name or Description: Flathead Catfish Assessment of Canal Section Lakes of the Tennessee-Tombigbee Waterway (TTW).

Contact Information:

Name: Tyler Stubbs

Co-Authors: Nathan Martin and Charles Watts

Email: tylers@mdwfp.state.ms.us

Phone: 662-840-5176

Objective: Determine baseline population characteristics of Flathead Catfish in the Canal Section impoundments (Locks A-E) of the TTW, Mississippi.

Current Status: In progress, only Locks A and C have been sampled so far. Age and growth evaluations are ongoing.

Abbreviated abstract: A study is in progress to evaluate the Flathead Catfish populations in 5 small (< 1,200 ha.) lock-and-dam impoundments along the Tennessee-Tombigbee Waterway in NE Mississippi. Low frequency electrofishing during late summer (July-August) will be used. As with all of the TTW Canal Section impoundments, the west side of the entire pool is a levee. Deep water occurs exclusively in the navigation channel (maintained for navigation at 2.7 m), with a few small, relatively deep creek channels entering the east side of the pool. Most of the off-channel habitat has silted in, leaving little available fish habitat. The navigation channel makes up for a large percentage of the impoundment, with each impoundment averaging 7.8 miles in length. Initial sampling illustrated low catch rates compared to the river section for Lock A (0.53 fish/km) and Lock C (5.9 fish/km). Due to low sample sizes, population structure was variable. PSD and RSDp for Lock A was 50 and 50 respectively; additionally, PSD and RSDp for Lock C was 35 and 6 respectively. Locks B, D, and E will be sampled in 2015.

State Reporting: Mississippi

Project Name or Description: Flathead Catfish Populations in Mississippi Impoundments.

Contact Information:

Name: Tyler Stubbs

Co-Authors: Jason Olive, Nathan Martin and Charles Watts

Email: tylers@mdwfp.state.ms.us

Phone: 662-840-5176

Objective: Determine baseline population characteristics of Flathead Catfish in the River Section impoundments (Aberdeen, Columbus, and Aliceville) of the Tennessee-Tombigbee Waterway, Mississippi.

Current Status: In press, SEAFWA

Abbreviated abstract:

Abstract: Flathead catfish (Pylodictus olivaris) populations were sampled in three northeastern Mississippi reservoirs (Aberdeen, Columbus, and Aliceville) along the Tennessee-Tombigbee Waterway to evaluate stock characteristics. Specifically, data were collected on relative abundance, growth, mortality, recruitment, and size structure. These samples were part of a statewide effort to document current population status in reservoirs and to develop management goals. Sampling was conducted in late summer (July-August) during 2011-2013 using low-frequency electrofishing. All fish 250 mm total length and greater were aged using pectoral spine sections. Relative abundance (fish km^{-1}) was higher in Aliceville Lake (12.56 fish km^{-1}) than in Aberdeen Lake (7.54 fish km^{-1}) or Columbus Lake (7.37 fish km^{-1}), but length-frequency distributions, growth and annual mortality rates, and recruitment variation of flathead catfish were similar among reservoirs. This is in contrast to downstream gradients of fish population metrics typically observed in river ecosystems, which could be due to habitat homogenization resulting from navigation-related anthropogenic activities.

State Reporting: Mississippi

Project Name or Description: Big Sunflower River Flathead Catfish Stock Assessment

Contact Information:

Name: Nathan Aycock

Co-Authors: Darrin Hardesty and Chad Washington

Email: nathana@mdwfp.state.ms.us

Phone: (601) 432-2200

Objective: To assess the flathead catfish population in the Sunflower River

Current Status: Complete

Abstract: Low frequency electrofishing was used to sample Flathead Catfish (*Pylodictis olivaris*) in the Sunflower River in August 2013. We sampled 25 different one mile stretches of the Sunflower from Indianola, MS, to Anguilla, MS, and collected 333 Flathead Catfish ranging from 60 – 913 mm in length. Overall CPUE was 14 fish per mile, and CPUE was 6 fish per mile for fish ≥ stock size. All fish collected were measured for total length and weight, and pectoral spines were removed from 10 fish per inch group for aging. Spines were sectioned through the articulating process using a low speed isometric saw and then read by three independent readers. A total of 194 fish were aged, and fish up to age 10 were found in the sample. Mean age at stock length (350 mm) was 2.5 years, and mean age at quality length (510 mm) was 4.6 years. Annual mortality was estimated to be 29% using the Robson and Chapman's method and 32% from a catch curve analysis. Analysis of the residual plot from the catch curve indicate relatively strong year classes in 2005 - 2008 followed by relatively weak year classes from 2009 – 2011.

State Reporting: Mississippi

Project Name or Description: Tallahatchie River Flathead Catfish Stock Assessment

Contact Information:

Name: Nathan Aycock

Co-Authors: Darrin Hardesty and Chad Washington

Email: nathana@mdwfp.state.ms.us

Phone: (601) 432-2200

Objective: To assess the flathead catfish population in the Tallahatchie River

Current Status: Ongoing

Abstract: The Tallahatchie River originates in Quitman county and flows south approximately 100 miles to Leflore county where it meets the Yalobusha River to form the Yazoo River. Low frequency electrofishing was used to assess the Flathead Catfish (*Pylodictis olivaris*) population in the Tallahatchie River to determine population characteristics. From July 2014 to September 2014 we sampled 15 different one mile reaches along three different stretches of the Tallahatchie River. A total of 254 Flathead Catfish were collected, and pectoral spines were pulled from 97 fish for aging. Total length ranged from 69 mm to 835 mm with a mean of 257 mm. CPUE was 17 fish per mile, and CPUE for fish $\geq$ stock size was 2 fish per mile. PSD was 28 and RSD-P was 4. Pectoral spines are currently being sectioned with a low-speed saw for age determination, and growth and mortality rates will be determined once sectioning and aging is completed.

SDAFS – Catfish Management Technical Committee

State Report - Missouri

State Reporting: Missouri

Name of Representative to Technical Committee: Joe McMullen

Contact Information:

Name: Joe McMullen

Email: joseph.mcmullen@mdc.mo.gov

Phone: 636-451-3512 x6048

Date Submitted: 9 January 2015

Project Name or Description: Truman Reservoir and Lake Ozark Catfish Management

Contact Information:

Name: Mike Bayless

Co-Authors: Greg Stoner and Zach Ford

Email: mike.bayless@mdc.mo.gov

Phone: 660-885-6981 x253

Objective: Implement blue catfish regulations on Truman Reservoir and Lake of the Ozarks to improve the quality of a declined fishery.

Current Status: March 1, 2014, new blue catfish regulations were put in place.

- 10 blue catfish daily
- Protected slot-length 26-34 inches
- 2 blue catfish larger than 34 inches

Abbreviated abstract: The new regulations were put in place based on concern, from anglers and MDC staff, of declining numbers of larger blue catfish in both reservoirs. Three years of pre-regulation data confirmed these concerns. Blue catfish sampled on Truman Reservoir broke down as; 86% below the protected slot, 13% within the protected slot, and 1% above the protected slot. Lake of the Ozarks

samples showed similar results; 86% below, 12% within, and 2% above the protected slot. In general the regulations have been well received with some complaints. MDC will evaluate the regulation once they have been given time to show a detectible change (no sooner than 7 years following implementation).

State Reporting: Missouri

Project Name or Description: Population Assessment and Angler Exploitation of Blue Catfish in Mark Twain Lake

Contact Information:

Name: Paul Michaletz

Co-Authors: Ross Dames

Email: paul.michaletz@mdc.mo.gov

Phone: 573-815-7901, x3921

Objectives:

1) To determine population demographics (i.e., size structure, age and growth, mortality) of blue catfish in Mark Twain Lake.
2) To determine angler exploitation of blue catfish in Mark Twain Lake.
3) To determine if new harvest regulations would improve the size structure of blue catfish in Mark Twain Lake.

Current Status: Age and growth information has been collected and 399 blue catfish ≥15 inches long were tagged with Carlin dangler reward tags during spring 2014. To date, 14 reward tags have been returned by anglers.

Abbreviated Abstract: Blue catfish provide a popular sport fishery in Mark Twain Lake but little is known about the population or angler exploitation. The goal of this study is to acquire information on population demographics and angler harvest to determine if fishing regulations should be modified in an effort to improve the size structure of blue catfish. Growth is slow with age-5 blue catfish averaging only 16 inches long. Growth is also quite variable among individuals. For example, age-9 blue catfish range in length from 21.6 to 32 inches long. Exploitation of blue catfish by anglers will be estimated using reward tags. Tagging was conducted during spring 2014 and will be conducted again during the springs of 2015 and 2016. Population demographics coupled with angler exploitation data will be used to model the effectiveness of various harvest restrictions in improving size structure of the blue catfish population.

State Reporting: Missouri

Project Name or Description: Determining Electrofishing Immobilization Thresholds of Smallmouth Bass, Blue Catfish and Flathead Catfish: A Critical Step to Develop a Standardized Sampling Protocol

Contact Information:

Name: Zach Ford

Co-Authors: Dr. Craig Paukert (University of Missouri)

Email: zach.ford@mdc.mo.gov

Phone: 660-885-8179 x236

Objectives:

1.) Determine the effective conductivity of live Smallmouth Bass, Blue Catfish and Flathead Catfish based on the behavioral response to electrofishing.
2.) Develop species-specific standardized electrofishing output goals to achieve constant power transfer to fish across a range of water conductivities and water temperatures.
3.) Evaluate these output goals in the field and develop power output tables for each species that can be referenced by field staff to standardize electrofishing output across water temperatures and water conductivity levels.

Current Status: This project has been proposed and, if funded, would be conducted during a 5 year period beginning July 2015. Funding status will be known in early 2015.

Abbreviated Abstract: Standardization of electrofishing output will minimize bias, reduce variation in catch, and allow for more valid spatial and temporal comparisons of sample data, regardless of the electrofishing control box used. Biologists need to know how conductivity of the water relates to the effective conductivity of Smallmouth Bass, Blue Catfish (BLC) and Flathead Catfish (FHC) in order to develop standardized electrofishing output goals that are species specific and maintain a desired capture-prone fish response (e.g., taxis or immobilization) across a range of water conductivities, water temperatures, and fish sizes. Previous work reported high sample variation (e.g., CV > 50%) using existing boat electrofishing methods to sample FHC in the lower Missouri River and tributary rivers in MO. Despite being the most commonly used gear, the unique behavioral response of BLC and FHC to electrofishing is not well understood and it is unclear what level of electrofishing power (threshold power) or most efficient electrical waveform is necessary to consistently achieve a capture-prone response at varying water conductivities and water temperatures, and to collect a representative sample of all fish sizes.

State Reporting: Missouri

Project Name or Description: Assessment of Vital Rates (Exploitation, Size Structure, Age and Growth and Total Annual Mortality) to Evaluate the Current Harvest Regulations for Blue Cattish and Flathead Catfish in the Missouri and Mississippi River

Contact Information:

Name: Joe McMullen

Co-Authors: Kyle Winders

Email: joseph.mcmullen@mdc.mo.gov

Phone: 636-451-3512 x6048

Objectives:

1.) Determine current commercial and recreational exploitation rates for Blue Catfish and Flathead Catfish in the Missouri River and Mississippi River downstream of Lock and Dam 24.
2.) Determine population demographics (size structure, age and growth and total annual mortality) of Blue Catfish and Flathead Catfish in the Missouri River and Mississippi River downstream of Lock and Dam 24.
3.) Determine if growth or recruitment overfishing of Blue Catfish and Flathead Catfish is occurring on the Missouri River and Mississippi River downstream of Lock and Dam 24 and if modifying harvest regulations is warranted.

Current Status: Project sampling will commence spring 2015 and conclude fall 2016.

Abbreviated Abstract: Blue Catfish and Flathead Catfish are native to the Missouri and Mississippi rivers which support some of the most important recreational and commercial fisheries in Missouri; however large river catfish populations have not been intensively managed in the past. An assessment of Blue Catfish and Flathead Catfish populations in the Missouri and Mississippi rivers will provide information needed to better manage these fisheries. Primary data needs include an estimate of exploitation by commercial and recreational fishers and population demographic information, including size structure, age and growth and total annual mortality for each fishery. Catfish will be collected using low-frequency electrofishing; once captured the information necessary to estimate population demographics will be collected. Reward tags will be affixed to catfish prior to their release and reports from recreational and commercial fishers will be used to estimate exploitation levels. Information collected during this study will provide the necessary inputs to evaluate current and prospective harvest regulations. Harvest regulation recommendations will focus on ensuring quality growth and recruitment among large river catfish fisheries and increasing the yield of catfish available to fishers.

State Reporting: Missouri

Project Name or Description: Hatchery Program – 2013 Missouri Department of Conservation Warm Water Hatcheries Production Report

Contact Information:

Name: James Civiello

Co-Authors:

Email: james.civiello@mdc.mo.gov

Phone: 573-815-7901, x3921

Objectives: Provide the numbers, sizes and species of fish requested for various regional and statewide programs and providing assistance for the management of Missouri's public waters and assist in the recovery of rare and endangered aquatic species.

Current Status: On-going

Abbreviated Abstract: Report documenting the number and species of fish produced at and stocked from each hatchery, with a cost analysis. Lost Valley Hatchery and Chesapeake Hatchery produced approximately 160,000 channel catfish (8-12") which were stocked in public waters. In 2014, Hunnewell Hatchery began production of blue catfish.

State Reporting: Missouri

Project Name or Description: Commercial Fishing Program – Missouri Commercial Fish Harvest 2013

Contact Information:

Name: Joe McMullen

Co-Authors: Heather Garrison

Email: joseph.mcmullen@mdc.mo.gov

Phone: 636-451-3512 x6048

Objectives: Document and summarize Missouri's commercial fishery data for 2013 and annual harvest trends since 1945.

Current Status: Complete

Abbreviated Abstract: Channel catfish, blue catfish, flathead catfish and bullhead catfishes are commercial fish on the Mississippi River and that portion of the St. Francis River that forms a boundary between Missouri and Arkansas. Commercial catfish harvest from the Missouri River has been prohibited since 1992.

Catfish were the most harvested species group statewide and accounted for 47% of the total harvest in 2013. Catfish harvest increased from 106,346 lbs. in 2012 to 125,149 lbs. in 2013, the highest catfish harvest since 2004.

Blue catfish remain extremely important to Missouri's commercial fishers, accounting for over 25% of the total harvest in 2013 and was the most harvested species on the Mississippi River. Blue catfish harvest increased from 45,046 lbs. in 2012 to 67,260 lbs. in 2013, the highest harvest since 2002 and the seventh greatest harvest since 1945. Mississippi River harvest is focused on the open portions of the river, downstream of Mel Price Locks & Dam near St. Louis, MO.

Flathead catfish harvest remained moderate in 2013, compared to peak levels from the 1970's up until the prohibition of commercial catfish harvest from the Missouri River. However, the importance of flathead catfish harvest continues, particularly for fishers on the upper Mississippi River (upstream of Mel Price Locks & Dam). Harvest decreased inconsequentially, from 37,442 lbs. in 2012 to 37,433 lbs. in 2013.

Channel catfish experienced extremely high levels of harvest during the 1980s and early 1990's, with a peak at 238,445 lbs. in 1990. However, harvest remains lower and the species continues to account for less of the overall catfish harvest since the prohibition of commercial catfish harvest from the Missouri River. Harvest decreased from 23,749 lbs. in 2012 to 20,174 lbs. in 2013.

Bullhead catfish harvest is minimal, increasing from 109 lbs. in 2012 to 282 lbs. in 2013, the third lowest harvest since 1945. The entirety of the 2013 bullhead catfish harvest was reported from the upper Mississippi River.

SDAFS – Catfish Management Technical Committee

State Report Format

State Reporting: South Carolina

Name of Representative to Technical Committee: Scott Lamprecht

Date Submitted: 1/15/2015

Project Name or Description: Blue Catfish Population Monitoring

Contact Information:

Name: Scott Lamprecht

Co-Authors: Carl Bussells

Email: lamprechts@dnr.sc.gov

Phone: 843 825-3387

Objective: Harvest recommendations

Current Status: Continuing

Abbreviated abstract:

Standard winter gillnetting has been used to monitor fish populations in Santee Cooper for 28 years. The results have documented the initial expansion of the blue catfish (BCF) population and subsequent changes. Most recently, the BCF population has experienced a substantial reduction in number, but the total weight of the annual sample has remained high. Attempts have been made to regulate commercial harvest through gear restrictions and a daily per person restriction of one BCF greater than 36" regardless of gear or license type. However, these restrictions and a reduced level of BCF recruitment has resulted in dissatisfied sport anglers and a reduction in anglers targeting catfish (anecdotal observations). In the 2014 Legislative session, a constituent bill was introduced to restrict daily harvest to 10 BCF with one over 30" per angler per day, regardless of harvest method, for a period of 3 years. At the last minute this was version was stalled by a contingent of legislators that were concerned about pay-ponds losing a cheap source of large catfish to stocking in their ponds. After much discussion a compromise bill was passed to restrict daily harvest to 25 BCF with two over 32" per person regardless of method, beginning April 1, 2015 and lasting for 3 years. While the structure of this bill was shaped by political wrangling, with little biological basis, it has been instrumental in bringing to light the issues of the sportfishing value of BCF, the long standing neglect of freshwater commercial fishing management in South Carolina, and what constitutes proper or best use of public resources.

Biologically, our survey catch rates by number have declined to 25% of the long term average, but the average size has increased and the total sample weight has remained near average. The results of good reproductive conditions in 2013 and 2014 have yet to be recruited to our winter gear. However, subjective observations indicate a strong 2013 year class.

Elsewhere around the state, though not legally stocked, we are seeing expanding BCF populations in nearly all of our piedmont reservoirs. In one 7,000 acre pump-back storage reservoir, a new reservoir record 90lb plus BCF was angled in December.

SDAFS – Catfish Management Technical Committee

State Report Format

State Reporting: Tennessee

Name of Representative to Technical Committee: Eric Ganus

Date Submitted: January 6, 2015

Project Name or Description: Channel Catfish and Blue Catfish are popular commercial and recreational species throughout the United States, especially in Tennessee. Catfish are the second most pursued recreational species in the state behind black bass and commercial catfish harvest can exceed 700,000 kg annually. Increased interest in catfish over the past twenty years has yielded much recent literature, including two international symposia; however, only a few studies of catfish have been conducted in Tennessee. In addition to the paucity of studies done on catfish in Tennessee, there have been relatively few studies performed on large reservoirs. Thus, Tennessee reservoirs provide an ideal stage to study these popular fish.

Contact Information:

Name: Cole Harty

Co-Authors: Phil Bettoli

Email: charty@tntech.edu; pbettoli@tntech.edu

Phone: 931-372-3086

Objective: The objectives of this study are to (1) develop unbiased catfish sampling protocols for the use of trotlines, low-frequency electrofishing, tandem hoop nets, or a combination of these three approaches; (2) assemble a statewide database on commercial and recreational harvest of catfish species and examine historical trends in terms of yield; (3) mathematically model the response of catfish populations to different management scenarios; and (4) assess the potential for growth and recruitment overfishing in Tennessee reservoirs.

Current Status: Ongoing

Abbreviated abstract: n/a

SDAFS – Catfish Management Technical Committee

State Report

State Reporting: Texas

Name of Representative to Technical Committee: David Buckmeier

Date Submitted: January 9, 2015

Project Name or Description: Statewide Catfish Management Prospectus

Contact Information:

Name: David Buckmeier

Coauthors: Numerous

Email: David.Buckmeier@tpwd.texas.gov

Phone: 830-866-3356

Objective: Publish a 10-15 page document for the general public stating our plan to manage catfish in Texas.

Current Status: On-going. Completion scheduled for December 2015

Abbreviated Abstract: Draft document has been compiled and is currently being edited for release for public input (June 2015). The final product will be about 10-15 pages and will state our vision, objectives, and general plan to manage catfish in TX waters. This document will guide future actions of the Inland Fisheries Division regarding catfish management.

State Reporting: Texas
Project Name or Description: Harvest and Angler Behaviors in a Flathead Catfish Fishery in East Texas

Contact Information:

Name: Kris Bodine

Coauthors: Richard Ott, Daniel Bennett, Jake Norman, Warren Schlechte

Email: Kris.Bodine@tpwd.texas.gov

Phone: 830-866-3356 x 213

Objectives: 1) estimate exploitation rates (i.e., gear- and size-specific) of flathead catfish in Lake Palestine, 2) estimate population size structure of flathead catfish in Lake Palestine, TX, and 3) characterize the demographics (e.g., age and gender) and angling behaviors (e.g., amount of angling activity and harvest tendencies), of handfishing anglers in Texas.

Current Status: Draft final report prepared.

Abbreviated Abstract: In 2011, the Texas state legislature legalized hand fishing as a new harvest method for catfish in Texas. Although Flathead Catfish are suspected to be vulnerable to this angling method, we have relatively little quantitative information about harvest efficiency, demographics, and behaviors of hand fishermen (as compared to other angling methods). This information is needed to make informed management decisions. Therefore, we evaluated exploitation (total, gear-, and size-specific) of Flathead Catfish in Lake Palestine, Texas, and administered statewide surveys to characterize demographics and angling behavior of hand fishers. In April 2013, we tagged 255 Flathead Catfish within three size groups (457–599 mm, $N = 46$; 600–761 mm, $N = 98$; $\geq$762 mm, $N = 111$) with Carlin dangler reward tags. Overall harvest was below reported maximum sustainable yield levels; total exploitation (all gears combined) was 3.2% and size-specific exploitation was less than 5% for all size groups. Trot lines and hand fishing accounting for 100% of the harvest (50% for each gear). Harvest by trot liners was evenly spread across all size groups tagged; however, hand fishers only harvested fish > 762 mm. About 44% of hand fishers surveyed ($N = 49$) considered hand fishing their most important fishing activity, but only 5.6% exclusively hand fished. Hand fishers also indicated they fish an average of 21.7 days per year and harvest about 18 to 40 Flathead Catfish annually (about 1 to 2 fish per day). Anglers reported their average catch size was 783 mm and average harvest size was 706 mm. Although we believe harvest of Flathead Catfish is likely sustainable under current regulations, biologists should continue monitoring exploitation. Subtle increases in harvest, especially for large fish, could negatively affect population size structure, even if the exploitation rate remains below maximum sustainable yield levels.

State Reporting: Texas

Project Name or Description: Development and Implementation of Standard Procedures for Sampling Catfish with Tandem-Hoop Nets and Low-Frequency Electrofishing.

Contact Information:

Name: Kris Bodine

Coauthors: Timothy Bister, Michael Homer, Natalie Amoroso, and Robert Mauk.

Email: Kris.Bodine@tpwd.texas.gov

Phone: 830-866-3356 x 213

Objective: 1) Develop standard procedures for sampling a) channel catfish with tandem-hoop nets, and b) blue catfish and flathead catfish with low-frequency electrofishing.

Current Status: Accepted and implemented into standard procedures manual.

Abbreviated Abstract: Standard sampling procedures for each gear were developed to accommodate objective-based sampling goals. Specific management objectives were identified and sampling strategies (e.g., sample size, spatial replication, etc.) were outlined for various levels of desired data quality (i.e., precision or accuracy). These procedures were developed based on information gleaned from existing catfish literature and were finalized and accepted by TPWD staff in October, 2014.

State Reporting: Texas

Project Name or Description: Evaluation of an experimental 30”-45” slot length limit for blue catfish in three Texas reservoirs

Contact Information:

Name: John Tibbs

Coauthors: Rick Ott, Tom Hungerford

Email: John.Tibbs@tpwd.texas.gov

Phone: 254-666-5190

Objective: 1) Quantify winter jugline and pole-and-line angler effort for blue catfish before and after the regulation is enacted, 2) Measure jugline attitude and opinions, as well as economic impact, before and after the regulation is enacted, 3) Measure pole-and-line angler attitude and opinions, as well as economic impact, after the regulation is enacted, 4) Measure size structure of jugline harvest and size structure of the total blue catfish population before and after the regulation is enacted, 5) Determine if large blue catfish contaminants are above action levels.

Current Status: Ongoing. Pre-regulation samples have been collected and analyzed. Post-regulation samples scheduled for Fall 2015 – Spring 2016.

Abbreviated Abstract: Contaminant samples for sub-slot and slot fish have been collected and metals processed; otoliths have been collected and age determined; mail-out survey to jugliners had > 50% response rate with only a single mailing; mail-out survey of catfish pole-and-line anglers complete.

State Reporting: Texas

Project Name or Description: Channel and Blue Catfish Recruitment Variability in Colorado River Reservoirs, Texas

Contact Information:

Name: David Buckmeier

Coauthors: Nate Smith, Dan Daugherty

Email: David.Buckmeier@tpwd.texas.gov

Phone: 830-866-3356 x 219

Objective: 1) evaluate the consistency of recruitment patterns of each species across reservoirs, 2) estimate the magnitude of recruitment variability and identify possible effects of hydrologic variability, and 3) explore relationships between annual recruitment variability (i.e. year class strength) and possible explanatory variables at regional and local spatial scales.

Current Status: On-going. Draft manuscript being prepared.

Abbreviated Abstract: Recruitment of both channel and blue catfish was mostly synchronous across Colorado River reservoirs, Texas and generally declined over the last decade (which has experienced extensive drought). Recruitment has been highly variable in several reservoirs and the magnitude of recruitment variability was positively related to hydrologic variability (CV reservoir water level, volume, and pelagic area) for channel catfish. Similar to recruitment variability, independent variables related to year class strength of channel and blue catfish were also related to reservoir hydrology. Few relations were found in our most hydrologically stable reservoir, whereas many were identified for reservoirs that experienced substantial hydrologic variability. Hydrologic conditions during spawn and postspawn seasons most often produced significant relations. As water demands in Texas continue to increase for a growing human population, managers should anticipate greater annual variation in recruitment of catfishes in reservoirs that are allowed to fluctuate. When combined with changing climatic conditions, including prolonged droughts and more extreme weather patterns, sustaining quality fisheries in these systems will be challenging. However, by understanding the effects of changing hydrology on recruitment patterns of important sport fish species with different life history strategies, managers may find some opportunities. Unlike short-lived species (e.g. white crappie) that typically develop "boom or bust" type fisheries in these systems, long-lived species (including catfishes) appear capable of supporting sustainable, high quality type fisheries so long as strong year classes are produced at least every five years.

State Reporting: Texas

Project Name or Description: Evaluate Nine-inch Channel Catfish Stocking Program in Community Fishing Lakes

Contact Information:

Name: Charlie Munger

Coauthors: Numerous

Email: Charlie.Munger@tpwd.texas.gov

Phone: 806-655-4341

Objectives: 1) Assess survival of 9" Channel Catfish (CCF) stocked into Community Fishing Lakes, 2) assess angler use of stocked CCF.

Current Status: Data collection completed. Results being implemented. Final report in preparation.

Abbreviated Abstract: Twenty five percent of the stocked study lakes had no CCF survival at all and evidence from another 25% of the lakes indicated that stocked CCF survived for less than the desired six month period. Only 50% of the study lakes had stocked CCF survive through to spring when angler effort increased. Hoop net data from these survival lakes indicated that less than half of the stocked CCF remained in the lake by the end of hoop net sampling (i.e. May). There was also no clear indication that angling effort had actually increased as a result of the stockings. Future requests need to provide evidence that stocked CCF survive or that stocked fish are being utilized by anglers.

State Reporting: Texas

Project Name or Description: Angler Characteristics, Catch, and Harvest for Neighborhood Fishin' Program Lakes

Contact Information:

Name: Robert Mauk

Coauthors: Numerous

Email: Robert.Mauk@tpwd.texas.gov

Phone: 940-766-2383

Objectives: 1) Determine if the Neighborhood Fishing Program (NFP) is meeting stated goals in terms of percentage of children participating, and creation of new anglers. 2) Examine NFP angling participation, catch, and harvest throughout the year, to determine if fish stocking schedules and rates can be altered to better meet temporal demand/expectations. 3) Examine angler catch using percent-of-success as an index. 4) Determine angler expectations in terms of catch and harvest of stocked fish.

Current Status: Data collection completed. Final report in preparation.

Abbreviated Abstract: The Texas Parks and Wildlife NFP stocks catfish in the summer and rainbow trout in the winter. The program was originally evaluated shortly after it was implemented. Since that time it has grown to 14 sites and appears popular. In the latest evaluation at the 14 NFP sites, we estimated a total of > 275,000 hours of angling effort, of which catfish made up > 211,000 hours. This equated to > 137,000 trips. Nearly half of the anglers interviewed were relatively new to fishing or were children. The proportion of children varied by NFP site, ranging from 12-45%. About half of the catfish anglers caught at least one Channel Catfish and 95% would be happy catching 3 or fewer fish in a trip.

State Reporting: Texas

Project Name or Description: Comparison of catfish catch and harvest among three angling gear types at Choke Canyon Reservoir

Contact Information:

Name: John Findeisen

Email: John.Findeisen@tpwd.texas.gov

Phone: 361-547-9712

Objective: To determine differences in catch per unit effort (CPUE), catch per unit hook effort (CPUHE), total harvest, and size structure for catfish among three angling gear types at Choke Canyon Reservoir.

Current Status: On-going. Data collection has been completed.

Abbreviated Abstract: Size range of harvested fish was greatest for juglines followed by trotlines and active gear anglers. However, active gear anglers were more numerous and thus harvesting more fish. Currently collecting boat ramp use information via game cameras (since July 2010). There has been some nighttime, but much less than during daylight.

State Reporting: Texas

Project Name or Description: Effects of Two Pond Filling Strategies on Production of Channel Catfish Fingerlings

Contact Information:

Name: Hugh Glenewinkel

Coauthors: Gerald Kurten and Aaron Barkoh

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Phone: 409-384-6103

Objective: Determine if stocking channel catfish fry into filling ponds as opposed to holding fry in kettles for seven days before filling negatively affects fish survival, growth and feed conversion efficiency in the production of 75-mm fish.

Current Status: Completed. Published in TPWD Management Data Series.

Abbreviated Abstract: Texas Parks and Wildlife Department rears Channel Catfish *Ictalurus punctatus* (CCF) fry to 75-mm fingerlings at the A. E. Wood Fish Hatchery in San Marcos, Texas. These fingerlings are further cultured to larger sizes (230-305 mm) for stocking Texas public waters. Traditionally, fry rearing was accomplished by stocking feed-trained, 5-d-old fry into modified Kansas pond kettles for additional 7-10 d (extended) of feed training before filling ponds with water. During extended feed training in kettles, fry may be subjected to poor water quality because of rainstorms that wash pond bottom sediments into kettles. Sediments in kettles can reduce dissolved oxygen levels and cause high fish mortalities. To avoid fish kills, hatchery employees expose themselves to hazardous weather conditions to shut pond drain valves and fill ponds before sediments can negatively impact the fish. Failing water supplies into pond kettles at night or during inclement weather also has caused fry losses in the past. We conducted this study to determine if extended feed training in pond kettles was a necessary part of the CCF grow-out process or if the risks to fish production and hatchery staff safety could be eliminated. This study compared fish production data over a 3-year period to determine if filling ponds immediately after stocking fry into pond kettles would negatively impact production when compared to the traditional method of filling ponds after extended feed training. In 2008, 2009, and 2010 six 0.4-ha rearing ponds were used for the study each year. Three ponds served as controls where fry were reared using the traditional method and three ponds were filled immediately after fry stocking into pond kettles (treatment). No practical differences were found between treatment and control in terms of fish survival, growth, and feed conversion. Dissolved oxygen concentration, water temperature, and pH (water quality) statistically differed between treatment and control ponds, especially during the first 10-20 d of culture. However, overall water quality was suitable for CCF production in both treatment and control ponds and did not appear to have negatively impacted fish production. Following this study, ponds have been started filling immediately following stocking of CCF fry into pond kettles. This has eliminated the risks to hatchery staff safety and CCF fish production without apparent adverse impact to 75-mm fingerling production.

State Reporting: Texas

Project Name or Description: Use of copper sulfate for management of columnaris disease in Channel Catfish and filamentous algae in low-alkalinity hatchery ponds

Contact Information:

Name: Neil Pugliese

Coauthors: Reese Sparrow

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Phone: 409-698-2052

Objectives: 1) Determine sensitivity of catfish to copper, 2) determine minimum efficacy level of copper for columnaris and algal treatment in catfish ponds.

Current Status: Will be initiated this year.

Abbreviated Abstract: Phase 1 of the project will determine sensitivity of Catfish to copper (i.e. determination of the LC50 and No-effect level of copper to Channel and Blue Catfish). Phase 2 will determine the minimum efficacy level of copper for columnaris treatment. Phase 3 will define the minimum efficacy level of copper for algal treatment.

State Reporting: Texas

Project Name or Description: Channel Catfish virus surveillance

Contact Information:

Name: Greg Southard

Coauthors: NA

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Phone: 512-353-3492

Objectives: 1) Determine prevalence of Channel Catfish (CCF) virus in brood stock reared at AEWFH using non-lethal detection methods (e.g., DT-PCR), 2) screen CCF transferred from AEWFH in 2011 to the other TPWD freshwater hatcheries to see if the pathogen was spread with fish transfer, 3) screen each spawn and 2-inch fingerlings produced at AEWFH prior to transfer to other TPWD freshwater hatcheries, and 4) screen 9-inch, 12-inch, and any moribund CCF at all TPWD freshwater hatcheries.

Current Status: On-going.
Abbreviated Abstract: none provided.

Catfish Management Technical Committee
American Fisheries Society - Southern Division

SDAFS – Catfish Management Technical Committee

State Report Format

State Reporting: Virginia

Name of Representative to Technical Committee: Aaron Bunch

Date Submitted: 1/12/15

Project Name or Description: Abundance estimation of blue catfish in Powell Creek based on mark-recapture

Contact Information:

Name: Aaron Bunch

Co-Authors: Yan Jiao, Bob Greenlee, Eric Brittle

Email: Aaron.Bunch@dgif.virginia.gov

Phone: 757-293-8334

Objective: Estimate blue catfish abundance in Powell Creek

Current Status: Analysis phase, writing for publication

Abbreviated abstract:

Blue Catfish *Ictalurus furcatus*, commonly found in coastal rivers entering the Chesapeake Bay provide trophy recreational fishing opportunities; however, ecosystem-level impacts of this nonnative species is uncertain and effective management has proven difficult. We used mark-recapture techniques to inform closed population models in Powell Creek, a small tidal tributary to the lower James River in Virginia in 2007 and 2014. Movement patterns were assessed using acoustic telemetry methods to evaluate model assumptions. In 2007, Blue Catfish densities were 708 fish/km (95% confidence intervals [CI] 692—725) and 6201 fish/ha (95% CI 6058—6344). In 2014, densities decreased to 338 fish/ha (95% CI 325—352) and 2961 fish/km (95% CI 2842—3080). Tracked fish maintained high site fidelity with 88% accounted for within the study area throughout the duration of the mark-recapture period. Previous studies have indicated that the James River and its tributaries are highly productive and have the largest Blue Catfish populations within the Chesapeake Bay watershed. These data can inform models to evaluate coastal fisheries issues in Virginia, but extrapolating to the entire Chesapeake Bay watershed should be done with caution. Our estimates provided snapshots on the population size of the Blue Catfish in Powell Creek and offered solid prior of the abundance in these 2 years that can further be used for other population dynamics analyses based on monitoring of its relative abundance and harvest.

State Reporting: Virginia

Name of Representative to Technical Committee: Aaron Bunch

Date Submitted: 1/12/15

Project Name or Description: Standardized low-pulse electrofishing in Virginia tidal rivers

Contact Information:

Name: Aaron Bunch

Co-Authors:

Email: Aaron.Bunch@dgif.virginia.gov

Phone: 757-293-8334

Objective: Obtain age, growth, and population characteristics of catfish in Virginia tidal rivers

Current Status: Analysis phase

Abbreviated abstract:

In 2014, the James, Rappahannock, Pamunkey, Mattaponi, and Piankatank rivers were sampled with standardized low-pulse electrofishing methods to evaluate age, growth, and population characteristics of the ictalurid species present, mostly blue catfish. Approximately 18,000 blue catfish were collected during monitoring efforts, and 1,500 otoliths are currently being processed. Data will be used to inform population models to better understand spatial and temporal population dynamics of blue catfish in Virginia tidal rivers.

State Reporting: Virginia

Name of Representative to Technical Committee: Aaron Bunch

Date Submitted: January 9, 2015

Project Name or Description: Dynamics and role of non-native Blue Catfish in Virginia's tidal rivers

Contact Information:

Name: Donald J. Orth

Co-Authors: Yan Jiao, Mary Fabrizio, Man Tang, Joseph Schmitt, Jason Emmel, Zach Moran

Email: Don_Orth@vt.edu

Phone: 540-231-5919

Objective:

Part 1. Quantify the prey consumption by blue catfish as it varies across years, season, and river. This will be a multi-year, multi river (Rapp, Mattaponi, Pamunkey, James), multi season (from May through October). Fish will be sampled from fall line to salinity wedge (up to 11 ppt) using a stratified random design so inferences can be drawn for the tidal freshwater region as a whole. Specifically,

a. quantify the diet of blue catfish in terms of relative importance of diet items

b. compare the diet composition among size groups, sample time, and river location.

c. estimate the trophic level and omnivory index for different sized blue catfish;

d. evaluate the extent of opportunistic and selective feeding on fish and crabs; and

e. estimate the production : biomass ratio (P:B), and the consumption : biomass ratio (Q:B), to use in linking blue catfish demographic model to potential predatory demand

Part 2. Development of hierarchical models that uses existing data on juvenile abundance in oligohaline zones, commercial harvest (VMRC), and electrofishing CPUE surveys (DGIF) to estimate demographic trends and important drivers. Specifically,

a) estimate the spatial and temporal variation of life history traits which include growth (individual), maturity, mortality and recruitment, by developing Bayesian hierarchical models;

b) explore the temporal and spatial population growth variation through a Bayesian population growth model;

c) explore possible impact factors by linking them to the trends of the variation of the life history traits and population growth;

d) construct hierarchical demographic models to evaluate population trend under different alternative management options.

Current Status:

Our current summary of the diet of blue catfish is based on 5,557 of 10,159 stomach samples from 319 sites. Piscivory is the dominant feeding mode of only the larger blue catfish the size at which blue catfish are primarily piscivorous varies by river from 500 mm TL for the James, 600 mm TL in Rappahannock, 700 mm TL in Pamunkey, and 800 mm TL in the Mattaponi. The dominant fish (by weight) is the Gizzard Shad. Major sources of variation in diets among rivers, site locations, and seasons appear to be tied to breeding, alosine migrations, juvenile alosine abundance, freshwater inflows and abundance of gizzard shad are principal determinants of diet composition, although these analyses have not been finalized. Lacking access to large, slow fish prey, blue catfish appear to switch to foraging for submerged aquatic vegetation, molluscs, and/or crustaceans. The alosine question remains a major challenges to overcome. To address this challenge we designed sampling events during the Alosine run for simultaneous collection of fish prey and catfish stomachs, we are identifying PDUF with DNA (~80% success), so that we may estimate consumption rates on a cohort basis to apply to population modeling

Abbreviated abstract:

Bayesian approach to standardize catch rate of Blue Catfish in tidal rivers of Virginia with generalized linear models. Man Tang, Yan Jiao, D. Orth, M. Fabrizio, R. Greenlee. MS for *Fisheries Research*.

Abstract: Blue catfish is a large-river fish species, originally distributed in the major rivers in Mississippi, Missouri, and Ohio basins. From 1970s to mid-1980s, a number of blue catfish was introduced into tidal waters of Virginia. Blue catfish have rapidly expanded into many major tributary in the Chesapeake Bay watershed and is considered an invasive species. A hierarchical delta model was applied to examine the relative influence of environmental, spatial and temporal factors on blue catch fish in tidal rivers of Virginia. The analysis was based the data collected from juvenile trawl survey by Virginia Institute of Marine Science (VIMS) and low- and high-frequency electrofishing survey by Virginia Department of Game and Inland Fisheries (VDGIF). In the delta model, the positive values of CPUE were estimated by a generalized linear model (GLM) assuming a lognormal distribution, and the probability of presence of blue catfish was estimated by a GLM assuming a Bernoulli distribution. The backward elimination approach was used to select the best model based on the deviance information criterion (DIC). The dissolved oxygen and station depth were removed in the variable selection for the VIMS survey. The salinity had a negative impact on the catch rates of blue catfish and the temperature had a positive impact on the catch rates. The standardized catch rates increased significantly in the VIMS survey and the low-frequency electrofishing survey by VDGIF. Thus, we suggest that the following surveys in these tidal rivers be necessary to monitor the blue catfish population changes and a management strategy be urgently needed to control the population of blue catfish

State Reporting: Virginia

Name of Representative to Technical Committee: Aaron Bunch

Date Submitted: January 9, 2015

Project Name or Description: Catch rates, selectivity, and directed effort for setline fishing in the New River

Contact Information:

Name: Donald J. Orth

Co-Authors: Ben Dickinson, John Copeland, Steve McMullin

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Objective:

Despite reports of setline catch rates of catfish species by bait type, little information exists on by-catch of recreational setlines targeting catfish, especially when live baits are used. By-catch information along with catch, harvest, and effort may be useful for managers of waters supporting both rod-and-reel fisheries for game fish and setline fisheries for catfish. Our objectives were to evaluate the catch rate and catch composition of recreational trotlines using two hook types and two bait types, and to estimate effort and catch of setline fishers in the New River, Virginia.

Current Status:

Work is completed and in revision for submittal to journal.

Abbreviated abstract:

Catch rates, selectivity, and directed effort for setline fishing in the New River, Virginia.

Recreational setline fisheries are often hidden from fisheries management agencies due to difficulties obtaining effort and catch data. The New River, Virginia, supports a poorly understood setline fishery for catfish *Ictaluridae* that coexists with popular fisheries for smallmouth bass *Micropterus dolomieu*, muskellunge *Esox masquinongy*, and walleye *Sander vitreus*. We estimated setline effort by conducting off-site interviews of setline fishers in combination with a modified creel survey. We also characterized setline catch of catfish and by-catch using experimental fishing. Setline effort was seasonal with highest effort in June, July, and August and declined lower effort in September. Experimental setlines baited with live baitfish proved effective for catching catfish, but caught few game fish. Cutbait was less effective for catfish, particularly flathead catfish *Pylodictus olivarus*, and caught fewer non-target species than live bait. Estimated setline by-catch of game fish was small compared with catch by rod-and-reel anglers, but setlines have the potential to capture large numbers of walleye during fall, winter, and early spring. We

conclude that populations of catfish are healthy and support a sustainable harvest by small number of specialized setline fishers.

State Reporting: Virginia

Name of Representative to Technical Committee: Aaron Bunch

Date Submitted: 9 Jan 2015

Project Name or Description: Population size estimation of blue catfish in a Chesapeake Bay tributary

Contact Information:

Name: Mary C. Fabrizio

Co-Authors: Troy D. Tuckey, Robert Latour, Alicia Norris

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Objectives: Estimate population size and mortality rate of blue catfish population in the James River; describe movement of blue catfish in large tidal tributaries (Potomac and James rivers)

Current Status: Field work completed, analysis underway

Abbreviated abstract:

The purpose of our study was to estimate population size and survival rates of invasive blue catfish in the James River. To do this, we used a three-year mark-recapture experiment with fish in the James River. Blue catfish ≥ 247 mm fork length were captured by baited traps, tagged with coded-wire tags, and released in the James River between the mouth of the Chickahominy River and the mouth of Upper Chippokes Creek. In 2012 and 2013, we tagged more than 34,000 blue catfish. Our field efforts in 2014 focused on recovery of tagged fish from the commercial harvest. We also continued to monitor recaptures from an additional tagging experiment in the Potomac River; this experiment involved large fish captured by electrofishing (MD DNR) and tagged with two dart tags during 2012 and 2013. In 2014, 21 fish were recaptured from the Potomac River, bringing the total number of recaptures to 77.

State Reporting: Virginia

Name of Representative to Technical Committee: Aaron Bunch

Date Submitted: 1/8/15

Project Name or Description: Lake Shenandoah Catfish Boxes

Contact Information:

Name: Brad Fink

Co-Authors:

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Phone:

Objective: Enhance catfish spawning habitat in Lake Shenandoah

Current Status: On-going, field work

Abbreviated abstract:

In 2013 ten catfish spawning boxes were placed in 36 acre Lake Shenandoah just east of Harrisonburg, VA. Boxes were checked weekly when water temperature reached spawning temperature of 24 ^{0}C. Egg masses were observed on four different occasions followed by hatch out the following week. In 2014 eleven more boxes were added to the lake. Although these boxes were installed just before the spawning period they did not have time to "naturalize". In 2014 three of the boxes again had egg masses followed by fry presence. None of the new boxes installed in 2014 were used for spawning. Recently we have begun investigating natural reproduction in four small impoundments in Region IV. All channel catfish are adipose clipped before stocking. Clipped and non-clipped fish will be collected during electrofishing surveys, hoop netting and creel surveys over the next several years. Spawning boxes will be placed in the reservoirs and catfish populations will be analyzed to see how the boxes recruit channel catfish to the adult population. In early June of 2014 channel catfish were collected from Lake Laura in western Shenandoah County and shipped to King and Queen Hatchery where they were stocked in hatchery ponds with spawning boxes. The channel catfish utilized the spawning boxes and hatchery personnel were able to raise approximately 4,000 fingerling catfish for stocking. This was the first attempt of using spawning boxes at King and Queen Hatchery to raise channel catfish.

Catfish Management Technical Committee
American Fisheries Society - Southern Division

SDAFS – Catfish Management Technical Committee

State Report Format

State Reporting: WV

Name of Representative to Technical Committee: David Wellman

Date Submitted: 16 December 2014

Project Name or Description: Ohio River Catfish Surveys

Contact Information:

Name: Chris O'Bara

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Phone: 304-420-4550

Objective: To assess catfish population characteristics

Current Status: Ongoing

Abbreviated abstract:

Surveys were conducted at six tailwaters of the Ohio River. Electrofishing-based surveys were conducted in twice at each tailwater except R.C. Byrd during May, June, and June. Catfish were collected using low-frequency (pDC output of 200s, 2-3amps and 15 Hz pulse rate) boat-mounted electrofishing techniques. A chase boat was utilized to aid in netting immobilized catfish. One netter was provided for each boat. Overall CPUE ranged from 24.7± 15.8 fish/h at the Hannibal tailwater to 70.7±35.5 fish/h at the Belleville tailwater during the May surveys. June survey overall CPUE ranged from 31.4± 20.5 fish/h at the Pike Island tailwater to 97.1± 15.8 fish/h for the R.C. Byrd tailwater. PSD exceeded 65 for all tailwaters during all survey periods. PSD-710 for most tailwaters were indicative of a fairly robust population structure Length frequency distribution of Ohio River flathead catfish demonstrated that a fairly substantial proportion of individuals are within the memorable or larger PSD size classes. Through the study period, 3,029 catfish (blue, channel, and flathead) were tagged with either a T-bar anchor tag or PDL tag or a combination of tags Angler reported recapturing 9% of tagged blue catfish and 4% of both channel and flathead catfish. Overall, anglers reported recapturing 4% of all tagged catfish. Less than 15% of all catfish caught were reported harvested.

State Reporting: WV

Name of Representative to Technical Committee: David Wellman

Date Submitted: 16 December 2014

Project Name or Description: Channel Catfish Population Abundance and Growth Characteristics in the South Branch of the Potomac River

Contact Information:

Name: Brandon Keplinger

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Objective: Assess the channel catfish population in the South Branch (SBR) of the Potomac River. Due to increased angler interest, channel catfish in the SBR is becoming a more popular game fish. There is a lack of population information for this species in the SBR. Effort will be employed to better understand the population dynamics of this species needed for an assessment of alternative management opportunities.

Current Status: ongoing

Abbreviated abstract: A number of pools, possessing a variety of habitats and colonized by channel catfish, will be assessed longitudinally throughout the SBR. Essential population characteristics such as abundance, growth, condition, size distribution and movement/site fidelity will be assessed. Growth modeling will be achieved through the aging of structures in order to better understand the rate and variability of growth characterizing this population. Insight into fishing harvest and pressure will be sought through angler reporting of tagged fish.

Effort will be devoted to a single pool, and thus a single river stretch, per sampling season. Pools possessing critical habitats will be selected to cover a variety of stream regions with differing physical, chemical and biotic influences. Baited hoop nets will be deployed during four different samples conducted within a single pool during four summer months of the sampling season. Each survey period includes an initial day for net deployment followed by three subsequent two day sampling periods, after which nets are tended and catch is evaluated. Nets will be re-baited as needed. Catch per effort will be reported as # of fish/net/night. This sampling design will also allow the utilization of both Jolly-Seber (seasonal) and Schnabel (weekly) multiple census mark-recapture estimators where possible. All channel catfish total lengths will be measured to the nearest millimeter, determined to be male or female through the examination of urogenital structures, and all fish will be weighed to the nearest gram. A T-bar anchor tag will be applied to indicate individual fish. Additionally, anchor tags will provide opportunities for the reporting of recreational pressure by anglers. Because tags can be removed for angler reporting, additional marks in the form of fin clips will be made to assign recaptures to prior capture history for long-term mark-recapture estimators. Proportional (PSD) and residual stock densities (RSD) will be

calculated and length-frequency histograms will be generated for pooled catches to better understand the size structure of the population. Individuals to be sacrificed for the obtaining of aging structures will be randomly selected during the late summer-fall portion of the sampling season. Fish retaining tags from prior captures will not be sacrificed. Examination of lapillar otoliths will provide ages to be used in the development of a Von bertalanffy growth curve for the population. Separate Von bertalanffy curves will also be constructed for male and female fish in order to assess the utility of a sex based age key for this population. Pectoral spines will be collected from sacrificed fish and cross-sectioned to provide an additional age quantification. Comparisons between lapillar otoliths and pectoral spines will be made in order to determine if the latter non-lethal structure is a viable alternative for generating age estimates for this riverine population.