



## 2025 State Reports

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### *Alabama*

*Name of Representative:* Chris McKee

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### *Arkansas*

*Name of Representative:* Sean Lusk

**Project Name: Utilizing Recreational Catch Data to Evaluate One of Arkansas Premier Striped Bass Fisheries**

Objective: Utilize angler supplied Striped Bass length and age data to assisting with monitoring long term trends in population characteristics.

**Project overview:** Evaluation of Striped Bass populations has routinely been problematic for management agencies across North America. Collection of adequate samples of Striped Bass has historically been challenging due to their pelagic and migratory nature. As a result, many Striped Bass fisheries are data-limited, making informed management decisions difficult. In 2018, a pilot study was initiated in an attempt to collect adequate samples sizes of Striped Bass from Lake Ouachita utilizing recreational catch data through angler journals. Since the inception of this program, over three thousand fish lengths have been recorded with the investment of relatively minimal resources. In 2021, a carcass collection effort was coupled with the journal program, allowing fishery managers to collect age data from a portion of the fish harvested by these anglers. The angler journal program has since expanded to all three Striped Bass fisheries in Arkansas, providing the ability to compare these populations. This program has not only allowed for the collection of a large volume of valuable scientific data on a previously data-limited fishery, but has shown great promise as a human relations tool for fishery managers as well.

**Project Name: Exploitation and harvest characteristics of the Striped Bass fishery in Arkansas**

Objective: 1) Evaluate the harvest characteristics of the three premier Striped Bass fisheries in Arkansas.

**Project overview:** Annual stockings of Striped Bass (*M. saxatilis*) support a popular recreational fishery in Arkansas. In recent years, biologists have become aware of increasing public concern over perceived declines in catch rates and overall fishery quality. A statewide tag-reward study

was initiated in February 2022 to evaluate annual exploitation and harvest characteristics of the Striped Bass fishery. A total of 667 legal-sized Striped Bass were double tagged in three large flood control reservoirs and each tagged fish offered a \$100 return incentive. A total of 154 tagged Striped Bass have been reported (23% overall return rate) and adjusted annual exploitation ranged between 4—14% among reservoirs. Information derived from this study will be used to guide future management of the Striped Bass fishery in Arkansas.

**Project Name: Hybrid Striped Bass (*Morone saxatilis* x *M. chrysops*) and Largemouth Bass Interactions in DeGray Lake, Arkansas**

Objective: 1) Evaluate harvest characteristics of Hybrid Striped Bass in DeGray Lake, 2) compare diet and habitat overlap between Hybrid Striped Bass and Largemouth Bass, and 3) estimate the response of Largemouth Bass to a simulated removal of Hybrid Striped Bass.

**Project overview:** Hybrid Striped Bass and Largemouth Bass co-exist in DeGray Lake, Arkansas. Black bass anglers perceive a negative effect of hybrid Striped Bass on Largemouth Bass. We studied habitat use and diets of the two populations. Radio telemetry allowed assessment of seasonal habitat use. Habitat categories included shoreline (barren, rocky, or vegetated), flooded areas, and open water. Gastric lavage was used to assess diets on a seasonal basis. Pianka's index of overlap for habitat use during spring, summer, fall, and winter was 0.56, 0.94, 0.99, and 0.83, respectively. Schoener's Index for diet overlap was greatest (61%) during summer and lowest (16%) in fall. Although there is no evidence that shad production is limited, if competition were occurring, it would likely be in the summer, when Largemouth Bass seem to occupy open water and forage on shads, as do hybrid Striped Bass. We used population and bioenergetic modeling to determine, in the absence of a hybrid Striped Bass population, the proportion of surplus shad potentially consumed by Largemouth Bass. The maximum proportion of the surplus shad (22%) consumed by Largemouth Bass would occur during a modest increase in proportion of maximum ration consumed and a 68% increase in population size (i.e., a 1.5 SD increase in recruitment). We found no evidence hybrid Striped Bass negatively influenced Largemouth Bass. Largemouth Bass are unlikely to consume a high proportion of surplus shad in the absence of a hybrid Striped Bass population. An increase in shad biomass, especially in larger size classes, could alter the dynamics of the existing forage base in unintended ways.

**Project Name: Evaluating daytime and nighttime hydroacoustics for assessing shad abundance in reservoirs**

Objective: 1) Evaluate the utility of daytime hydroacoustics for assessing shad abundance in large reservoirs.

**Project overview:** Vertically migrating Chaoborus create large amounts of acoustic backscatter at night, making it difficult to gain accurate fish abundance estimates from nighttime hydroacoustic data. During the 2022 field season, we evaluated the use of daytime sampling as an alternative to traditional nighttime sampling, with particular attention to evidence of boat

avoidance and acoustic shadowing (attenuation of acoustic signal) when dense schools were present, which are reasons commonly cited for why shad sampling should be conducted at night. We sampled the same transects during day and night using a 200kHz transducer during the months of July - October 2022 at Beaver and DeGray Lakes, and in October 2022 at Lake Carl Blackwell. We evaluated the movement of acoustic targets while in the sound beam to infer the body tilt (assuming fish moved head-first) to assess if fish dove deeper to avoid the boat. We used the bottom echo strength before, during and after the occurrence of dense schools of fish to determine if fish schools attenuated the signal strength that reached the bottom. During September and October samples, a forward facing-facing multibeam DIDSON echosounder was also used to further evaluate boat avoidance in the horizontal plane (parallel to surface). Boat avoidance was slightly greater during daytime than nighttime but was not significant enough to cause a problem in analysis (mean vertical tilt angle was  $< 0.65^\circ$  of horizontal and the mean number of fish targets moving horizontally away from the boat was at most 3% greater than the null value for random movement). We also saw no evidence of acoustic shadowing using the strength of bottom returns under schooling fish. Preliminarily, we believe daytime sampling may therefore be preferable to nighttime sampling.

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## *Florida*

*Name of Representative:* Stephen Stang

### **Broodstock Collection Information:**

**Blackwater State Fish Hatchery Manager:** Bob DeMauro

**Email:** [robert.demauro@myfwc.com](mailto:robert.demauro@myfwc.com)

The Florida Fish and Wildlife Conservation Commission (FWC) collects Gulf Striped Bass (GSB) annually for spawning activities at FWC's Blackwater Fisheries Center (BFC). The tailrace below Jackson Bluff Dam on Lake Talquin provides a majority of broodstock collected for spawning at BFC annually with occasional contributions from adult GSB collected from the Apalachicola, Blackwater, and Yellow River systems. Additionally, attempts are made annually to obtain a limited number of adult GSB from waters in Alabama and/or Georgia, in cooperation with ADCNR and GDNR, to aid in increasing the genetic diversity of GSB fry/fingerlings produced at BFC and stocked in Florida.

Seventy-one adult GSB (23 females and 48 males) were collected and transported to BFC for spawning in spring 2024. Twenty females and 48 males were obtained from the tailrace below Jackson Bluff Dam on Lake Talquin and 3 females were collected from Smith Lake, AL in cooperation with ADCNR. Mean total length (TL) and weight of females collected from Lake Talquin were 637.3 mm TL and 3.7 kg., respectively. Mean TL and weight of females collected from Smith Lake was 808.2 mm TL and 6.6 kg. All broodstock were collected by electrofishing or hook-and-line.

Fourteen adult White Bass females and 10 Striped Bass males were collected from the Ochlockonee River system and transported to BFC for Sunshine Bass (reciprocal Hybrid Striped Bass) production. No White Bass production was scheduled for 2024. All broodstock were collected by electrofishing or hook-and-line techniques.

### **2024 Gulf Striped Bass Production and Stocking:**

Twenty of 23 (87%) GSB females achieved ovulation and spawned successfully at BFC following injection with LHRH and/or HCG, producing 3.56 million fry. Overall fertilization averaged 48.7% and ranged from 3% - 79% for individual females. Fry were distributed to BFC (593,000), Marion (AL.) State Fish Hatchery (408,000), Turcotte (MS.) State Fish Hatchery (200,000), Pvt. John Allen National Fish Hatchery (446,000), Warm Springs National Fish Hatchery (294,000), and Welaka National Fish Hatchery (1,622,000) for fingerling grow-out prior to stocking to assist meeting statewide stocking requests from Florida, Alabama, Georgia, and Mississippi which totaled over 1.6 million in 2024.

FWC statewide GSB stocking requests for 2024 totaled 400,000 fingerlings. Over 424,000 fingerlings were stocked in 4 Florida waterbodies from GSB fry produced at BFC in 2024. An additional 6,400 fingerlings were obtained from Welaka NFH spawning activities were also stocked in-state. Overall, GSB fingerling stocking in Florida waters totaled over 430,000 in 2024. BFC, Warm Springs NFH, and Welaka NFH all contributed fingerlings to meet FWC requests. An additional 572,680 GSB fingerlings produced from BFC fry were stocked in state waters of Alabama, Georgia, and Mississippi by these partner hatcheries to assist with out-of-state GSB stocking requests. This collaboration between agencies was critical towards meeting stock enhancement goals of states participating in the Gulf Striped Bass Fishery Management Plan.

### **2024 Hybrid Striped Bass Production and Stocking:**

Twelve of 14 (86%) female White Bass collected for BFC spawned successfully following injection with HCG, producing over 2.63 million reciprocal hybrid striped bass (HSB) fry. All HSB fry produced at BFC in 2024 were transferred to FWC's Florida Bass Conservation Center (FBCC) and the USFWS Welaka NFH for fingerling grow-out prior to stocking in Florida waterbodies statewide. In 2024, FWC statewide stocking requests totaled 844,000. Over 691,000 HSB fingerling were stocked by FBCC and Welaka NFH from fry produced at BFC. An additional 160,000 HSB fingerlings obtained from Richmond Hill (Georgia DNR) State Fish Hatchery were stocked in Florida waterbodies to assist meeting 2024 requests. In total, 851,000 HSB fingerlings were stocked in 20 different waterbodies statewide.

### **Atlantic Striped Bass Production/Stocking:**

Over 280,000 Atlantic Striped Bass fingerlings were produced and stocked by Welaka National Fish Hatchery into the St. Johns River at Welaka, Florida. Fry for grow-out were received from South Carolina Department of Natural Resource's Jack D. Bayless Hatchery or spawned at Welaka NFH.

### **Gulf Striped Bass Regulation Evaluation on Lower Ochlockonee River:**

**Contact name:** Stephen Stang

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Exploitation data collected in Lake Talquin and the tailrace during 2021 revealed that limited cohorts of sexually mature fish were heavily targeted by anglers before and during broodfish collection efforts in the tailrace. As a result, a new regulation aimed at reducing harvest of the sexually mature fish required for hatchery production took effect in January 2023. The new regulation allows anglers to harvest three Striped Bass per person per day with only one fish greater than 609 mm TL (24") in the lower Ochlockonee River and all its associated tributaries. The primary goal of this regulation is to reduce the harvest of sexually mature Striped Bass in the lower Ochlockonee River during the months with the highest angling pressure and when/where annual broodstock collections occur.

To evaluate this regulation, a follow-up exploitation study was conducted in 2024 to compare to the pre-regulation change exploitation data that was collected in 2021. Additionally, an access creel survey was conducted from February 2024 through May 2024 in the lower Ochlockonee River. Results from the creel survey were paired with total effort estimates derived from game cameras mounted below Jackson Bluff Dam to estimate Striped Bass effort, catch, and harvest in the tailrace during peak-season.

The results of the exploitation study don't indicate a significant reduction in overall exploitation. The creel survey estimated, however, that approximately 445 fish over 609 mm were caught and 129 were conserved (or protected from harvest) by the new regulation. Approximately 17% of Striped Bass trips were required to release fish greater than 609 mm because of the new regulation. An additional exploitation and creel study for the 2025 season is recommended to estimate exploitation in a year comprised of a population where all year classes of adults are resulting from consistent fingerling stocking numbers.

## **Gulf Striped Bass Acoustic Telemetry Project in Pensacola Bay:**

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During the Winter and spring of 2023-2024 a total of 20 Vemco Acoustic tags were implanted in Striped Bass (425mm-1050mm) in the Blackwater River and Blackwater Bay. These tags were passively monitored with a fixed telemetry array throughout the Pensacola Bay watershed (N=76 receivers) and supplemental manual tracking by biologists to observe seasonal movements. All tagged individuals retreated to the upper Blackwater River or a spring influenced tributary called Pond Creek during the highest water temperatures showing some broad areas of thermal refuge in the system. During the winter months most individuals remained near the mouths of the Blackwater River or Yellow River in estuarine habitat, however one individual did make larger movements traveling over 95 miles in one month ending in the Escambia River, a tributary of Pensacola Bay that is not currently stocked with Striped Bass.

During the winter of 2024-2025 an additional 16 Striped Bass have been tagged with 4 more tags to be deployed by spring. Passive and active acoustic monitoring will continue to take place to observe thermal refuge use and help identify spawning aggregations in the spring that may aid in broodstock collection for hatchery production.

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## *Georgia*

*Name of Representative:* Hunter Roop

### **2024 Moronid Production (Alex Cumming):**

During 2024, Georgia DNR produced 6.3 million striped bass fry and 8.7 million reciprocal hybrid striped bass fry for stocking hatchery ponds across the state. Production of striped bass fry averaged 40,317 fry per pound of female. Additionally, we only required 8 female striped bass brood fish from Region 1 to meet our annual production needs. Reciprocal hybrid striped bass production averaged 29,982 fry per female white bass. A total of 1.64 million striped bass, 2.48 million hybrid striped bass, and 272,000 white bass were stocked by DNR into 23 reservoirs and 2 rivers across the state throughout 2024.

### **Region 6 Coastal Rivers (Joel Flemming):**

Flathead catfish are now present in all of Georgia's major coastal river systems. The Savannah River has experienced extreme growth in the flathead population since the species was first identified in the system in 2011. The Savannah riverine striped bass population is nearly completely dependent on Georgia DNR's stocking efforts and the increased numbers, high predation potential, and possible impact of flatheads on these striped bass restoration efforts is of growing concern for managers. Stocking phase II striped bass in segments or tributaries of the

river uninhabited by flatheads has historically been a successful strategy. However, within the last few years, flatheads have migrated into nearly all areas of the river system, eliminating the ability to avoid interaction between flatheads and the vulnerable stocked fish.

In the fall of 2024, Georgia DNR staff began preliminary efforts to assess the feasibility of utilizing electrofishing efforts to temporarily suppress the overall flathead abundance and/or decrease the number of large flatheads within small river segments where striped bass are stocked. The results of these efforts indicate that flatheads are preying on striped bass, as 3 juvenile fish were identified while assessing flathead gut contents after a single stocking event. Further predation assessments were curtailed by significant decreases in water temperature which limits the effectiveness of catfish electrofishing gear. Efforts to decrease the overall abundance and number of large flatheads within stocking areas showed promise. Future removal efforts will begin earlier within the fall season to eliminate the confounding effects of temperature on catch rates and better evaluate effectiveness.

### **Region 2 Reservoir Report (Kyle Rempe):**

Lake Hartwell currently receives Hybrid Striped Bass stocking from both GADNR and SCDNR, although the crosses used differ for each state agency. Georgia has predominately stocked reciprocal (male Striped Bass x female White Bass) strain hybrids while on the other hand South Carolina tends to stock original (female Striped Bass x male White Bass) strain hybrids into the reservoir. Since both crosses are being put into Hartwell at the same time, aging and genetics work are being done to observe any meaningful differences between the two in terms of growth, mortality, or other factors. In addition, this provides a needed update for the Hybrid Striped Bass length at age key for Lake Hartwell.

Collections were done during fall gill netting since some mortality already occurred to fish while using that gear type, with 2023 and 2024 sampling efforts providing 114 Hybrid Striped Bass in total. Fish were measured for total length and total weight, had a left pelvic fin clip taken, and then had both sagittal otoliths removed for further lab work. After aging the individuals collected from fall sampling, only three age classes were able to be gathered and documented: 0.5, 1.5, and 2.5 year old individuals. This created an issue with constructing any catch or growth curves from the data due to a lack of age classes inhibiting the ability to properly generate those models. Despite this, the data does seem to fit with the general theme of hybrids by them having fast growth along with a not so long lifespan. Fin clips were taken and stored as previously mentioned, but genetics work has not yet been started.

Based off Morone scouting and various angler reports there are certainly some larger hybrids in Lake Hartwell, it just seems that they just are not being successfully targeted by our gill netting gear. Going forward there will likely be an effort to obtain larger, hopefully older, individuals via alternative methods such as spring electrofishing or fishing guide catches to better capture the

full age class spectrum of Hybrid Striped Bass in Lake Hartwell, which would provide valuable back calculations for age and growth data specifically.

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## *Kentucky*

*Name of Representative:* Marcy Anderson

### Statewide Morone Management Plan

During 2024, the Kentucky Department of Fish and Wildlife Resources (KDFWR) Morone Committee continued revising the draft statewide Morone management plan and working on associated documents, including historic stocking tables and standardized sampling protocols.

### Hatchery Production

Striped Bass fry were obtained from TWRA, and Hybrid Striped Bass fry were purchased from Keo. Fish were grown out at Minor Clark Fish Hatchery near Morehead. In 2024, a total of 468,052 Striped Bass were stocked in one lake (Lake Cumberland) and two tailwaters (Kentucky and Barkley) at an average size of 1.6 inches. This fell short of the production goal of 600,000 Striped Bass. 560,656 Hybrid Striped Bass were stocked in eight lakes and one pool on the Ohio River at an average size of 1.6 inches. Hybrid Striped Bass production goals fell well short of the requested 1,080,900, so planned stockings in the rivers and tailwaters were reduced and/or cut. No definitive cause was identified for the reason in the low survival, but in 2024, Hybrid Striped Bass fry were shipped differently than in the past (insulated wrap instead of the usual boxes) and temperatures were 2-3 degrees warmer than average.

### Lake Cumberland

On Lake Cumberland (50,250 acres), Striped Bass were stocked at a rate of 9.0 fish per acre (468,052 total) and were slightly under the planned stocking goals of 10.0 fish per acre. 2024 was an off year for sampling Striped Bass, but several Striped Bass were collected during Walleye sampling. Based on observations, the 2023 and 2024 year classes are looking strong. Water quality was poor in the late summer and fall, but no Striped Bass mortality was observed and fish looked in relatively good condition.

### Lake Cumberland Oxygen Injection System

Work is still ongoing to install an oxygen injection system that will be placed in the forebay of Wolf Creek Dam. The goal of the system is to improve oxygen levels near the turbine intakes to meet mandatory oxygen levels in the tailwater without having to operate sluice gates in the late summer and fall. The system is currently slated to be operational starting in late summer 2025. We will be monitoring the area after implementation and make adjustments to regulations if needed.

### Commercial Fishing Guides: Reporting and Changes to Licensing

In March 2024, mandatory reporting for all commercial fishing and hunting guides was initiated. Fishing guides were required to submit completed trip data, including number of anglers, hours fished, number of legal fish harvested, and number of sublegal and legal released. Statewide, from March thru December 2024, 61 fishing guides completed 1,993 trips targeting Morone species, and these guides took out 6,284 anglers and fished a total of 9,612 hours. Eighty-three percent of the targeted Morone trips occurred on Lake Cumberland (1,656 trips) and accounted for 86% of the anglers (5,384) and 82% of the fishing hours (7,914). On Lake Cumberland, 7,300 Striped Bass were harvested, 230 legal-sized (22 inches minimum length limit) were released, and 2,385 sublegal fish were caught and released. Kentucky Lake and Lake Barkley and the associated tailwaters accounted for 11% of the total Morone trips, with most of the effort going towards White Bass and Yellow Bass.

Legislation was recently passed that created outfitter and guide license distinctions for hunting and fishing guides and allowed for tiering to be implemented in regards to license fees. Currently, an annual resident guide license is \$150, and a non-resident guide license is \$400. Under a proposal to our Kentucky Department of Fish and Wildlife Resources Commission, fishing outfitters would fall into two tiers: Tier 1 (no guides under them)- \$250 Resident/\$1,000 Non-Resident and Tier 2 (1 or more guides)- \$750 Resident/\$1,500 Non-Resident, and a guide license would be \$100 Resident/\$400 Non-Resident.

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## *Louisiana*

*Name of Representative:* Jonathan Winslow

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## *Mississippi*

*Name of Representative:* Christian Shirley

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## *North Carolina*

*Name of Representative:* Kelsey Roberts

### **Research Projects**

**Project Name:** Distribution and Summer Habitat Use of Bodie Bass in Lake Norman, NC

#### **Contact Information:**

**Name:** Kelsey Roberts

**Co-Authors:** Lawrence Dorsey

**Email:** kelsey.roberts@ncwildlife.gov

**Phone:** (336) 290-0052

**Objective:** To evaluate seasonal distribution patterns and physical tolerances of Bodie Bass in Lake Norman.

**Current Status:** Complete. [Final Report.](#)

**Project Description:** Hybrid Striped Bass *Morone chrysops* x *M. saxatilis*, or Bodie Bass as they are officially named in North Carolina, are a popular alternative to stocking Striped Bass *M. saxatilis* in reservoirs. Summer lake stratification reduces useable habitat for Striped Bass and Bodie Bass, often resulting in fish kills. However, Bodie Bass populations generally experience less frequent fish kills compared to Striped Bass populations when stocked in the same reservoirs. To better understand the mechanisms behind their survival, acoustic and radio telemetry were used to evaluate seasonal distribution patterns and physical tolerances of Bodie Bass in Lake Norman. Results from this study show that the high thermal tolerance of Bodie Bass allows them to access a wider range of habitat and vertically separate from Striped Bass during summer months and are thus, not as limited by suitable summer habitat availability. The results of this study will be used to predict hybrid Striped Bass utility in other reservoirs.

**Project Name:** Reservoir Morone Management Plan

**Contact Information:**

**Name:** Kelsey Roberts

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**Phone:** (336) 290-0052

**Objective:** 1) Create a management plan using biological and human dimensions data to inform future management decisions regarding all Morone species, specifically Striped Bass and hybrid Striped Bass; 2) assess angler awareness, use, and satisfaction of currently stocked reservoir populations; 3) evaluate the motivational factors driving anglers to target Morone species.

**Current Status:** First draft is complete and under review.

**Project Description:** This management plan will serve as a knowledge base for historic and current Striped Bass and hybrid Striped Bass data, including but not limited to sampling methods, stocking history, unique considerations, and current reservoir physical characteristics. It will also include guidelines to inform stocking decisions for existing and new locations. Results from the human dimensions survey will be used to improve angler satisfaction, use, and awareness of the program and provide baseline information for future human dimension assessments.

**Project Name:** Morone Angler Social Science Survey

**Contact Information:**

**Name:** Kelsey Roberts

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**Phone:** (336) 290-0052

**Objectives:** 1) Assess angler awareness, use, and satisfaction of stocked reservoir; 2) evaluate the motivational factors driving anglers to target Morone species; and 3) incorporate results into the Inland Morone Management Plan.

**Current Status:** Complete. [Final Report](#).

**Project Description:** Typically, biologists use gillnets to assess various population metrics used in management decisions. However, data collected using gillnets often have low sample sizes and can be highly variable. Thus, biological assessments only provide a fraction of the information needed to make key management decisions. Human dimensions information is especially important in locations where biological data is lacking. Angler awareness, use, satisfaction, and motivation have never been assessed for this stocking program. Thus, North Carolina license holders were contacted via email and/or mailed letters to complete a survey targeting the above objectives. The results from this survey were incorporated into the Inland Morone Management Plan and assist in making key management recommendations.

**Project Name:** Using Hybrid Striped Bass as a Management Tool to Control Stunted Black Crappie Populations

**Contact Information:**

**Name:** Seth Mycko

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**Phone:** (336) 290-0053

**Objectives:** 1) Use stomach contents and stable isotope analysis to determine the diet composition of hybrid Striped Bass in a small reservoir with a stunted Black Crappie population and 2) monitor the Black Crappie and Largemouth Bass populations annually over 5 or more years to determine any population changes post-stocking of hybrid Striped Bass.

**Current Status:** Population monitoring of Black Crappie and hybrid Striped Bass is ongoing. Diet and stable isotope collection and analysis will begin fall 2025.

**Project Description:** Stocking hybrid Striped Bass, or Bodie Bass, is a popular tool to control stunted crappie populations in small ponds or impoundments despite the lack of research on whether Bodie Bass consume crappie or how predation impacts crappie populations. Thus, the NC Wildlife Resources Commission began stocking Bodie Bass at Farmer Lake in 2022 and monitoring the stunted Black Crappie population annually in 2022. Stable isotope and stomach content analyses will be used to determine the seasonal percent composition of various-sized Black Crappies in the diets of Bodie Bass. Body condition, CPUE, growth, and age and size distribution of the Black Crappie and Largemouth Bass populations will be monitored for a minimum of five years post-stocking to determine any population changes.

**Project Name:** White Bass Spawning Movements in a Piedmont Reservoir, NC

**Contact Information:**

**Name:** Seth Mycko

**Co-Authors:** Kelsey Roberts

**Email:** seth.mycko@ncwildlife.gov

**Phone:** 336-290-0053

**Objective:** To evaluate spawning movement patterns in relation to various environmental and biological factors such as fish sex.

**Current Status:** Data analysis and final report are in progress.

**Project Description:** White Bass are a popular sportfish during spring spawning migrations and are used as broodfish to produce hybrid Striped Bass. White Bass have highly variable spawning patterns and recruitment success, making angling and broodfish collections difficult in recent years. A total of 50 White Bass were implanted with acoustic telemetry tags in spring 2019 and an additional 30 White Bass were tagged in spring 2020. Spawning migrations were tracked in two tributaries of Falls Lake (located in the Piedmont of North Carolina) using an array of passive receivers. Results from this study will allow biologists and anglers to better predict peak spawning conditions improving both angler and surveying success across the state.

**Project Name:** Angler Exploitation of Bodie Bass in Lake Norman

**Contact Information:**

**Name:** Casey Joubert

**Co-Authors:** Michael Fisk, Kelsey Roberts

**Email:** casey.joubert@ncwildlife.gov

**Phone:** (910) 729-0872

**Objective:** To better understand the Bodie Bass population and angler dynamics in Lake Norman using a tag-return model.

**Current Status:** Data collection is complete. Data analysis and report are in progress.

**Project Description:** Hybrid Striped Bass *Morone chrysops* x *M. saxatilis* populations, or Bodie Bass as they are officially named in North Carolina, are established and maintained through regular stockings. Management of these populations requires knowledge of mortality, natural and fishing, and involves adjusting stocking rates and establishing size and creel limits for harvest. The popularity of the Bodie Bass population has grown significantly since the lake was first stocked with Bodie Bass in 2013 leading to concerns about potential overharvest. This project involved a multi-year tag and tag return model to estimate harvest from boat and bank anglers in Lake Norman. The results from this study were used to adjust regulations at Lake Norman and inform management decisions for other popular moronid fisheries.

**Project Name:** Lake Norman Hybrid Striped Bass Survey

**Contact Information:**

**Name:** Casey Joubert

**Co-Authors:** Troy Thompson

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**Phone:** (910) 729-0872

**Objective:** Examine the hybrid Striped Bass population at Lake Norman following 10 years of stocking and evaluate the effectiveness of current regulations (4 fish per day, 508 mm minimum length limit).

**Current Status:** Complete. The survey summary is available upon request.

**Project Description:** Hybrid Striped Bass have been stocked annually at Lake Norman since 2013. Fish were sampled using gillnets in December 2023. All fish were weighed, measured, and aged using sagittal otoliths. A total of 115 fish were collected and 60% were of harvestable size ( $\geq 508$  mm). Growth was rapid with fish reaching harvestable size between 2 and 3 years. The overall population was dominated by fish ages 1–3 and the oldest fish captured was age seven. The results suggest the current minimum length limit is appropriate and allows fish to remain in the population for a minimum of two springs before harvest. All hybrids stocked thus far have been Palmetto Bass (female Striped Bass x male White Bass). Due to hatchery and broodstock constraints, the NC Wildlife Resources Commission may begin stocking Sunshine Bass (male Striped Bass x female White Bass). This survey collected baseline data to compare to future surveys, regardless of which hybrid cross is stocked. The hybrid Striped Bass population has become established at Lake Norman and, based on social science survey data, is very popular amongst anglers. Stocking and sampling efforts will continue.

**Project Name:** Ongoing Neuse River Striped Bass Spawning Grounds Survey

**Contact Information:**

**Name:** T.D. VanMiddlesworth

**Co-Authors:** Mason Collins

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**Phone:** 919-210-4320

**Objective:** Monitor and quantify population metrics of Striped Bass populations migrating to spawning grounds of the Neuse River

**Current Status:** Ongoing.

**Project Description:** In spring 2024, the Neuse River Striped Bass total catch was low (~98 fish) and PBT fin clips were collected during the Neuse River Striped Bass spawning grounds survey. An updated report is underway and will be completed once the 2024 PBT results are available. Broodfish collection and stocking did not occur in the Neuse River in 2024 but will continue on a rotational basis in 2026. However, broodfish were collected in 2024 for hybrid Striped Bass production and will continue as needed in the future.

**Project Name:** Stocking Report

**Contact Information:**

**Name:** Jeff Evans

**Co-Authors:**

**Email:** jeff.evans@ncwildlife.gov

**Phone:**

**Objective:** To aid in the conservation of some Striped Bass populations and to provide unique angling opportunities throughout the state of NC.

**Current Status:** Ongoing.

**Project Description:**

SPECIES	SIZE	Total	Stocked
Striped Bass	1-2"	1,174,000	1,912,319
Bodie Bass	1-2"	401,500	117,836

Bodie Bass fingerlings were greatly impacted by ferry and clam shrimp and we were not able to meet stocking goals this year for Bodie Bass. Undesirable populations of fairy shrimp and clam shrimp continue to dominate spring “blooms” in fingerling production ponds at Watha. Both species either compete with or deplete zooplankton resources necessary for successful fingerling production. Improved management practices for limiting the impact of these competitors have been, and continue to be pursued.

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# Oklahoma

*Name of Representative:* Matt Mauck

1. RESEARCH: Arkansas River – microchemistry study (presentation at this meeting)
  - a. Alexis Whiles - *An update on the classification and determination of Striped Bass natal origins in the Arkansas River, Ok.*
  - b. Several consecutive years of water chemistry data from a myriad of focal locations
  - c. Starting to analyze abrasion oto microchemistry.
2. RESEARCH: Attempting biological control of white perch in Oklahoma. Jeremy Duck (presentation on Thursday)
3. RESEARCH: OFRL Gap limits: multiple Moronid species co-existing and make a living from similar food resources. Focus on gizzard shad. Proportion of GZ vulnerable to 4-5 moronid species. Competitive advantages of each. Gape based vulnerability..... what does that mean on a management basis. Pending publication. Austin Griffin (OFRL)
4. RESEARCH: fry/fingerling evaluation (pending), OTC marking fry vs fingerlings. I'm optimistic that the genetics/SNP can become a better tool (survival of mark, reliability of mark). Jory Bartnicki (OFRL)
5. RESEARCH: Correlation of inflow characteristics with annual year class formation of striped bass at Lake Texoma, a naturally sustaining fishery– start date pending
6. RESEARCH Human Dimensions: Review of the fishing guide industry in Oklahoma.... Not selective to Moronids but shed a huge spotlight on the importance and dominance of fishing guide industry involved with Moronid fisheries (particularly specific waterbodies). Gear and knowledge specific type of fishing. Party fishing.... Low skill level. A lot of people experience fishing that might not otherwise go. Nationwide audit on what other states charge and how regulated. What they are targeting, catching, harvesting, number of clients/trips, methods/technology utilized, attitudes towards what responsibility they have, whether they support guide license increase. Highlighted wide range of opinions (responsibility, willingness to pay). Betsey York (Human Dimensions Specialist)
7. CREEL: Directive to do more creel surveys on our reservoirs. Morone implication: Texoma, Sooner lake and Foss. Texoma data is available while other reports are pending completion.

8. HATCHERY: focus on hybrids, little to no STB production. Produce more fry than we need for use in fish trades with other states. Wild caught broodstock each spring (Palmetto/original cross). Typically raise 700,000 fingerlings (16 lakes, 5-10/acre, annual or biannual schedule) but produced 300,000 in 2024 due to challenges with excessive vegetation growth, temp, oxygen, and pH swings. Taking soil samples and planning to lime ponds to mitigate pH swings. Hatchery staff made good contacts at the Mid Continent meeting.
  9. MANAGEMENT PLAN: Working/laboring on a hybrid striped bass management plan that meets Administrative expectations and biologist acceptance. Pending. Examples appreciated.
  10. CHALLENGE/QUESTION: Several lakes have diminished white bass populations (Foss and Grand). Both have hybrids stocked. Backcrossing concerns. Any evidence of negative interactions or interbreeding between these species?
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## *South Carolina*

*Name of Representative:* Jason Bettinger

### **Routine Monitoring**

South Carolina conducts routine monitoring of Striped Bass and Hybrid Striped Bass (Savannah impoundments only) in select reservoirs annually. The objectives of the sampling are to monitor relative abundance, age structure, relative weight and estimate growth. Sampling is conducted with reservoir-specific standardized gillnetting during fall and winter. Reservoirs surveyed during 2024 included Lake Murray, Lake Moultrie, Lake Marion, and Lake Wateree in the Santee drainage and Lake Hartwell and J. Strom Thurmond Reservoir in the Savannah drainage.

During 2024 boat electrofishing was used to collect Striped Bass from tributary rivers to the Santee-Copper Lakes and the PeeDee River during spring to monitor relative abundance and size distribution.

### Santee-Cooper

Region IV staff conducted annual gill net sampling of Lakes Marion and Moultrie (collectively referred to as Santee Cooper Reservoir) in the winter of 2023-24. This represents a study that has been ongoing since 1984-85, initiated specifically to monitor the STB population in the system.

Of note for the 2023-24 sample was the overall catch rate of STB (7.2 fish/net night). This catch rate represents a second year in a row below the 20-year average of 10.2 fish/net night. It should be noted that starting in the 2018-19 season, a historically unproductive sampling site for STB (Pack's Landing) was replaced by a previously unsampled site (Wyboo Creek) in which the habitat was expected to produce much higher catch rates of STB. This proved to be true and is

reason for the higher than average catch rates observed in the previous four seasons (2018-2022), given that catch rates at other sites remained relatively stable. This site change should be considered when making inferences about the changes in catch rate over the past 6 sampling seasons.

To remove the suspected influence of the Wyboo site, we did the following: All fish collected from Wyboo in the six years since the addition of that site were removed from the dataset. Likewise, all STB collected from Pack's Landing in the six years preceding the site switch were removed as well. Consistent catch rates were observed from Lake Marion over the past 12 seasons when disregarding STB collections from these two sites. Conversely, catch rates from Moultrie have been more variable.

#### J. Strom Thurmond Reservoir (Clark's Hill)

As in previous years late winter/early spring electrofishing assessment of the Striped Bass population was conducted to supplement gill net data. Working with GA DNR, SC DNR collected 85 STB and 22 SWH from three major tributaries of Lake Thurmond.  $W_r$  was 90.89 and 93.02 for STB and SWH, respectively. STB PSD-Q was high with an observed value of 92 (SWH PSD-Q = 50).

Anglers reported declining catch rates of STB, declining mean STB size, and increasing catch of less desirable SWH. These observations prompted SC DNR personnel to examine historical catch data from STB tournaments. It was difficult to identify the reported decrease in STB size in tournament data or in fishery-independent data as STB PSD-Q values were high. However, catch of SWH in fall/winter gill net samples far exceeded catch of STB – 7.75/net night and 1.31/net night, respectively. Additionally, over the last several years STB stocking rates fell below the 10/acre target with a mean of 6.3 STB/acre between 2019 – 2023 (range: 3.2 – 10.4 STB/acre). During the same period, the mean SWH stocking rate was 9.16 (range: 6.4 – 11 SWH/acre) potentially explaining some of the observed pattern.

#### Lake Hartwell

Lake Hartwell late winter electrofishing was minimal in 2024, but managers were able to collect otoliths from STB for the first time since a large-scale fish kill in summer 2018. STB mortality estimates based on 26 otoliths were  $Z = 0.522$ ,  $A = 40.6\%$ . STB mean  $W_r$  was 91.

Tournament catch data from a STB tournament held on Lake Hartwell each January has shown an upward trend in both mean total length and mean weight of STB and SWH each year data has been collected since the 2018 fish kill (2020, and 2022-2025). Mean  $W_r$  during this time has varied between 83.5 - 88.5 for STB and between 87.6 - 95.9 for SWH.

#### Lake Murray

Winter (November – January) sampling during the 2023/2024 season resulted in a mean catch per unit effort (CPUE) of 51.7 fish/net night. Mean CPUE of Striped Bass was below average

and on the lower end of what has been observed the last 20 years. Striped Bass ranged in total length (TL) from 288 to 740 mm with a mean TL of 520 mm, the fourth highest mean TL observed in Lake Murray gill net sampling. Striped Bass ranged in age from age-0 to age-7. Growth of Striped Bass was faster than normal for Lake Murray, with the average fish reaching the 21-inch minimum length limit in 2.3 years. Condition of Striped Bass was good (mean  $W_r = 99$ ) with stock-size fish (mean  $W_r = 101$ ) in better condition than quality-size fish (mean  $W_r = 95$ ) which is typical for Lake Murray.

Lake Murray experienced a moderate-sized Striped Bass kill between July 26 and July 29, 2024. Periodic summer-time kills occur at Lake Murray, with the last kill occurring during 2021. The kills are typically due to any early summer formation of an anoxic metalimnion followed by a mid-summer formation of an anoxic hypolimnion effectively trapping fish in the hypolimnion. However, this kill was atypical in that the kill abated quickly (only 4 days) and while conditions in the hypolimnion were hypoxic (dissolved oxygen  $\approx 1.7$  mg/L) oxygen concentrations were higher than what typically precedes a moderate to large hypolimnetic kill.

## **Research**

### Santee-Cooper Striped Bass Stocking Assessment

Past data suggests that the Santee Cooper STB fishery is largely hatchery supported (>90% hatchery origin). 2023-24 data continues to support this trend. Fin clips were taken from every individual < 550 mm total length ( $n = 71$ ) for genetic parentage analysis. This limited genetic samples to all fish from the last 2 year classes 2023 and 2022, and some of the fish from the 2021 year class. Individuals were genotyped and analyzed to determine if matches were present between samples and genotyped broodstock. In total, 69 fish were designated as hatchery progeny, and 2 were from natural reproduction (97.2% hatchery origin). We've evaluated the success rates of stocking phase I vs phase II STB juveniles. Evaluations from the 2014 year class suggested significantly higher returns of phase II fish through five years post-stock. However, evaluations of multi-phase stocking of 2017 and 2018 year classes are far less definitive with significant returns of phase II fish occurring sporadically year to year. These trends will continue to be monitored.

### Great Pee Dee River Striped bass

The Great Pee Dee River supports a relatively small population of reproducing striped bass that has seemingly declined over the decades. Recent genetic analysis has determined that there does not appear to be a unique Pee Dee stock left but indicates a mixture of North Carolina signature and Santee Cooper strain. In previous studies, a handful of adult striped bass were implanted with transmitters and results showed that some fish remained exclusively in the upper section of the river, while other fish utilized the entire length of the river at varying times of the year. Current studies are to evaluate stocking contribution and continue with an abundance index.

Beginning in 2019, 146,752 phase II fish were stocked into the Pee Dee River and additional 9,808 fingerlings in 2024. During the spring of 2024, 83 striped bass were collected during the standardized abundance index sampling. With a CPUE of 8.3 fish/day this marked the second highest catch rates in the last 8 years. All fish were fin clipped for genetic analysis 18% were designated as wild fish and 79% were cultured fish. This marked the highest percentage of cultured fish in any of our samples.

### Seasonal Movement and Habitat use of Striped Bass in the Edisto River

The Edisto River in coastal South Carolina contains a genetically distinct and self-sustaining strain of Striped Bass that is identified as a fish of conservation need. Striped Bass in the Edisto River seek thermal refuge each summer in the most upstream reaches of the river system. Amendments to South Carolina water laws have exempted agricultural water withdrawals from the normal review and permitting process, which has resulted in corporate megafarms entering the Edisto River basin with the ability to withdraw from the river, even during drought events. These water withdrawals are near areas where it is believed Striped Bass seek thermal refuge during summer. In this study telemetry was used to monitor the seasonal movements of Striped Bass in the Edisto River system and identify summer-time thermal refuges. Seasonal movements over the last five years have confirmed that Striped Bass use three upstream tributaries during summer as a thermal refuge. During fall and winter Striped Bass inhabit the tidally influenced area of the lower Edisto River. Habitat selection of Striped Bass residing in the upstream tributaries during summer is being investigated in a companion project conducted by Clemson University. Manually located Striped Bass occupied temperatures from 24.2 to 26.9 C° and depths from 0.7 to 3.8 m. Striped Bass habitat selection was positively associated with depth, canopy cover, and structure and negatively associated with temperature.

### Edisto River Flow Effects on Summertime Water Temperatures: Are Thermal Tolerances of SWAP Fishes Exceeded at Low Flows?

Initiated in Winter 2023 the goal of this collaborative effort with Clemson University is to quantify the effect of mean daily flow on summertime water temperatures in the Edisto River, model summertime water temperature under current and future climate and water withdrawal scenarios and determine if thermal tolerances of SWAP fishes, including Striped Bass, are exceeded. During 2024 Clemson University estimated the thermal tolerance of Striped Bass utilizing two methods. Electron transport system assays (ETS), which are nonlethal, were conducted on 10 Edisto Striped Bass (ESTB) and 12 Congaree River Striped Bass (CSTB). An additional 21 Congaree River Striped Bass were subjected to traditional thermal ramping assays. The ETS assays revealed that the thermal tolerance (quantified as the temperature at which enzyme activity drastically dipped by 90% of the optimal enzyme activity level) was similar in both ESTB (34.8°C) and CSTB (34.7°C). In traditional thermal ramping assays, the mean temperature for loss of equilibrium (LOE) for CSTB was 33.7°C and the mean temperature for loss of opercular movement for 10 seconds (LOP) for CSTB was 34.4°C. Both LOE and LOP

were statistically similar to the ETS thermal tolerance results for Edisto and Congaree striped Bass.

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## *Tennessee*

*Name of Representative:* Ted Alfermann

### **Stocking**

Morone fishery enhancements have been conducted in Tennessee since the 1960s with the first striped bass stockings occurring in Kentucky Lake. Today, opportunities exist across the state in reservoirs, rivers, and small lakes to catch striped bass, hybrid striped bass, white bass, and yellow bass. Annual fingerling production goals are currently around 1 million for striped bass and 250,000 for hybrid striped bass. No white bass are currently produced by state hatcheries. In 2024, four state hatcheries produced 1.2 million striped bass fingerlings (5.5-818/lb.) which was significantly more than 2023 (880,000). Two hatcheries produced 198,000 hybrid striped bass (56-362 fish/lb.) in 2023, which was slightly lower than 2023 (216,000). Striped bass are stocked in 10 reservoirs across the state annually, whereas four reservoirs and four small lakes are stocked annually with hybrid striped bass.

### **Monitoring and Research**

#### J. Percy Priest Reservoir

Annual sampling of hybrid striped bass occurs at J. Percy Priest Reservoir each November to monitor survival of fingerlings stocked in June or July. Twelve gill net nights, six at the upstream end and six at the middle of the reservoir, are used along with creel surveys to evaluate stocking survival. Six experimental gill nets with mesh sizes of 0.5, 1, 1.5, 2, 2.5, and 3" changing every 25 feet are set on two separate nights. Starting in fall 2025, we will no longer be using the 0.5" mesh size in our sampling nets because we have not documented hybrid striped bass small enough to fit in that mesh size and it will reduce bycatch of logperch and threadfin shad.

A total of 108 hybrid striped bass were collected by gill netting in November 2024 on J. Percy Priest Reservoir. The total CPUE of 9.0/net night was good and is consistent with the previous four years. Age-0 CPUE was estimated at 2.75/net night (n=33, an increase from 2023 and right at the five-year average of 2.8/net night). Catch per unit effort for fish greater than 15" was 6/net night, which is slightly below the five-year average. Hybrid striped bass grow fast in Percy Priest, averaging close to 10 inches at age-0 (November), exceed the minimum length limit of 15 inches before age-2 and exceed 20 inches by age-3. Around 103,000 hybrid striped bass were stocked into J. Percy Priest in 2024 (7.3/acre), which is about even with the five-year average.

This year we began an exciting long-term genetics project on J. Percy Priest which has the goal of evaluating our hybrid and striped bass stockings using parentage analysis. Brood fish genetics

were collected in May 2024, fish were stocked in June and July 2024, and we began recapturing offspring in November 2024. The Percy Priest Hybrid and Striper Club has graciously volunteered eight of its anglers to help us collect 150 hybrid and 150 striped bass YOY fin clips by April. It's been a slow start with around 50 of the 300 fin clips needed collected, but we expect the pace to quicken as temps warm up. Anglers are catching a lot of one year old fish with their typical gear but have found they need to downsize their presentation to effectively catch age-0 fish. We hope to send in our 300 fin clips by late spring 2025 and have results shortly after.

### Cherokee Reservoir

TVA will be removing the oxygen lines in the forebay of Cherokee Reservoir Dam by 2026. The lines are meant to add oxygen to the tailwater to meet minimum dissolved oxygen criteria, but the secondary effect is that it provides pockets of oxygenated water to the reservoir's forebay and concentrates the STB there in the summer. This decision will likely result in a drastic decrease in fish over 25". This past summer before the oxygen lines were turned on, Cherokee experienced a fish kill of 475 STBA and all were over 25". TWRA will be adding questions to our annual creel survey specifically targeted at STBA anglers to help determine future management strategies.

### Boone Reservoir

The Boone Reservoir Morone fishery seems to be doing just fine after the reservoir was drawn down and is back to full pool.

### Norris Reservoir

Work continues with Oak Ridge National Laboratory to annually collect STBA on Norris Reservoir for their contaminant sampling by partnering with the local STB club instead of setting gill nets. It's about a half day event where anglers catch the specific size and number of STB needed as opposed to setting nets and dealing with bycatch and unnecessary mortality.

### Creel

Angler creel surveys are administered at reservoirs across TN each year. Because of the difficulties of sampling striped bass effectively, creel surveys are our best indication of the status of the fishery. The most popular location across the state for hybrid striped bass fishing is J. Percy Priest Reservoir, which has experienced 50-70,000 angler hours a year over the past five years.

Anglers from many states come to fish for 50 plus pound striped bass in Old Hickory and Norris reservoirs each year. Most of the effort is found at Old Hickory Reservoir with 52,000 angler hours recorded in 2023. Creel was not performed on Old Hickory in 2024.

## *Texas*

*Name of Representative:* Jake Norman

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## *Virginia*

*Name of Representative:* Dan Wilson

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## *West Virginia*

*Name of Representative:* Katie Zipfel

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