THE BASS MENAGERIE: A MICROPTERUS ODYSSEY



In 2017, the Georgia Department of Natural Resources (GADNR) initiated the Georgia Bass Slam. This program was designed to entice anglers to learn about the state's black bass (Micropterus spp.) diversity by offering recognition and prizes for those who can catch and document at least five of the black basses native to Georgia within a 1-year period. There are 12 species of Micropterus that can be caught in Georgia (Table 1), representing threequarters of the formally described or provisionally recognized black bass species known to exist in the world (Figure 1, Taylor et al. 2019). In May 2019, after living in Georgia for three years, I was offered a career opportunity that would remove me from the southeastern US following my graduation from the University of Georgia (UGA) the following December. Knowing that my bass fishing opportunities would soon be limited, and being intrigued by GADNR's Bass Slam program, I set out to catch each of Georgia's 12 black basses before my time in the state came to an end. This quest was aided by local scientists, field biologists, and anglers. What began as a simple pursuit of species for my life list developed into an eye-opening experience. Over the next year, I learned more than I could have imagined about these mostly lesser-known sport fishes, their habitats, and the efforts being undertaken to conserve them.

I first became familiar with the Georgia Bass Slam from my friend Alex Pelletier, a fellow master's student studying fisheries at UGA's Warnell School. Both living in Athens, 2019 was the first time that the two of us had been in Georgia for the summer, so we decided to tackle the Slam together. Two rods could find the fish better than one. Having a second pair of hands also made photo-documenting the Slam easier and allowed us to take higher quality pictures. The structure of the Slam emboldened us with a sense of legitimacy and provided several important resources to aid us in our pursuit of these fishes. Chief among these was a map of the distribution of black basses in Georgia. After reviewing the

Photos by the author and Alex Pelletier (Figures 2 left, 6, 8, 12, 13, 15, and 16).

Guy Eroh is a fish enthusiast from Park City, Utah, where he grew up chasing trout. He moved to Athens, Georgia, in 2015 to pursue a B.S. in Ecology and an M.S. in Forestry and Natural Resources from the University of Georgia, where he was exposed to the diversity of Southeastern fishes. He plans to dedicate his professional career to the conservation of fishes and fisheries, from non-game freshwater species to large, commercially important marine stocks. Guy is currently participating in a Knauss Marine Policy Fellowship with NOAA's Atlantic Highly Migratory Species Management Division in Silver Spring, MD.

map, and a little deliberation, we decided to start locally on the Oconee River.

Our first morning on the water found us below a recently removed dam, fishing for native Largemouth Bass Micropterus salmoides and introduced, some may say invasive, Spotted Bass M. punctulatus. Although dams like this one can sometimes act as barriers to the spread of invasive fishes, Spotted Bass had already been introduced upstream before the dam's removal. I grew up in northern Utah and was pleased to find that the techniques I'd honed over years on small, western trout streams worked just as well with river bass. After crossing the waist-deep river several times, casting in-line spinners on ultralight tackle, we both landed Spotted and Largemouth basses after a couple hours (Figure 2). Though both species were there, the Spotted greatly outnumbered the Largemouth. At the request of my former ichthyology professor, Dr. Bud Freeman, we took fin clips from these fish back to his lab for genetic analyses. Results of the tests revealed that the "Spotted Bass" we had caught were actually Alabama Bass Micropterus henshalli. This species is distinct from, but similar in appearance to, the Spotted Bass (aka Northern Spotted Bass, and/or Kentucky Spotted Bass).

While dropping off the tissue samples in Dr. Freeman's lab, I met two students, Elijah Dwoskin and Jared Bennett. They were investi-

Table 1. The 12 species of black basses native to Georgia are eligible for the Georgia Bass Slam when caught and photodocumented in Georgia waters.

Common Name	Scientific Name
Alabama Bass*	Micropterus henshalli
Altamaha Bass	Micropterus sp. cf. cataractae
Bartram's Bass	Micropterus sp. cf. cataractae
Chattahoochee Bass	Micropterus chattahoochae
Florida Bass**	Micropterus floridanus
Largemouth Bass**	Micropterus salmoides
Redeye Bass (aka Coosa Bass)	Micropterus coosae
Shoal Bass	Micropterus cataratae
Smallmouth Bass	Micropterus dolomieu
Spotted Bass (aka Northern Spotted Bass and/or Kentucky Spotted Bass)*	Micropterus punctulatus
Suwannee Bass	Micropterus notius
Tallapoosa Bass	Micropterus tallapoosae
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^{*}Alabama Bass and Spotted Bass are not differentiated for the Slam.

^{**}Florida Bass and Largemouth Bass are not differentiated for the Slam.

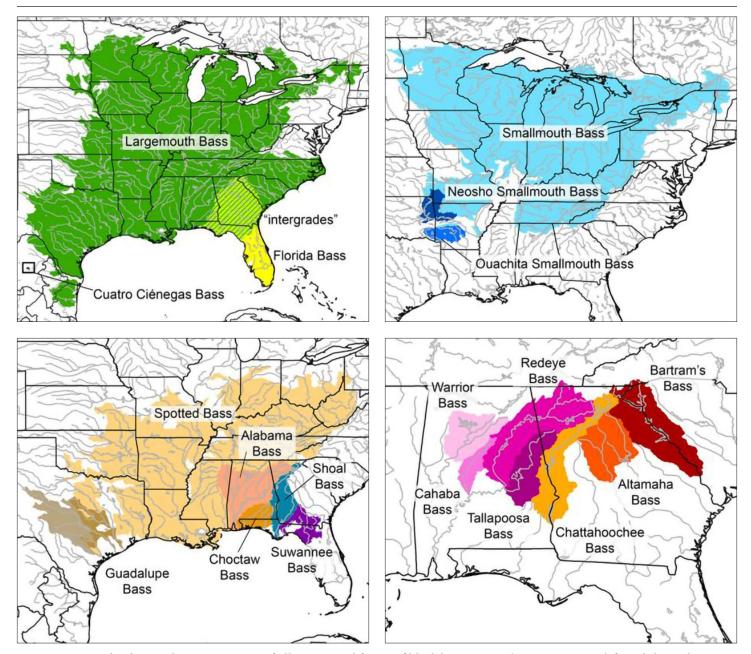


Figure 1. Maps displaying the native ranges of all recognized forms of black bass species (*Micropterus* spp.) found throughout the southeast. The maps were adapted from data compiled by Stephanie L. Shaw and originally published by Taylor et al. (2019). Figure used with permission.

gating hybridization among black bass species, particularly between Chattahoochee Bass *M. chattahoochee* and Alabama Bass. Alabama Bass have been widely introduced throughout the limited native range of the Chattahoochee Bass. As a result, the genetic integrity of the Chattahoochee Bass, officially recognized as a species in 2013, might be becoming compromised (Baker et al. 2013). To study this, Elijah and Jared were collecting fin tissues from fish that bore the distinctive flame-orange fins of the Chattahoochee Bass in several locations throughout the Chattahoochee River system. Our shared need to catch some Chattahoochee Bass soon led to a joining of forces on a combined Bass Slam/UGA genetics research sampling trip to a small tributary of the Chattahoochee River in the mountains of North Georgia.

Before departing on this important mission, we had to be trained. The weekend before the trip, Elijah took us out on a local stream to fish for our third target, Altamaha Bass *M. sp. cf. cataractae* (Figure

3). These bass, like Chattahoochee Bass, are part of the shoal bass clade, though outwardly they resemble the more distantly related Redeye Bass *M. coosae* (aka Coosa Bass). Native to the Oconee and Ocmulgee river systems, Altamaha Bass are the only *Micropterus* species endemic to Georgia, found nowhere else in the world. As we made our way up the picturesque shoals of this rarely fished stream, Elijah showed us how to properly sample and preserve fin tissues, photograph the organisms, and record essential information in the lab's field book. This practice expedition was a success in several ways. After an afternoon of catching and working up several Altamaha Bass, I now had three species checked off, and we were prepared to seek out Chattahoochee Bass.

A week later, the four of us headed to a tributary of the mainstem Chattahoochee in the mountains of northern Georgia. This stream had several barrier falls that Jared and Elijah hoped would



Figure 2. The author (left), with arms extended well in front of his body, presents an Alabama Bass at the confluence of the North Oconee and Middle Oconee rivers. Alex (right) shows off a 17-inch Alabama Bass caught in a slack water eddy. Both fishermen are excited to have caught their first *Micropterus* of the Slam.



Figure 3. An Altamaha Bass that was caught during a sampling trip in Athens, GA.



Figure 4. Jared (left) and Elijah (right) take an anal fin clip from a 16-inch Alabama Bass (inset) while on a research expedition in search of Chattahoochee Bass in north Georgia.



Figure 5. A Largemouth Bass, one of four *Micropterus* species the author caught from Mossy Creek during the sampling day.



Figure 6. The author with a surprise Shoal Bass caught while searching for Chattahoochee Bass in a north Georgia tributary to the Chattahoochee River.

prevent non-native basses (previously introduced to the main river) from hybridizing with the native Chattahoochee Bass population upstream. Below the first set of falls, we caught Alabama Bass (Figure 4), Largemouth Bass (Figure 5), and a new fish which none of us expected: the Shoal Bass *M. cataractae* (Figure 6). This welcomed surprise meant I had tallied my fourth *Micropterus* of the Slam. This Shoal Bass lived up to its moniker as it was pulled from a torrential section of the stream. Despite our diverse haul below the first barrier falls, we were still without Chattahoochee Bass.

Above the falls we did not catch any Alabama Bass, but we still had a tough time finding Chattahoochee Bass. After nearly an hour, I finally caught a Chatty, my fourth Micropterus species of the day and fifth for the Slam. Soon after, Alex landed a small Chattahoochee Bass of his own that had the brilliant orange fins associated with the species (Figure 7). Although this would be the last Chattahoochee Bass of the trip, the timing of the catch was perfect. While we were collecting the fin samples for Elijah and Jared's genetic testing, a man called to us from the shore. He introduced himself as the owner of the adjacent property, and we were nervous that he might run us off. However, he seemed intrigued by our encounter, as fishermen this far upstream was almost certainly uncommon. Once we showed him our Chattahoochee Bass and told him about the research project and the Slam, he expressed enthusiasm for the work and for this neat species that could be found in "his" stream. We had won over another supporter for both the Slam and the research project! Following the trip, Jared and Elijah took the samples back to the lab and processed them. Fortunately, the Chattahoochee Bass I had caught was a pure fish. However,



Figure 7. A small Chattahoochee Bass sampled with researchers from the Freeman lab displaying the bright orange dorsal, anal and caudal fins associated with the species. Following genetic analyses, this bass was revealed to be a hybrid between a Chattahoochee and Alabama bass.

Alex's fish, which we'd been certain was pure, was in fact a hybrid Alabama-Chattahoochee Bass. The presence of these non-native genes above the falls indicates that pure Alabama Bass, or hybrid Alabama-Chattahoochee Bass, have found their way above the barrier through either natural or fisherman-aided dispersion. This important result also shows that putative Chattahoochee Bass can be hybrids even when their appearance resembles a pure fish.

Following the Chattahoochee Bass expedition, Alex and I planned our next few trips in the western and northwestern parts of the state where we sought Georgia's two true species of "redeye" basses: Redeye Bass and Tallapoosa Bass M. tallapoosae. While we would eventually catch the basses we were after, we consistently found ourselves catching new, non-Micropterus species. Whenever I talk to people about the Slam, I inevitably will show photos of the beautiful sunfish, shiners, and other species that I stumbled upon along my journey. While targeting Tallapoosa Bass (Figure 8) in a low-gradient stream, Alex and I caught ten species between us. Among these were Redear Sunfish Lepomis microlophus and Yellow Bass Morone mississippiensis, two species that I had never caught before. The next week, on a solo mission, I caught eight species in an hour from a single stream, including a Coosa Bass (Figure 9) and several "spotted bass" out of a wide pool. Later that same day, in a fruitless attempt to catch Smallmouth Bass M. dolomieu, I caught four more species, bringing the day's total to 12 species from 8 genera and 4 families (Centrarchidae, Leuciscidae, Percidae, and Salmonidae). Not bad for throwing the same Panther Martin all day. With the Tallapoosa, Coosa and Spotted basses under my belt, my Slam count was up to eight.



Figure 9. A Redeye Bass (Coosa Bass), one of eight species from five genera and three families caught in an hour from a tributary to the Etowah River.



Figure 8. A Tallapoosa Bass caught from a slow-moving pool in a creek under some large, woody debris. This habitat is quite different than that which they are reported to prefer but perhaps not here in Little Tallapoosa Park.

Over the next month, Alex and I made several attempts to catch a native Georgia Smallmouth in one of the few streams in their native range; but, to no avail. We caught big River Chubs *Nocomis micropogon*. We caught wild and hatchery raised Rainbow Trout *Oncorhynchus mykiss*. But we didn't catch Smallmouth Bass, trip after trip. Finally, after consulting with Jeff Durniak, a GADNR biologist and renowned fisherman familiar with the area, we elected to put our north Georgia smallie fishing on hold. Instead, we decided to focus our efforts on a non-native Smallmouth population that had become established in the Savannah River near Augusta.

The next weekend I headed alone to Augusta Shoals. By now, the fall semester was in full swing, and fishing trips were becoming less frequent. At the shoals, the Savannah River is hundreds of meters wide, much different from the small streams that Alex and I had been fishing all summer. Though wadeable in sections, the river is also full of holes and runs that must be swum. Several islands can be accessed along with hundreds of smaller, sharp rocky points and outcroppings. In retrospect, making this trip to large and unfamiliar water alone, particularly without a kayak, was unwise. Good footing was hard to come by, Cottonmouths were prevalent, and swift currents frequently prevented safe crossing. This area, one that I might have missed without the incentive of the Slam, pushed my comfort zone that day but was worth it. Strange, unidentified creatures climbed in the canopy. Fish jumped over the rocks. Large gar smashed spinners in whirling gyres and deep pools. It felt surreal.

Unexpected to me, Augusta Shoals was rife with Bartram's Bass M. sp. cf. cataractae, another species I sought to catch (Figure 10). This species, native to the Savannah system, is related to the previously mentioned Shoal, Chattahoochee, and Altamaha basses and named after the naturalist William Bartram. Bartram explored the region in the 18th century and so was thought to be an appropriate namesake when my aforementioned professor, Dr. Bud Freeman, originally named the species. Despite large numbers of Bartram's, I still could not find any smallies. Dejected and tired, I gradually made my way back to the Georgia bank, stumbling and crashing into the river several times along the way. Eventually, I crawled up onto the towpath along the river's edge and began the walk back to my car. For some reason, just as I was reaching the parking lot to head home, I felt inspired to give the Shoals one last shot. I took a few more casts, just before sunset, below the dam upstream of the Shoals. I hooked into another Bartram's and almost gave up. But something inside of me kept my rod casting one more time. One more time, again and again. Finally, the last cast came, as it always does and always will. However, unlike most final casts I've experienced, this one resulted in a tight line. As light was fading, I hooked



Figure 10. One of the many Bartram's Bass caught from Augusta Shoals on the Savannah River. The abundance of these fish resulted in one of the few occasions where a *Micropterus* species was the most frequently caught on the day.

into a fish much larger than the Bartram's Bass I had been catching and eventually landed a 15-inch Smallmouth (Figure 11). I was excited. I was relieved. Though the whole trip had been generally enjoyable, that last 10-minute push to catch a fish that I had been chasing for months was truly fulfilling. Landing the Smallmouth made the trip feel worthwhile in a way that it hadn't up to that point. What a day!

As I drove home from Augusta with ten Georgia black basses brought to hand, I had one thing on my mind: catching the two Georgia *Micropterus* which remained on my list. Both of these species, the Florida *M. floridanus* and Suwannee *M. notius* basses, live in the southern part of the state in spring-fed rivers. With the calendar now into November, final exams and thesis defenses approaching, and a 5-hour drive needed to reach these fishes, Alex and I only had one weekend left to pull this off. Based on the advice of other angling friends and local biologists, we planned to focus our initial efforts on the Withlacoochee River. I brought my kayak and had planned to tow Alex behind me in an inner tube for a point-to-point trip between two bridge crossings. However, to our surprise, none of the local sporting goods stores stocked float tubes during that time

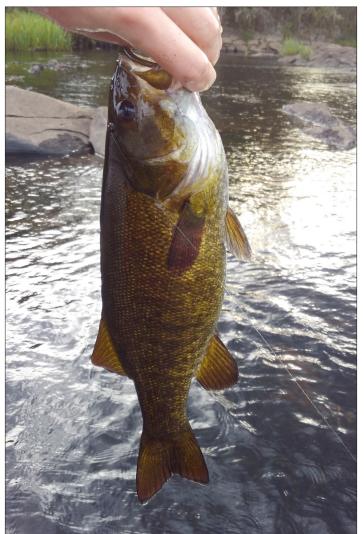


Figure 11. A 15-inch Smallmouth Bass caught just below the dam at Augusta Shoals as the day's light began to fade.

of the year. Improvising, we loaded both of us into the small oneman craft, nearly in each other's laps, and began the float down the tannin-stained river.

The limestone banks and abundant large woody debris appeared to be excellent fish habitat, but the fishing was spotty. We caught some of the biggest Bluegill *Lepomis macrochirus* and Redbreast Sunfish *L. auritus* we've seen, but bass were hard to come by. By early afternoon we had each managed to land a Florida Bass (Figure 12). We did not take fin clips of these fish, and it is possible that they were intergrades or hybrids with Largemouth Bass. I'm still counting it, though.

At about 3:00 pm we checked the map and realized that we could not complete the float before sundown and were forced to paddle back upstream to the put-in. Still without any Suwannee Bass, the next morning we paddled upstream from the previous day's planned takeout. After hours of slow fishing, we came to a set of large shoals that were impassible by motorboat. We beached the kayak and fished on foot. With a strict time to get off the water, we could only fish the length of the shoals, and nothing more, before calling it quits. The Redbreast bite lit ablaze, but we hooked no *Micropterus* by the time we reached the top of the shoals. Demoralized, we started back to the boat. On the way down the shoals I cast a few more times into a



Figure 12. A Florida Largemouth Bass, possibly an intergrade, caught near the Florida-Georgia line.

large pool and managed to land a small Florida Bass, our first and only bass of the long day. However, before releasing the fish I went to consult Alex about its possible identity. In that brief time, the fish's colors, distinctive black diamonds, returned. It was unmistakably a Suwannee Bass, the only one of the weekend (Figure 13). My Georgia Bass Slam was complete, to a degree, but in my mind I didn't feel completely done. Something continued to unsettle me.

Though all of the "Spotted Bass" we had sampled around the state were actually Alabama Bass, this distinction isn't recognized by GADNR because telling the two apart by photographs is impossible. In my mind I was able to let it slide, because certainly at least one of the dozens of Spotted Bass I had caught must have been a true Spot. I debated with Alex about this point at length. Regardless, in light of completing the Georgia Bass Slam, there were still four species of *Micropterus* outside of Georgia that we hadn't yet caught. Though it was now December, Alex and I decided to use the downtime between final exams and graduation to make a 3-day road trip to Alabama. Planning to wet-wade the chilly waters, we were about to get back to the traditional small stream fishing with which we had started the year.

Our first stop was Mud Creek in the Cahaba River drainage. Contrary to its name, the water was clear and flowed over sets of shoals, one after the other. Meandering through a mountainous



Figure 14. Alex with a Cahaba Bass caught at Tannehill Ironworks State Historical Park.



Figure 13. A Suwannee Bass, the last fish required for the author's Georgia Bass Slam.

state park, Mud Creek was the quintessential Redeye Bass stream. There is a common saying out west that "trout fishing is always a good time because trout only live in beautiful places." I think the same can be said for all of these basses that make their homes in small, upland streams. The day started slowly as fish of any species were hard to find. Alex and I began to worry that the December water temperatures might just be too cold to be productive. But we had made the long drive and weren't going to give up without putting forth our best effort. Fortunately, our luck changed a few hours in. I pulled my favorite Panther Martin upstream around a bend in the creek and saw a large flash miss the lure. With a quick cast into the same stretch of water, I hooked and landed a Cahaba Bass *M. cahabae* with a bonnie blue operculum. The bite took off from there as



Figure 15. The author with a Warrior Bass caught from a small, roadside stream near Birmingham, AL.



Figure 16. A Choctaw Bass caught by the author near Brewton, concluding a successful three-species trip to Alabama.

we continued to hook into fish the rest of the afternoon (Figure 14).

The next day's fishing followed nearly the opposite pattern. We pulled Alex's car off the road near a suburban stream crossing downhill from a Winn-Dixie grocery store. My gear was already rigged up, so I got on the water first. I landed my first Warrior Bass M. warriorensis right off of some highway-side riprap before Alex was able to wet his line. A small individual, this fish was handsome with several dark vertical bars (Figure 15). I could tell why Hubbs and Bailey (1940) had suggested that these fish may be a distinct species even before they possessed the proper tools to describe the species. One of my favorite things about catching these basses is that the appearance of the fish is prized over size. In my discussions with other redeye bass anglers I've found that the topic of conversation is always related to the beauty of a fish's pattern or the area in which the fish was caught. Few of these lesser recognized Micropterus attain a size that would be impressive to those with limited black bass familiarity. Fly anglers frequently target tiny Brook Trout Salvelinus fontinalis when larger Rainbows could be more easily caught lower in the drainage. In the same vein, redeye bass anglers value the pursuit of incredible native fishes beyond the valued statistics (i.e., length and weight) traditionally associated with angling prizes. Over the next 10 minutes I would catch two more Warrior Bass, the last two that we would see during the trip. We spent the rest of the afternoon hitting stream after stream with no luck. With one day left on our Alabama trip, we headed south to Brewton to spend the next day in pursuit of Choctaw Bass M. sp. cf. punctulatus.

On the final morning of our trip, Alex and I were greeted by a town decorated head to toe for the Christmas season. We pulled into a park with a small disc golf course covered in oversized candy canes and other holiday regalia and began to fish our way upstream. As the sun rose higher in the sky, the bite began to heat up. After catching Largemouth Bass and Longear Sunfish *L. megalotis* (a new species for me), Alex and I each landed a Choctaw Bass off some downed trees in the middle of Burnt Corn Creek (Figure 16). Three days, three *Micropterus* species. Our mission fulfilled, Alex and I celebrated at Whataburger and headed home.

Graduation came and went. My father flew into town and we packed my things in preparation of a long drive from Georgia to Oregon. The GPS directed my father and me to drive north to I-80 before heading west. But, with two weeks left in the year, I had different plans. Staying south, we took I-10 to Texas to target Guadalupe Bass *M. treculii*. After a day of driving, we stopped in Nacogdoches to rest. That night, the conversations I had with Alex regarding Spotted Bass kept coming to mind. Before I left Georgia, we had pondered over the legitimacy of my Spotted Bass one last time. I had caught these fish-in-question in almost every applicable drainage in



Figure 17. The author proudly displays a Spotted Bass caught from a stream near the Stephen F. Austin campus in Nacogdoches, TX.

the state. Could they all have been Alabama Bass and none Spotted Bass? Though not fully convinced that I should be held to a higher standard because I had obtained genetic information on some of my fish, a shadow of a doubt remained about my catch. I realized that I might have a chance to solidify that Spotted Bass in East Texas. With this in mind I left the motel that morning in search of a true Spot. I found a small stream on the Stephen F. Austin campus and after fewer than 10 minutes had landed what was definitively, positively, a true Spotted Bass (Figure 17). Energized, my dad and I hit the road, my mind finally at ease.

We made it to Guadalupe State Park with about an hour of light to spare. I caught several bass as I fished down the river but, convinced they were Spots, I returned them to the water. At the time, I was unaware that the range of the Spotted Bass did not extend that far west. As dusk approached, I finally brought one of these fish to shore to get a picture, just in case (Figure 18). I sent it to a friend of mine, a Guadalupe Bass aficionado from Hunt, TX. I got the good news while walking back to the truck that I had found Texas's state fish. With Guads on my list, black bass number 16, I called it a season. I had caught every recognized *Micropterus* species.

This *Micropterus* odyssey led me to catch a diversity of fishes in a number of gorgeous places that I would not have anticipated when I set out on the journey. Spurred on by GADNR's Bass Slam, I can attest to the power a program like this can have on anglers and the public. The Southeast is home to a diversity of aquatic





Figure 18: The author (left) and his father examine a Guadalupe Bass along the banks of the Guadalupe River, still unsure if it was truly the fish they were looking for.

organisms unparalleled anywhere in the temperate world. Unfortunately, much of this diversity, among both game- and nongamefishes, is underappreciated by most people. Programs like the Georgia Bass Slam appeal to the public and can serve as teaching tools to promote education about fish diversity. The program also acts as a powerful conversation-starter about the conservation of

this diversity and the habitats on which these fish rely. Sport fishes in particular can serve as gateways to capture the interest of people who may not be immediately interested in nongame diversity, but who could become interested with time. Greater awareness of, and pride for, local fishes is needed to advance research and conservation efforts for native fishes. Slams and similar programs offer opportunities to engage the public and foster these interests. I look forward to future participation in other slams, both official and of my own design. Utah Cutthroat Slam, I have my eye on you. I also hope to catch the three remaining forms (not currently recognized as species) of *Micropterus* that I have yet to pursue: Neosho Smallmouth, Ouachita Smallmouth, and Cuatro Ciénegas basses (Figure 1). I suppose I'll need to do an Arkansas bass slam too. In the meantime, I look forward to getting on the water as much as possible so that I can continue enjoying the rich diversity of these amazing creatures and their habitats, wherever I go.

References

Baker, W.H., R.E. Blanton, and C.E Johnston, 2013. Diversity within the Redeye Bass, *Micropterus coosae* (Perciformes: Centrarchidae) species group, with descriptions of four new species. Zootaxa, 3635(4):379–401.

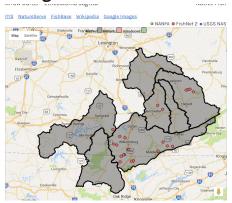
Hubbs, C.L., and R.M. Bailey. 1940. A revision of the black basses (*Micropterus* and *Huro*) with descriptions of four new forms. Miscellaneous Publications, Museum of Zoology, University of Michigan No. 48.

Taylor, A.T., J.M. Long, M.D. Tringali, and B.L. Barthel. 2019. Conservation of black bass diversity: an emerging management paradigm. Fisheries, 44:20–36.



FishMap.org is for anglers, aquarium hobbyists, scientific researchers, or anyone else with a passion for fishes who wants to visually explore species' ranges or learn what species are in their local waters. The site is dedicated to spreading knowledge and respect for all fish species.

Range and Collection Data



FishMap.org combines numerous data sources to provide a better view and more complete understanding of fish species distribution. It uses data from NatureServe, the National Atlas, the USGS water resources and Nonindegenous Aquatic Species programs, FishNet2, iNaturalist.org, GBIF, and iDigBio.

Explore Watersheds



FishMap.org is sponsored by NANFA. Users can submit their own data to the portal to help map species distribution, so FishMap.org has been working with NANFA members to create an additional database of fish sightings and collections (currently nearly 30,000 records and growing).

Compare Ranges

