MICROFISHING FOR NORTH AMERICAN NATIVES IN SOUTH FLORIDA

Arthur Kosakowski

Davie, Florida

Year-round tropical climate. This is what causes millions of people to visit South Florida each year and the reason many end up permanently calling the area home. As it turns out, many fishes feel the same way about South Florida as humans do. Throughout the last half of the twentieth century, many exotic fish species were intentionally or unintentionally released into the warm waters of South Florida. The tropical climate has allowed many of these fishes to thrive and take up permanent residence well outside of their native ranges. The result more than half a century later is that it is nearly impossible to fish a local canal or pond without running into more exotic species than native ones. The challenge for a North American native fish enthusiast lies in having to weed through the exotics to find the natives.

Today's quest for natives is focused on the G15 canal in Broward County (Figure 1). The G-15 canal was first dredged in 1906 and originates to the northwest in Lake Okeechobee (Broward County, n.d.). It flows south-southeast through Palm Beach and Broward counties draining into the Intracoastal Waterway and the Atlantic Ocean. The canal is a popular destination for fishermen targeting game fish such as the Largemouth Bass *Micropterus salmoides*, Butterfly Peacock Bass *Cichla ocellaris*, Tarpon *Megalops atlanticus*, and snook *Centropomus* spp. However, today the targets will be the smallest of the G-15's inhabitants. The goal is to use microfishing to catch and appreciate any small natives in a canal being overrun by exotics.

The first stop of the day was a confluence where a small canal that drains a neighborhood enters the G-15. The smaller canal was full of tall eelgrass, which provides a plethora of hiding spaces for any smaller fish. A small size 12-hook tipped with a small piece of redworm on an ultralight rod with two-pound test monofilament was the setup for the day.

In the shallows along the water's edge where the eelgrass begins to thin, small fish about three to four inches long could be seen swimming in and out of the grasses. The redworm was dropped down at the edge of the eelgrass and almost instantly a school of a dozen or so small fish began to attack it. After failing to hook one on the first few attempts, an African Jewelfish *Hemichromis letourneuxi* finally came up (Figure 2). The first exotic species of the day is a native of the African continent. First spotted in Miami in 1965, the African Jewelfish is now well established throughout much of the southern portion of the state (Nico et al. 2013a, 2013b).

After rebaiting the hook and tossing it back in the water, it was once again instantly attacked by a school of African Jewelfish. However, mixed in among the African exotics were a few other fishes that were difficult to identify through the water. After trying and failing to catch the mystery micros, a few more African Jewelfish came up on the hook. Then it happened, one of the mystery fish got hooked. To no one's surprise it was not a native, but this time the exotic was from South America. The Oscar *Astronotus ocellatus* was first spotted on the Gulf Coast of Florida in 1960 and has since established itself among much of Southern Florida (Figure 3) (Nico et al. 2013a, 2013b). As expected, trying to find a native fish in South Florida is a challenge.

Photos by the author.

Originally from Bayonne, New Jersey, Arthur Kosakowski is a recreational fisherman currently living in Davie, Florida. He has a passion for finding beauty in every fish species no matter the size. Since moving down to South Florida four years ago, he has been mesmerized by the vast variety of both native and exotic fish species. You can follow his fishing adventures on his YouTube channel at www.YouTube.com/c/TheFishingNomad

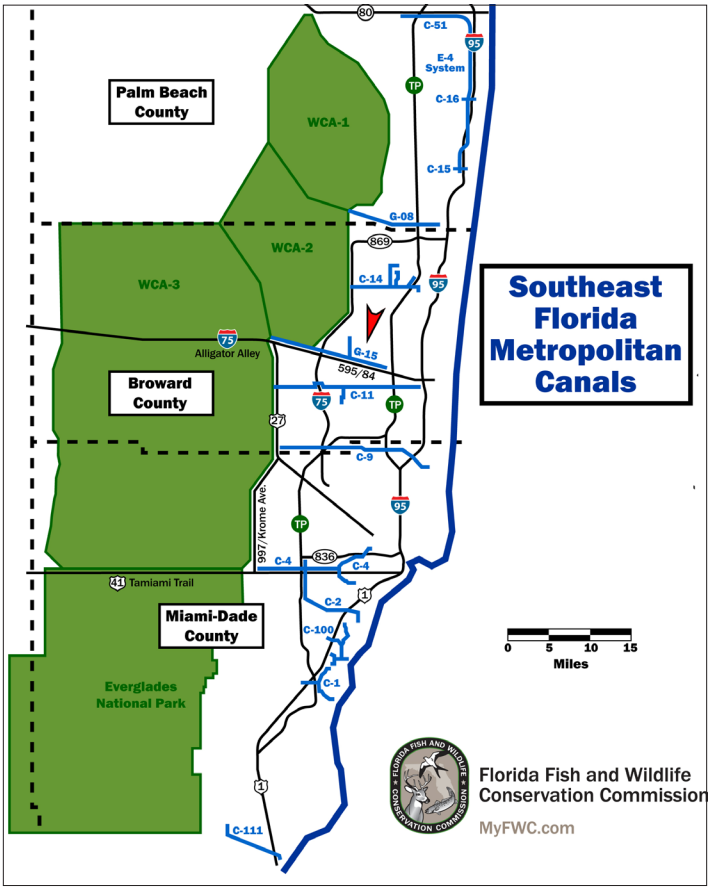

Figure 1. The red arrow points to the G-15 Canal in Broward County.

Figure 2. An exotic African Jewelfish.

Figure 3. An exotic Oscar.

After leaving the eelgrass in favor of a small shallow cove a few feet down the canal, a small school of minnows was seen swimming around near the surface. A small piece of redworm was tossed into the shallow water and a school of micros instantly swarmed it. Finally! The first native came up, a Golden Topminnow *Fundulus chrysotus* (Figure 4). It was like hitting gold! A beautiful yellow-gold color body with specks of orange flakes that shine in the sun as beautifully as any topical fish in the aquarium trade. Seeing these natives light up and glisten, and knowing that they have been in these waters well before humans began interfering with nature, is breathtaking.

Among the school of Golden Topminnows were some smaller fishes and hooking them was the biggest trial of the day. After getting some more hooks into the mouths of a few more Golden Topminnows and African Jewelfish, a second native species made an appearance. On the other end of the line was an Eastern Mosquitofish *Gambusia holbrooki*, probably one of the smallest species of fish in the entire canal. Although lacking the spectacular coloration of the Golden Topminnow, the Eastern Mosquitofish is beautiful in its own right. A shimmer of silver with a paler white stomach gives off vibes of unbeknownst attractiveness.

After dropping more redworms down into different shallow secluded spots along the canal, more African Jewelfish and Eastern Mosquitofish kept coming up. Towards the end of the day, one of the Eastern Mosquitofish that was hooked was ambushed by a juvenile Butterfly Peacock Bass (Figure 5). Although this is a very

Figure 4. A native Golden Topminnow.

Figure 5. An exotic Butterfly Peacock Bass that tried to eat a native Eastern Mosquitofish.

basic predator-prey relationship and completely natural, it highlights the problems that North American native fishes are facing in South Florida. They are competing with, and being hunted by, exotics. It is hard to imagine South Florida waterways without all these exotic fish species. However, you don't need to go that far back in time to find a South Florida ecosystem without these problems. In only half-a-century, all of these exotic fish were released and became established. This isn't a problem unique to South Florida, but the climate here is perfect to exacerbate the problem.

After a day of microfishing in one of Broward County's biggest canals, only two species of North American native fishes were caught. Not only were the species of native fishes caught outnumbered by exotics, but the number of individual native fishes caught was also less than that of their exotic counterparts. If all of this can happen in half a century, what does the future of native fishes look like in South Florida?

Literature Cited

Broward County (n.d.). Freshwater Canals. Retrieved August 5, 2020 from https://www.broward.org/EnvironmentAndGrowth/EnvironmentalProgramsResources/Publications/Documents/FreshwaterCanals.pdf

Nico, L.G., P. Fuller, P.J. Schofield, and M. Neilson. (2013a). *Astronotus ocellatus* (Agassiz in Spix and Agassiz, 1831): US Geological Survey, Nonindigenous Aquatic Species Database, Gainesville, FL. Retrieved August 5, 2020 from https://nas.er.usgs.gov/queries/FactSheet.aspx?speciesID=436

Nico, L.G., P. Fuller, P.J. Schofield, and M. Neilson. (2013b). *Hemichromis letourneuxi* Sauvage, 1880: US Geological Survey, Nonindigenous Aquatic Species Database, Gainesville, FL. Retrieved August 5, 2020 from https://nas.er.usgs.gov/queries/factsheet.aspx?SpeciesID=457