

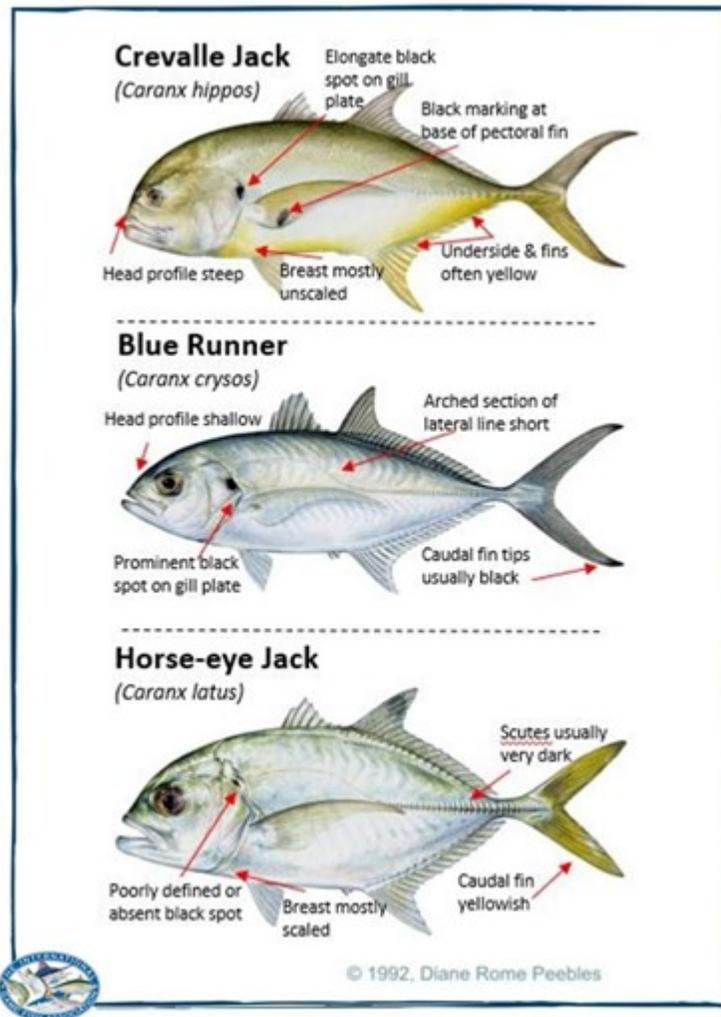


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## From Trash to Treasure: The Tale of the Crevalle Jack

Crevalle jack, *Caranx hippos*, are a voracious predatory fish that inhabit tropical and temperate waters on both sides of the Atlantic Ocean, from Nova Scotia to Uruguay and from Portugal to Angola. They are common in inshore, nearshore, and offshore waters and often school around structure and hard-bottomed areas. Crevalle jack are one of the largest species of jacks (the [all-tackle world record](#) weighs more than 60 pounds!) and are distinguished by their broad, muscular bodies, steeply profiled head, and black markings above their pectoral fins and on their operculum (gill plate). Known to consume a widely variable diet of fish and crustaceans (e.g., shrimp and crabs), their speed and agility make them formidable predators throughout their range.



*Crevalle jack are distinguished from other similar fish species by their deep body, steeply profiled head, and coloration. Graphic courtesy of the International Game Fish Association.*

Despite their expansive distribution and high abundance in the Gulf of Mexico, crevalle jack have historically received little attention in U.S. recreational and commercial fisheries. For instance, the considerable musculature that makes crevalle jack such efficient hunters also makes them undesirable as a food fish, earning them a “[trash fish](#)” reputation in the U.S. Gulf of Mexico. In fact, most – approximately 90% – of crevalle jack are released after capture in the U.S. recreational fishery. To date, crevalle jack remain unregulated commercially and recreationally in all five Gulf states, with no size or gear restrictions in the Gulf of Mexico (although unregulated species in Florida default to a recreational bag limit of two fish/day or 100lbs/person per day, whichever is greater). Additionally, few research efforts have examined crevalle jack biology or ecology; abundance trends and movement patterns are largely speculative, and crucial questions remain regarding crevalle jack stock structure and life history.

However, perceptions of crevalle jack are changing for several reasons. First, their status as an exceptional recreational sport fish is rapidly gaining traction. Their strength, size, and aggressive hunting instinct makes them an attractive choice for recreational anglers. Additionally, their widespread abundance in oceanic, estuarine, and riverine environments makes them an accessible fishing option for many. In fact, the International Game Fish Association has labeled crevalle jack as a “[superb light tackle species](#)”, willing to take almost any bait with a fighting spirit to rival inshore sport fish favorites, such as snook, redfish, and seatrout. Second, growing research suggests they hold important ecological roles in the Gulf of Mexico. For example, high crevalle jack abundance, combined with their use of a variety of habitats and wide dietary breadth, likely makes them valuable contributors to ecosystem connectivity. Their longevity (some have been estimated to live approximately 20 years) also has crucial management implications with regards to determining sustainable harvest levels and evaluating ecosystem vulnerability.

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## An Uncertain Plight



***Crevalle jack will be removed as a kill category and added as a catch-and-release category for the 2024 Alabama Deep Sea Fishing Rodeo.***

While growing interest in crevalle jack has put them high on the sport fishing target list, it has also initiated concern over current harvest levels and population declines. Information collected by researchers at Florida International University using stakeholder [local ecological knowledge \(LEK\)](#) and [fishery-dependent data](#) (information gathered directly from fishermen through logbooks, surveys, or reporting apps) have suggested declines in crevalle jack

abundance in the Florida Keys. This information was then used to develop a crevalle jack stock assessment, incorporating a novel approach to address important knowledge gaps (such as stock status trends, discard mortality rates, and the level of targeting) for a species that is largely understudied. Results have indicated declines in stock biomass, with the crevalle jack stock being overfished and experiencing overfishing. Despite these efforts, the implications of large-scale migrations, increased fishing pressure, and climate change on depleted crevalle jack stocks – and the ecosystems these fish inhabit – continue to remain largely unknown.

Given these uncertainties, fisheries scientists with Mississippi State University's Marine Fisheries Ecology (MFE) Program have recognized an opportunity to address concerns regarding crevalle jack population declines. In partnership with the [Alabama Deep Sea Fishing Rodeo \(ADSFR\)](#) and the Mobile Jaycees, crevalle jack will be removed as a kill category and added as a catch-and-release category for 2024. The angler with the most captured and released crevalle jack will claim the "jack"-pot of this category. This new category designation will also prevent unnecessary discards of an overfished species (that is also experiencing overfishing).

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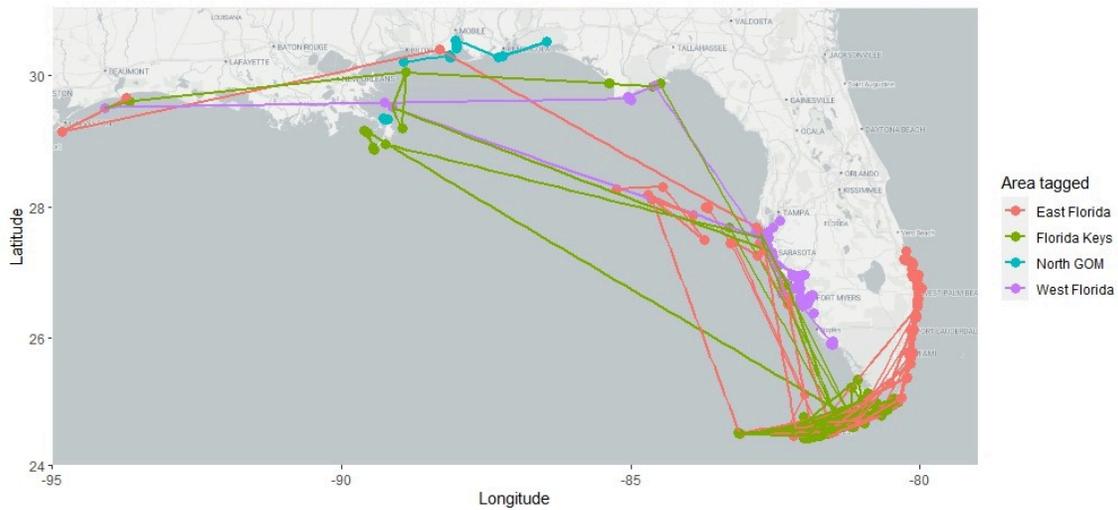
## Tracking Treasure

But that's not all! Fisheries scientists with the MFE Program are continuing to collaborate with scientists at Florida International University (FIU), Texas A&M University – Galveston (TAMUG), and the National Oceanic and Atmospheric Administration (NOAA), as well as recreational fishing guides, to outfit crevalle jack with acoustic tags. These specialized tags emit signals which are detected by receivers placed throughout the Gulf of Mexico. Receiver detections from tagged fish inform scientists where crevalle jack spend most of their time and when they move to different habitats.



***Dr. Marcus Drymon, an Associate Extension Professor at Mississippi State University, carefully equips a crevalle jack with an acoustic tag. Receivers throughout the Gulf of Mexico can “hear” a tagged fish swim by. Scientists can then track fish movements over time, which helps inform future management strategies on how to best conserve this important fish species.***

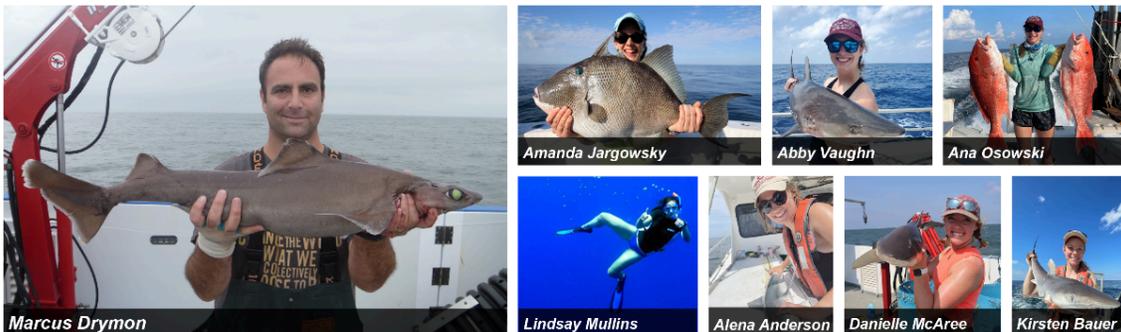
So far, these efforts have shown crevalle jack exhibit expansive movement patterns. For example, tagged fish made regular movements between the east and west coasts of Florida, and some fish tagged in south Florida were observed migrating as far north as coastal Texas! While it is unclear if these large-scale movements represent a seasonal migration or if this movement occurs as fish grow and develop, continued monitoring will help answer these questions and will identify what areas are most crucial to crevalle jack conservation.



***A map showing detections of acoustically tagged crevalle jack. Colors represent different areas where fish were initially caught and tagged in south Florida. Points show where detections of tagged fish were picked up by receivers, while lines show crevalle jack movement patterns. Photo courtesy of Carissa Gervasi.***

The success of these efforts has been critically dependent on LEK and citizen science, and the information collected will help inform future fisheries management efforts. Investigations on crevalle jack harvest, stock status, and movement show how collaboration between scientists and fishermen can identify research priorities to better manage an important recreational fish species.

Be sure to visit the [Coastal Fish Ecology and Fisheries Lab website](#) as scientists at the MFE Program, FIU, TAMUG, and NOAA continue cooperative efforts to investigate crevalle jack ecology. You can also follow [FIU Fisheries Lab](#) on Instagram or visit their [Facebook page](#) to keep up with current findings from these collaborative research efforts.



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