

KAYAK CORNER



TAGGING FLUKE

BY PAUL ZIAJSKI

Chase Wunder has activated kayak anglers to help gain a better understanding of fluke movement in New Jersey estuaries.

Hundreds of customers walk through my kayak shop each season, and I develop relationships with many of them. When I met Chase Wunder, I immediately recognized that we shared a common passion for kayak angling and conservation. We chatted about Great Bay and the many species of marine life that inhabit this beautiful body of water. When Chase steered the conversation toward a project he was involved in, I knew I wanted to be a part of it.

Wunder is a Rutgers University Graduate Research Fellow at Rutgers University Marine Field Station (RUMFS) located on the banks of Great Bay. The project, Fish Tagging Research and Education Program (FiTREP,) is a volunteer-driven pilot initiative aimed at gaining a deeper understanding of the movement and migration

patterns of summer flounder and other species within New Jersey's coastal estuaries. FiTREP brings together charter captains, recreational anglers, and volunteers from four coastal counties in the state. With a focus on enhancing public awareness and increasing volunteer tagger participation, the goal is to continue expanding FiTREP to study how fluke move within and among New Jersey's estuaries and ocean waters. The program is currently led by Rutgers University's Dr. Douglas Zemeckis and Dr. Sarah Borsetti.

Not long after our initial conversation, Chase supplied me with a tagging kit that consisted of a tagging gun, Floy T-bar tags ("spaghetti tags"), data sheets, and spare needles. I was eager to grab my kayak and hit the bay. Even though the program's primary subject is summer flounder, I also managed to tag a bunch of sheepshead. I

am obsessed with catching sheepshead, and here in New Jersey, we have very little data about these fish. Chase was fine with me spending just a bit of the resources on my "side project."

This spring, I invited Wunder to attend a meeting at a local kayak fishing club. His presentation was well-received, and several members became volunteers. We organized a few outings during which Rutgers University students and the volunteer kayak anglers worked together catching and tagging fluke in one of the many creeks that spill into Great Bay.

Tagging with T-bars is simple. Once an angler becomes proficient with the process, it takes less than a minute to measure the fish, insert the tag, and release the fish. Conversely, implanting acoustic tags should be performed only by those who have been properly trained.



Nearly 150 summer flounder have been tagged with acoustic transmitters which act like an E-Z Pass, monitoring a fluke's movements through New Jersey's waters.



The author has tagged several sheephead, hoping to add some data about this species in New Jersey.


“Volunteer tagging programs can be a cost-effective way to study fish movement patterns, while also strengthening relationships between researchers and local anglers” explains Wunder. “Since the program’s inception in 2022, over 2,500 summer flounder have been tagged by volunteer anglers jigging the back bays, surf, and offshore wrecks. Recapture rates have increased annually, with a 5.7% tag recovery rate in 2024. Most recaptures occur during the recreational season when there is a high concentration of fishing effort in the back bays. On multiple occasions in Avalon and Great Bay, program members have released a tagged fish only for it to be caught as soon as 45 minutes after release or the next day (sometimes in the same location). Some summer flounder have demonstrated “homing” and have been recaptured the following year in the same bay, occasionally within a quarter-mile of the release point. On average, data has shown a 2- to 3-inch growth rate in sub-legal summer flounder between years. While weeding through shorts can be frustrating, the 16-inch fish released the previous year could return to the same backwaters next spring legal for harvest.”

External conventional tagging, while cost effective, has its limitations. Data collection relies on the tagged fish to be recaptured and reported. It is known where the fish was at the time of release

and recapture, but the timing and path of movement in between is unknown. To fill in these data gaps, Chase and the Director of RUMFS, Dr. Thomas “Motz” Grothues, are tagging and tracking fluke with electronic acoustic transmitter tags. Acoustic telemetry works like the E-ZPass system on the highways. Acoustic receivers, or hydrophones, that have approximately a 500-meter detection range are deployed as gates in locations of interest to monitor fish passage. As the tagged fish swims by an acoustic receiver, the date, time, and unique tag ID number are recorded and stored within the acoustic receiver for later download. This research is highly collaborative and involves local recreational and commercial anglers, angling clubs, regional biologists, and partnering institutions. To date, 145 summer flounder have been tagged with acoustic transmitters throughout New Jersey estuaries and offshore ocean.

Data is currently being analyzed to examine the timing of estuary entrance, departure, annual residency, and their relationship to seasonal environmental factors. Chase shared that “summer flounder generally display east to west movement patterns. Acoustically-tagged fish make their way into the back bays as early as March, and most tagged fish migrate out the bays between August and October toward offshore spawning grounds. While in

the back bays, fluke have been observed as highly mobile, following the Intracoastal Waterway (ICW) between Great Bay and Barnegat Bay or localized and actively recording detections in the same hole for over 3 months. We have also seen a select few fish exhibit movements that leave you scratching your head. One flounder departed the back bays of Avalon in August, traveled over 25 miles offshore, returned to Avalon in November, and then moved 20 miles offshore in December. Less than 3% of fish tagged offshore from 2022 to 2024 have entered the back bays, potentially suggesting there are separate subpopulations of ocean and bay summer flounder.”

It is not a secret that summer flounder have a significant economic impact in many states. Fluke fishing is as synonymous with New Jersey as a pork roll sandwich (not Taylor Ham!). Gathering and analyzing accurate data is imperative as it helps shape the future management of the fishery. Restrictive regulations based on limited or poor-quality data will result in a negative impact on anglers, charter captains, tackle shops, bait suppliers, etc. So, please consider helping scientists with programs like FiTREP. Become a volunteer. Report tagged fish. There is no cooler feeling than learning more about a fish you tagged when it is recaptured. 

Chase Wunder, MS, contributed to this article.