

THE APPLIANCE OF SCIENCE

Where did the adult bass you catch grow up? A new partnership between scientists and anglers needs your help to answer this important question for the future of bass management

Since its formation, 50 years ago, BASS has been involved in a number of scientific research projects to help us understand more about how and where bass live. Our members have undertaken juvenile bass surveys, adult bass tagging studies and collected thousands of bass scales and length recordings to help determine growth rates and maturity ages.

We are currently assisting Plymouth, Portsmouth and Essex Universities in bass-related studies which have mainly been funded by the Fishing Industry Science Partnership (FISP) grant scheme. One question we were particularly intrigued to find the answer to was where the bass you catch grow up, and we were approached by the team at the University of Essex who were looking for the answer to this question too.

Where the bass you catch around the UK grow up is one of the big questions we hope to answer with a pair of new grants that were recently secured to study connectivity across UK (sea) bass populations.

Baby bass are often found in shallow estuary waters, hiding amongst the murky muddy shores of creeks and hiding from predators in the complex channels of saltmarshes and shallow bays. These juveniles will, in a few short years, be the shining bars of silver that grab hold of your lure, fly or bait.

One of the mysteries of its life journey that we are hoping to answer is where that landed adult fish was born and where it grew up: was it spawned directly offshore, with the newly hatched larvae being carried passively into the estuary by the tidal movements? Does offshore spawning encourage movement further down the coastline; the eggs and larvae being swept along by coastal currents before catching a tide into different estuaries? And does this therefore result in one big population, or a series of smaller linked populations separated across European waters?



Joe Dawson, one of the researchers on this project, doing what he loves: catching a bass



Ultimately, we want to know if the timing and location of spawning result in differences in where the larvae end up in a given year. Answers to these questions will help with bass management. If we can understand the connection between adult spawning and feeding areas and juvenile nursery grounds, we can target management to protect the most "successful" nursery areas, that are perhaps over-represented in the adult population.

We can also investigate what's common about those nursery areas and if we can manage and restore "underperforming" creeks and estuaries to help increase the growth and survival of their juvenile bass inhabitants.

By combining genetics and natural tags (chemical markers in fish earstones – otoliths – and eye lenses) we hope to tackle these questions. To do this we sample low numbers of juvenile bass from different nursery areas each year to build up an annual tissue archive which acts as a reference library of each nursery ground.

Our next phase is to sample the adults to look at how similar their genetics, otolith and eye lens chemistries are to those 'fingerprints' we see among the juveniles from nursery areas, near and far. By combining these approaches, we can work out if mixing is local, or very broad – creating a few isolated populations, or one larger very well-connected population.

SUPPER FOR SCIENCE

And this is where you come in. This grant was written in collaboration with the Bass Anglers' Sportfishing Society. It would be great to have the widest sampling of UK bass possible, and we therefore want to work with recreational sea anglers all across the UK to do this.

Our proposal is "supper for science". If you are keeping a seabass for consumption between March and November, we would be very grateful if you could place the head into a bag and save it in your freezer.

If we were just working on genetic markers, we could ask you to keep a much smaller part of the fish: a piece of fin, for example. But contained within the head of a fish is so much other information – those ear bones and eyes contain lifetime records of natural chemical tags that give us clues about the water the fish lived in and the food that it ate. Collectively, these help us reconstruct the lifetime journey of the fish. While the genetics data helps us determine how similar fish from different areas are, the chemistry of the ear bone and eye lens layers can help us reconstruct when that adult fish moved offshore, whether they started life in France but were an adult off Bournemouth, or were a teenager in Kent but an adult in The Wash. ■

If you are interested in joining this initiative please email seabasstastic@gmail.com and we will add you to our mailing list and send out sample bags.

We will be coordinating pick up sites around the UK, hopefully with a "bass roadshow" to pick them all up or can facilitate the posting of the sample back to us here in Essex. Ideas for pick up locations are welcome, such as local angling clubs.

No single group or club covers the whole of the UK, with local branch premises to coordinate pickups, so we are hoping we can all work together and our whole will be greater than the parts. Any help you can offer, please get in contact.

Thanks to the team at BASS. This article first appeared in issue 177 of the BASS magazine.

