

## **Bangor University, Fisheries and Conservation Group**

### **Our scientific programme on bass and other fish: a personal perspective by Michel Kaiser**

#### **What is the use of science?**

Fisheries science is all about understanding how populations respond to harvesting, hence if a fish stock is healthy, then it is conserved. In our approach to fisheries management we also have to understand how fisheries impact other parts of the ecosystem such as the fishes' habitat. We have a long track record in understanding how fishing affects seabed habitats and this has led to significant changes in policies around the UK. This approach fits very well with the 'Striking the Balance' document produced by the Welsh Fishermen's Association.

The other key aspect of fisheries science is that we deal with 'evidence'. Indeed controversies abound due to a poor or distorted use of evidence or the portrayal of opinion as fact. Once a scientist steps over this line then he/she has undermined their credibility.

Although much of our research is focused on commercial fisheries, we have published a number of science studies using sea angling data, two stand out. Back in 2006 we published some work on the community supported Inshore Potting Agreement in Start Bay, Devon. This is a gear restriction management area that means that only static gear and angling are allowed in certain areas of the sea, while other areas rotate between static and towed fishing gears. Our research showed that individual specimens of some species of fish reported by anglers were much larger in the vicinity of this area than other outlying areas. However not all species were conferred protection, thus while spotted ray and dab got bigger, blonde rays did not. In the same year we published another study showing how angling data provides a powerful indicator of fish stock health that tracked fisheries surveys. This study shows the really useful potential of using angling data to inform fisheries science on stock status.

(for a list of all publications see

<http://www.bangor.ac.uk/oceansciences/research/php/publications.php?person=0002>).

#### **What are we doing in Wales?**

At present we are involved in a project that seeks to provide the science to underpin sustainable marine fisheries in Wales. To date Wales has been overlooked in comparison to other UK areas and the science has been ad hoc at best. Our challenge is to put in place scientific monitoring, in close cooperation with fishers, to give the Welsh Government much better insights into the state of the stocks in Wales and how best to manage them. One of the species highlighted for action is bass. Bass are important both to recreational anglers and commercial fishers, however a paucity of information collected on a regular basis has undoubtedly led to recreational and commercial fishing being undervalued in Wales. Understanding the value of fishing is important when Government make choices about investment into services that might enhance the fishing experience and profitability (e.g. better launch facilities, surveillance of illegal fishing in all sectors etc). To that end we are undertaking an economic survey of all areas of fishing in Wales to understand much more precisely how sea fishing in all its forms contributes to the wider economy. At present our main focus is on bass but we will include other species such as rays and other elasmobranchs (e.g. tope and smooth hounds) later in the project.

## **How does better information in Wales affect the European dimension?**

With devolution comes the responsibility to manage the fish stocks in your own waters, it also gives the Welsh Government a voice at an international level regarding activities that might impact fish in home waters. We know at present that the vast majority of bass spawn in the English Channel where the French account for 80% of commercial landings from commercial fishing vessels. There are probably other spawning areas and identifying those is a priority for us. If we can find local spawning aggregations we may have locally adapted fish that could be considered a local stock and hence managed at that level. Understanding the contribution of the English Channel bass to the bass we see in Wales is important because the Welsh Government can make a case for the needs of Welsh recreational and commercial fisheries to be taken into account in any negotiations about potential management. However without the scientific evidence none of this is possible. To identify these spawning areas we need to collect guts with the sex organs of fish to ascertain their maturity stage (e.g. ripe) and genetic samples (fin clips) to understand population structure across Europe (this is through a large EU funded project).

## **What are we trying to achieve?**

We need to know how much is caught in which area and by whom (e.g. recreational or commercial sector). Second we need to understand population structure (the number of older and younger fish, and their size) which will give some insights into population health. To do this we are collecting scales from fish across Wales and from fish processors. ICES attempted the first stock assessment of bass this year but failed due to uncertainties in the data, however all the indicators suggest that the spawning stock biomass is on a steeply declining trajectory. This is not surprising given there are no controls on the amount of bass currently caught as this is a non-quota species. We also want to understand the recruitment of bass into nursery areas (e.g. estuaries) and set up a long term monitoring programme that will provide a recruitment index and an insight into future populations. The last few years have seen poor recruitment in Welsh waters based on our conversations with the NRW (former EA in Wales), and this year seems to be following that pattern based on a recent survey we undertook in estuaries around Wales.

## **Who are we working with?**

We are working with all and any fishermen that will participate in our study, we have asked various organisations (like WFA, BASS and the WFSA) to publicise what we are doing to extend our outreach, but the project is entirely independent reporting to a stakeholder panel made up of angling representation, commercial fishers, and Government bodies.

## **What do we do with data from individual fishers?**

Information provided to us is treated with the highest level of confidentiality, indeed we have gone to great lengths to protect all fishermen from malicious freedom of information requests. We are interested in general population trends and not 'where is the best place to catch 10 lb bass?'. If we show data in a mapped form it will be aggregated to large scales, demarcated by biological boundaries imposed by the environment (e.g. seawater temperature). Thus we might show graphs that display the age distribution of all fish caught from for example, the LLŷn Peninsula. What we won't show are all the bass caught by Mike Kaiser in 2013 at Menai Bridge.....which would be a big

fat zero so far! We will report aggregated commercial and recreational data separately, but that is because we might expect there to be a big difference in the age groups targeted by these two groups and this may have important implications for understanding which fish are vulnerable to different types of fishing at different stages of their life history.

### **Why work with us?**

This is your opportunity to contribute knowledge where currently there is a major gap. Why should you care? Without a better understanding of the status of bass and other fish like rays in Welsh waters it will be impossible for the Welsh Government to engage in helping all sectors of the fishing community improve the sustainability of fishing into the future. In the past a lack of data tended to work in the fisherman's favour, but these days there is a growing need to provide evidence of the impact of our activities on the marine environment to be able to continue pursuing our hobby or livelihood, for which we need your help.