



March 2014

Please keep checking our website for our latest reports and all the publications and presentations we have completed to date.

The most recent report available on the website is:

- Welsh waters scallop survey – Cardigan Bay to Liverpool Bay July-August 2013

Visit: <http://fisheries-conservation.bangor.ac.uk> and choose 'Welsh Fisheries' – 'Reports'. Or link to the latest reports via our homepage (top right). The website contains photos and videos of our work. Join our Facebook page for more: <https://www.facebook.com/fisheriesconservation>. You can also follow us on twitter: @Fisheriesbangor.



Scallops

The fishing intensity trial

The fishing intensity trial pre-surveys are now underway. The RV Prince Madog is currently in Cardigan Bay carrying out habitat assessments prior to the start of fishing trials. We have 5 vessels taking part in the study, assisting in an experimental investigation to determine the effects of different levels of scallop fishing intensity on seabed organisms and habitat in the Cardigan Bay Special Area of Conservation (SAC). Thanks to all those who showed interest.

Ultimately we seek to be able to advise the Welsh Government and the fishing industry on potential sustainable levels of scallop fishing activity that might be permitted in this area.

The experiment has begun and is being carried out in pre-defined areas of Cardigan Bay. The amount of fishing undertaken by each vessel is being directed by the Fisheries and Conservation Group. The experimental fishing has been taking place since the 1st of April and is due to continue until the 30th of April 2014. The proposed location of the experiment is a scallop ground that has been closed to fishing activities for almost 5 years.



RV Prince Madog leaving the Menai Straits for Cardigan Bay for the start of the fishing intensity trial

Fisher questionnaire

The fishers' knowledge questionnaire is currently being conducted with fishers across Wales and will continue into the spring and summer. So far 59 questionnaires have been completed; 28 in North Wales, 10 in Mid Wales, and 21 in South Wales. We hope to have the majority of the questionnaires completed by the end of summer 2014 and can move onto the analysis stage. We are looking to schedule interviews with fishers, so if you are interested please contact Julia (j.pantin@bangor.ac.uk).

You can also register on our website (just click on the 'Get Involved' link at <http://fisheries-conservation.bangor.ac.uk>)

This questionnaire is vitally important as it will identify those areas of the coast that are most important to fishers, provide a portfolio of independent evidence for the fishing industry to use going forward, and inform our understanding of the biology of the commercially important species in Wales.

Habitat mapping with the Flying array



The flying array (left) and the camera sled (right) used for habitat surveys

Soon we will be looking at a cost / benefit analysis using various methods of sampling for benthic habitat bio-typing. In other words: if you want to know what kind of habitat is on the bottom of the sea; we can identify which method would be the best for a specific job and budget (divers, a flying video array or a video sled). We will be collecting data on benthic habitat type and complexity and also species diversity; Seasearch divers will collect dive based information and local fishermen will work with our researchers to deploy video equipment. These methods will be assessed, compared and contrasted to highlight the strengths and most appropriate use of each method.



Crustacea

Lobster Escape Hatch Study

Field work for the lobster escape hatch study in Cardigan Bay will continue this summer when gear has been replaced and lobsters are active. This work will explore the catch abundance and size structure from pots with small, large or no lobster escape hatches, as well as the by catch composition and differences in sorting time.

To complement this field work, a camera system is currently being built which will allow filming of the inside of a lobster pot. Deployment of this camera system is planned for May and August 2014. We hope to address the following questions:

1. Are undersized target species and by catch species using the escape gaps?
2. What percentages of individuals entering a pot are actually caught?
3. Is cannibalism occurring on undersized target species in pots without escape gaps?

Lobster Reproduction

The work undertaken last summer on lobster size at maturity has provided some baseline data and a protocol for data collection. However the sample sizes are currently too small for accurate analyses and therefore we will be adding to the data this spring/summer. We are looking for fishers from the whole of Wales to participate in this study. You will be required to take a researcher to sea on approximately four occasions to measure the size of the lobsters, the number which are berried and, for any females that are not berried, a pleopod (small swimming leg) will be sampled to allow for cement gland staging in the laboratory. Cement glands are found in the pleopods and swell up when a female is due to extrude eggs. The cement is used to fix the eggs to her abdomen.

In addition we will be sampling whole egg masses from approximately 50 lobsters from four sites around Wales (200 lobsters in total). The carapace length of the lobster will be measured, the number of eggs will be counted, the average size of eggs measured and the egg quality investigated. Anyone interested in this study should contact Natalie: n.hold@bangor.ac.uk; 07903762466

Brown crab



Juvenile brown crab, *Cancer pagurus*

The Size at Maturity research is currently on hold until this November/December 2014 so that we can assess the population when they are breeding. To determine if there are regional differences in size at maturity we will assess the reproductive state of both males and females from Scotland, England, Wales, Ireland and the Isle of Man. We currently have representatives from these countries that are all eager to contribute to this very broad scale study and so we're all excited about getting started.

For adult brown crab we are looking at the patterns in sex ratio and size structure of landings. To do this we are sampling crabs and lobsters from processors around Wales. As landings are reported in weight only it is helpful to understand what sizes, sexes and moult stages are landed throughout the year. We are also doing on-board sampling with the on-board camera system and the more traditional method of on-board observers.

Crabs, prawns and whelks

We are close to completing our lab analysis for adult crabs and whelks and have started on the prawn samples. Here in this photo the lab is bustling with Gemma Rayner (left) looking at brown crab fecundity, Jen Fox and Matthew Kings (middle) processing whelk samples and Kayla Williams and Niamh Ryan (right) processing Cardigan Bay prawn samples.



A busy lab – (Left to right) Gemma Rayner, Jen Fox, Matthew King, Kayla Williams and Niamh Ryan

Whelks

We have completed our tag retention study trialling different tagging methods and now we are getting ready for summer when two new masters students, Georgia Robson and Zara Turtle, join our team to assess local abundance of whelks using mark recapture methods. They will be assessing local abundance of whelks and population structure in both Swansea and North Wales.

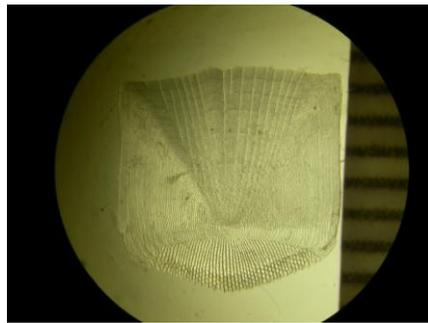


Finfish

Sea bass

More than 1300 fish have been sampled so far. We have started the analysis of the scales to age the fish and for the stable isotope analysis. A total of 600 fish have been aged and growth curve and other biological parameters have been estimated. Sections of each scale, from fish caught in 8 specific areas around Wales have also been prepared for stable isotope analysis and sent off for analysis. The first results should be available by June. This analysis will give us an insight into the site fidelity of bass on feeding grounds and possible migration patterns.

We are constantly collecting samples of ripe and running bass from fishers and processing industries. These data will allow the size at maturity to be determined; Many thanks to all those who have collaborated with us so far. **Please get in contact with Giulia Cambiè** (g.cambie@bangor.ac.uk) if you can provide bass samples (scales and gonads).



Bass scale recorded by our student Tom Overy.

