



August + September 2013

It has been a busy summer of sampling and we are beginning to get some preliminary reports together. Please keep checking our website for these and visit the reports section for all our reports, publications and presentations we have completed to date.

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, and join our Facebook page for more: <https://www.facebook.com/fisheriesconservation>. You can also follow us on twitter: @Fisheriesbangor.

Sea 2 Shore Festival – Aberystwyth

On 17th August, the "Sustainable Fisheries Resources in Welsh Waters" group took part in the Sea 2 Shore Festival in Aberystwyth. This festival celebrated the many resources the sea and shores of Cardigan Bay have to offer, and included cooking and fishing demonstrations, children's activities, live animals, and craft, food, music and information stalls. Our project had a stall displaying our different data collection equipment, videos of our underwater cameras in action, and a variety of informative materials explaining our project. Even though it was wet and windy, plenty of people came to check out the festival and we talked to many very interested people at our stall. It was a really great day and we hope to participate again next year.

Menai Seafood Festival



On 31st August, the first Menai Bridge Seafood Festival took place. We had a stand here and again it was a really busy day and thanks to everyone who visited our stall.

Fisher questionnaire

The fishers' knowledge questionnaire is underway with the first interviews already carried out. We are still looking to schedule fishers for interviews. **Please spread the word and contact Julia if there is anything you would like us to know about Welsh fisheries! *This questionnaire is vitally important as it will identify those areas of the coast that are most important to fishermen, it will provide a portfolio of independent evidence for the fishing industry to use going forward (e.g.***

when confronted with renewable developments), and will inform our understanding of the biology of the commercially important species in Wales.

Email – j.pantin@bangor.ac.uk, or you can register on our website – just click on the ‘Get involved’ link at: <http://fisheries-conservation.bangor.ac.uk>

Economic interviews

The economic interviews are underway with 10 completed so far. Thanks to all those fishers who have given up their time to help. **Please get involved and contact g.cambie@bangor.ac.uk. Remember this survey is important because it will address the current undervaluation of the value of commercial fisheries to the Welsh economy and hence bring fisheries issues higher up the agenda.**



Scallops

The scallop stock assessment survey has been completed. A summary of the initial results can be found in the interim report online. Go to <http://fisheries-conservation.bangor.ac.uk>, click “Welsh fisheries” and then “Reports”. The report is entitled “Welsh scallop stock assessment survey July-August 2013: feedback to industry”. All the information collected on scallop abundance, biomass, size, age and maturity, as well as information on by catches, will be processed in the coming months and an extensive report comparing data from 2012 and 2013 will be published by the end of the year. This will hopefully be the beginning of a very useful time series which will allow us to assess the status of the stock available to the fishery and provide the invaluable evidence needed for the Welsh industry and the Welsh Government to discuss sustainable management plans in the future where and if needed.

A new ICES Scallop Stock Assessment Working Group has been formed this year, and we have attended the first meeting during the first week of September. The group intends to compare the methods used by scientists from different European countries in terms of conducting stock assessment and advising the scallop fishery. Scientists from France, England, Scotland, Ireland, Northern Ireland, Isle of Man, Wales, Iceland and the United States got together for 4 days and shared their experience. A report will be sent to the ICES in February 2014 and will be made available to the public. It will include the terms of references of the group and a summary presenting the different stock units around Europe. There is no implication of the work conducted by this group for the Welsh fishery at this stage, as there is no advice to be given at the European level. The group is a platform for experts to share experience, make informed decisions in terms of data collection and, in the long run, get comparable outputs between stocks which could inform management decisions where and when needed.

The fishing intensity trial, aimed at finding a sustainable fishing effort in Cardigan Bay, in terms of habitat impact, has been postponed until April 2014 for logistical reasons. Welsh Fisherman's Association (WFA), Welsh Government, the Fisheries and Conservation Science Group of Bangor University, Natural Resources Wales (NRW) and Seafish will get together in October and discuss related issues to move forward. The industry will be updated on progress and possibilities of involvement as soon as possible after the meeting.

The software for the fishers' questionnaire is ready and some interviews have already been conducted, and scallop fishermen will be contacted very soon. Briefly, the questionnaire is focusing on gathering fishers' extensive knowledge on Welsh scallop stocks, their fluctuation and some ecological and environmental information. All this evidence will belong to the scallop fishing industry (although no personal commercially sensitive data will be shared) and will help inform stock assessments and any other industry related issues (zones with conflict of interest between various stakeholders, impact on habitats etc.).

Please contact **Gwladys**, g.lambert@bangor.ac.uk or 01248 388472, if you wish to participate (or contact Julia as mentioned above).



Crustacea

Juvenile crustacean survey



Juvenile brown crab (*Cancer pagurus*), and European lobster (*Homarus gammarus*) caught in our experimental pots.

We have been using D-shaped prawn pots to catch juvenile crab and lobster. We are hoping to identify the type of habitat used by these animals and to devise an abundance index that can be used to monitor the population. We are piloting this survey in North Wales as it requires the pots to be lifted every 2-3 days. Once we have the method developed we will then roll this out across Wales to see if there are any regional differences. This is very much an experimental survey at this point and we are trying potting in many different locations. If anyone has any suggestions or can show us a good area to catch small lobsters or crabs we would be very interested in hearing from you. It has been mentioned that prawn fishers may be able to help us with this – the smaller the better!

We have been using a drop down camera system to identify the habitats where the pots are set. Please visit our webpage and go to 'Videos & Images' in the menu (<http://fisheries-conservation.bangor.ac.uk/vidimg.php.en>) or follow the link in the 'Latest News' on the home page to see some footage.

Please contact:

Natalie Hold n.hold@bangor.ac.uk : 07903 762466

Jodie Haig j.haig@bangor.ac.uk : 07593 635348

Lobster tagging

The lobster tagging program has been getting underway this summer. We have been looking at survival of lobsters after tagging in our aquariums here at the university. They were tagged in May and all 13 lobsters are still doing well in our tanks. We will be expanding this survival study to include undersized lobsters once we have dispensation from the Welsh Government. In addition we have had one lobster go through a moult in the tanks and successfully retain his tag. We will continue to keep the lobsters in tanks to ensure long-term survival is good.

Out at sea we have tagged approximately 700 lobsters. We have had a really good recapture rate so far. For example Brett Garner on the Llŷn Peninsula has tagged nearly 350 lobsters and catches 5 to 10 tagged lobsters every time he goes out fishing. To date he has re-caught nearly 50 lobsters. The number of re-captures has reduced a little recently which we think could be due to them moulting. On previous fishing trips we caught lobsters that were showing signs that they were preparing to moult. Hopefully in a few weeks, when they have had time to harden up, we will see our first growth data. To date the re-captured lobsters have generally moved very little, only a few tens of metres. We will continue to plot the movement data and see if this pattern changes at different times of the year or with different size lobsters.

Thank you to all those fishers who have helped with the tagging and we will be continuing to tag with those fishers who we haven't managed to get out with yet.

Lobster size at maturity

We have had a Masters student helping us with determining lobster size at maturity. She has been collecting data from lobsters caught on the Llŷn Peninsula and in Pembrokeshire to compare maturity in north and south Wales. The first method used was to look at the size at onset of maturity. This looks at the smallest size that lobsters are likely to be mature and methods include looking at body shape; abdomen width in females and crusher claw shape in males. In addition we looked at the size of female lobsters that are carrying eggs to calculate the smallest size and the average size at which lobsters carry eggs. Finally we have been looking at cement glands in females. These glands secrete the cement that holds the eggs to the females abdomen and legs and the appearance under a microscope changes with maturity. The final data collection was finished the first week in September and we are now starting to analyse the results with a report due mid-October.

Lobster Moulting



The computer screen shows the image of a lobster pleopod taken using a USB microscope camera for analysis.

A Masters student has been looking at the moult cycle in lobsters. We are hoping to see what proportion of the population moults once compared to twice. This will be combined with the growth data to model the growth of the population. With the cold start to the season it was very difficult to catch lobsters in May when we were expecting the first moult. Since then however we have analysed 1000 lobsters from north and south wales. We have looked at a section of the swimming leg under the microscope to see how the epidermis/skin of the lobster pulls back away from the inside of the shell when it approaches the moult. The sample collection was finished the first week in September and data analysis is now underway with a report due in mid-October.

Lobster Escape Hatch Study in Cardigan Bay

From 18th to 23rd August, Julia spent a week in Cardigan Bay setting up on-board camera systems on three of the four boats involved in the lobster escape hatch study. She also went out for a fishing day with two of the fishers to take measurements and ensure the on-board camera protocol worked for the fishers. Initial videos have been recorded and are currently being analysed in order to validate the on-board camera system. The fishers have begun fishing with the escape hatch pots; however, poor weather has resulted in few fishing days and consequently a slow start to data collection. The fourth on-board camera system is currently being built and will be set-up as soon as it is finished.

Thanks to all those involved!



On-board camera

There is an on-board camera update bulletin now available in the 'Latest News' section on the homepage of our website. Please visit:

<http://fisheries-conservation.bangor.ac.uk>

Monthly Shellfish Returns

We have entered the monthly shellfish return data from a few fishers who have sent us their triplicate copy. We are in the process of getting a summary report with graphs back to those individuals. However, we understand that Welsh Government have now employed someone to enter this data both from their archives and going forwards. We will be looking into how we can share that data rather than repeating work, so for the time being we will not need any other fishers to send us their return triplicates.

For any information on lobster research please contact **Natalie Hold**: n.hold@bangor.ac.uk.

Brown crab



Juvenile brown crab, *Cancer pagurus*.

Masters students have been monitoring populations of juvenile brown crabs from Anglesey and the Pembrokeshire coasts all summer and are now writing their theses. The reports will be available soon! This month we went on a crab-identifying trip with Bethan Wyn Jones from the Daily Post. As it is illegal to take undersized brown crab we must allow these little guys a chance to grow up and contribute to the next generation (and also provide you with some good dinner!). Teach your friends and family how to spot the difference between brown crabs and other crabs (brown crabs have that "pie crust" edge and black tipped pincers) and that protecting these little guys on the shore is in everyone's best interest.

Visit our website to see the full article in the Daily Post. Visit the homepage and follow links from the 'Latest News' or choose 'Welsh fisheries' – 'Reports' and scroll down to find 'Press releases':

<http://fisheries-conservation.bangor.ac.uk/documents/Dailypostarticle-crabsSept13.pdf>

Prawns



Palaemon serratus, in the laboratory.

Masters students have been sampling prawn populations all summer from around Anglesey and Pembrokeshire Coasts and are currently writing their theses. The reports will be available soon! For a sneak peek the Pembrokeshire Coast report is already available on our website.

Breaking news: The Cardigan Bay Fisherman's Association (CBFA), with the help of the Fisheries and Conservation Science team, will soon be on an exciting journey to Marine Stewardship Council (MSC) Accreditation for the Cardigan Bay Palaemon Fishery. We anticipate that for the next 24 months we will help collect the necessary data required to apply for MSC status. This process will not go ahead without the extensive consultation with the industry so, if you're a prawn fisher in Cardigan Bay, stay tuned for upcoming meetings, you'll hear from us soon. MSC accreditation means fair and stable prices for the fishers; a traceable sustainable product and a future fishery for prawns are ensured. Stay tuned for updates from the CBFA and us!

We are looking for fishers to participate in the winter prawn fishery sampling. This sampling will provide valuable information about the fishery and will be used to understand fluctuations in catch and to provide a better understanding of the health of the fishery across Wales. If you would like to fish two scientific pots for us please get in touch with Jodie: j.haig@bangor.ac.uk. Jodie will come and visit you once a month to collect samples, for the rest of the time you are free to fish the scientific pots as you like.



Finfish

Recruitment index

We have been out looking for the influx of the juvenile (<1 year age group) sea bass entering the estuaries around Wales. This is to assess the abundance of bass recruiting to the area so we can start developing a recruitment index. We sample using a micromesh seine net. We have netted in Conwy Estuary, Foryd Bay (Caernarfon Bay), Malltraeth Sands, Porthmadog, Fairbourne, Tywyn, Aberdovey (2 sites), Milford Estuary, Swansea Bay, Loughor. The only recruits (juvenile bass) we have found were in the south (Swansea Bay and Loughor), suggesting 2013 is a poor recruitment year.

Fishers and fish merchants

We have continued data collection from fishers and fish merchants to collect sea bass gonad samples, to assess the maturity and male: female ratio of bass. The first short report on bass length frequency distribution and length-weight relationship has been completed and is available on our webpage: <http://fisheries-conservation.bangor.ac.uk/>. Visit the home page and follow the links from the 'Latest News' section to Report 26.

Many thanks to all the fishers involved and to the merchants we have worked with so far; Tucker's Fresh Fish and Coakely-Greene Fishmongers in Swansea Market, Gills's Plaice in Tywyn, Chris Davies from Welsh Seafoods in Milford Haven docks, Owen Davies from Channel Fish in Burry Port, Debbie & Paul from Swansea Fish, and all the kind people from Mermaids Seafoods in Llandudno.

If you are a fisher targeting sea bass or a merchant and would like to get involved then please get in touch. We will not interfere with any work, we just need a corner where we can measure bass, take a small fin clip, a few scales and where possible take gut and gonad samples.

For all projects related to sea bass please contact: g.cambie@bangor.ac.uk

Whelks

Whelks from around Wales are being processed in the lab and we are continuing to get some very interesting data (which we are already starting to feedback to the fishers who are involved). We hope to continue the fishing through winter even though catches are lower, it will be important to determine annual trends in movement and activity. These samples are also important for a whelk ageing project starting in the new year.



Y Gronfa Pysgodfeydd Ewropeaidd:
Buddsoddi mewn Pysgodfeydd Cynaliadwy
European Fisheries Fund:
Investing in Sustainable Fisheries



Llywodraeth Cymru
Welsh Government