



June 2014

## Seafood Festivals



In June, the EFF team attended the “Taste of the Sea” festival in Aberdaron and the Pembrokeshire Fish Week in Milford Haven. We had a great time at both festivals (despite the torrential rain in Milford Haven) telling people all about the exciting work we’ve been doing. Check out our photos on Facebook and Twitter (<https://www.facebook.com/fisheriesconservation>). We have two more festivals we will be attending and we hope to see you there!

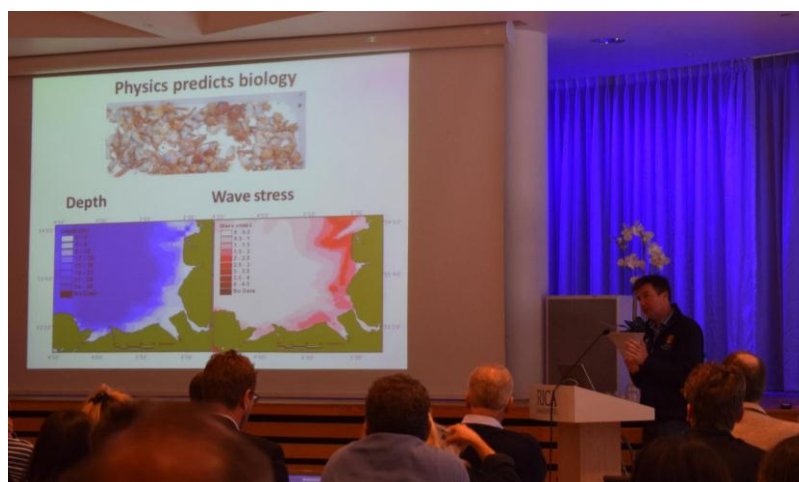
August 16, 2014 – Sea 2 Shore Festival in Aberystwyth

August 30, 2014 – Menai Seafood Festival in Menai Bridge (<http://www.menaiseafoodfestival.com/>)

We’ll be talking about all the different research we are doing, displaying the research equipment and fishing gear we use, and showing underwater videos we have taken.

Hope to see you there!

## ICES Symposium on the impact of fishing, Tromso, Norway



Michel Kaiser delivering a keynote speech at the ICES Symposium on fishing impacts, in Tromso

Michel Kaiser delivered a keynote speech and Gwladys Lambert presented her research on 'Quantifying recovery rates of seabed habitats after fishing', at the ICES Symposium in Tromso. Over the 3 day conference attended by over 100 international experts in the field of marine fisheries ecology, Bangor University's Jan Hiddink, Marija Sciberras and Claire Catherall gave presentations that covered benthic fishing impacts in habitats from the North Sea, Irish Sea and the English Channel, and Kath Hughes discussed the methodology, and pros and cons of meta-analysis and systematic reviews.

### Fisher questionnaire

The fishers' knowledge questionnaire is still in progress with fishers across Wales and will continue into the summer. So far 61 questionnaires have been completed; 29 in North Wales, 11 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](mailto: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.***

### Economic interviews

The analysis of the economic interviews has started and the identification of the fleet segments from a technical and economic point of view is under assessment. All the analysis will be based on the

information of the economic structure collected during the interviews, with a total of 56 vessels recorded. Thanks again to all fishers involved in this survey.

### Whelks



**Whelks tagged and ready to be returned to the sea; Whelks climbing out of the bucket, obviously they couldn't wait to be tagged!**

Our two MSc students have begun work. They have been out with Jodie tagging whelks in north and south Wales. We will be estimating local abundances and the short term movement of whelks. We are using thick elastic bands (a method found to be most reliable over short term studies) for tagging. The two students currently have a second tag retention study underway assessing the bands we will use and another experiment looking at post-tagging behaviour.



**Tagging was so much fun even the skipper Nigel had to get involved.**

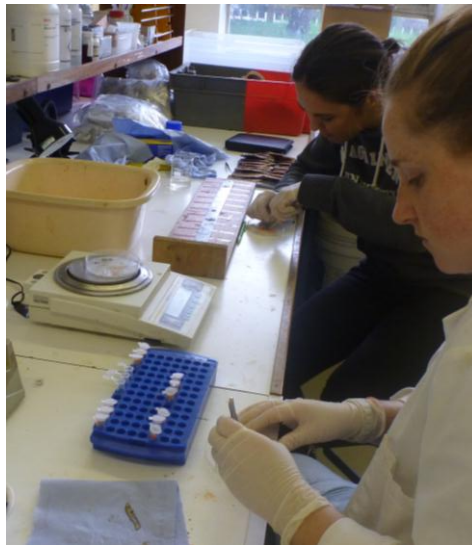


### Scallops

#### **Experimental fishery**

The data analyses are in progress for the experimental fishing trial. Fishing effort in each experimental box has been mapped and quantified. The pictures of the seabed taken during the post experimental survey in May have been analysed (i.e. species identified and counted, sediment type categorised). The tender document for the grab sample analyses, which will be conducted by a third party, has been drafted and will go out shortly.

## Summer sampling



**Babette Bookelar and Jen Fox processing scallops in the lab**

Sampling of the King scallop, *Pecten maximus*, across the summer is going well with 216 scallops processed so far. We are beginning to build up a picture of scallop spawning times in areas north of Anglesey, Liverpool Bay and Caernarfon Bay. Processing involves measuring, aging, and weighing scallops, as well as taking tissue samples for genetics, gonad samples for fecundity studies and staging the gonads to find out what state of maturity they are in. Many thanks to all fishers involved!



## Finfish

### Sea bass



**Jennifer Fox, Gala González and Abigail Carroll processing sea bass**

The data collection for this year's spawning season (November 2013-April 2014) has ended with around 220 bass analysed. Interestingly the peak of the spawning season 2013-2014 was in March,



when the gonad-somatic index was high for both males and females. We are producing a guide to help classify the correct maturity stage of bass based on our pictures of the gonads and on biological parameters (e.g. length of gonads/length of fish, weight of gonads/weight of fish).

Finally, after a year, we have started to collect some biological information on fish caught in Mid Wales. Huge thanks to our fisherman involved!

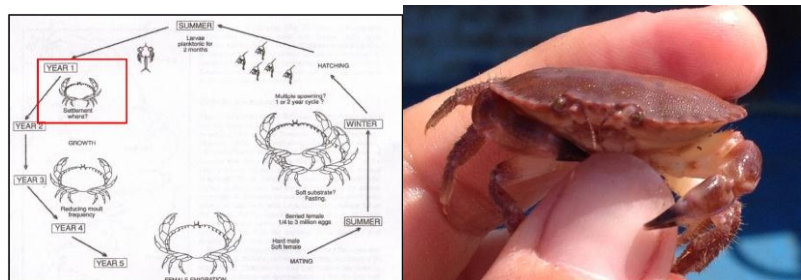
New students and assistants have joined our “bass group”. Welcome to Abigail Jane Carroll, our Masters student looking at the population dynamics of bass around Wales. We also have 2 new internship students, Charles William Key and Anna Selbmann. Charles will focus his internship on bass recruitment and the characterization of the species composition in the estuaries around Wales. Anna will work on various research projects, including the analysis of bass scales and other laboratory work. Finally welcome to Gala González, our Erasmus student from Malaga (Spain). She will stay with us for three months and will help in all the field and lab work.

Many thanks to all the bass fishermen involved that have provided samples from around Wales!



## Crustacea

### Brown crab



**Juvenile brown crab, *Cancer pagurus*.**

This summer we have two exciting projects on juvenile brown crabs. Marc Uya is a Masters student developing a model to describe how habitat type can describe juvenile crab abundance on the shore. This data will contribute to a time series aimed at developing a recruitment index for the *Cancer pagurus* fishery. Babette Bookelar is a placement student from the Netherlands looking at habitat use by juvenile crabs and lobsters in sub-tidal habitats. Babette will be predominantly working off the Llŷn Peninsula.

Gemma Rayner is finalising the crab fecundity and morphometric study and is now writing up a full report from data collected over the last year.

## Nursery habitat survey



Strings of small mesh prawn pots ready to be deployed

Where are all the juvenile crustaceans hiding themselves? A secret kept. To answer this question a pilot study was performed to identify juvenile habitat preferences of crustacean's (brown crab and lobster) on the Llŷn Peninsula last summer. It is important for crustacean fisheries to have a better indication of the real numbers of crab and lobster in Welsh waters. This year the research will be continued to find more evidence of their habitat preferences. Strings of two prawn pots (with a small mesh size) will be deployed at stations with different types of habitats and exposure levels to try and catch juvenile crab and lobster. The pots will be hauled every 3 or 4 days with sex, length, and abundance of crab and lobster recorded and by-catch identified. Further environmental factors will be noted to detect if these affect habitat preferences as well. At the same time habitat analysis will be carried out to investigate the patchiness and diversity of the habitats. At the moment the equipment for the survey is ready to be deployed at sea. In the near future we hope to show our results and gain knowledge about the habitat preferences of juvenile crabs and lobsters in Welsh waters.

## Lobster



A berried lobster with eggs almost ready to be shed

## **Reproduction**

We have two students carrying out a summer internship with the group who are based in Pembrokeshire for June and July; Robyn Cloake and Hannah Finch-Saunders. They are focusing on collecting egg samples from berried females to look at egg development stage, egg quality, egg size and fecundity in Lobsters. In addition they are collecting morphometric data to look at size at maturity and monthly fisheries data for both crabs and lobsters. A masters student; Robert Scott-Nichols is carrying out similar fecundity and egg quality work in North Wales.

## **Genetics**

The lobster genetics work is continuing with a completion date for laboratory work set for September. This work will look at the prevalence of multiple paternity (more than one male fertilising the eggs of one female) in populations with differing exploitation rates and will also look at the ratio of successfully reproducing males to females. Sex ratio and multiple paternity have an important influence on genetic diversity, which in turn can influence the population's resilience to stress. This information can be important when considering management measure which could influence the sex ratio and reproductive strategies of the population.

## **Lobster Escape Hatch Study in Cardigan Bay**

Data collection has started again for the lobster escape hatch study with the CBFA in Cardigan Bay. Four fishers will be hauling a string of pots which includes 4 pots with no escape hatch, 4 pots with small escape hatches, and 4 pots with large escape hatches. We hope to complete the data collection by August 2014. In addition, we have been trialling the design for the camera system that will film what's happening within the pots and will hopefully have the final prototype ready for deployment in the next month.

## **Prawns**

Winter sampling (fishers providing pot samples) has come to a close. Winter brought with it terrible weather conditions and so not many prawn boats were out fishing this winter. With the samples we have from the last year we have completed the laboratory analysis and will have the full report available soon (the report will be approved by all fishers that have contributed before we put this out).

Summer sampling has begun. We are netting inshore to determine habitat use by juvenile *Palaemon serratus* with the intention of building a long term monitoring program for *Palaemon* recruitment. We are using small push nets, specially designed seine nets for catching very small shrimp (ideally anything less than 2-4 cm) and we are also working with dip nets in rock pools and tricky shore areas.



Niamh working one of our small push nets, and Kayla and Niamh learning to pull the specially designed seine nets

If anyone knows of any areas that they are catching very very small *Palaemon serratus* we would be very interested to hear from you. Contact Jodie Haig on [j.haig@bangor.ac.uk](mailto:j.haig@bangor.ac.uk) with details.



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