Pysgodfeydd Cynaliadwy Cymru
Sustainable Fisheries Wales

EMFF Fisher – Science Partnership for Sustainable Fisheries



Newsletter 1
May 2019

Welcome

Bangor University, in partnership with the Welsh fishing industry, will gather data for deficient, commercially exploited shellfish and finfish species. This data will be used to ensure evidence based fisheries are environmentally sustainable. Collaboration with the fishing industry and participatory research will empower local fishing communities encouraging sustainable, long term resource management.

The project is funded through the European Maritime and Fisheries Fund (EMFF) under European Structural and Investment Funds. The project started in January 2019 and will finish in December 2022.

The project has employed Post-Doctoral Researchers in finfish and shellfish who will work alongside Research Assistants and the Principle and Co - Investigators on the project to conduct the research.

Researchers will be working with fishermen to develop a fisher-scientist network which will meet to discuss progress of the project and discuss new scientific needs. Finfish researchers will collaborate with the Welsh fishing industry in participatory research to collect baseline data on the skate and ray fishery and to continue data collection on the sea bass fishery. To analyse Bass movement and stock mixing researchers will tag 100 bass in collaboration with CEFAS and BlueFish. Researchers will continue to study scallop stock status and will increase the collaboration with the fishing industry in participatory research for long-term sustainability. We will utilise the camera systems and software developed in previous projects to collaborate with fishers to address data deficiencies in crustacean fisheries. Scientists will also gather additional data by fieldwork on fishing vessels and fisher collected samples.

What have we been doing so far?

Recruitment

We have recruited into all of the positions on the project now and we have included an introduction to the team in this newsletter. You are welcome to contact any of the team directly if you have questions.

Prince Madog Surveys

The first task was to organise all the relevant permissions to carry out two Prince Madog surveys.

The Prince Madog time was booked up in advance and has included a one week annual scallop stock assessment survey which took place over the Easter weekend. The data from this survey will be analysed in the next few months so we

will update you on that soon. We have scallop samples returned to the laboratory to assess reproductive state, size at maturity, fecundity and growth. In addition we fished alongside Mark Roberts for three tows and will be comparing his catch estimates to those of the Prince Madog. We will be undertaking a larger vessel comparison survey next spring.

Mark Roberts' vessel Harmoni taken from the Price Madog (Image: Natalie Hold)

The Prince Madog survey for rays will be taking place later in the summer. Due to the commercial and conservation importance of these species we worked with Welsh Government and NRW on a cruise plan. It was decided that the majority of sacrificial sampling will take place in collaboration with the fishing industry to limit the numbers that will need to be killed in addition to those already taken by the commercial fishery. It was felt that with a larger commercial fishery in south Wales this approach should be able to cover all our sampling needs in that area. Therefore the Prince Madog survey is focusing on North Wales and will gather data for skates and rays, in particular thornback ray (*Raja clavata*), blonde ray (*Raja brachyura*), small-eyed ray (*Raja microocellata*) and spotted ray (*Raja montagui*) with the aim to provide information for target species within the ray fisheries in the coastal waters of Wales. We have six sampling zones and in each area we plan carry out otter trawls. For each tow, the shark and ray species will be assessed. Each individual will be measured, weighed and classified by sex, except for small-spotted catsharks where the expected catch per tow will be very large! We will be collecting limited samples to take back to the laboratory for maturity staging with the majority of samples to be collected in collaboration with the commercial and recreational fishers. If you would like to be involved in the sampling of rays then please contact Sam.

Student projects

We have several masters student projects associated with the project this summer. Melissa came out on the Prince Madog scallop survey and will be using the data collected to develop growth models to inform the stock assessments. She will be comparing the growth of scallops from Wales with the Isle of Man and English Channel, looking at differences in space and time and possible environmental factors driving growth patterns. Haydon will be carrying out fisher knowledge gathering to increase our understanding of the commercial and recreational ray fishery and fisher knowledge on local ray ecology and biology. Jenny will be going out on the Prince Madog ray survey and will be using the data collected there to look at the spatial distribution of rays and the habitats they are found on.

Katie (left), Molly (middle) and Melissa (right). Both Molly and Melissa are doing MSc projects (Image: Lucy Southworth)

Student interns

We will shortly be appointing several former students on 4-6 month internships. They will be gaining valuable experience in fisheries research whilst providing much needed help with field and laboratory work. We will send more details in the next newsletter.

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European Structural and Investment Funds

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Pot sector technology

We are planning on using some new technology to help gather data on the potting sector. This will build on the video systems we used in the EFF project. We have teamed up with the Computer Science department at Aberystwyth University who will be developing automatic recognition software which will automatically extract images of the caught crabs and lobsters from the video captured by the on-board camera. The aim is for the software to automatically detect if the image contains a crab or lobster, how big they are and ideally which sex. To add to this data we will be trialling some pot tags and deck loggers. The pot tags will record water temperature, depth and soak time and automatically download to the deck logger when hauled. The deck logger will also provide options for fishers to record a range of information such as landings, number of pots hauled, weather, and sea state. It will be completely customisable and we will consult with pot fishers on the options. This data will be used to refine catch per unit effort calculations and identify drivers of catch as well as being used for stock status assessment. We hope to roll out this technology early this summer. Please contact Natalie if you are interested in being involved.

Upcoming work

We will continue to share the planned work through newsletters. If you would like to be added to our mailing list to receive these and other updates directly then please contact Jenny Dickinson. We will also be releasing a new website shortly which will be kept up to date with news and progress.

Key pieces of work this summer include:

- Lobster size at maturity study in August
- Crab tagging study
- Scallop stock status report
- Scallop genetics and connectivity report
- Size at maturity for rays
- Continuation of bass sampling and analysis of stable isotopes to inform movement patterns and connectivity.

Meet the Team

Natalie Hold - Research Lead
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I was involved in the previous EFF Welsh fisheries project and am the Project Manager for the Sustainable Fisheries Wales project. In addition I will be leading on the Crustacean research. I have experience in fisheries science research, specialising in shellfish. My PhD researched the spatial variation in reproduction in scallops around the Isle of Man and also studied the genetic connectivity of scallops. I lead the research in to the use of cameras on pot-fishing vessels to gather scientific data and this will be continued in the current project. I have an interest in quantitative and statistical analysis and will be applying these skills to develop stock assessment methods for crustaceans.

Samantha Simpson - Fish Post-doc
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I completed my PhD at the Marine Biological Association and the University of Southampton. The PhD theme was the spatial ecology and fisheries interactions of skates (Rajidae). I am currently working on the Sustainable Fisheries Wales project researching sea bass and skate movement ecology and population dynamics to inform stock assessments. This will involve collecting commercial information through collaborations with the fishing industry, scientific surveys, stable isotope analysis, tagging data and developing the use of non-terminal methods to assess maturity stage.

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Adam Delargy - Shellfish Post-doc
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I am a fisheries researcher with a strong focus on methods for estimating scallop stock size, including stock assessment. For my PhD I studied, developed and applied various state-of-the-art stock assessment models and several other analytical techniques to the scallop population in Cardigan Bay. During the Fisher-Scientist Partnership for Sustainable Welsh Fisheries project I will be continuing to collect both commercial and scientific scallop data which will contribute to towards stock assessments and developing other methodologies for monitoring scallops in Wales. This will involve using VMS data, camera sampling, scientific dredging and commercial information through collaborations with the fishing industry. In addition, I will be assisting the development of stock assessment methodologies for both the crab and lobster fisheries.

Harriet Lincoln - Research Assistant and Project Lab Manager
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I am a marine ecological scientist and one of two Research Assistants for the team. I will be helping across the project. I was also a Research Assistant with the Bangor University team during the European Fisheries Funded (EFF) project (2012-2015). Following on from this I have been continuing the seabass research started by Giulia Cambiè during EFF looking at spawning, feeding and migratory behaviour. I am looking forward to seeing old faces and meeting new ones during this next Welsh fisheries project.

Lucy Southworth - Research Project Support Officer
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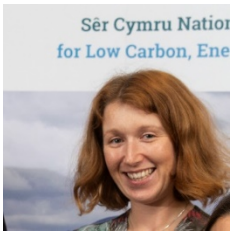
I am a fisheries scientist working in a multidisciplinary manner to help to address ecological and management questions across the project for a range of species.
My research includes understanding gear technology/efficiency on board vessels, as well as utilising local knowledge via industry questionnaires for queen and king scallop fisheries. This work utilises a combination of industry catch data, VMS data, camera work and sampling at sea on both research and commercial vessels. I am currently working to understand the spawning cycles, feeding, migratory behaviour and movements of seabass during their nursery to adult years. During the project I will also be working to apply these techniques to the ray and skate fishery. As well as collecting biological and migratory behaviour on the crustacean fisheries and developing non-invasive sampling techniques such as on board camera systems. I am looking forward to continuing to collaborate with and meet members of the fishing industry during the project.



Jenny Dickinson - Finance and Administration Assistant
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I provide the project with administrative support and help to assemble to the claim each quarter. Prior to joining this project I worked as a Finance and Administration Assistant for the Sêr Cymru National Research Network for Low Carbon, Energy and Environment where I was responsible for compiling the financial claims each quarter for submission to Welsh Government, as well as supporting the team with event organisation, publicity activities, budgeting and general administration. Before this I worked on European funded projects Inventorium and Imagina as a Project Coordinator based in CAST Ltd. I am currently studying for an accounting qualification through the AAT.

Ian McCarthy
PI and Fish Expert
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Image: Melissa Woodhams

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