



Fisheries Research in Welsh waters

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A presentation for the Cardigan Bay Fishers Association, Aberystwyth
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Project: European Fisheries Fund

How long: 3 years

Ethos: Bottom up management approach to create sustainable fisheries in Welsh waters

Work packages for the EFF project

1. Fishers knowledge: questionnaire survey
2. Habitat survey
3. Stock status of target species
4. Connectivity of welsh stocks
5. Assessment and management advice

Project: European Fisheries Fund

Work packages for the EFF project

1. Fishers knowledge: questionnaire survey

Historical and Current fishing in Welsh waters &
Fishers knowledge of the ecology / biology

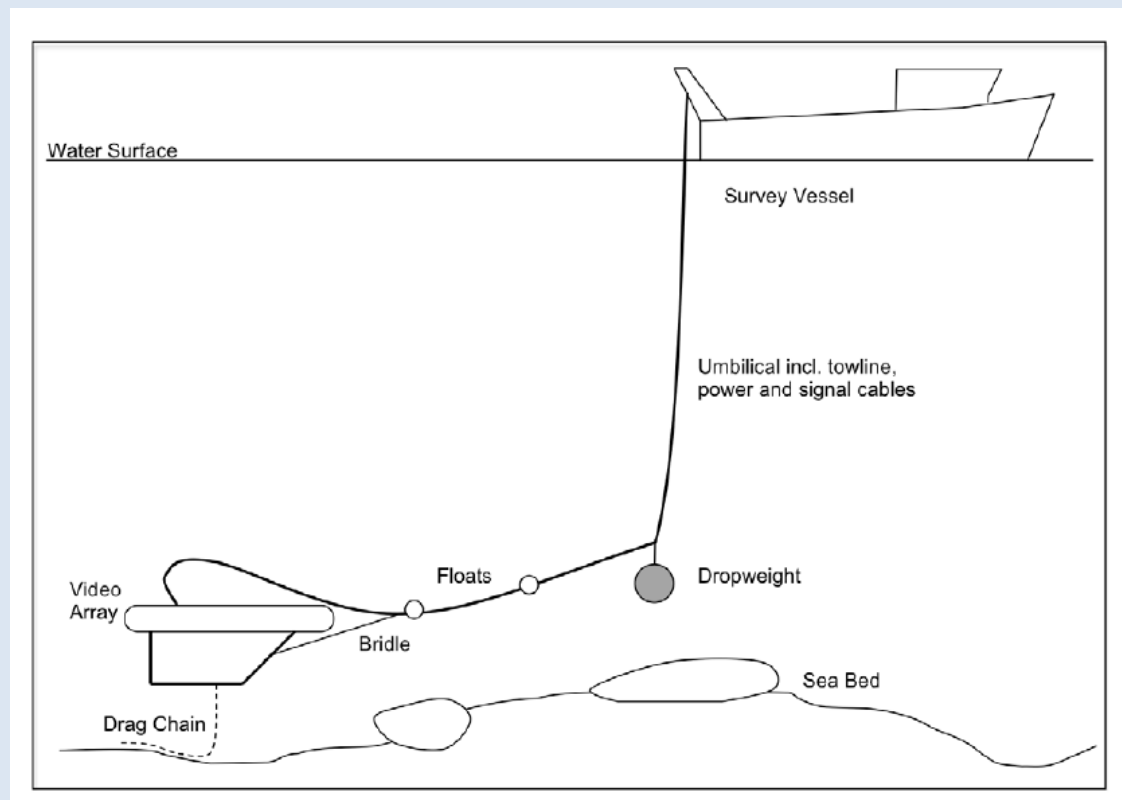
You can get involved!

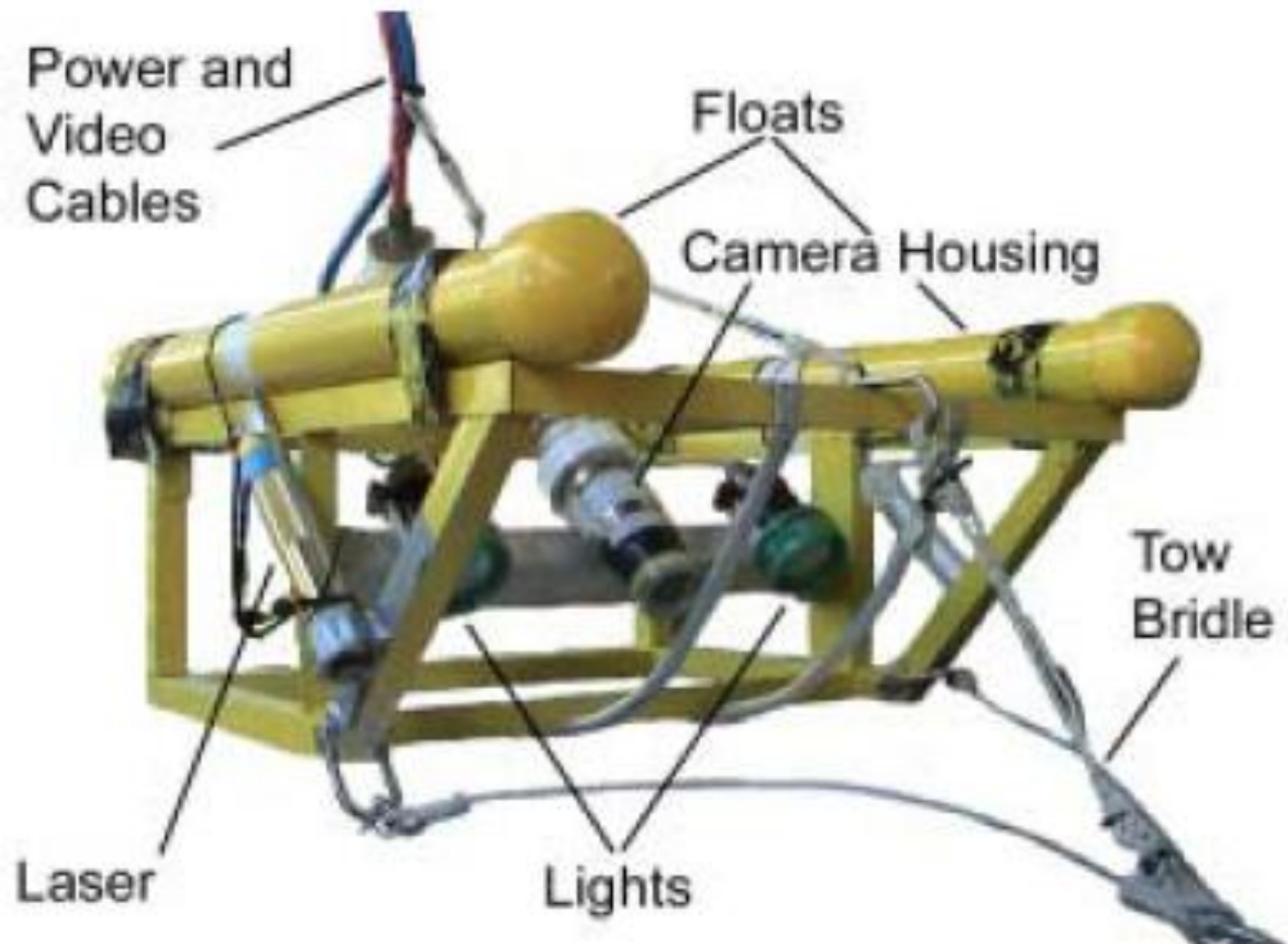
Register online or on this sheet!

Project: European Fisheries Fund

Work packages for the EFF project

2. Habitat survey





Habitat survey video



Project: European Fisheries Fund

Work packages for the EFF project

3. Stock status of target species



Static Gear Fisheries

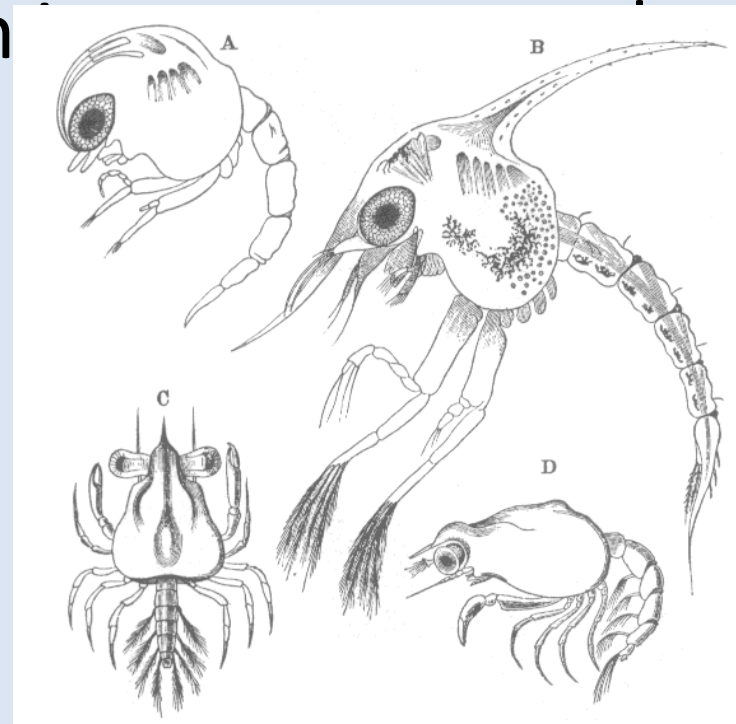
Potting in Welsh waters

- Lobsters (*Homarus gammarus*)
- Brown crab (*Cancer pagurus*)
- Spider crab (*Maja squinado*)
- Shrimp (*Palaemon serratus*)
- Whelk (*Buccinum undatum*)



Inshore Research

- Recruitment index Juvenile Brown Crab,
- Common Prawn & Lobster
- Important nursery habitats
- Competition and predation
- Abundance



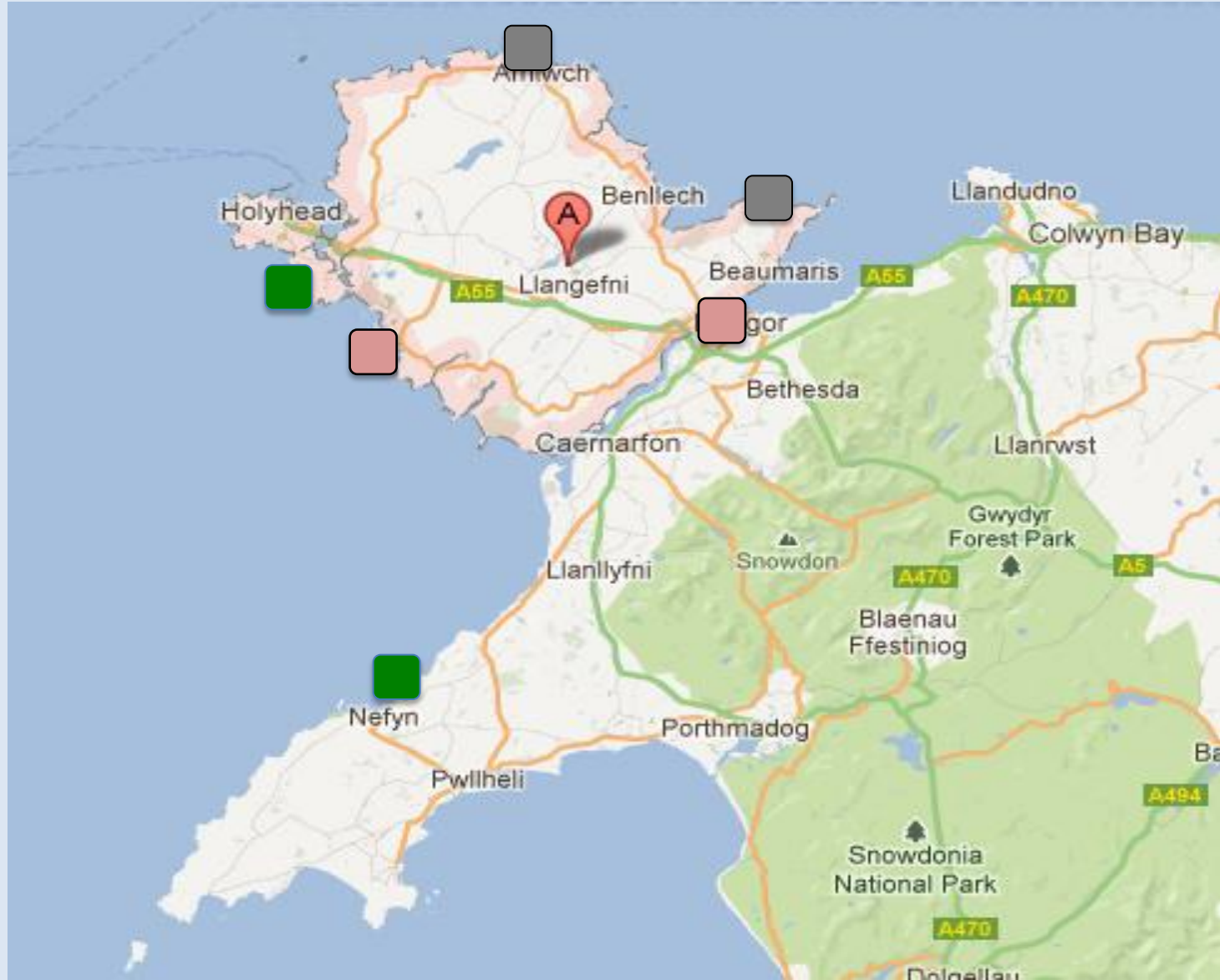
Inshore Research: habitat types

Habitat use by
juvenile crustaceans

Seagrass

Algae

Rocky





Adult Prawn & Whelk



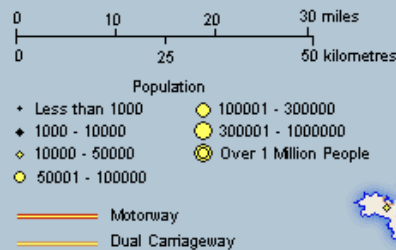
What we want to know:

- Ratio of males to females
- Frequency of disease / imposex
- Distribution of different sized prawn/whelk
- Size at maturity
- Why is prawn catch so unpredictable
- Survey juvenile lobsters and crabs: can we catch them in prawn pots?

Fisheries Samples:
Whelk x 50
Prawn x 50 or 3 pots
Bycatch?

Where:
 North Wales
 Anglesey
 Llŷn Peninsula
 Cardigan Bay
 Pembrokeshire
 South Wales

When
1 x Every Month
3 reps / Season:
 Winter 2012
 Spring 2013
 Summer 2013
 Autumn 2013



Prawn Fishers



How you can help us:

- ADVICE! We need advice on pots and catch-ability
- We supply 1-3 pots to put out
- You freeze the catch (all of catch)
- Once / month
- As many areas around Wales as possible
- For 1 year



Until we can get some pots: 50 shrimp from a catch from one day in December and one day in January (any day).

Whelk Fishers



How you can help us:

- Freeze 50 whelk
(randomly chosen pre-riddled sample)
- Once / month
- As many areas around Wales as possible
- For 1 year
- Depletion experiment (masters study)

On Board Camera System



What we want to know:

- Catch (landed & discarded)
- Size
- Sex (berried and non-berried females)



**Use this data to estimate abundance,
Size frequency and sex ratio of catch for lobsters
and crabs. It will also be used to create an index
of recruitment to the fishery for the following
year**

On Board Camera System

How you can help

We'll come to you!

- You help us decide on the best place for your camera
- Drop off and pick up the camera gear
- We will provide you with a summary of the data from your catch





Genetic pilot study

Lobster Paternity: *Homarus gammarus*



Why: Bias in the sex ratio may decrease genetic diversity

GENETIC DIVERSITY PROVIDES RESILIANCE TO CHANGE

Aims

- Are larger males more reproductively successful than smaller ones?
- What proportion of males contribute to the next generation?
- Does population density affect the observed pairing patterns?
- Does sex ratio affect genetic diversity?
- Does multiple paternity exist for this species?

Genetic pilot study



Methods

- Sample berried females, eggs and males from fishers' catches;
 - Small pleopod sample: does not decrease market value of the specimen
 - Approximately 200 eggs
- Microsatellite genetic analysis
- Max. likelihood analysis (program Colony2) to construct paternity

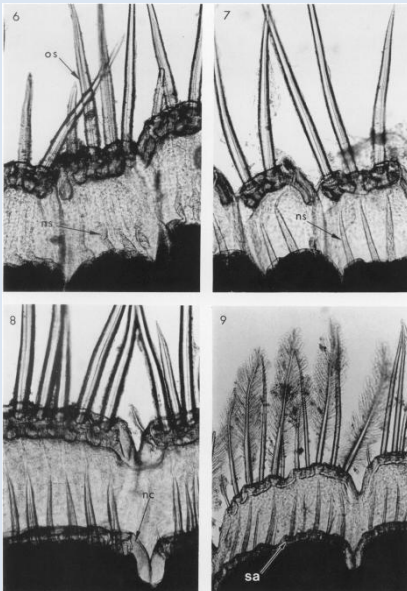


Moult cycle and growth in the European lobster

Collaborate with fishers to collect carapace length data and sex of lobsters where the fishers land. Collect non-lethal Pleopod sample.

Use slides and microscopic analysis of lobster pleopods to identify moult stage.

Tagging of lobsters. This will enable us to measure growth increments between moults and will also allow us to estimate the proportion of individuals that moult twice in a season.



All of this data will be used to create an index of the numbers of undersized lobsters which should recruit to the fishery in a year and two years time.



Temperature loggers

Collecting long term temperature data

Attached to pots
throughout wales

Annual temperature
changes: relate to catches and very
important for modeling growth and moulting



Spider Crabs

- Genetic study being undertaken by a team in Spain
- We can send Welsh samples and they will include in their Europe wide study
- Depending on results of this we can decide if finer resolution is needed.



For other studies we are doing

Website:

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

Quarterly Newsletter:

- Online
- Register and we'll post or email one to you!