Fisheries & Conservation Science

SCIENCE UPDATE

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Common whelk – *Buccinum undatum*

We have maintained a solid working relationship with four whelk fishermen in Wales and collected more than 13 months of data to assess fisheries statistics and also size at maturity. This summer we also conducted a tagging study where Masters students, Zara Turtle and Georgia Robson, tagged 18,000 whelks.

Preliminary results

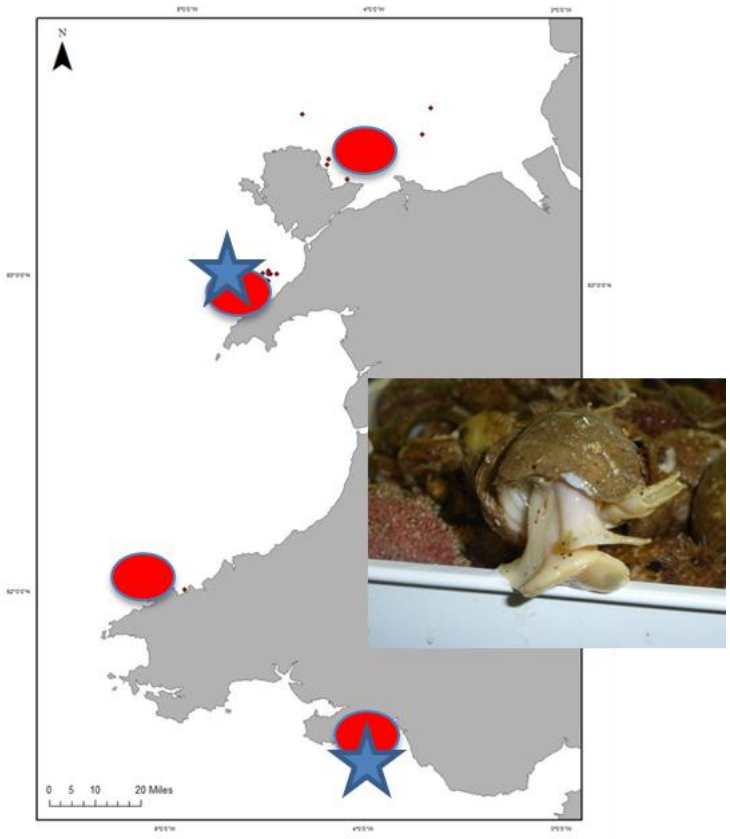

Figure 1. The sites where whelks were collected from two scientific pots for 13 months (red circles) and also where whelks were tagged (blue stars). Inset is a majestic looking whelk specimen eager to explore the world.

<u>Tagging study</u>

The mark recapture study was set up with the purpose of finding out if you could successfully carry out a mark recapture study of this scale over a summer. We found it to be a great success with recaptures of

around 17% (this is pretty good for a marine study). The early results indicate that our tagging and fishing methods are very appropriate for future research efforts. Some preliminary results show us that they don't appear to move much in a day but this slow movement may add up over time. We are still looking at the data but from early results we can confirm what you already know, there are patches of whelks in considerably high densities, and some patches have low whelk abundance. We discuss these patterns in relation to habitat type and water depth in our reports which will be out soon!

Size at maturity

The size at which 50% of whelks are found to be mature (L_{50}) was seen to be regionally variable. In our study, size at maturity ranged from 57.7 mm to 66.5 mm total shell length. This may not sound very much, but it means that anywhere between 16-52% of whelks that are currently landed from the sampled ports are immature (depending on the port). These figures highlight that the current minimum landing size of 45 mm total length for *Buccinum undatum* is much too low to protect brooding stocks.

How to read a box and whisker plot: the box is where 50% of the data lies, the whiskers are the remaining data. The whiskers help to display the range (max and min) of the data in relation to the bulk of the data. The dark line is the median (middle) value of the data.

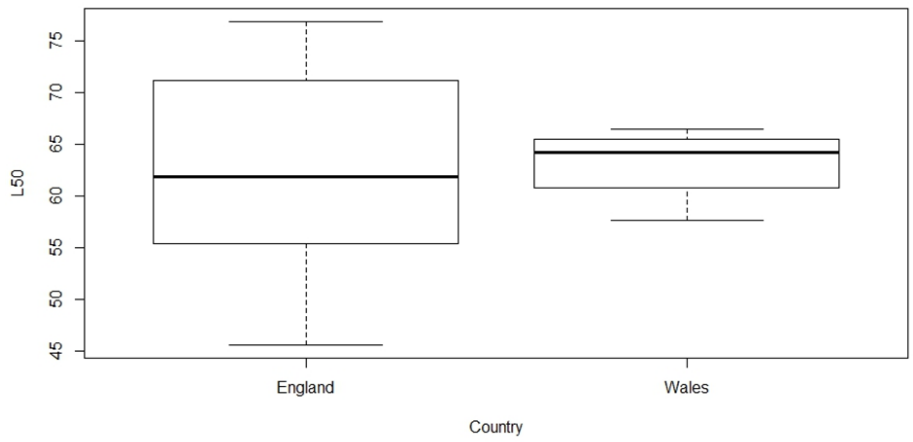

Figure2. This box and whisker plot shows that in English waters the size at maturity estimated by CEFAS (2013) is much more variable for the 12 sampled sites (46.4 to 76.2 mm) than that found at the 4 Welsh sites (57.7-66.5 mm).

This research is of course a snap shot in time, and we would advise that size at maturity is assessed every four to five years to determine if fishing pressure and management changes have an effect on the size at which whelks mature.