

Guidance to the industry on the increase in MCRS for whelk

Background

Extensive research was undertaken by Devon & Severn IFCA throughout 2015 and 2016 to determine the size of sexual maturity of the whelk, *Buccinum undatum*, within the D&S IFCA District. The size of maturity (SOM) is defined as the size, in this case shell height, at which 50% of the population is sexually mature. The 2015 report looked at the SOM and spawning period of whelks sampled over a year from Ilfracombe in North Devon and Exmouth in South Devon. The 2016 report focussed on additional research undertaken on whelks caught in Start Bay in South Devon. The results can be seen in Table 1 below.

Table 1 Estimates for SOM, based on shell height, for each site studied by D&S IFCA

Site	Female SOM (shell height in mm)	Male SOM (shell height in mm)
Start Bay	57.8	64.4
Exmouth	69.3	70.9
Ilfracombe	76.5	76.4

At each site the SOM was much greater than the current EU Minimum Conservation Reference Size (MCRS) of 45mm. This indicates that the spawning stock is not being adequately protected, so whelks are being landed before getting the chance to breed, and recruitment over-fishing is likely to be occurring.

New Management

To better protect the whelk stocks within its District, D&S IFCA will use the estimates of SOM as the basis for a new MCRS. Although each area sampled had a different SOM, a single MCRS for the whole D&S IFCA District is the most pragmatic approach for new management. Table 2 below indicates the percentage of the population sampled that is mature at five different shell heights. Increasing the MCRS to 65mm will give greater protection to the stock in all areas sampled.

Table 2 Percentage of whelks sampled that were sexually mature at various shell heights

		% mature at each shell height				
		45mm	50mm	55mm	60mm	65mm
Exmouth	Female	0.3	0.7	3	8	27
	Male	0.006	0.4	2	6	19
Ilfracombe	Female	0.09	0.5	1.6	4	10
	Male	0.002	0.2	0.5	2	6
Start Bay	Female	0.2	0.9	15	78	98
	Male	0.6	2	7.5	23.5	54

D&S IFCA will be increasing the MCRS from 45mm to 65mm. However, in recognition of the impact that this may have on fishers, a phased increase will be implemented with the MCRS increasing to **55mm in November 2018** and then to **65mm in November 2020**.

Relationship between shell height & shell width

D&S IFCA has taken the view that the introduction of a whelk width size (riddle) and an escape hole size for whelk pots, was not deemed suitable at this time for inclusion in the Potting Permit Conditions. However, the results of the survey work can be used as guidance for the setting of riddle spacing and escape holes.

There is a strong positive relationship between shell height and shell width, meaning that as the shell height increases the width increases at a proportionate rate. As well as the height, two width measurements were taken for each whelk in the samples; the minimum width and the maximum width (Figure 1).

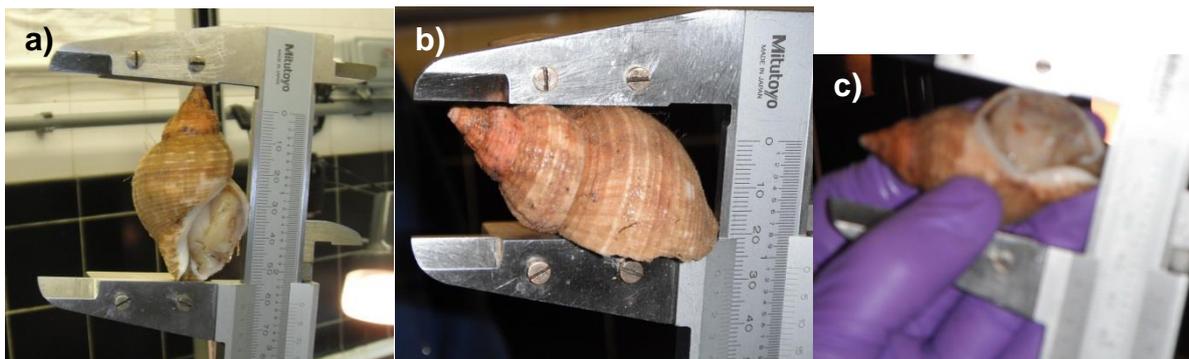


Figure 1 a) Measuring shell height, b) Measuring minimum width, c) Measuring maximum width

Using these measurements, it's possible to estimate the shell width for a given height. For a whelk with a shell height of 55mm, the average minimum width is 23 mm and maximum width is 32mm. For a whelk of 65mm shell height the average minimum and maximum widths are 27mm and 37mm, respectively. These shell widths could potentially be used as guides for the setting of riddles for the new MCRS.

For the 55mm shell height MCRS:

- With a riddle set to the average minimum width of 23mm, approximately 5.3% of the retained catch would be undersized, while 4.9% of the sizeable catch could be lost.
- If the riddle was set to the average maximum width of 32mm, no undersized whelks would be retained but 73% of the sizeable catch could be lost.

For the 65mm shell height MCRS:

- With a riddle set to the average minimum width of 27mm approximately 7.9% of the retained catch would be undersized, while 8.8% of the sizeable catch could be lost.
- If the riddle was set to the average maximum width of 37mm, no undersized whelks would be retained but approximately 91% of the sizeable catch could be lost.

(Based on the D&S IFCA sample of 1633 whelks, and assuming all whelks would pass over the riddle (in a controlled manner) on their minimum width.)

Full copies of the 2015 and 2016 SOM research reports are available from Devon & Severn IFCA on request.