

**NWIFCA Technical, Science and Byelaw
Sub-Committee**

12th May 2015: 10:00 a.m.

**AGENDA
ITEM NO.**

8

BYELAW REVIEW REPORT

Purpose: to inform Members of developments in the Byelaw Review work by Officers

Recommendations:

1. That Members approve the work of Officers;
2. That Members approve the drafts of Byelaws 9 and 10;
3. That Members approve the recommendation to proceed with informal consultation on Byelaws 9 and 10, taking them forward for making by the Authority at the earliest opportunity;
4. That Members approve further work on the drafting of Byelaw 7 to be brought to the next TSB meeting.

Background:

1. In order to progress the Byelaw review work a sub-group of Science Officers Mandy Knott and Sarah Temple, and Enforcement Officers Andy Deary and Steve Brown has been working on drafting Byelaw 7 (Fishing for Lobster, Crawfish, Crab, Prawn and Whelk), Byelaw 9 (Restrictions on Fishing for Shrimps and Prawns) and Byelaw 10 (Measures for the Protection of Lobster (*Homarus gammarus*)).

Progress:

2. Byelaw 7 is the hobby permit byelaw for fishing for lobster, crawfish, crab, prawn and whelk. A thorough re-draft has been sent out to Officers for comments. The initial response has raised some issues that require clarification before the draft can be brought before the TSB. It is therefore expected that following further work Byelaw 7 will be presented to the next TSB meeting with a view for approval and sending out for informal consultation.
3. Byelaw 9 is attached as Appendix A. Officers welcome discussion, comments and any amendments.
4. Following approval by Members Officers will proceed with an informal consultation on Byelaw 9, with the view to providing a Byelaw ready for making by the full Authority at the earliest opportunity.
5. During work on Byelaw 7 it became clear to Officers that a separate Byelaw with measures for protecting lobsters was the most appropriate course of action. These measures will apply to all fishing, both commercial and hobby. The inclusion of the MLS is necessary to ensure regulatory measures are in place across the District once the Emergency Byelaw lapses (see Agenda Item 8).
6. The protection measures of prohibiting the removal of berried lobsters and 'V'-notched lobsters consolidates measures across the District from the two sets of byelaws. Currently the

southern part of the District has 'V' notch protection measure while the northern part does not, and the northern part has berried lobster protection measure while the southern part does not. Officers would expect support for these measures from industry and hobby fishers.

7. North West SFC part of District has no escape gap measure in its byelaws; Cumbria SFC part of the District has an escape gap within its Byelaw 25 measuring 74 x 44 x 100 mm confirmed by the Minister on 20th October 1997. This appears to be the smallest escape gap within all IFCA Byelaws. The escape gap measure in Byelaw 10 introduces an increase in the size of the Cumbria escape gap. Officers consider that this proposal should be fully consulted on with all stakeholders and following approval by Members would put this out to informal consultation as soon as possible.
8. If there are no substantial objections that cannot be overcome during the consultation the Authority may consider introducing the increase in escape gap size over a fixed period in order to give industry time to adapt and minimise the financial consequences.
9. The following is the reasoning for the proposed increase in the size of the escape gap:
 - a) EU MLS adopted by NWIFCA of 87mm for lobster;
 - b) Escape gaps within other IFCAs byelaws include

North-eastern IFCA	80 x 46 x 100 mm in parts of the District to be applied to whole District following review
Eastern IFCA	80 x 46 x 100 mm
Kent and Essex IFCA	84 x 46 x 100 mm
Devon and Severn IFCA	84 x 46 x 100 mm – 87mm MLS increasing to 90mm
Cornwall IFCA	84 x 46 x 100 mm – 90 mm MLS
 - c) During drafting of CSFC Byelaw 25 the then Chief Officer Dave Dobson reported to the Committee. The recommendation he made in November 1995 to introduce an escape gap of 75 x 45 x 100 mm followed successful trials with a Whitehaven fisherman;
 - d) A further report in November 1996 followed discussion with MAFF and the Directorate of Fisheries Research, who had been trialling escape gaps of various sizes and concluded that they certainly reduced catch of undersize lobsters and reduced mortality caused by the stress of handling;
 - e) The national MLS at that time was 85 mm with moves to increase it to 87 mm. Dave Dobson stated in his report that should the MLS increase then it would be a simple case of amending the byelaw to reflect that change. It appears that the byelaw was made with an escape gap of 74 x 44 x 100 mm which has not been amended since despite the introduction of EU MLS of 87 mm;
 - f) Comment was also made that there was no issue with impacts on Velvet Swimming Crabs in the Cumbria District as there was no targeted fishery for this species. There had been concerns raised in other areas that escape gaps allowed the escape of Velvets;
 - g) There are a number of studies providing evidence that the use of escape gaps is an effective measure for protection of undersize lobsters and reducing mortality. There is also research to show that they can also reduce sorting time for fishers and therefore make fishing more efficient (Sussex SFC and Seafish project. Sue Utting. 2007);

- h) Bangor University also carried out research (Murray et al. 2009) into the effectiveness and efficiency of differing sizes of escape gap, recognising that it is important that the size of escape gap used retains as many lobsters of or above the MLS as possible while allowing undersized individuals to escape. The aim of the study was to verify if escape gaps of 80 x 45 mm and 84 x 46 mm, would retain lobsters of ≥ 87 mm while allowing smaller individuals to escape. Results are shown in Figures 1 and 2.

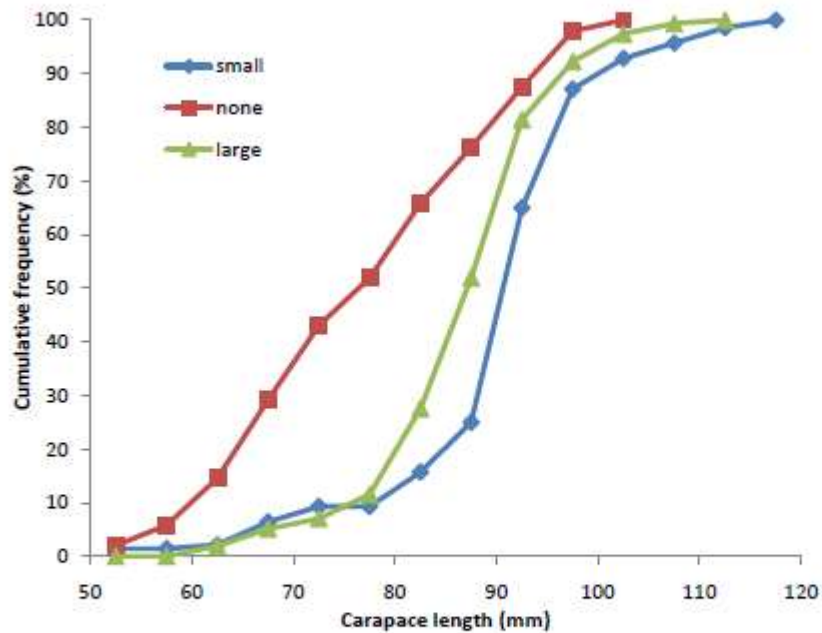


Fig. 1. Cumulative size-frequency distribution of lobsters in traps with small, large or no escape gaps. Source: Murray et al. 2009.

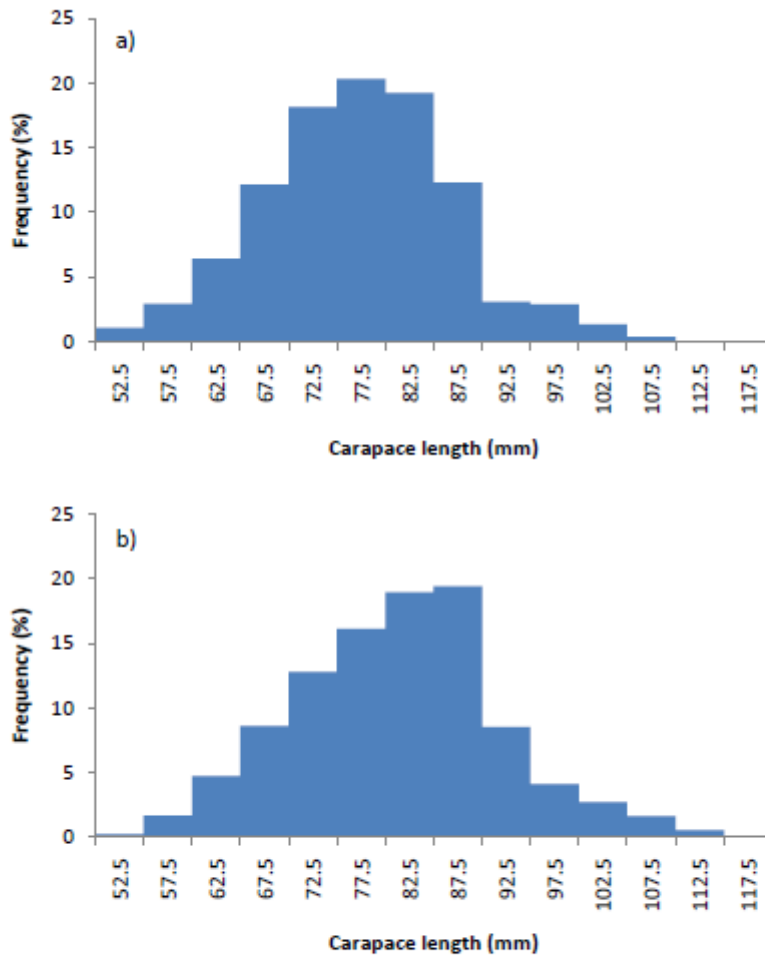


Fig. 2. Estimated size frequency distribution of lobsters escaping from traps with a) large gaps and b) small gaps. Source: Murray et al. 2009.

The discussion, conclusion and recommendations from this paper are reproduced here:

Discussion:

Brown (1982) concluded that the optimal size of lobster escape gap was 1 mm below the size of the minimum carapace or abdomen dimension which corresponds to the required carapace length. Thus, a lobster with a carapace length of 87mm would be expected to have a carapace width of 47.7 mm for males or 47.8 mm for females; ideal escape gap sizes would therefore be 83 x 47 mm to allow most undersized males to escape. The size of escape gap adopted by Sussex SFC is 80 x 45 mm and therefore below the optimal size suggested by Brown (1982). However, given the natural variability in lobster sizes, adopting a slightly smaller gap size would prevent the loss of individuals ≥ 87 mm. Based on the results of Brown (1982), an 80 x 45 mm gap would be expected to allow most lobsters of 83 mm carapace length to escape, while a larger gap, of 84 x 46 mm, would allow lobsters of 84 mm carapace length to escape. In the current study, the estimated modal size of lobsters escaping through 80 x 45 mm was 81 mm, and 83 mm from 84 x 46 mm gaps. Conan (1987) emphasises that it is not possible to have an exact retention size. Escape gas could be varied in size by a few millimetres depending on whether it was more desirable to allow all undersized individuals to escape or to

retain all individuals of ≥ 87 mm. ***For a MLS of 87 mm the 80 x 45 mm escape gaps provide an acceptable intermediate that will not, overall, result in losses of commercially viable lobsters.***

Conclusions and Recommendations:

- Fitting escape gaps to lobster traps is an effective means of allowing undersized lobsters to escape.
 - It is estimated that 83% of lobsters escaping through 80 x 45 mm gaps had a carapace length of <90 mm.
 - The mean carapace length of lobsters caught in traps without escape gaps was lower than in traps with escape gaps.
 - CPUE of lobsters of ≥ 87 mm was not significantly different between traps with and without escape gaps.
 - The fitting of 80 x 45 mm rectangular escape gaps to lobster traps would allow many lobsters < 87 mm to escape with minimal loss of lobsters ≥ 87 mm CL. Both this study and previous studies indicate that fitting escape gaps may improve the efficiency of traps at catching larger lobster, in addition to reducing the time required to sort catches. Escape gaps of 80 x 45 mm will retain undersized male lobsters and many undersized female lobsters, particularly those which are egg-bearing. It is thus essential that lobsters continue to be measured before they are landed.
10. Officers therefore recommend that Members consider inclusion of an escape gap measuring 80 x 46 x 100 mm to bring this byelaw up-to-date with current thinking and as a sustainable conservation measure.
11. Work is on-going by Ms Temple on the Regulatory Impact Assessments (RIAs) to accompany all of these byelaws.

Mandy Knott
Senior Scientist
30th April 2015

References:

Brown, C.G. (1982). The effect of escape gaps on trap selectivity in the United Kingdom crab (*Cancer pagurus* L) and lobster (*Homarus gammarus* L) fisheries. *J. Cons. Int. Explor. Mer.*, **40**, 127-134.

Conan, G.Y. (1987). A generalised model for predicting size-specific retention of lobsters in traps fitted with an escape gap. *ICES Shellfish Committee Report. CM1987/K:24.*

Murray, L.G., Hinz, H. & Kaiser, M.J. (2009). Lobster escape gap trials. *Fisheries & Conservation report No. 9*, Bangor University. pp.11.