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Science



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Nephrops Trawlers

Sampling Nephrops onboard a vessel targeting Nephrops.

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1	Grant Course	21/05/2003	
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3	Jon Elson	30/01/2019	Simplified the procedure to remove any ambiguity

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1 Introduction

The way that Nephrops are processed on board by the crew complicates Nephrops sampling. How we sample Nephrops will depend on how easily we have access to the catch and how much time we have to sample it.

1.1 General protocol

Sampling both discards and retained Nephrops on these trips, should take priority over sampling the fish by-catch but not at their expense.

1. The catch on boats targeting Nephrops can be sampled the same way as on other trawlers but if necessary smaller sub-samples of the other species may be needed to give more time to measure Nephrops
2. The sampler should aim to measure about 200 carapace lengths of individual Nephrops per haul over the different categories and catch components.
3. Depending on the crew, the retained Nephrops may be graded into several categories. It might be feasible to measure the retained Nephrops as a mixed category instead of measuring each category separately. This is less time consuming but does depend on how the crew work and how amenable the crew is.
4. In the North East (North Shields) occasionally the Nephrops which are going to be discarded may be included in catch being kept aboard the boat for tailing ashore. These Nephrops are sorted by shore crews when the boat lands and any retained Nephrops are tailed.
5. To get a realistic sample of the discards, ask one of the crew while at sea to sort through a small amount of the mixed catch and remove any Nephrops which are too small to be tailed. From this a sample can be carried out and the proportion of discards in the mixed Nephrops can be calculated.
6. If the crew are not willing to do this the observer can wait until the boat lands and get these discards when the shore crew start to tail the Nephrops.
7. If the observer can only get to the Nephrops after they have been tailed the observer can measure the tail length and then use the conversion table on the Network to convert the lengths to carapace length. The tail lengths must be done by sex. If the tail cannot be sexed, then do not measure it because the tail has been parted in the wrong place.

1.1.1 Procedures for sampling Nephrops

For retained samples, steps 1 to 3 above still describe best practice but sampling tails can be time consuming - with the added complication of having to identify and deal with damaged tails that cannot be measured.

How you manage to sample the different catch components for Nephrops will depend on time; how the crew process their catch and how cooperative the crew are. There are effectively four options. These are listed in order of preference:

Option 1

1. Sample each of the retained categories of Nephrops including the tails if tailing is being carried out.
2. If the crew are amenable, ask for a sample of the Nephrops which are going to be tailed before tailing has occurred so that carapace length can be obtained. 1/10th of a 5st fish basket (the top of the solid line at the base of the basket) of whole Nephrops will yield enough lengths for a sample. You can tail them after you have measured them as a sweetener. The resultant volume of tails sampled compared to the total volume of tails retained for that haul gives you the raising factor.
3. Discarded prawns will be sampled in the volume selected as representative of the rest of the discarded catch.
4. If all the small Nephrops are being kept on board for tailing ashore then ask a crew member to sort through a small proportion of those - selecting out those too small to tail which ultimately will be discarded.

Option 2

1. Measure each of the retained categories except the tails.
2. Measure the tails using a tail board. This is time consuming and could potentially be done ashore if the crew will allow you to take a sample (1/10th of a 5st fish basket and apply a throw rate of 2 to yield around 70 tails) for processing ashore. Payment may be required.
3. Discarded prawns will be sampled in the volume selected as representative of the rest of the discarded catch.
4. If all the small Nephrops are being kept on board for tailing ashore then ask a crew member to sort through a small proportion of those selecting out those too small to tail which ultimately will be discarded.

Option 3

1. Select a representative volume of Nephrops from the total catch in the pound or in the hopper.
2. Ask the crew to select the keepers and discards from that volume and then sample the retained.
3. Sample the discarded Nephrops. The RF will be the same as the Retained which will be the total volume of the retained (accounting for the affect of any tails on that volume) divided by the sampled volume of retained.

Option 4

1. If time, crew or process will not allow you to get a crew selected sample of retained then measure that volume without the discards removed and record that as a Total (T) sample.

The first 2 options are by far the best and if the crew are able to sort your sample of bulk prawns in Option 3, before you measure them, then that is equally as good.

Option 4 - collecting a length sample of the unsorted Nephrops as a Total (T) sample is not quite as good but will still be used. Any discarded Nephrops that are measured when sampling the remainder of the catch in that haul will allow analysts to make assumptions about the retained component.

The observer should not sort the catch for the crew and separate out discards for sampling based on what we are told. That data will not provide a measure of commercial selectivity.

1.2 Other Issues

This protocol glosses over the different situations a sampler may find themselves in and the complexities affecting how raising factors may be calculated. The training manual gives plenty of examples of how these RFs may be calculated in other situations and these also apply here. This protocol is here as guidance, highlights best practice but assumes some prior knowledge or further mentoring.

1.2.1 Nephrops heads

The Nephrops heads from the retained tails might often make up a large proportion of the discards going over the side – they will likely end up in the volume of discards you need to process. Take this into account when selecting a sufficient volume of discards to sample and when calculating your RFs.

1.2.2 Multiple hauls

It can take a long time for Nephrops catches to be processed by the crew and sometimes the hopper or pound might not be cleared before the next haul is brought on board. If this is likely to happen do not rely on the entire haul to be sorted to get your RFs.

Appendix 1:



Centre for Environment Fisheries & Aquaculture Science



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