1. **Purpose and Scope**

The purpose of this guidelines document is to provide information on the design and sampling levels for demersal port sampling. This document is aimed at all analysts who carry out demersal port sampling.

1. **Responsibility**

* It is the responsibility of the Senior Laboratory Analyst to ensure that this procedure is implemented and adhered to, by all staff.
* It is the responsibility of all personnel to comply with this SOP and to notify the Senior Laboratory Analyst immediately if difficulties are experienced.

1. **Definitions / Terminology**

* *FEAS Fisheries Ecosystems Advisory Services*
* *SOP Standard Operating Procedure*
* *LO Landing Obligation*

1. **Procedure**

Since Q1 2016 Ireland has employed a Statistically Sound Sampling Protocol (4S) for

Demersal port sampling events.

## Port selection

The target number of sampling trips to each port will be proportional to the landings of the main demersal species in each port. Because there are a large number of small ports that contribute very little to the overall landings, only the top 21 ports will be sampled. These ports represented 95% of the demersal landings in the previous 2 years. Each of the ports has a probability of being selected for sampling in each quarter, but some of the smaller ports might end up with a sampling target of zero.

## Port Targets

The port sampling targets can be accessed in Stockman2015 (<http://mifeasapp01/Stockman2015/>) by clicking on Sampling Targets and viewing the Target Sampling Events by Port.

Note that:

* It is important to spread the sampling trips out throughout the quarter
* The sampling targets refer to landings ports (this could be different from the location where you can access the samples, like processors or auctions in different ports).
* If fish that were landed in e.g. Fenit are accessible in e.g Castletownbere and you decide to sample these, then try to sample a number of species or stocks from Fenit on that day. If you only sample a single species, it still counts as a port trip but that would be cheating! Try to treat it as if you are taking a trip to Fenit: you check out what is being landed and then decide which stocks you will sample.
* Important to keep an eye on AIS, vessel finder or Marine traffic, prior to sampling events to familiarize oneself with fleet activity.

## Species/Stock selection

Once you arrive at a sampling location (auction, producer etc.), you decide which species to sample. There might be landings of more than one stock of the same species and you are probably not able to sample all stocks that are landed so you will have to prioritise. To help you decide which stocks to sample, you can check the stock targets in Stockman2015 (<http://mifeasapp01/Stockman2015/>) by clicking on Sampling Targets and viewing Target Sampling Events by Stock”. Additionally, the table below gives some guidance on how much priority to give each stock. Stocks with high priority are generally difficult to obtain and should be sampled whenever available.

**Stocks and priority**

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| |  |  | | --- | --- | | **Stock** | **Priority** | | Monk spp in IV,VI | Normal | | Monk bud in VIIb-k,VIII | Normal | | Cod in VIa | Medium-give priority over Normal stocks | | Cod in VIIa | Medium-give priority over Normal stocks | | Cod in VIIe-k | Normal | | Cod in VIIbc | High- always sample | | Haddock in III,IV,VIa | Medium-give priority over Normal stocks | | Haddock in VIb | High- always sample | | Haddock in VIIa | High- always sample | | Haddock in VIIb-k | Normal | | Hake in IV,VI,VII,VIII | Normal | | Megrim spp in VIa, | Medium-give priority over Normal stocks | | Ling in VI-XII | Normal | | Megrim whif in VII,VIII | Normal | | Monk pis in VIIb-k,VIII | Normal | | Plaice in VIIa | High- always sample | | Plaice in VIIfg | Normal | | Plaice in VIIh-k | Medium-give priority over Normal stocks | | Saithe in IV,VI | Normal | | Saithe in VII | Normal | | Pollack in VI,VII | Normal | | Sole in VIIa | High- always sample | | Sole in VIIfg | Normal | | Sole in VIIh-k | Medium-give priority over Normal stocks | | Whiting in VIa | High-give priority over Normal stocks | | Whiting in VIIa | High- always sample | | Whiting in VIIb-k | Normal | | Any other stock / species | Low – only sample when you have time | |  |

* If you sample multiple grades from one stock from one vessel this is considered a single sample. So a sample is defined as the measurements taken from the unique combination of a stock and fishing trip.
* Some of the stocks in the table above will be difficult to sample, particularly VIIa stocks and some VIa and VIb stocks. Try to give priority to the ‘difficult’ stocks and plan sampling trips accordingly. If you didn’t achieve the stock targets but you have achieved the port targets for the port where these stocks are landed, you may have to do additional sampling trips.
* If a fishery suddenly picks up, (e.g. this could happen with Rockall haddock), then the targets will need to be increased.
* It is more important to sample different stocks than it is to sample different vessels, so if you have the choice between sampling the same stock from two vessels or two stocks from the same vessel, go for the second option
* The two species of monk and those of megrim should be sampled in proportion to their landings; so if 10% of the landings are *L budegassa*, hopefully we will end up with 10% of *budegassa* in our monkfish samples. So within monkfish stocks and megrim stocks, do not target specific species.

## Vessel selection

If numerous vessels have landed in or transported to the sampling location, and they have landings of the species you intend to sample then randomly select the vessel by landing location depending on the stocks you need to target.

## Otolith targets

The targets for age sampling per event are as follows:

|  |  |
| --- | --- |
| Monkfish (black and white), Hake | Collect otoliths from one fish per two cm |
| Cod, haddock, ling, pollock, whiting, Saithe | Collect otoliths from one fish per cm |
| Megrim, plaice, sole | Collect otoliths, record sex and maturity from two fish per cm |

* A sample may consist of a number of grades; if these overlap, e.g. they both have a fish of 30cm, then you only need to take one age sample at 30cm. Ensure to sample all grades if possible so sample can be used as a measured sample as well.
* In the “Target Sampling Events by Stock” report in Stockman2015 you can keep track of the number fish that have been sampled for age. There are no overall age targets but if the number of aged fish is very low, the number of fish per size class may need to be increased.

Measured Only Sampling

* Once the otolith target per sample has been reached, if time permits measure the rest of the sample.
* If all the sampling targets are reached for a quarter for a stock then those species can be measured only.

## Sampling of rare/incidental by-catch of fish species

During each sampling event the sampling location should be checked for landings of rare/incidental bycatch species. These should be recorded on a measured only sheets and entered in to STOCKMAN

## Sampling of Landing Obligation fish

At this time there is no obligation to sample LO fish on the ports as we are able to get samples from the At sea Catch sampling programme.

## FAQ

Q: How many fish should you measure?

A: You don’t want to spend so much time on a single sample that it you lose the opportunity to sample other stocks but if you have boxes with very few, large, fish you will have to measure enough boxes to get a ‘reasonable’ impression of the size distribution

Q: If a vessel lands round and gutted fish of the same species, do you need to sample both?

A: Yes, because round fish are generally smaller than gutted fish, they should be treated the same as different size grades. So if a vessel lands round haddock, small gutted haddock and medium gutted haddock these should be treated as three separate size classes.

In some cases you may have unsorted landings as well as graded landings. If you are 100% sure that the unsorted landings are representative of the total landings, then you can sample the unsorted landings only. However it is very difficult to know if they are really representative of the total landings, so the safest thing would be to treat them as a separate grade anyway.

Q: What to do you are interrupted before you have measured all size categories?

A: you can still use the age data, enter ‘N’ on the form under: USE THIS SAMPLE AS A LENGTH SAMPLE ALSO (Y/N). However the length sample is now not representative and cannot be used.

Q: What to do if you don’t know the total number of boxes landed for each size category?

A: Try to estimate the proportion of each category; this is more important than the absolute amount. So if you have 50% small, 30% medium and 20% large and you measured one box of each, you could fill in:

* + 1 boxes sampled out of 5 (Small)
  + 1 boxes sampled out of 3 (Medium)
  + 1 boxes sampled out of 2 (Large)

(or 10,6,4; or 50,30,20 you get the idea).

Q: What to do about ageing the fish we buy?

A: If you can’t sell the unused fish, age them all. If you can get them before they are sorted into boxes then you might be able to return unused fish.