

# **Protocol for sampling demersal fishery with passive gears at landing sites (GSA25)**

**Version: 2 (10/2021)**

**Stratum:** Landing sites for demersal fisheries with passive gears (nets, hooks and lines, traps) in GSA25

**Sampling frame identifier:** LS\_PG\_DEF\_GSA25

**Sampling frame description:** List of landing sites for demersal fishery with passive gears in GSA25. The list is provided in **Table 1**, and their location in **Map 1**.

**PSU:** landing site X day

**Method of PSU selection:** random selection of landing sites and weekdays.

**Sampling scheme:** Sampling on shore

**Sampling aim:** biological sampling, collection of effort and catch data (including discards and PETS incidental catches)

**Sampling restrictions:** 4-5 sampling events at landing sites may be carried out every week (not more than 1 per day). Sampling is carried out during working days and mostly during working hours.

**Fleet segments involved:** VL0006, VL0612, VL1218

## **Step 1 – Random selection of landing sites and sampling day**

A random selection (without replacement) of 8 landing sites from the ones listed in **Table 1** is made every 2 weeks. Specifically, landing sites are randomly assigned a number and are ranked by the highest value. First 4 landing sites are selected to be sampled during the first week, while the following 4 landing sites are selected to be sampled during the second week. An alternative landing site is also selected for each week, based on the ranking of the rest of the landing sites.

Following the selection of the landing sites, a second selection is made on the sampling days (Monday – Friday). 4 sampling days, as well as an alternative one, are selected for the first week, based on their ranking by highest value. Same procedure follows for the second week.

The combination of selected sampling sites and sampling days is based on their ranking order. The alternative combination of sampling site-sampling day is used in case of deviation from the planned sampling.

Electronic records are kept on all random selections, as well as the actual sampled landing sites and days, including any possible deviation from planned sampling and providing the relevant reason (bad weather, logistical and/or technical issues).

## Step 2 - Sampling procedure

The data collection team arrives at the selected sampling site early morning, around the time most fishermen return from fishing, and remains until all fishermen return to the landing site (usually before noon).

During sampling, the aim is to sample all vessels and all their fishing activities, considering that the use of polyvalent gears during a fishing trip is a common practice.

Trip sampling: The sampling form used for collecting effort, catch data and perform biological sampling (length) per vessel is available at the following link:

<http://www.moa.gov.cy/moa/dfmr/dfmr.nsf/All/5C667104B416A5A0C22586C500320E18?OpenDocument>. All species are required to be recorded, by the gear that they were caught. Concurrent length sampling is performed for the species included in **Table 2**; species are assigned in priority 1 and priority 2, in case there is not available time for sampling all of them. Table 2 provides also information on the 5 species for which biological samples are collected for the lab (for data on individual weight, age, maturity and sex).

Sample size: The aim is to length-measure around 25 individuals by species (by each fisherman that has caught the relevant species); it is noted that in many cases all individuals may be measured, since the total number landed by the fisherman is smaller than the target sample. The weight of the sample size is always measured.

Length measurements: total length, size intervals of half centimetre (scm), measurement at the lowest scm. In case of PETS, required length measurements are included in the sampling form.

For the five species for which biological samples are collected (bought) for the lab, the effort is to collect individuals through length-stratified sub-sampling. However, the collection of lab samples depends on the availability and the willingness of fishermen to sell, considering the popularity of fish to consumers and restaurants.

PETS incidental catches: Apart from onshore scientific observations (including photos, videos), information on PETS incidental catches is collected through interviews (see questionnaire in sampling form).

Following sampling, records are electronically saved, with each trip receiving a unique id and each length and lab sample receiving a code connecting them with the relevant trip. All collected information on the sampled trips are electronically reported, with indication whether length and other biological sampling was carried out, and for which species.

**Table 1:** List of landing sites (fishing shelters), ordered by location from eastern to western side of Cyprus. The landing sites included in the sampling list are indicated with an asterisk (\*).

A/A	LANDING SITE /FISHING SHELTER	LOCATION CODE	COMMENTS
1	ΑΓΙΑ ΤΡΙΑΔΑ (ΑΥΙΑ ΤΡΙΑΔΑ)*	CYTRI	This fishing shelter is combined for sampling with Paralimni, due to very close proximity
2	ΠΑΡΑΛΙΜΝΙ (PARALIMNI)*	CYPAR	This fishing shelter is combined for sampling with Aya Triada, due to very close proximity
3	ΑΓΙΑ ΝΑΠΑ (ΑΥΙΑ ΝΑΡΑ)*	CYAYI	
4	ΠΟΤΑΜΟΣ ΛΙΟΠΕΤΡΙΟΥ (ΡΟΤΑΜΟΣ ΛΙΟΡΕΤΡΙΟΥ)*	CYROT	
5	ΞΥΛΟΦΑΓΟΥ (ΧΥΛΟΦΑΓΟΥ)*	CYXYL	This fishing shelter is combined for sampling with Ormidia, due to close proximity and very few vessels registered.
6	ΟΡΜΗΔΕΙΑ (ORMIDIA)*	CYORM	
7	ΞΥΛΟΤΥΜΠΟΥ (ΧΥΛΟΤΥΜΠΟΥ)		Used by 1-2 vessels
8	ΛΑΡΝΑΚΑ (LARNAKA)*	CYLCA	
	ΛΑΤΟΥΡΟ (LATOURO)*		Private shelter between Larnaka and Zygi fishing shelters, used mainly by fishermen registered in Larnaka fishing shelter.
9	ΖΥΓΙ (ZYGI)*	CYZYG	
10	ΛΕΜΕΣΟΣ (LIMASSOL)*	CYLOP	
11	ΑΚΡΩΤΗΡΙ (AKROTIRI)	CYAFS	Occasionally used by fishermen registered in Limassol and Zygi. Very difficult to access this site.
12	ΠΑΦΟΣ (PARHOS)*	CYPFO	
13	ΑΓ. ΓΕΩΡΓΙΟΣ ΠΕΓΕΙΑΣ (ΑΥ. GEORGIOS)*	CYGEO	
14	ΛΑΤΣΙ (LATSI)*	CYLAT	
15	ΠΩΜΟΣ (POMOS)*	CYPOM	Very few vessels registered, and far to reach (from Nicosia headquarters).
16	ΠΥΡΓΟΣ (PYRGOS)*	CYPYR	Very few vessels registered and far to reach (from Nicosia headquarters).



Αλιευτικά Καταφύγια							
1	Αγίας Τριάδας	5	Ξυλοφάγου	9	Ζυγίου	13	Αγίου Γεωργίου Πέγειας
2	Παραλιμνίου	6	Ορμίδειας	10	Λεμεσού (Παλιό Λιμάνι)	14	Λατσιού
3	Αγίας Νάπας	7	Ξυλοτύμβου	11	Ακρωτηρίου	15	Πωμού
4	Ποταμός Λιοπετρίου	8	Λάρνακας	12	Πάφου	16	Κάτω Πύργου
Fishing Shelters							
1	Agias Triadas	5	Xylofagou	9	Zygiou	13	Agiou Georgiou Pegeias
2	Paralimniou	6	Ormideias	10	Lemesou (Palio Limani)	14	Latsiou
3	Agias Napas	7	Xylotymbou	11	Akrotiriou	15	Pomou
4	Potamos Liopetriou	8	Larnakas	12	Pafou	16	Kato Pyrgou

**Map 1:** Geographical distribution of inshore fishery landing sites (fishing shelters).

**Table 2:** List of species sampled during sampling at landing sites.

Species	Priority level	Comment
<i>Boops boops</i> *	Group 1 species	Group 1 at national level
<i>Merluccius merluccius</i>	Group 1 species	Group1 at GFCM and national level
<i>Mullus barbatus</i> *	Group 1 species	Group1 at GFCM and national level
<i>Mullus surmuletus</i> *	Group 1 species	Group 1 at national level
<i>Pagellus erythrinus</i> *	Group 1 species	Group 1 at national level
<i>Spicara smaris</i> *	Group 1 species	Group 1 at national level
<i>Lagocephalus sceleratus</i>	Group 1 species	Exotic species - Group 1 at GFCM level
<i>Pterois miles</i>	Group 1 species	Exotic species - Group 1 at GFCM level
<i>Diplodus annularis</i>	Group 2 species	Species with MCRS
<i>Diplodus sargus</i>	Group 2 species	Species with MCRS
<i>Diplodus vulgaris</i>	Group 2 species	Species with MCRS
<i>Epinephelus</i> spp.	Group 2 species	Species with MCRS
<i>Lithognathus mormyrus</i>	Group 2 species	Species with MCRS
<i>Pagellus acarne</i>	Group 2 species	Species with MCRS
<i>Pagrus pagrus</i>	Group 2 species	Species with MCRS
<i>Scomber colias</i>	Group 2 species	Species with MCRS
<i>Trachurus mediterraneus</i>	Group 2 species	Species with MCRS
<i>Trachurus trachurus</i>	Group 2 species	Species with MCRS
<i>Fistularia commersonii</i>	Group 2 species	Exotic species - Group 2 at national level
<i>Octopus vulgaris</i>	Group 2 species	Group 2 at GFCM and national level
<i>Serranus cabrilla</i>	Group 2 species	Group 2 at national level
<i>Siganus luridus</i>	Group 2 species	Group 2 at GFCM and national level
<i>Siganus rivulatus</i>	Group 2 species	Group 2 at GFCM and national level
<i>Sparisoma cretense</i>	Group 2 species	Group 2 at national level
Elasmobranchs	Group 2 species	

\* Asterisk indicates the species for which also biological sampling on age, maturity and sex is performed.