# ANNUAL REPORT

## On the Greek National Fisheries Data Collection Programme for 2016

(IN COMPLIANCE WITH COUNCIL REGULATION (EC) 199/2008, COMMISSION REGULATION (EC) 665/2008, COMMISSION DECISION 2010/93 EU)

**MINISTRY OF RURAL DEVELOPMENT AND FOOD**

**DIRECTORATE GENERAL FOR FISHERIES**

**MAY 2017**

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# I. GENERAL FRAMEWORK

The current document presents the Annual Report (AR) on the work carried out in Greece for the year 2016, according to the Greek National Programme (NP) for the collection, management and use of data in the fisheries sector and the requirements listed in the DCF. The programme has been carried out in accordance with the rules laid down in:

*Commission Regulation No 665/2008 laying down detailed rules for the application of Council Regulation (EC) No 199/2008 concerning the establishment of a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy.*

*Commission Regulation No 199/2008 establishing a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy*

*Commission Decision 2010/93/EU adopting a multiannual Community programme for the collection, management and use of data in the fisheries sector for the period 2011-2013*.

*Commission Implementing Decision 2013/5568/EU extending the national programs for the collection of primary biological, technical, environmental and socio-economic data in the fisheries sector for the period 2011-2013 to the period 2014-2016.*

The format of the document follows the most recent guidelines from the Commission (DCF_Guidance_AR_2015.doc and DCF_Standard-Tables_AR_2015.xlsx).

During 2016 all the modules have been implemented. There were no major methodological changes in approach compared to previous year.

The updated list of all the derogations requested by Greece and are still valid is presented in **standard table I.A.1.** Regarding the derogations requested on 2009 for eel fisheries sampling and eel biological sampling and variables, they are not valid any more. After the realization of pilot study on eel on 2012, data on eel fisheries and eel biological sampling are collected yearly.

Concerning bilateral and multilateral agreements regarding data collection, MS has not sign such an agreement, therefore the **standard table I.A.2.** is not filled.

# II. NATIONAL DATA COLLECTION ORGANIZATION

## II. A. National correspondent and participating institutes

The Data Collection Programme is co-ordinated by the General Directorate of Sustainable Fisheries, Ministry of Rural Development and Food, under the national correspondent Dr. Apostolos Karagiannakos, whose contact details are:

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The Data Collection Programme for Greece is carried out by two partners, the **Hellenic Agricultural Organization – Demeter** (HAO-DEMETER) that is the project's Scientific Co-ordinator and the **Hellenic Centre for Marine Research** (H.C.M.R.). Two institutes from each partner contribute to the realization of the NP. Specifically, from the HAO-DEMETER participates the **Fisheries Research Institute** (F.R.I) and the **Agricultural Economics Research Institute** (AGR.E.R.I). The FRI is a semi state marine research organisation responsible for collection of scientific data on the fisheries sector in North and Central Aegean Sea, on eel, on aquaculture and processing industry. The AGR.E.R.I is also a semi state research organisation responsible for collection and evaluation of economic data on the fisheries sector. From **H.C.M.R** participates the **Institute of Marine Biological Resources & Inland Waters of Athens** (I.M.B.R.W-Athens) and the **Institute of Marine Biological Resources & Inland Waters of Crete** (I.M.B.R.W-Crete)**.** The I.M.B.R.W is a semi state marine research organisation responsible for the collection of scientific data on the fisheries sector in South Aegean Sea, Ionian Sea and Cretan Sea. It also has the management of the database and GIS Fisheries Information System called IMAS-Fish which supports the Data Collection programme.

The contact details of the participating institutes are:

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The national DCF website is http://www.inale.gr/page57.html

One national coordination meeting was held in Kavala on 6/10/2016. The main issues discussed by the representatives of the involved institutes were i) the problems caused in the implementation of 2015 NP by the late start of the programme and ways to overcome them in 2016 ii) new data collection framework for the period 2016-2020 iii) financial issues.

## II B Regional and International coordination

### II B 1 Attendance of International meetings

The Standard **Table II.B.1** shows the international scientific meetings that have been attended by Greek scientists.

### II B 2 Follow-up of regional and international recommendations and agreements

The follow-up of regional and international recommendations is listed in **Standard Table II.B.2.**

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# III MODULE OF THE EVALUATION OF THE FISHING SECTOR

## III A General description of the fishing sector

The Greek fishing fleet consists of a large number of vessels. According to the National Fleet Register of 2015 the fleet consists of 15624 registered fishing vessels with a total tonnage of 74699 GT, total power of 446.239 KW and average age of 29.06 years. From 2012 onwards till 2015 the size of the Greek fleet decreased by 8.14% in the number of vessels, by 8.58% in tonnage and by 6.76% in engine power while the age of the vessels increased (Table III.A.1.1.).

**Table III.A.1.1** The change in fleet size from 2012 to 2015.

| Year | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|
| **Number of vessels** | 16063 | 15954 | 14755 | 15624 |
| **Tonnage (GT)** | 76.211 | 75.566 | 72.843 | 74.699 |
| **Engine power (KW)** | 455.640 | 454.565 | 431.166 | 446.239 |
| **Average Age (years)** | 26.78 | 27.61 | 28.26 | 29.06 |

The great majority of the fleet consists of small vessels -average length 7.5 m- exploiting the extensive coastline of the mainland, and the shoreline of the numerous Greek islands targeting the coastal fishing stocks. A general description of the Greek fishing sector is given in the **Standard Table III.A.1**

The Greek fishing fleet operates in Ionian Sea (GSA 20), Aegean Sea (GSA 22) and Cretan Sea (GSA23) and is categorized in the following three (3) major categories depending on the fishing activity.

### Demersal fisheries

The demersal fishery in Greece is the otter trawl fishery that consists of 282 vessels with total capacity 27.278 GT and engine power 82.462 KW. Although it represents a small part of the Greek fishing fleet (1.8%), its production represents approximately the 25% of total fisheries production. It is a mixed fishery that targets demersal species and is only one metier (OTB_DES_>=40_0_0). It is a common fishery in the Aegean, Ionian Sea and in a lower extent in Cretan Sea and exploits mainly fishing grounds covering the continental shelf and the first part of the slope (depths up to 300 meters) in the national and international waters of the Mediterranean Sea.

### Pelagic fisheries

The pelagic fishery in Greece is the purse seine fishery that consists of 253 vessels with total capacity 11.343 GT and engine power 47876 KW.

Purse seine fishery targets mainly small pelagic species (anchovy and sardine), mackerel and horse mackerel as well. It performs fishing trips of short duration (rarely more than 24 hours), because of the vulnerability of the main target species. It is a common fishery in the Aegean, Ionian Sea and in a lower extent in Cretan Sea. It is only one metier (PS_SPF_>=14_0_0).

**Coastal fisheries**

The coastal fishery in Greece represents the largest part of the Greek fishing fleet. It consists of 14218 vessels which according to their overall length are divided into:

A) Vessels with an overall length of less than 12 meters. This category consists of 13.567 vessels with a total capacity 26490 GT and total power 252161 KW.

B) Vessels with an overall length equal to or greater than 12 meters. This category consists of 313 coastal fishing vessels with a total tonnage 5542 GT and total power 28649 KW.

The Greece coastal fishery is the largest among all EU countries both in number of vessels and fishermen causing difficulties in the monitoring of fishing activity and production. It has a multi-gear and multi-species character. The most common metiers that have been recorded in coastal fishery are the following:

| | |
|---|---|
| Set gillnet for demersal fish | GNS_DEF_>=16_0_0, |
| Set trammel net for demersal fish | GTR_DEF_>=16_0_0, |
| Set long lines for demersal fish | LLS_DEF_0_0_0, |
| Drifting long lines | LLD_LPF_0_0_0, |
| Pots and traps for demersal species | FPO_DEF_0_0_0, |
| Beach and boat seine for demersal species | SB_SV_DEF_0_0_0 |
| Hand and pole lines for finfish | LHP_LHM_FIF_0_0_0, |
| Trolling lines for large pelagic fish | LTL_LPF_0_0_0 |

According to ranking system as described in the EU Dec. 93/2010, the first five of them have been selected for sampling purposes while the last three were not selected.

**III B Economic variables**

Supra region: Mediterranean Sea and Black Sea

III B 1 ACHIEVEMENTS: RESULTS AND DEVIATION FROM NP PROPOSAL

This section focuses on the estimation of economic variables of the fishing sector in Greece. The economic data collected refers to the year 2015 (reference year).

A sample survey was conducted in order to estimate the economic parameters of the fishing sector, while data required for the estimation of the value of fixed assets and annual depreciation costs were calculated by processing records derived from the National Fleet Register. The target population was the Fleet Register.

However, there are some differences in the composition of the target population, compared to what was described in the 2011-2013 NP proposal, as indicated in table III.B.1. These changes can be explained by the fact that for the 2011-2013 NP proposal the National Fleet Register of the year 2008 was used. Nevertheless, from 2008 till 2015 the Greek fishing fleet has decreased by 9.4%, while the reduction was not equi-proportionate among segments.

Another deviation from the NP proposal concerns the clustering of two fleet segments. In the NP proposal no clustering of the fleet segments was considered necessary. But due to changes in the composition of the fleet, as already mentioned, one clustering was considered necessary for confidentiality reasons in 2015, as explained in more detail in the paragraph "Clustering of fleet segments".

Finally, it should mentioned that the economic variables collection scheme and the transversal variables collection scheme have been aligned since the 2014 data collection, as was advised to the MS during the evaluation process of 2012 and 2013. Specifically, the segments used in the transversal variables scheme were adopted. Therefore, the "polyvalent passive gears" segments were split to "pots and traps", "hooks" and "nets.

To carry out the sample survey the statistical methods (sample design, sample size, strata allocation, raising factors, variance estimators) described in the 2011-2013 NP proposal have been applied.

Data were collected through face-to-face interviews using a structured questionnaire specifically designed for the survey.

It should be emphasized that no deviations from the NP proposal are listed regarding the methods used for collecting the data and for the estimation of the economic parameters.

The number of sample units per stratum and the planned sample rate is reported in table III.B.1. Standard tables III.B.1 and III.B.3 have been updated with the information collected during the sampling year.

The number of inactive vessels for each length category is presented in table III.B.1. It should be noted that the National Fleet Register does not include any information regarding inactivity of fishing vessels. The number of inactive vessels in Table III.B.1 has been estimated through the data collection survey (random sampling survey).

***Clustering of fleet segments***

In this section, all the information regarding the clustering of the fleet segments is provided as required by the DCF and following STECF recommendations. Standard Table III.B.2 reports the segments that have been clustered. Clusters are named after the segment that contains the larger population of vessels.

The information regarding clustering is provided for separately "Important segments with distinct characteristics", "Segments similar to other segments" and "Non-important segments with distinct characteristics" as required.

*1. Important segments with distinct characteristics*

No clustering was necessary for important segments with distinct characteristics.

*2. Segments similar to other segments*

Two segments with similar characteristics were clustered together, for confidentiality and sampling reasons. Specifically, the segment "Vessels using hooks 18-24" contains only 8 vessels that were clustered together with the segment "Vessels using hooks 12-

18" which contains 118 vessels. Apart from the fact that the clustering of the two fleet segments was necessary for sampling and confidentiality reasons it should also be emphasized that the two fleet segments use similar fishing equipment and fishing patterns and it was also observed that the LOA of the larger vessels was close to 18. For the above reasons clustering was considered not only necessary but also fully justified.

*3. Non-important segments with distinct characteristics*

No clustering was necessary for non-important segments with distinct characteristics.

***Estimation of Capital value and capital cost***

For the estimation of the capital value and the capital costs data from the National Fleet Register were also used. The methodology suggested by the study on "evaluation of the capital value, investments and capital costs in the fisheries sector" (No FISH/2005/03) was applied.

In order to estimate the capital value (GCS) three steps were followed:

1. Specification of the composition of the active fleet by age

2. Estimation of value per LOA

3. Calculation of the value of each vintage (year of construction) of the fleet and converting values of all vintages to current prices using price indices.

The year of construction for each vessel was taken from the National Fleet register. For the estimation of value per LOA, data gathered through the survey was also used, as described in more detail in the following Table.

| ***Questions*** | ***Answers*** |
|---|---|
| 1. Which are the reference values taken into account for the estimation of the price per capacity unit (e.g. book value, second hand market, etc)? | The reference values were estimated through the sample survey. They were also crosschecked with information provided by market stakeholders. |
| 2. Which estimation methods and/or models have been used to estimate the PCU? | The reference values were estimated through the sample survey. |
| 3. If a net value has been used, what is the method used to calculate the gross value? (e.g. formula, figures from the balance sheets, etc.)? | Digressive (replacement) formula: historical value/(1-depreciation rate of each asset)^age of the asset. |
| 4. What type of index price series have been used (e.g. heavy machinery index, etc.)? | Heavy machinery index. |
| 5. What depreciation rates? From where do they come (e.g. national legislation, general scheme excel spreadsheet, etc)? | Hull (7%), Engine, (25%), Electronics (50%), other equipment (35%) (see study No. FISH/2005/03). |
| 6. Which age schedule (service life time) has been used? | Hull (25), Engine (10), Electronics (5), other equipment (7). |
| 7. What is the share of each asset on the total value of the capital? | Hull (46%), Engine, (25%), Electronics (2%), other equipment (27%). |

Inactive vessels have been included in the evaluation of capital value and capital costs.

III B 2 DATA QUALITY: RESULTS AND DEVIATION FROM NP PROPOSAL

The sampling strategy and the achieved values of the accuracy indicators are presented in **Table III.B.3.**

Data quality is also given in terms of planned sample rate, response rate and achieved sample rate.

All economic variables of Appendix VI are collected through the sample survey and therefore data is consistent.

In the case of the value of capital and annual depreciation costs data from the National Fleet Register was also used, as already mentioned in the previous chapter.

*FTE and engaged crew*

Total employment and FTE are estimated according to the methodology suggested by the study on "calculation of labor including FTE (full-time equivalent) in fisheries" (No FISH/2005/14).

In order to estimate the FTE, data from the questionnaires regarding the average number of days at Sea, the number of average crew per vessel excluding and including rotation and the average number of hours of work per crew member per day at Sea, are gathered.

The estimation of the employment in terms of FTE has been made by assuming an FTE threshold (representing the standard working time for the fishing sector) expressed in terms of yearly hours per man.

The FTE threshold is equal to 2,000 hours per year. It is also assumed that:

• each crewman working annually 2,000 hours or more is counted as one FTE

• each crewman working less than 2,000 hours per year is counted as a percentage of an FTE according to the number of hours worked in relation to the threshold of 2,000 hours

• working time is the time spent on fishing and related activities on board or on shore. This means that working time is only a part of the duration of a fishing trip.

During the data collection extra measures were taken in order to achieve high quality of the collected data. The data collectors were properly educated and detailed written instructions regarding the collection of the data were provided to them. They were also advised to conduct the institute in charge of economic data processing throughout the data collection process whenever a problem or question arose. Furthermore, each data collector was asked to submit a completed trial questionnaire to ensure that all fields were filled out correctly.

In addition, as soon as data was submitted by the data collectors they were evaluated mainly in terms of missing values and typing errors and the data collector was conducted in case any problem arose.

For a more extensive evaluation of the quality of the collected data several indicators were used. The days at Sea, the fuel consumption per day at Sea, the number of employees per vessel, the volume of landings and the average price per kilo were used to identify outliers in every fleet segment. Furthermore, the ratio of each cost category (e.g. variable costs, fuel costs, wages and salaries, fixed costs etc.) to the revenues of the vessels was used for the same purpose.

After the extensive evaluation of the collected data the CV of the economic variables was also estimated as another quality indicator. Both the values of the CV of the estimated economic variables and the response rate were adequate, given the fact that there were significant delays in the beginning of the NP. Finally, for the final quality check of the estimated economic variables the DV tool proposed by the JRC was used.

### III B 3 Actions to avoid deviations

The deviations from the NP proposal concern mainly the segmentation of the population and the clustering of two fleet segments that, as mentioned in detail above, are explained by changes in the fleet composition since 2008. These deviations are justified and necessary for sampling reasons and therefore should not be avoided. Moreover, to align with the transversal variables data collection scheme, the MS has altered the segmentation of the fleet.

Finally, it should be noted that despite the fact that there were significant delays in the beginning of the NP in year 2016, the MS managed to meet the deadlines for the economic data collection and to achieve an adequate level in all qualitative indicators. However, the qualitative indicators can be further improved, provided that the NP will start on time.

## III C. Metier-related variables

REGION: MEDITERRANEAN SEA

III C 1 ACHIEVEMENTS: RESULTS AND DEVIATION FROM NP PROPOSAL

The sampling was carried out for the evaluation of length distribution of species in the catches and the quantity of catches and discards. The data have been collected by metier referred to as level 6 of the matrix defined in Appendix IV (EU Dec. 93/2010), and has been agreed at regional level (RCM Med & BS 2009 and 2010), per GSA as defined in Appendix I Level 4 (EU Dec. 93/2010) and for the stocks listed in Appendix VII (EU Dec. 93/2010).

The **Table III.C.1** provides information on the metiers that are realised by the Greek fishing fleet, considered as major and were selected for sampling purpose through the ranking system. The selected metiers are in full agreement with the most recent regional ranking (PGMED 2016). Metiers are given at GSA level, based on the requirements of the Commission Decision (EU Dec. 93/2010). The Greek GSAs are: GSA20 (Ionian Sea), GSA22 (Aegean Sea), GSA23 (Cretan Sea).

The **Tables III.C.3** and **III.C.4**, provide information on the number of trips that were achieved by métier in each GSA for 2016 and on the number of trips that were initially planned, respectively. Sampling has been carried out in each GSA, through concurrent sampling on-board the fishing vessels and on-shore, providing data on all the species that were fished in the first case (on-board) and only on landings in the second case (on-shore). The sampling has been designed taking into account the spatial and temporal variability in order to detect Seasonal differences in the demographic structure and composition of the landings for different métiers. The sampling unit was the fishing trip. The discards were estimated for all the metiers that were selected for sampling through the ranking system. More effort was given to sampling at Sea in order to have better information on the discards and more representative length and age distribution per species. Therefore the trips at Sea are more than the planned in most of the cases.

A brief description of the sampling intensity per métier is given below:

***Bottom otter trawl fisheries targeting demersal species (OTB_DES_>=40_0_0)***

The bottom otter trawl fishery was sampled to a lesser extent compared to what was planned. In GSA 22 the sampling intensity approached the target (151 trips instead of 190, 79%) while in GSA 20 the sampling intensity was 47% (60 trips instead of 128) and in GSA 23 was 33% (20 trips instead of 60). The poor coverage of GSA 23 can be attributed to the fact that the bottom trawl fishery is not usual in Cretan Sea as only 9 bottom trawlers out of the 282 operate in that area (see also section III.A General description of the fishing sector).

***Purse seine fisheries targeting small pelagic fish (PS_SPF_>=14_0_0)***

The overall sampling performance of purse seine fishery met the planned target as 439 trips out of 444 (98.8%) were realized. However, the sampling coverage differentiated among the GSAs as it has surpassed the sampling requirements in GSAs 20 and 22 and was poor in GSA 23. In details, the sampling intensity was 105% in

GSA 20 (168 out of 160 trips), 134% in GSA 22 (252 out of 188 trips) and 20% in GSA 23 (19 out of 96 trips). The poor coverage of GSA 23 can be attributed to the fact that purse seine fishery is not usual in Cretan Sea as only 7 purse seiners out of the 252 operate in that area (see also section III.A General description of the fishing sector).

***Pots and traps for demersal species (FPO_DES_0_0_0)***

The pots and traps fishery is realised only in GSA 22. It was sampled more than what was planned however with no additional financial burden on the budget. The sampling intensity was 106% (54 trips instead of 51).

***Set gillnet for demersal fish (GNS_DEF_>=16_0_0)***

The overall sampling performance of gillnet fishery surpassed the planned target as 589 trips out of 496 (119%) were realized. However, the sampling coverage differentiated among the GSAs as it has surpassed the sampling requirements in GSAs 20 and 22 and was lower in GSA 23. In details, the sampling intensity was 165% in GSA 20 (237 out of 144 trips), 129% in GSA 22 (299 out of 232 trips) and 44% in GSA 23 (53 out of 120 trips).

***Set trammel net for demersal fish (GTR_DEF_>=16_0_0)***

The overall sampling performance of trammel net fishery surpassed the planned target as 1078 trips instead of 908 (119%) were realized. The sampling intensity surpassed the sampling requirements GSA 20, and 23 and nearly met the target in GSA 22. In details, the sampling intensity was 164% in GSA 20 (446 instead of 272 trips), 96% in GSA 22 (485 out of 504 trips,) and 111%in GSA 23% (147 out of 132 trips).

***Set long lines for demersal fish (LLS_DEF_0_0_0)***

The overall sampling performance of set long line fishery surpassed the planned target as 741 trips instead of 612 (121%) were realized. The sampling coverage differentiated among the GSAs as it has surpassed the sampling requirements in GSAs 20 and 22 and met the target in GSA 23. The sampling intensity was 151% in GSA 20 (333 trips instead of 220), 109% in GSA 22 (296 trips instead of 272) and 93% in GSA 23 (112 trips out of 120).

***Drifting long lines (LLD_LPF_0_0_0)***

Regarding the drifting long line fishery, in Greece it targets only swordfish. Blue fin tuna and albacore are by-catch in swordfish fishery. Thus, the métier LLD_LPF_0_0_0 is only for SWO. The drifting long line fishery surpassed the sampling requirements; the sampling intensity was 117% (414 trips instead of 354). Most of the sampling was realized on shore.

The **Table III.C.6** shows the achieved length sampling by species and by metier. Landings and discards were monitored for the Group 1, 2 of Appendix VII (EU Dec. 93/2010) and Group 3 species that were decided by 2008 RCM Med & BS.

The overall planned number of individuals that should be collected for length sampling was achieved for all the G1 and G2 species. However, the sampling coverage differentiated among the GSAs as it has surpassed the sampling

requirements for all the G1 and G2 species in GSA 22 and for the majority of them in GSA 20. In GSA 23 the sampling coverage surpassed the sampling requirements for the species: *Boops boops, Illex coindetii Pagellus erythrinus, Sepia officinalis, Spicara smaris*, while for the rest G1 & G2 species the achieved number of individuals was lower than the planned.

All the Group 3 species were sampled for length, by métier, in all the GSAs. As there were no planned numbers for G3 species in the Greek NP the species were sampled whenever they were found, either in the on-board sampling or the scientific survey (MEDITS).

The total number of species sampled was 68 species in GSA20, 71 species in GSA22 and 48 species in GSA23.

III C 2 DATA QUALITY ISSUES

In most of the metiers the sampling intensity has met the targets described in the NP proposal. Deviations observed in bottom otter trawl fisheries and can be attributed to refusals to access to vessels and difficult weather conditions during the winter months. Also, the four months closure of bottom trawl fisheries (23/5-30/9) deteriorates even more the possibilities to meet the sampling requirements.

The sampling intensity in GSAs 20 and 22 met the targets described in the NP proposal and in many cases have sampled more than what was planned. However, lower coverage indicated in GSA 23 in bottom trawler and purse seiner metiers.

Regarding the length sampling most fish stocks were oversampled in terms of the number of length measurements, well exceeding the planned and requested minimum numbers described in the NP

III C 3 ACTIONS TO AVOID DEVIATIONS

Reallocation of the sampling scheme between GSAs regarding i) the number of trips per metier and ii) the planned number of fish that should be measured per metier for length sampling, is considered as a solution in order to improve the performance of GSA 23. This matter has already been arranged in NWP 2017-19. Also, it will be a greater effort to meet the sampling requirements in bottom trawl fisheries.

## III D. Recreational fisheries

III D 1 ACHIEVEMENTS: RESULTS AND DEVIATION FROM NP PROPOSAL

Recreational fisheries of bluefin tuna

There is no recreational fishery of bluefin tuna in Greece. According to the Ministerial Decision 5632/104626/2015 which lays down specific rules for the fisheries of large pelagic species (*Thunnus thynnus*, *Thunnus alalunga* and *Xiphias gladius*) in Greek waters, the fisheries for these species (i) can only be practiced by professional fishermen with a special licence, and (ii) is strictly forbidden for recreational fishermen.

Also, in 2003, a derogation was requested by Greece concerning blue fin tuna and the derogation was justified according to SGRN document: 05-01 Evaluation of NP for 2005_Sec(2005)-255 (pages 55, 103-104)

Recreational fisheries of eels

According to the Ministerial Decision 643/39462/01-4-2013 which lays down specific rules for the eels' fishery, the recreational fishery of eels is prohibited all year throughout the country.

Recreational fisheries of sharks

According to the Ministerial Decision 4531/83795/20-7-2016, any type of fishery professional or recreational, of the following elasmobranches species, is prohibited all year throughout the country.

*Carcharias taurus, Carcharodon carcharias, Cetorhinus maximus, Dipturus batis, Galeorhinus galeus, Gymnura altavela, Isurus oxyrinchus,Lamna nasus, Leucoraja circularis, Leucoraja melitensis, Mobula mobular, Odontaspis ferox, Oxynotus centrina, Pristis pectinata, Pristis pristis, Rhinobatos cemiculus, Rhinobatos rhinobatos, Rostroraja alba, Sphyrna lewini, Sphyrna mokarran, Sphyrna zygaena, Squatina aculeata, Squatina oculata, Squatina squatina.*

If any of these species is caught, it should be released immediately and without injury, as far as possible.

III D 2 DATA QUALITY ISSUES

Not applicable

III D 3 ACTIONS TO AVOID DEVIATIONS

Not applicable

## III E Stock-related variables

III E 1 ACHIEVEMENTS: RESULTS AND DEVIATION FROM NP PROPOSAL

Biological stock-related variables are collected from surveys, on board sampling, landings and market place spatio-temporally to detect seasonal differences in the structure and composition of the species examined.

The **Table III.E.1** shows all the species and stocks for which biological variables sampling is mandatory according to the requirements of the Appendix VII of Commission Decision 2010/93/EU, for the areas where the Greek fishing fleet is operating (GSAs 20, 22, 23). The reference period used in the most recent NP 2011-2013 was the 2005-2007 period which has a decade time gap from today. Therefore it was decided the average landings (in tons) and share in EU landings (%) to be given over the 2013-2015 period for all the stocks, as it is provided in the report of RCM MED BS LP 2016. Stocks, whose landings by weight were less than 200 tons or corresponding to less than 10% in the EU Mediterranean landings, have been excluded. Species not sampled are highlighted in grey.

For a number of species Greece asked derogation for biological stock-related sampling (see Standard Table I.A.1) because of small landings quantity (<200tons) or small share in the EU Mediterranean landings (<10%) which has been approved. Some of these species (*Lophius piscatorius, Micromesistius poutassou* and *Sparus aurata)* showed an increase in landings for the period 2013-2015. However, this increase is rather controversial because:

For *Sparus aurata*, the production is very variable from one year to another and is mostly caught in lagoons. Only a small fraction is by catch of demersal trawlers and small scale fishery.

For *Lophius piscatorius*, neither the fishermen nor the fish merchants separate *Lophius* species because the price is the same for both species; they separate them only by the size. From the onboard sampling we have noticed that the real quantities of *Lophius piscatorius* are very small.

For *Micromesistius poutassou*, the production is very variable from one year to another.

Nevertheless, Greece included these species in the NWP 2017-2019 in order to clarify the situation.

The **Table III.E.2** shows the biological variables (individual information on age, length, weight, sex and maturity) that were collected in 2016 for the species defined in Table III.E.1.

The **Table III.E.3** shows the number of individuals sampled, by species and by GSA, in order to obtain the biological variables according to Greek NP.

The planned number of individuals that had to be measured was achieved for most of the variables and in many cases there was oversampling. The coverage per stock and GSA is given below

*Anguilla anguilla:* The species was sampled for biological variables in all EMUs that commercial catches exists. The achieved number of individuals exceeded the planned for weight-at-length variable (162%) and nearly met the target for all the age related variables (90%).

*Boops boops:* The species was sampled for biological variables in all GSAs. The number of individuals collected nearly met the planned target in GSAs 20 and 22 (>80% for maturity-at-length and sex-ratio-at-length variables) and surpassed it (>110%) for weight-at-length variable. In GSA 23 over sampling occurred for all the variables (139%).

*Eledone moschata*: The species was sampled for biological variables only in GSA 22 and the number of individuals collected was half of the planned (54%).

*Engraulis encrasicolus:* The species was sampled for biological variables in GSAs 20 and 22. The planned number of individuals was achieved in both GSAs and over sampling occurred for all the variables (>120%).

*Illex coindetii:* The species was sampled for biological variables only in GSA 22 and over sampling occurred for all the variables (>120).

*Loligo vulgaris:* The species was sampled for biological variables in GSAs 20 and 22. Over sampling occurred for all the variables in GSA 20 while the coverage was lower in GSA 22 (32-38%).

*Lophius budegassa:* The species was sampled for biological variables in GSAs 20 and 22. In GSA 20 the number of individuals collected for length variables was ~70% while for age variables ~60%. In GSA 22 the number of individuals collected for age variables was 75% for weight-at-length 82% while for maturity and sex-ratio about half of the planned number.

*Merluccius merluccius:* The species was sampled for biological variables in all GSAs. In GSAs 20 & 22 over sampling occurred for all the variables and in GSA 23 the planned number was achieved (95-96%) also for all the variables.

*Mullus barbatus:* The species was sampled for biological variables in all GSAs. Over sampling occurred in all GSAs for all the variables.

*Mullus surmuletus:* The species was sampled for biological variables in all GSAs. Over sampling occurred in GSAs 20 & 22 for all the variables and in GSA 23 the planned number was archived also for all the variables.

*Nephrops norvegicus:* The species was sampled for biological variables only in GSA 22 and over sampling occurred for all the variables (>120%).

*Octopus vulgaris:* The species was sampled for biological variables in GSAs 20 and 22. The achieved number was 75% for all the variables in GSA 22 while in GSA 20 was lower than the planned (21%).

*Pagellus erythrinus:* The species was sampled for biological variables only in GSA 22 and over sampling occurred for all the variables (>300%).

*Parapenaeus longirostris:* The species was sampled for biological variables in all GSAs. Over sampling occurred in GSAs 20 & 22 for all the variables and in GSA 23 the planned number was archived also for all the variables (96%)

*Penaeus kerathurus:* The species was sampled for biological variables only in GSA 22 and the number of individuals collected was lower than the planned (60%), however satisfactory.

*Sarda sarda:* The species was sampled for biological variables in all GSAs and over sampling occurred for all the variables (>250%).

*Sardina pilchardus:* The species was sampled for biological variables in GSAs 22 and 20. The species was oversampled in both GSAs for all the variables.

*Scomber colias:* The species was sampled for biological variables in GSAs 22 and 20. The species was oversampled in both GSAs for all the variables.

*Scomber scombrus:* The species was sampled for biological variables in GSAs 22 and 20. The species was oversampled in GSA 22 for all of the variables while in GSA 20 the coverage was low (14-16%).

*Sepia officinalis:* The species was sampled for biological variables in GSAs 22 and 20. The species was oversampled in GSA 22 for all of the variables while in GSA 20

the number of individuals collected was lower than the planned (38-39%) for all of the variables.

*Solea solea:* The species was sampled for biological variables only in GSA 22 and the number of individuals collected was half of the planned (47-54%) for all of the variables.

*Spicara smaris:* The species was sampled for biological variables in all GSAs. The species was oversampled in GSA 23. In GSA 22 the planned number was achieved for the length related variables and nearly achieved (82%) for the age related variables. In GSA 20 the achieved number for the age related variables and for weight-at-length variable was about half of the planned while for maturity-at-length and sex ratio-at-length variables was even lower (26%).

*Trachurus mediterraneus:* The species was sampled for biological variables in GSAs 22 and 20. The species was oversampled in GSA 22 while in GSA 20 the number of individuals collected was much lower than the planned (20-25% depending on the variable).

*Trachurus trachurus:* The species was sampled for biological variables in GSAs 22 and 20. The species was oversampled in both GSAs for weight-at-length, length-at-age, weight-at-age variables and nearly met the target for maturity-at-length and sex ratio at length variables (84-95% depending on the variable).

*Thunnus thynnus:* The species was sampled for biological variables in all GSAs. The planned number of individuals for the weight-at-length variable was achieved.

*Xiphias gladius*: The species was sampled for biological variables in all GSAs. The planned number of individuals for the weight-at-length variable was achieved

For the species *Coryphaena hippurus* and *Thunnus alalunga*, according to their landings, no individuals were planned for sampling for 2016 from the relevant PGMed meeting.

The Shark-like selachii are caught only as by catch, so the number of individuals sampled at national level cannot be planned in advance; they were sampled for biological variables, whenever they were found during on board sampling and MEDITS scientific survey. From the Shark-like selachii species a considerable number of individuals was caught only for the species *Scyliorhinus canicula* in GSA 22 and in a lower extend in GSA 20. The species was sampled for length related variables in both areas.

### III E 2 DATA QUALITY ISSUES

The planned number of individuals that had to be measured was achieved for most of stocks and for most of the variables and in many cases there was oversampling. For few stocks the target has not met. The lack of availability of samples for certain stocks was generally related to low landings of these stocks or to small fishing period.

### III E 3 ACTIONS TO AVOID DEVIATIONS

Data collection was in accordance with the NP with no major deviations. Most effort will be given in future in order to have the appropriate samples for all the stocks.

## MONITORING OF COMMERCIAL EEL

### Eel landings

The total landings of all legally caught eels (i.e. TL> 30cm) for 2016 in Greece (EMU-1, EMU-2 and EMU-3) were 72.95 t, higher than the 54.99 t recorded in 2015. The recorded landings in 2016 for Western Greece (EMU-1) including the Mesolongi - Aitoliko lagoons, lagoons of Amvrakikos Gulf, Preveza and Lefkada lagoons were 47.04 t. Ilia and Achaia lagoons of Western Peloponnese (EMU-2) eel landings were approximately 22.16 t. Finally the landings recorded in 2016 for Eastern Macedonia and Thrace was 0.56 t (Lake Vistonida and Evros).

### Eel measurements

In the framework of the National Fisheries Collection Program 2016, length, weight, sex, sexual maturity and the number of parasites measurements were collected for a sample of 1,136 eels, from the landings of the 3 EMUs where eel production exists. Data on age were, also, collected, calculated according to the proper ICES protocol, for a subset of the above sample (270 specimens).

For EMU-3, the total number of specimens measured for Total Length (TL, mm) and Total Weight (TW, mm), was 42 (all derived from the River Evros Delta). In EMU 3 the total eel production in 2016 was even lower than the production of 2015 (57,73% decrease). This decline was due to the weather conditions prevailed during the main eel fishing period (November-December 2016). During the above mentioned period the high temperatures and drought prevailed had as a result the significantly delay of the initiation of the spawning migration, which was observed to have started in mid-January 2017. For EMU-1, the total number of specimens that had TL (mm) and TW (mm) calculated, were in total 994 (394 of the Mesolongi and Aitolikou lagoons, 117 of Arta's lagoon, 90 and 261 of Lefkada and Preveza lagoons respectively) while in EMU-2 181 specimen were measured (Prokopou and Kotychi lagoons).

### Age assessment

For the discrimination of eel specimens into age classes, the otolith method was used instead of the scale method, as proposed by the age assessment protocol of ICES.

The age of 172 specimens of Mesolongi and Aitoliko Lagoons was calculated for EMU-1. The mean age for the specimens from Mesolongi and Aitoliko Lagoons was estimated at 4.02 years with a standard deviation (SD) equal to 1.43 and the most common age in the sample, was found to be age 3 and 4. High SD of the ages is possibly caused by the environmental heterogeneity among the lagoons of the Messologhi-Aitoliko wetland complex. In EMU-2, the age of 98 specimens of Prokopos and Kotychi lagoon were assessed. Sample's mean age was estimated at 3.25 years with a standard deviation (SD) equal to 0.66. Same as 2015, eels of EMU-2 seem to transform into silver eels faster than in EMU-1.

### Sexual maturity

For the discrimination of the eel specimen into sexually immature (including all 5 stages of yellow eels, proposed by Duriff et al. (2005)) and sexually mature, a combination of 3 indices was used. Those three indexes were, Eye Index (Punkharst

et al., 1982), Fin Index (Duriff et al., 2005) and the Mean Minimum Length of Female eels caught while migrating from all Greek lagoons. When all 3 indices gave the same result about a specimen, only then it was accepted to be mature or immature, the rest of specimens that failed to get a common result by all 3 indices where not classified. This method was applied on the total sample, thus 1,136 specimens from all 3 EMUs of Greece.

**Parasites and various diseases**

The eels sample collected from River Evros Delta (EMU-1) in 2016 was tested in the laboratory for parasites revealing that a large number of fish were infected parasites. Out of the 42 specimens, 11 (26.19%) were carriers of at least one individual of the nematode *Anguillicoloides crassus*. From the Mesolongi -Aitoliko Lagoons a total of 776 specimens were examined, the parasite *A. crassus* was carried by 34specimens (4.38%). Finally, for EMU-2 a total of 100 specimens were checked for parasites, resulting that 49 specimens (49%) of the sample were carriers of the parasite.

## III F Transversal variables

### III F 1 Capacity

#### III F 1 1 Achievements: results and deviation from NP proposal

Data on fleet capacity for 2016 was available from the National Fleet Register and includes vessels operating in GSA-20, GSA-22 and GSA-23.

The following parameters were estimated:

- Number of professional fishing vessels
- Length
- GT
- kW
- Age

Parameters were estimated annually, by fleet segment, GSA and supra-regions (in case of large pelagic fishery).

#### III F 1 2 Data quality: results and deviation from NP proposal

Data were collected exhaustively from the fleet register, cover the entire Greek fleet so, no further estimation is required and it is in accordance with the NP with no deviations.

#### III F 1 3 Actions to avoid deviations

There are no shortfalls

### III F 2 Effort

#### III F 2 1 Achievements: results and deviation from NP proposal

Data on effort were collected for all the required metiers. Considerable attempt was made to allocate the effort of small scale fishery vessels to the required metiers. This

was due to the fact that till the end of 2016 it was not mandatory for small-scale fishery vessels to specify the type of activity they practice along the year. Each vessel can use all the fishing gears indicated in the license. The majority of the fishing licenses of the Greek small scale fishery vessels allow the use of more than one gear (~96%). This framework is also more complex if we consider the high number of existing métiers, with differences in Seasonality and geographical areas.

In order to estimate fishing effort by métier and GSA, the following data sources have been used:

- field survey to detect the prevalent fishing activity
- sample survey to estimate the monthly distribution of activity by métiers. The sample survey was based on a frame of 592 vessels (**Table III.F.2.1.1**) distributed in the 12 major fishing areas (GSA20: N-ION, C-ION, S-ION, GSA-22: ARGSAR, EVIA, THERM, THR-LIM, CHI-MIT, CYCL, DODEC, VOL_SPOR, GSA-23: CRETE) (**Figure III.F.2.1.1**) Data on fishing effort, vessel activity and fishing area were recorded by gear using purposely formulated questionnaires. Results for each area, by month and by métier were obtained by applying raising factors to the sampled data.
- VMS data to estimate fishing effort for trawlers and purse seines (100% of vessels).
- ERS data covering part of the year to estimate fishing effort for trawlers and purse seiners.

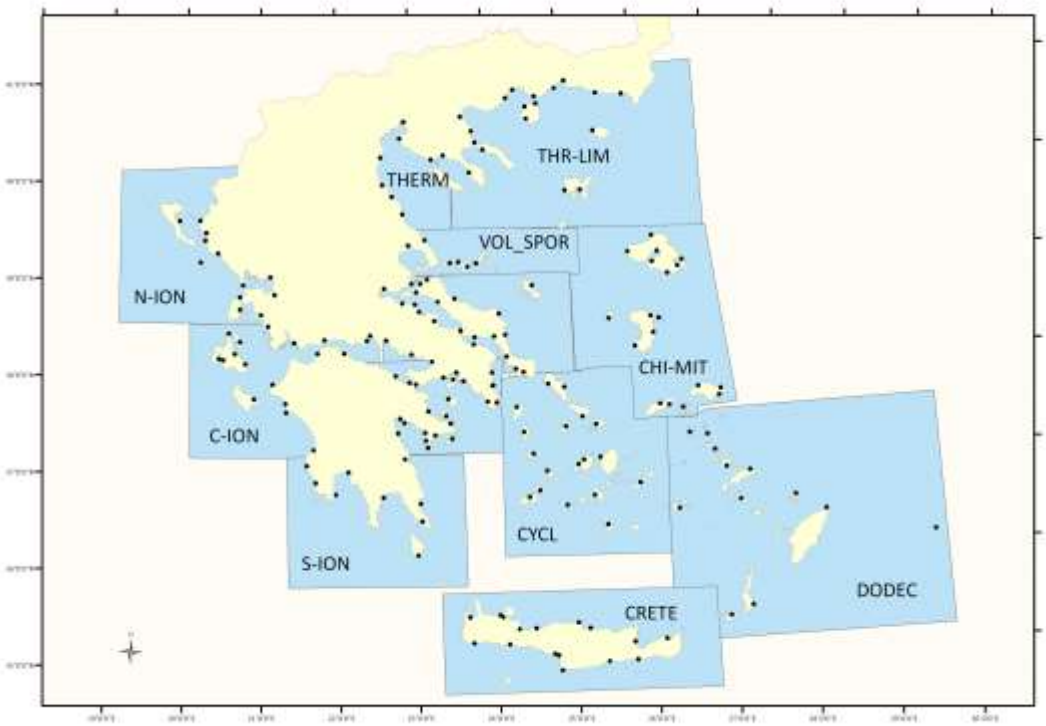



**Figure III.F.2.1.1** The 12 major fishing areas for the stratified sampling scheme of the Greek DCF.

**Table III.F.2.1.1**.The number of vessels per fleet segment and length category that were sampled for effort and landings data in each of the 12 major areas of Greek territory.

| | | Fishing Areas | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FLEET_SEG1 | Length Class | ARGSAR | EVIA | THERM | THR-LIM | CHI-MIT | CRETE | CYCL | DODEC | N-ION | C-ION | S-ION | VOL-SPOR | **Total** |
| Trawlers | VL1218 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **2** |
| (Demersal trawlers)* | VL1824 | 3 | 1 | 2 | 5 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | **20** |
| | VL2440 | 14 | 10 | 23 | 16 | 7 | 4 | 2 | 3 | 2 | 3 | 1 | 3 | **88** |
| PurseSeine | VL0612 | | | | | | | | | | | | | **0** |
| (Purse seiners) | VL1218 | 3 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 0 | 1 | **17** |
| | VL1824 | 4 | 4 | 2 | 3 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | **23** |
| | VL2440 | 0 | 4 | 6 | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | **18** |
| BoatSeine | VL0006 | | | | | | | | | | | | | **0** |
| | VL0612 | 6 | 5 | 2 | 1 | 3 | 1 | 3 | 4 | 5 | 3 | 2 | 1 | **36** |
| | VL1218 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | **9** |
| | VL1824 | | | | | | | | | | | | | **0** |
| Bottom longlines | VL0006 | 5 | 5 | 2 | 2 | 4 | 3 | 2 | 3 | 2 | 2 | 3 | 2 | **35** |
| (Vessels using hooks) | VL0612 | 10 | 5 | 3 | 3 | 4 | 4 | 3 | 5 | 3 | 3 | 3 | 2 | **48** |
| | VL1218 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | **14** |
| | VL1824 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **2** |
| Fixed nets | VL0006 | 7 | 8 | 7 | 7 | 11 | 3 | 3 | 4 | 9 | 6 | 5 | 4 | **74** |
| (fixed netters) | VL0612 | 18 | 10 | 11 | 12 | 11 | 6 | 7 | 8 | 17 | 10 | 7 | 5 | **122** |
| | VL1218 | 3 | 1 | 1 | 2 | 1 | 2 | 4 | 3 | 1 | 1 | 1 | 1 | **21** |
| | VL1824 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | **2** |
| Pots and Traps | VL0006 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | **9** |
| (pots and/or traps) | VL0612 | 1 | 1 | 3 | 2 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | **13** |
| | VL1218 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | **2** |
| | VL1824 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | **2** |
| Drifting longlines | VL0006 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | **10** |
| (vessels using other Passive gears) | VL0612 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | **11** |
| | VL1218 | 0 | 1 | 1 | 1 | 1 | 1 | 2 | 0 | 1 | 0 | 1 | 1 | **10** |
| | VL1824 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | **4** |

Statistical methods described in the 2011-2013 NP have been applied. The Standard **Table III.F.1** shows the information collected during the sampling year.

III F 2 2 Data quality: results and deviation from NP proposal

Elementary and aggregated data have been checked to verify their reliability. Consistency among different variables has been analyzed. A census of effort for all bottom trawlers and purse seiners operated in Greek territorial waters has been obtained from VMS and ERS data. The remaining data was collected through the sample survey and therefore data is consistent.

III F 2 3 ACTIONS TO AVOID DEVIATIONS

Data collection was in accordance with the NP with no deviations.

III F 3 LANDINGS

III F 3 1 ACHIEVEMENTS: RESULTS AND DEVIATION FROM NP PROPOSAL

Landings by métier were sampled in the same way as effort was sampled and outlined above (according to the variables and desegregation levels listed in Appendix VIII). The landings indicators from the sampling program are:

- Total live weight per vessel
- Total value per vessel
- Unit value per species per vessel

These indicators were disaggregated to live weight or value per day, per kw*day or per effort unit.

Data related to BFT landings are provided by a specific data collection implemented by the national administration in accordance with ICCAT procedures.

The **Standard Table III.F.1** provides the information collected during the sampling year.

III F 3 2 DATA QUALITY: RESULTS AND DEVIATION FROM NP PROPOSAL

Landings data by species and métier have been sampled in detail for all fleet segments. All variables of Appendix VIII were collected through the sample survey and therefore data is consistent. Data quality is given in terms of coverage rate.

III F 3 3 ACTIONS TO AVOID DEVIATIONS

Data collection was in accordance with the NP with no deviations.

## III G ReSearch surveys at Sea

III G 1 ACHIEVEMENTS: RESULTS AND DEVIATION FROM NP PROPOSAL

According to appendix IX of DCF (EU Dec. 93/2010), the Greek National Programme for 2011-2013, which was extended to the period 2014-2016, included two surveys:

- MEDITS, MEDiterranean International bottom Trawl Survey
- MEDIAS, MEDiterranean International Acoustic Survey

**MEDITS**

The Medits Project target was to conduct a common bottom trawl survey in the Mediterranean Sea in which all the participants use the same gear, same sampling protocol and the same methodology, for the monitoring of demersal resources. The Medits survey is annual, covers the continental shelf and slope from 10 to 800 m and it is based on a stratified standardised sampling scheme. Data on the total weight and number of individuals, as well as on size and maturity, by species are collected, based on specific species list, according to the common protocol. Voluntary collection of data on Marine Litters can be realised, based on a list of the common protocol, in agreement with the requirements of the Marine Strategy Directive Framework (Directive 2008/56/EC).

The MEDITS-GR survey monitors the demersal resources in the relevant GFCM Geographic Statistical Areas of the Greek Territory, i.e. GSAs 20, 22 and 23. The sampling methodology is in accordance with the common MEDITS protocol, following the instructions of the latest version of MEDITS manual (Medits Handbook 2016, version 8).

The MEDITS-GR sampling scheme is comprised of 184 fixed sampling stations randomly distributed in 5 different bathymetric zones: 10-50, 50-100, 100-200, 200-500, 500-800 m. The number of stations in each bathymetric zone is proportional to the zone's surface. The same sampling scheme is followed every year.

The total weight and the number of individuals by species, caught in each haul, are recorded for all megafauna species. Individual size, maturity stage and age are recorded for a list of species, as refer to the MEDITS manual (version 8).

The bottom water temperature by haul is recorded. Voluntary collection of data on litter was also realised during 2016 MEDITS trawl surveys.

The achievements for MEDITS-GR 2016 are summarized in Table III.G.1. The survey was accomplished in all the Greek GSAs (GSA 20, 22, 23) and all the planned stations were sampled. Some additional stations were sampled without burdening the cost of the programme.

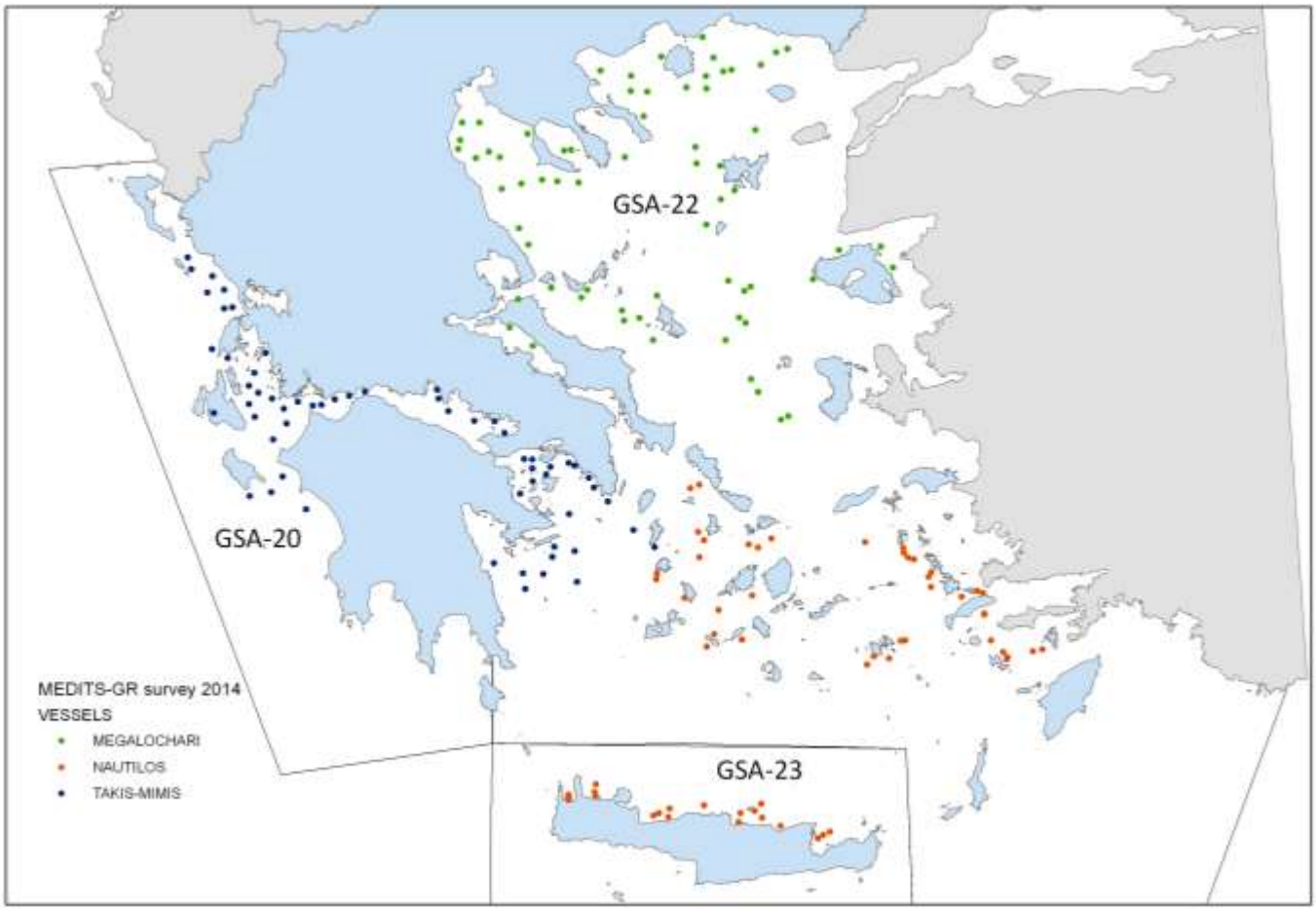



**Figure III.G.1.1.** Sampling stations distribution during of the MEDITS-GR survey. Different colours represent the different vessels used for the sampling.

## MEDIAS

### DIRECT ASSESSMENT OF THE BIOMASS OF ANCHOVY AND SARDINE STOCKS IN THE AEGEAN AND IONIAN SEA

During the project two research surveys according to contract were carried out. One in Aegean Sea (GSA 22) during June 2016 and one in Ionian Sea (GSA20) during September 2016. Collected data were used for:

- Abundance and biomass estimation of anchovy stock and sardine stock by a fishery-independent technique: Acoustics.
- Spawning stock abundance and biomass estimation of anchovy stock by a fishery-independent technique: DEPM.
- The survey focused on the delimitation of the juvenile grounds distribution for anchovy and sardine stocks and the biomass estimation of the respective stocks.

The Standard **Table III.G.1** summarizes the achievements accomplished within the framework of the acoustic surveys

**Hydrographic sampling.**

Hydrographic parameters were recorded over a grid of 149 sampling stations in Aegean Sea and 75 sampling stations in Ionian Sea. At each station of the sampling grid vertical profiles of temperature and salinity were obtained by a Temperature-Salinity-Depth (CTD) system SBE-19 plus of Seabird Electronics

**Acoustic sampling and stock assessment for anchovy and sardine.**

According to the project, the size and the geographic distribution of anchovy (*Engraulis encrasicolus*) and sardine (*Sardina pilchardus*) stocks in Aegean and Ionian Sea were estimated with the acoustic methodology. The methodology of the acoustic survey will follow the protocol of MEDIAS so that results will be harmonized and comparable to the other Mediterranean areas.

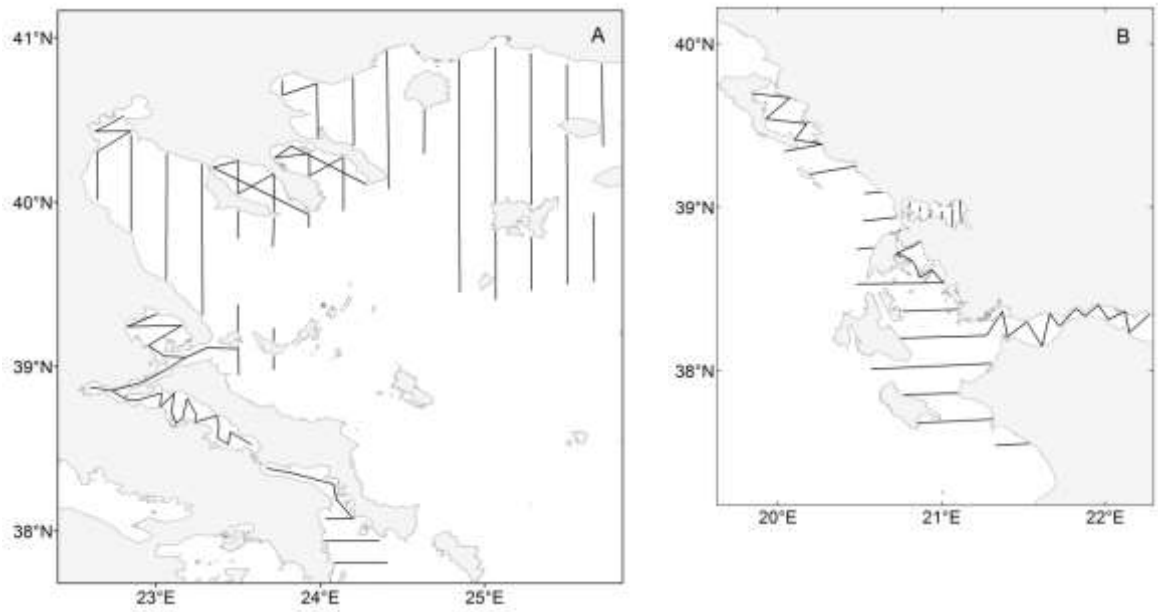



**Fig III.G.1.2** Pre-defined transects in a) Aegean Sea during June and b) Ionian Sea during September 2016.

Acoustic echoes were registered continuously along 74 pre-defined transects in the Aegean Sea during June 2016 and along 44 pre-defined transects in the Ionian Seaduring September 2016 (**Fig III.G.1.2**) with a Simrad ES38-10,38 kHz split-beam echo sounder transducer. The size of the Elementary Distance Sampling Unit (EDSU) was one nautical mile. The partitioning of integrated deflection was done by comparing the echogram at corresponding times. Echograms were examined in order to identify school marks that characterize anchovy and sardine in conjunction with the target strength of each species. Acoustic survey covered a total area of 32,599 $km^2$ in Aegean Sea and 9464 $km^2$ in Ionian Sea. In order to estimate anchovy's and sardine's biomass, the weight-length relationship is required as well as species length frequency

distribution per area. Therefore, 40 pelagic trawls were held along transects in the positions of high fish concentrations.

The mean frequencies of each length class were estimated

In 4 sub-areas in Aegean Sea (in the area east of Thasos, in the area west of Thasos, in Thermaikos gulf, in the wider region of Sporades – N. Euvoikos gulf).

- and in 4 sub-areas in Ionian Sea (in Patraikos gulf, in the south part of Ionian Sea, in the north part of Ionian Sea and in Amvrakikos gulf).

The mean frequencies of each length class were estimated as

$$f_j = \frac{\sum_{k=1}^{M}\left(\frac{n_{jk}}{t_k}\right)}{\sum_{k=1}^{M}\left(\frac{N_k}{t_k}\right)}$$

Where $f_j$ is the mean frequency of anchovy of the length class j; $n_{jk}$ is the number of individuals of anchovy/ sardine in the length class j at the sampling station k; $N_k$ is the total number of individuals of anchovy/ sardine at the sampling station k; $t_k$ is the fishing duration in station k; and M is the number of sampling station in the area (MacLennan and Simmonds 1992).

Also, the following relationship was estimated for each sub-area:

$$W = a\,L^b$$

Where W is the total weight; L is the total length and **a** and **b** are constants estimated with regression analysis.

The density of targets (F) from the observed echo integrals were estimated according to the equation F= (K/<σ>)E, were K is the calibration factor, <σ> is the mean cross-section and E is the Echo integral after partitioning (MacLennan and Simmonds 1992). The <σ> was calculated for the mean total fish length of each area according to the equations $<\sigma> = 4\pi\sum_{\iota} f_i 10^{TS/10}$, where $f_i$ is the corresponding length frequency as deduced from the fishing samples (MacLennan and Simmonds 1992).

The abundance Q was estimated separately for each sub-area. The abundance Q in each elementary statistical sampling area was calculated from the average density within each sub-area according to the equation:

$$Q = A_k \sum_i F_i / N_k ,$$

where $F_i$ is the i sample; $A_k$ is the area of each elementary statistical sampling area and $N_k$ is transects in $A_k$. The variance V was estimated as

$$V = \sum_i (AF_I - Q)^2 / [N_r(N_{r-1} - 1)]$$

The data have been log transformed and the means and variances of F estimated according to the following equations:

$$F=\exp(m)\mathbf{G_N}[0.5\ S/(n-1);\ V=F^2-\exp(2m)\ \mathbf{G_N}[S(n-2)/(n-1)^2];$$

where m = average (lnF); S= variance (lnF) and n = independent observations of F.

The total abundance $Q_t$ and its variance are obtained by summing the results for each region $Q_t=Q_1+Q_2+\ldots$ , and $V_t=V_1+V_2+\ldots$. Standard error of $Q_t$ is the square root of V (MacLennan and Simmonds 1992).

**Deliverables**

The abundance indices that are estimated and provided, include NASC (Nautical Area Scattering Coefficient, $m^2/nm^2$) and Biomass values (t), as listed below:

1. Total fish NASC per EDSU (Elementary Distance Sampling Unit) (Annex I, Tables 1 and 2)
2. Target Species (anchovy and sardine) NASC per EDSU (Elementary Distance Sampling Unit) (Annex I, Tables 1 and 2)
3. Biomass per EDSU per target species (Annex I, Tables 1 and 2)
4. Number of individuals per EDSU per target species (Annex I, Tables 1 and 2)
5. Number of individuals/age/Target species (Annex I, Tables 3-6)
6. Biomass/age/Target species (Annex I, Tables 3-6)
7. Number of individuals/length class/Target species (Annex I, Tables 3-6)
8. Biomass/length class/Target species (Annex I, Tables 3-6)

In addition the following items are also provided:

1. Point maps of total pelagic fish NASC per ESDU (Fig III.G.1.3)
2. Point maps of anchovy and sardine NASC per EDSU (Fig III.G.1.4 and III.G.1.5)
3. Point maps of anchovy and sardine biomass per EDSU (Fig III.G.1.6 and Fig III.G.1.7)
4. Catch compositions of the hauls: pie-charts indicating biomass per species (Fig III.G.1.8)

For non–target pelagic species that are considered important in each area, Length–Weight relationships (where an adequate number of samples is available) and Length frequency distributions in Aegean Sea and Ionian Sea are provided (Annex I, Table 7 and Figs 1-5).

**Comments on stock status**

Acoustic sampling results for Aegean Sea (June 2016) and Ionian Sea (September 2016) showed the following:

In Aegean Sea:

Anchovy stock biomass during June 2016 is higher compared to June 2014 (70%) as well as September 2013. The lack of data for 2015 and the short time series available do not allow a reliable assessment on the population trend. The length and age structure of anchovy stock showed that the dominant age is age 1. The spatial distribution of anchovy showed that the main concentrations are located in Thracian Sea, Strymonikos Gulf, North Evoikos Gulf and the inner part Thermaikos Gulf.

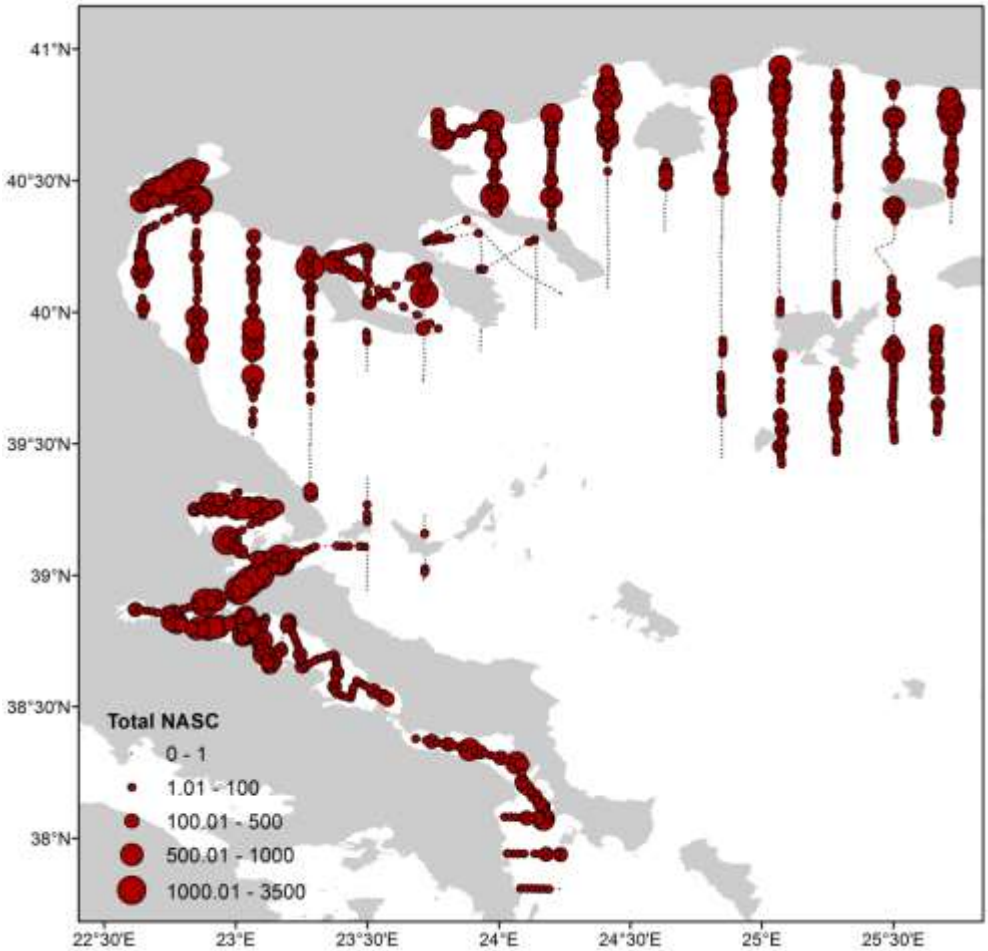
Sardine stock biomass during June 2016 is higher compared to June 2014 (47%) as well as September 2013. The lack of data for 2015 and the short time series available do not allow a reliable assessment on population trend and stock status. The spatial distribution of sardine showed that the main concentrations are located in Thracian Sea and especially at the eastern and western part of Thasos, the inner part Thermaikos Gulf Strymonikos Gulf and the northern part of North Evoikos Gulf. The length and age structure of sardine stock showed that the dominant age is age 1.

In Ionian Sea:

During 2016, the highest concentrations of anchovy biomass are located mainly in Amvrakikos Gulf, Patraikos Gulf and Kerkyraikos Gulf. The highest concentrations of sardine biomass are located mainly in Amvrakikos Gulf and to a lesser degree to Patraikos and Kerkyraikos Gulfs.

Stock biomass of anchovy in September 2016 are higher compared to 2015, 2014 and 2013 but without the sharp increase observed in Aegean Sea as anchovy stock is at approximately at the same level. On the other hand, sardine stock biomass seems to be more variable compared to anchovy stock. The length and age structure of anchovy and sardine stocks showed a narrower age range with ages 0 and 1 being dominant. As the area has not been surveyed before, 4 years of surveys are not adequate for a reliable stock assessment. At Amvrakikos Gulf in all years we observed higher schools density up to 15 m depth whereas complete absence of pelagic fish schools in deeper waters. Reduced oxygen levels in deeper waters limit the distribution of fish in the upper part of the water column.

In order to apply complete stock assessment and obtain estimates in terms of reference points, we need to combine acoustic estimates with the estimates of monthly catches as well as take into account the length frequency of the catch. However, these estimates lack for 2015 and exist only for 2014 and 2016.



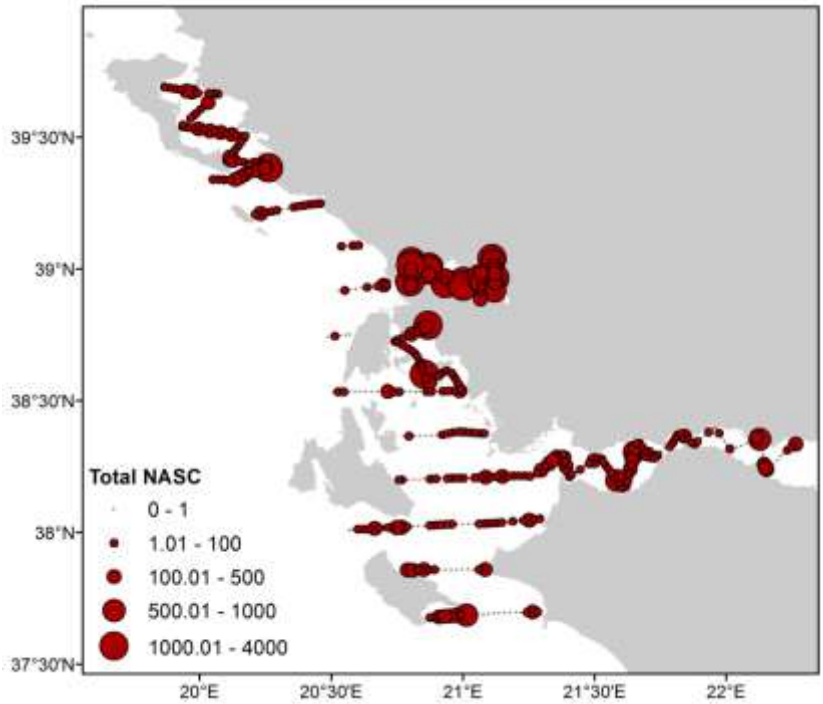
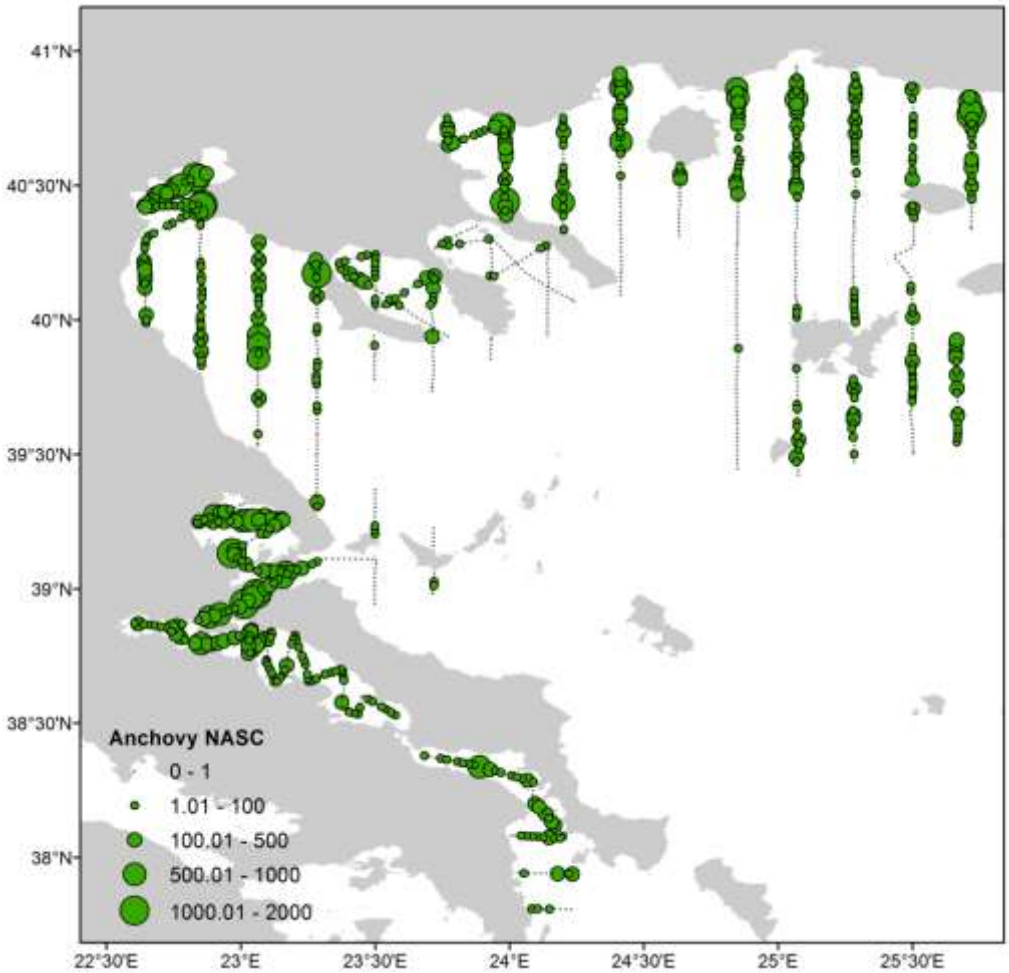




**Fig III.G.1.3.** Distribution of the total fish NASC ($m^2/nm^2$) per EDSU in a) Aegean Sea and b) Ionian Sea during June and September 2016, respectively.



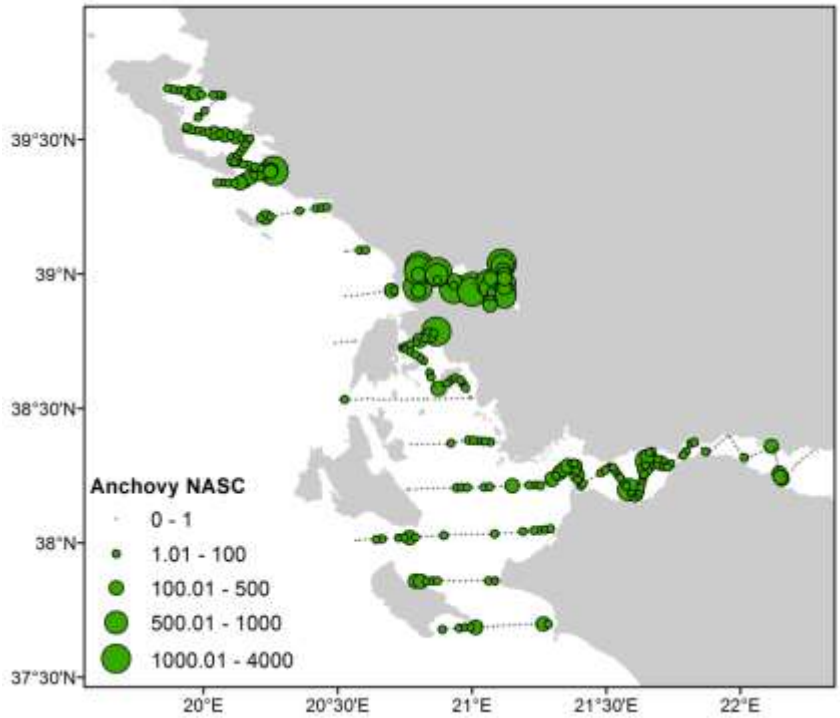
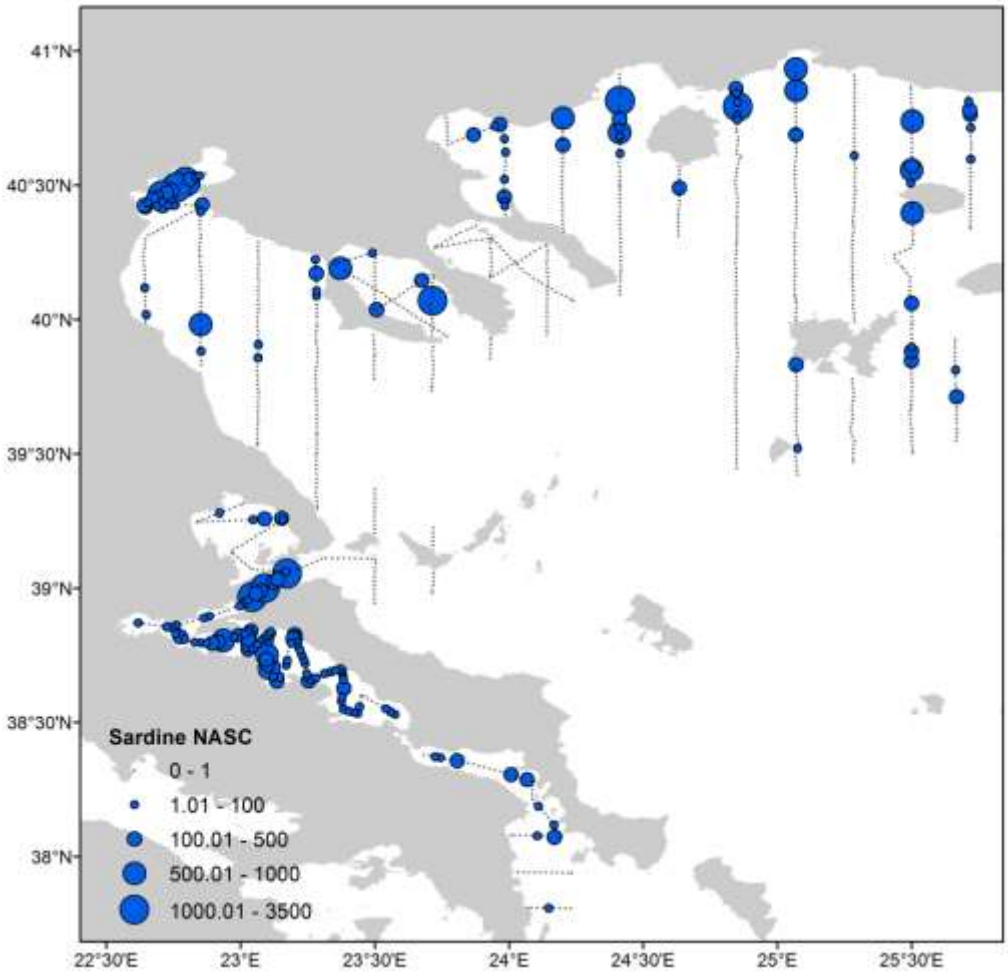




**Fig III.G.1.4.** The distribution of anchovy NASC ($m^2/nm^2$) per EDSU in a) Aegean Sea and b) Ionian Sea during June and September 2016, respectively



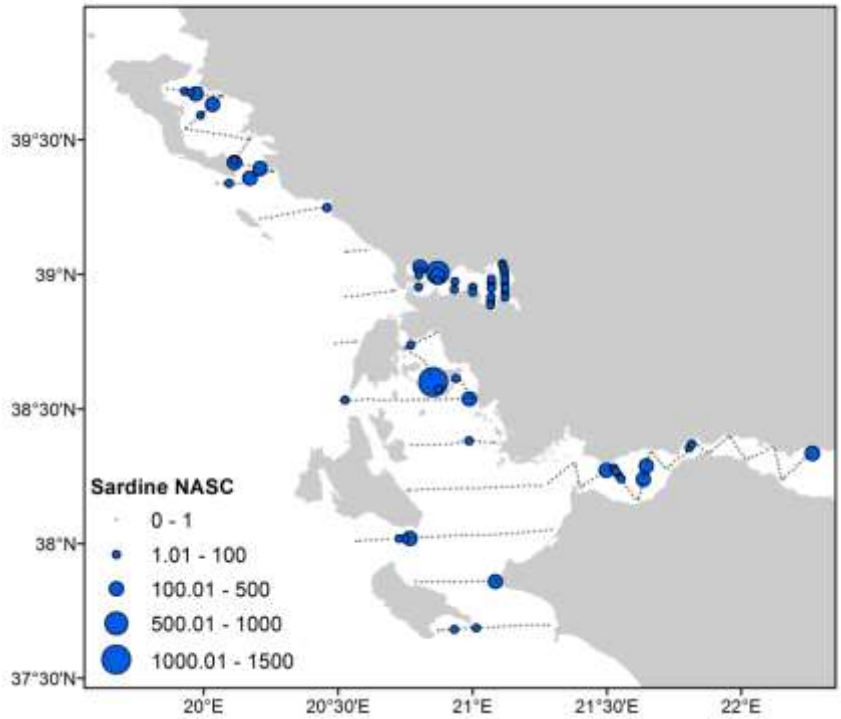




**Fig III.G.1.5.** The distribution of sardine NASC ($m^2/nm^2$) per EDSU in a) Aegean Sea and b) Ionian Sea during June and September 2016, respectively.

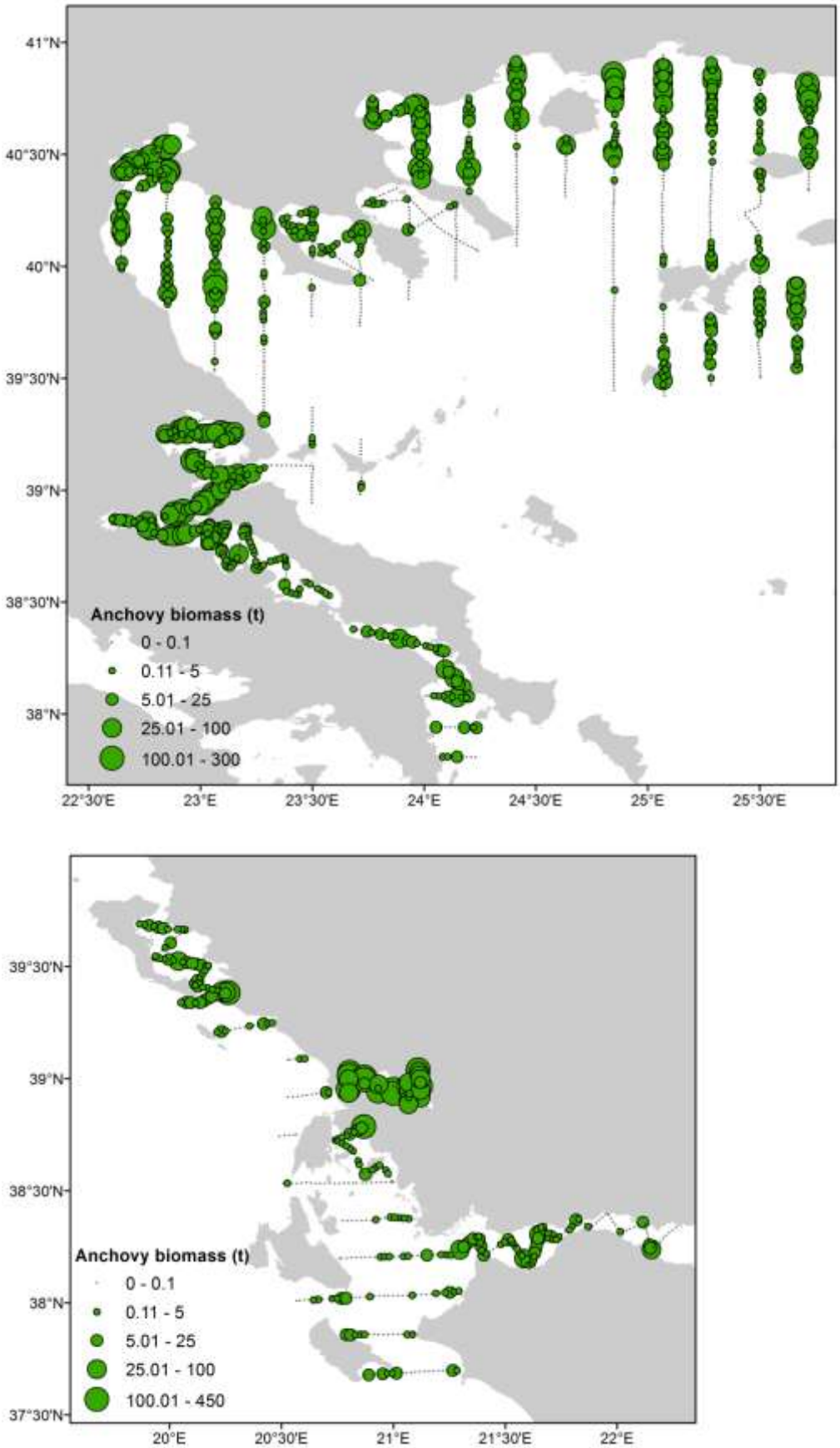



**Fig III.G.1.6.** The distribution of anchovy biomass (t) per EDSU in a) Aegean Sea and b) Ionian Sea during June and September 2016, respectively.

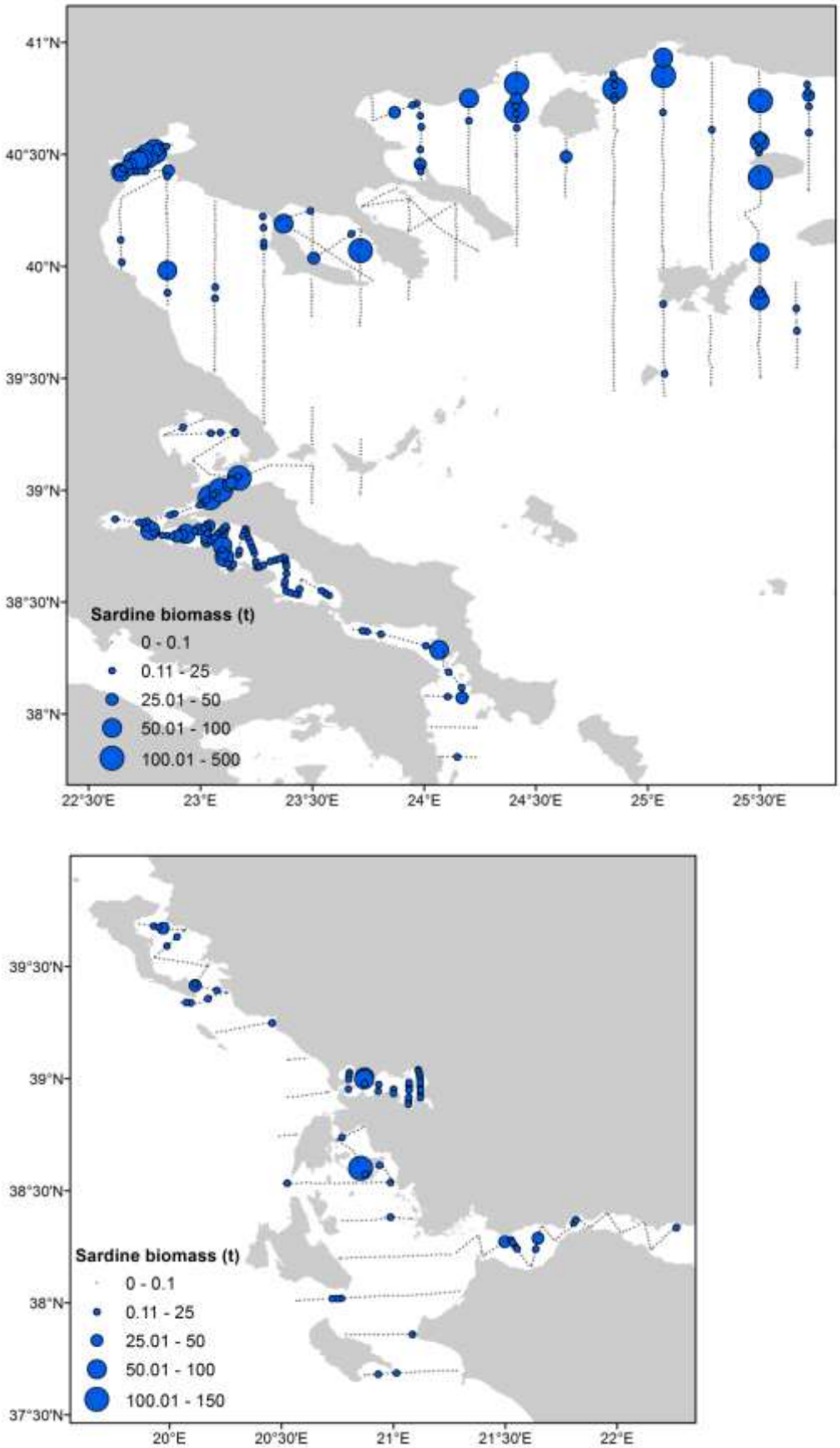



**Fig III.G.1.7.** The distribution of sardine biomass (t) per EDSU in a) Aegean Sea and b) Ionian Sea during June and September 2016, respectively.

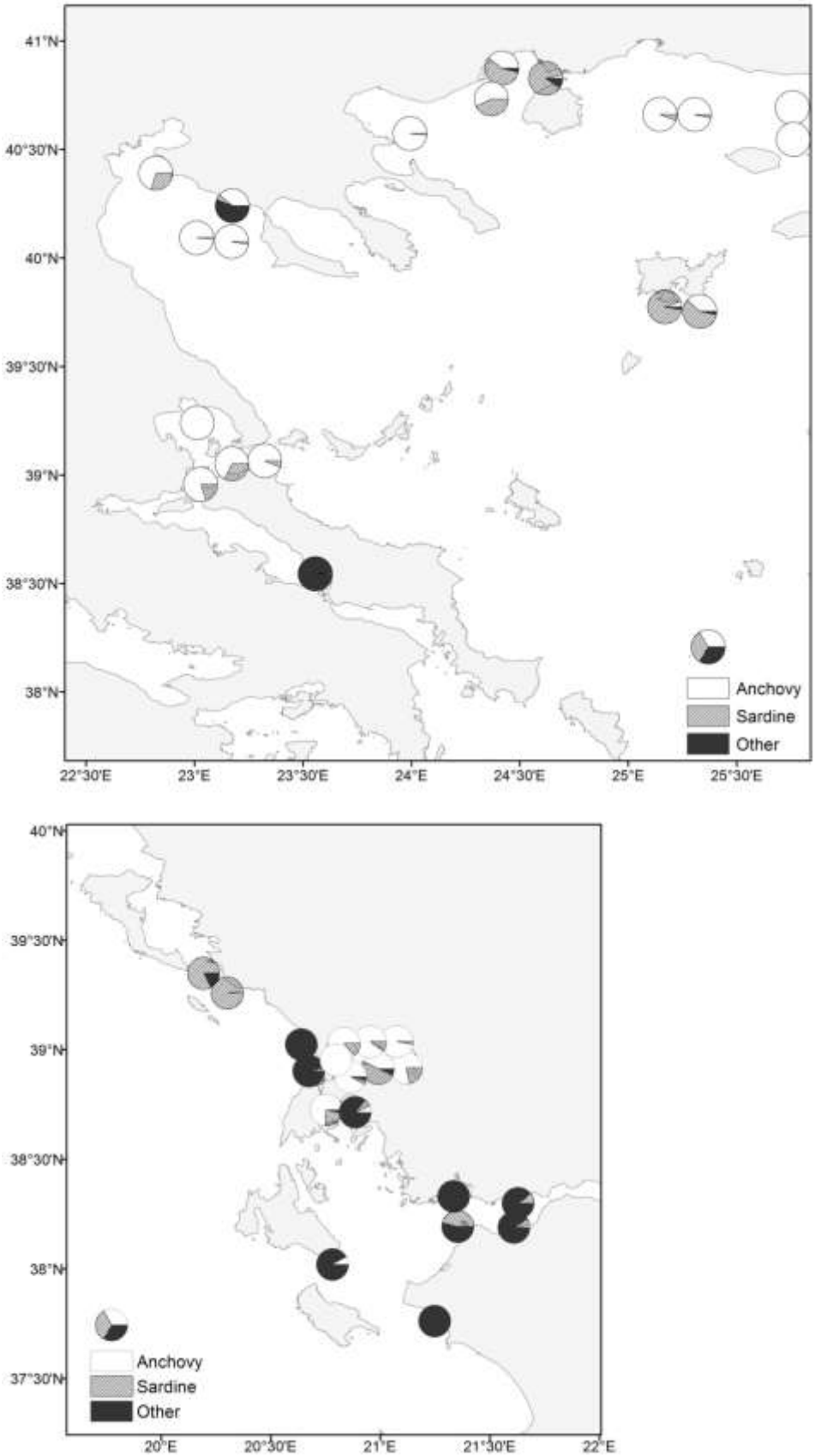



**Fig III.G.1.8.** The catch compositions of the hauls (species kg/haul) weighted per hauling hour in a) Aegean Sea and b) Ionian Sea during June and September 2016, respectively.

III G 2 DATA QUALITY: RESULTS AND DEVIATION FROM NP PROPOSAL

**MEDITS**

The survey was accomplished in all the Greek GSAs (GSA 20, 22, 23).The sampling procedure was carried out based on the methodology defined in the MEDITS instruction manual without any deviations. The survey data will be submitted to the relevant data calls.

**MEDIAS**

No deviation of the proposed plan was observed for 2016. We succeeded 100% of the planned EDSU (Elementary Distance Sampling Units) for acoustics, 98% in the number of CTD stations and 121% in terms of midwater hauls.

III G 3 ACTIONS TO AVOID DEVIATIONS

**MEDITS and MEDIAS**

No shortfalls were experienced requiring actions. However, the most important action to avoid any deviations is the funding of the NP proposal on time

# IV MODULE OF THE EVALUATION OF THE ECONOMIC SITUATION OF THE AQUACULTURE AND PROCESSING INDUSTRY

## IV A Collection of data concerning the aquaculture

### IV A 1 ACHIEVEMENTS: RESULTS AND DEVIATION FROM NP PROPOSAL

Fish and shellfish have been produced using aquaculture techniques in Greece since early 1960s. The strengthening of the aquaculture industry with the implementation of new techniques and the rapid increase of production started in late 1990s, when the amount of captured fish showed a decreasing trend while the demand for aquatic product continued to rise.

It should be noted that the aquaculture units in Greece, are not financially autonomous entities but belong to larger firms most of which keep parallel economic activities. Furthermore, in most cases, it is difficult to achieve the distinction of the production between different segments.

For the fiscal year of 2015, there were 590 licensed aquaculture units of which 546 participated in the survey.

Following the NP proposal, the data collection methodology included: self-reporting of aquaculture enterprises through a properly structured questionnaire, on site visits and interviews and finally data collection from public bodies and published balance sheets.

The questionnaire included the following 3 topics:

(1) cost and profit: value of total sales, personnel costs, energy related costs, value of purchased raw material(fry) and other material necessary for the production, production costs and value of the final product, capital costs, special costs, investments, and debt.

(2) Aquaculture segment per species: Hatcheries and Nurseries, On growing, Combined, Cages, Rafts or Long line Mussel production and Extensive farming in estuaries and lagoons.

(3) The socio-economic criteria of the sector are attributed to: employment per sector, gender employment statistics, number and location of enterprises, and the problems of the enterprises.

### IV A 2 DATA QUALITY: RESULTS AND DEVIATION FROM NP PROPOSAL

The census method was followed for the following segments: 1) Cages - Sea bass & Sea bream, 2) Cages - Other Marine Fish and 3) Land based farms - Hatcheries & Nurseries- Sea bass & Sea bream. Those segments are activities of SA and LTD companies obliged to publishing their annual balance sheet and therefore the provided data was adequate enough to apply the census method.

For the rest of the segments: 1. Land based farms - Combined – Trout, 2. Long line – Mussel, 3. Extensive farming -Estuaries & Lagoons (combined Sea bass and Sea

bream and other marine fish), which are the activities of small economic entities without published financial data, the Probability Sample Survey method was used.

IV A 3 ACTIONS TO AVOID DEVIATIONS

As mentioned in IV.A.1, most aquaculture units in Greece are not financially autonomous entities but belong to larger firms most of which keep parallel economic activities. Although the distinction of costs between the various activities was hard to be accurate due to lack of companies' track of cost distinction, an effort was made to acquire additional accounting and financial data to distinguish the production costs between the parallel operating activities.

## IV. B. COLLECTION OF DATA CONCERNING THE PROCESSING INDUSTRY

In Greece, the traditionally important, due to its geographical location, fishing industry has led to the development of fisheries processing industry. For the fiscal year of 2015, there were 156 companies with proven activity of freezing, processing (filleting, salting, drying, marinating, smoking, cooking, canning) of fish, and the de-shelling of mussels of which 145 participated in the survey.

Following the NP proposal, the data collection methodology included: self-reporting of processing industry enterprises through a properly structured questionnaire, on site visits and interviews and finally data collection from public bodies and published balance sheets.

The questionnaire included the following topics: (1) value of total sales per processed products, (2) personnel costs, (3) energy related costs, (4) quantity and value of purchased processed raw material and other material necessary for the production, (5) production costs and value of the final product, (6) capital costs, (7) special costs, (8) investments, and (9) debt. The socio-economic criteria of the sector are attributed to: (1) employment per sector, (2) gender employment statistics, (3) number and location of enterprises, and (4) the problems of the enterprises.

Regarding the completion of the questionnaires, 145 were filled out either by phone interview or during onsite interviews.

Additional to the questionnaire data, basic financial ratios of economic liquidity, productivity, structure and activity are estimated for the fiscal year 2015, with the purpose of estimating the basic financial indices of LTD or SA companies that are obliged to publicize their balance sheets and also have the largest sales of Seafood products in the Greek and the International food market.

### IV B 1 ACHIEVEMENTS: RESULTS AND DEVIATION FROM NP PROPOSAL

The enterprises that received the aforementioned questionnaire were generally positive in providing the required data. The completed questionnaires provided a significantly high percentage of sample (93%).

The collected data provided by completed questionnaires (filled out by the companies or during onsite interviews) were supplemented with and cross checked by data from the following sources: (a) Prefectural Chambers of Commerce, Industry and Trade (e.g. brand name, location, VAT number, phone and fax numbers) (b) Prefectural Directorates of Fisheries and Veterinary Services, as well as the National Food Control Agency (EFET), and the Hellenic Ministry of Rural Development and Food (e.g. purchase of raw material, production per species, total sales in quantity and value, employment, functioning regulations) and (c) World Wide Web (e.g. location, phones, projected investments, sales, general economic data).

Out of the 145 companies participating in the survey, 59 belong to the freezing sector, 49 belong to the processing sector and finally 37 belong to the mussel de-shelling.

The analysis of the financial statements of corporations (gross revenue, net profits, assets, liabilities) and key indicators (profitability, liquidity, economic structure and activity) for the year 2015, consists of processing data acquired from published

balance sheets of 40 SA and Ltd companies (22 of freezing and 18 of processing sector) out of a total of 59 companies, (Due to the fact that in Greece, published financial data for the fiscal year 2015 had to be adjusted, for the first time, to Directive 2014/95/EU of the European Parliament, a number of companies did not publish their annual balance sheet). Those 40 companies account to 75.51% of the processing industry according to the raw material cost while they represent 74.19% of the industry according to total sales.

### IV.B.2 Data quality: Results and deviation from NP proposal

All requested indicators listed in Appendix XII of Commission Decision 2010/93/EC were collected in the Greek data collection program for the fish processing industry.

As mentioned before, the data sources were the completed questionnaires, data provided by official bodies, the fishing ports, official financial agencies and published balance sheets

For most variables the achieved sample rate and the response rate exceeded 81% (Table IV.B.2.).

Also, according to the NP proposal, the data collection for the variables of Wages and Salaries of staff, Energy Costs and Other Operational Costs was estimated by Non Probability Sample Survey (Type C in Table IV.B.2). The census method was used for the rest required variables. Due to the current unfavorable economic situation, a number of small companies (companies <= 10), provided less than adequate salary and wage data so non probability sample survey was applied taking into account the legal minimum wage cost.

### IV.B.3: Actions to avoid deviations

As in previous years, companies with parallel activities other than processing did not or could not provide sufficient data for cost allocation per activity, a distinction which is also not reflected in the balance sheets and financial statements of most, especially small sized, companies. The only relevant information is derived from questionnaires and relates solely to distinguish sales of finished products.

Actions to address the difficulty of cost distinction, especially the ones concerning staff, energy and other operating expenses, were: a) an adjustment on the cost topic of the questionnaire, b) requesting additional information from companies' administration in order to establish a logical cost quota for each activity and c) contacting the companies' accountants for additional information to the balance sheet data.

Since the aforementioned approach effort already took place in the previous year, more companies were accustomed to the additional data demand and the percentage of the agreeable and adequate cost analysis data keeps increasing.

Furthermore, companies with parallel aquaculture activity, showed no cost when using their own aquaculture products in the processing activity. In this case, the minimum raw material price for the financial year 2015 was used as the aforementioned cost, a suggestion from companies' representatives during the onsite interviews.

# V. MODULE OF EVALUATION OF THE EFFECTS OF THE FISHING SECTOR ON THE MARINE ECOSYSTEM

## V. 1. ACHIEVEMENTS: RESULTS AND DEVIATION FROM NP PROPOSAL

**Indicators 1-4: Conservation status of fish species Proportion of large fish Mean maximum length of fishes Size at maturation of exploited fish species**

Data for the Indicators 1-4 were collected by MEDITS & MEDIAS scientific surveys that were realized in 2016.

**Indicators 5-7: Distribution of fishing activities, Aggregation of fishing activities, Areas not impacted by mobile bottom gears.**

According to the Commission Regulation (EC) No 2244/2003, fishing vessels larger than 15 meters in total length, are obligated to be equipped with Vessel Monitoring System (VMS), which at regular intervals provides data to the fisheries authorities on the location, course and speed of vessels. In case of Greece, all trawlers and purse seiners are equipped with VMS, while 84 coastal vessels have total length greater than 15 meters and therefore are controlled by VMS. The rest of coastal fishing vessels are not obligated to have VMS except those having license to fish large pelagic species. For the purposes of the DCF, VMS data are provided by the Hellenic Ministry of Maritime Affairs, Islands and Fisheries and specific routines were implemented for analysis and mapping (Kavadas & Maina 2012). It has already established a link between VMS positional data and ERS. The distribution of fishing activities, aggregation of fishing activities and areas not impacted by mobile bottom gears can be mapped and provided as required. Greece continued to manage and analyse all of the relevant resulting data sets, and made these data available to various expert groups under a formal data request.

**Indicator 8: Discarding rates of commercially exploited species**

Metier based discard sampling is conducted as part of the concurrent sampling at Sea programme. Trip specific discard rates by species measured in weight were raised to discard rates by quarter and metier using species landings data.

**Indicator 9: Fuel efficiency of fish capture**

The collected economic data were used to calculate the indicator of the relationship between fuel consumption and the value of landed catch. It provides information on trends in the fuel efficiency of different fisheries.

## V. 2. ACTIONS TO AVOID DEVIATIONS

There are no shortfalls

# VI. MODULE FOR MANAGEMENT AND USE OF THE DATA

## VI. 1. ACHIEVEMENTS: RESULTS AND DEVIATION FROM NP PROPOSAL

### VI.1.1 Management of data

The data are hosted in a centralized integrated database and GIS Fisheries Information System called IMAS-Fish which supports the Data Collection program. IMAS-Fish was developed between 2003 and 2006. During the development of the IMAS-Fish databases, a particular attention was attached to design the system to fulfill the requirement of the Data Collection Regulation in force at that time. The system was updated to fit with the new DCF requirements. This includes the update of the database structure, the update/constructing of data entry forms and the update of the query tool that support the data mining procedure and EU data calls. In addition, supplementary tests were done to ensure that the system is working properly and is able to provide the expected results. The COST structure was incorporated into IMAS-Fish as well as the required insert/update procedures were constructed.

**Use of the data**

The data of the surveys (MEDITS and MEDIAS) are stored on ORACLE database server, and a special tool generates output to the relevant international database of each survey.

Biological data from commercial fishery are transmitted to EU organizations for international stock assessment. Greece continued to use the tools developed by the COST project to analyse and report on the sampling data. Greece has also been involved in the plans for the establishment of a regional database.

Greece responded to data requests from the EC in 2014, and achieved successful transmission in all cases.

The continuing effort to upgrade and integrate database as well as to improve the analysis and data mining tools has helped to avoid many shortfalls, with the Greek DCF data.

### VI.1.2 DATA TRANSMISSION

The data transmission to end-user if provided to the Standard table VI_I.

## VI. 2. ACTIONS TO AVOID DEVIATIONS

Not applicable

## VII LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AR | Annual Report |
| CPUE | Catch per Unit of Effort |
| DCF | Data Collection Framework |
| EC | European Community |
| EMU | European Monitoring Unit |
| EU | European Union |
| GFCM | General Fishery Commission for the Mediterranean |
| GSA | Geographical Sub Areas |
| ICCAT | International Commission for the Conservation of Atlantic Tunas |
| MEDIAS | Pan-Mediterranean pelagic survey |
| MEDITS | Mediterranean International Trawl Survey |
| MS | Member State |
| NP | National Programme |
| PGMED | Mediterranean Planning Group for Methodological Development |
| RCM MED BS LP | Regional Co-ordination Meeting Mediterranean and Black Sea, Large Pelagic Fisheries |
| RDB | Regional data Base |
| SAC | Scientific Advisory Committee of GFCM |
| STECF | Scientific, Technical and Economic Committee for Fisheries |

## VIII. COMMENTS, SUGGESTIONS AND REFLECTIONS

None

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## X. ANNEXES

### ANNEX I. MEDIAS

**Table 1.Aegean Sea:** Total fish NASC (Nautical Area Scattering Coefficient, in $m^2/nm^2$) per EDSU (Elementary Distance Sampling Unit), and also NASC, biomass, and abundance of anchovy and sardine (target species) per EDSU.

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0.68595 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 8.92795 | 7.2842 | 1.18882 | 126444.9 | 0 | 0 | 0 |
| 8 | 4.03501 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 1.07128 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 13.3144 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 1.74693 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | 3.93092 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | 4.55803 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18 | 1.43227 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19 | 0.69151 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 | 2.505 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21 | 1.39856 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22 | 15.4657 | 0 | 0 | 0 | 0 | 0 | 0 |
| 23 | 4.41108 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24 | 24.7461 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 35 | 119.944 | 113.14 | 18.46532 | 1964002 | 0 | 0 | 0 |
| 36 | 742.34 | 642.25 | 104.8182 | 11148635 | 96.90706 | 14.2699507 | 778102 |
| 37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 38 | 763.951 | 604.02 | 98.57835 | 10484954 | 147.3932 | 21.704237 | 1183474 |
| 39 | 1518.21 | 1194.9 | 195.01 | 20741578 | 274.1269 | 40.3662822 | 2201065 |
| 40 | 299.755 | 299.75 | 48.92134 | 5203353 | 0 | 0 | 0 |
| 41 | 24.3558 | 16.991 | 2.77308 | 294949.3 | 0 | 0 | 0 |
| 42 | 525.093 | 443.8 | 72.42959 | 7703730 | 66.67797 | 9.81859683 | 535381.7 |
| 43 | 29.9946 | 20.491 | 3.344202 | 355694.8 | 0 | 0 | 0 |
| 44 | 60.8739 | 59.399 | 9.694187 | 1031090 | 0 | 0 | 0 |
| 45 | 26.8887 | 0.6496 | 0.106016 | 11276.06 | 0 | 0 | 0 |
| 46 | 2.5708 | 1.7196 | 0.28064 | 29849.34 | 0 | 0 | 0 |
| 47 | 4.12782 | 0.346 | 0.05647 | 6006.266 | 0 | 0 | 0 |
| 48 | 287.842 | 0 | 0 | 0 | 0 | 0 | 0 |
| 49 | 121.301 | 102.41 | 16.71308 | 1777630 | 16.58998 | 2.44294016 | 133207 |
| 50 | 306.555 | 306.2 | 49.97342 | 5315254 | 0 | 0 | 0 |
| 51 | 168.289 | 167.87 | 27.39723 | 2914014 | 0 | 0 | 0 |
| 52 | 0.52165 | 0.3831 | 0.062517 | 6649.458 | 0 | 0 | 0 |
| 53 | 35.6501 | 15.05 | 2.456256 | 261251.4 | 0 | 0 | 0 |
| 54 | 5.19729 | 4.0406 | 0.659447 | 70139.89 | 0 | 0 | 0 |
| 55 | 361.939 | 356.6 | 58.19832 | 6190068 | 0 | 0 | 0 |
| 56 | 1.72253 | 0 | 0 | 0 | 0 | 0 | 0 |
| 57 | 36.2484 | 35.975 | 5.87128 | 624478.9 | 0 | 0 | 0 |
| 58 | 14.4894 | 14.489 | 2.364735 | 251517.1 | 0 | 0 | 0 |
| 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 61 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 62 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 63 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 64 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 65 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 66 | 1.72073 | 1.7207 | 0.280831 | 29869.67 | 0 | 0 | 0 |
| 67 | 122.631 | 119.95 | 19.57601 | 2082136 | 0 | 0 | 0 |
| 68 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 69 | 24.2342 | 21.294 | 3.47532 | 369640.7 | 0 | 0 | 0 |
| 70 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 71 | 0.61306 | 0 | 0 | 0 | 0 | 0 | 0 |
| 72 | 0.44992 | 0 | 0 | 0 | 0 | 0 | 0 |
| 73 | 6.36637 | 3.8882 | 0.634574 | 67494.35 | 0.631378 | 0.09297286 | 5069.56 |
| 74 | 972.66 | 71.303 | 11.6369 | 1237719 | 901.3026 | 132.720395 | 7236886 |
| 75 | 176.092 | 24.51 | 4.000208 | 425468.7 | 0 | 0 | 0 |
| 76 | 53.3717 | 45.62 | 7.445333 | 791897.7 | 0 | 0 | 0 |
| 77 | 2.37604 | 2.1286 | 0.347395 | 36949.54 | 0 | 0 | 0 |
| 78 | 5.45776 | 0 | 0 | 0 | 0 | 0 | 0 |
| 79 | 0.12303 | 0 | 0 | 0 | 0 | 0 | 0 |
| 80 | 12.1987 | 12.199 | 1.990883 | 211753.6 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 81 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 82 | 20.9265 | 1.0554 | 0.172248 | 18320.56 | 0 | 0 | 0 |
| 83 | 18.3948 | 6.8458 | 1.117263 | 118833.9 | 0 | 0 | 0 |
| 84 | 234.542 | 0.5205 | 0.084953 | 9035.724 | 231.6472 | 34.1109675 | 1859979 |
| 85 | 659.271 | 8.3299 | 1.359472 | 144595.6 | 650.517 | 95.7912224 | 5223238 |
| 86 | 0.51236 | 0 | 0 | 0 | 0 | 0 | 0 |
| 87 | 126.783 | 125.64 | 20.50454 | 2180896 | 0.783385 | 0.11535653 | 6290.081 |
| 88 | 42.9186 | 0 | 0 | 0 | 42.91862 | 6.31993779 | 344609.2 |
| 89 | 54.522 | 54.522 | 8.898238 | 946431.1 | 0 | 0 | 0 |
| 90 | 74.6298 | 74.63 | 12.17992 | 1295476 | 0 | 0 | 0 |
| 91 | 14.5702 | 13.877 | 2.264841 | 240892.2 | 0 | 0 | 0 |
| 92 | 174.751 | 174.38 | 28.46032 | 3027086 | 0 | 0 | 0 |
| 93 | 241.024 | 241.02 | 39.33618 | 4183861 | 0 | 0 | 0 |
| 94 | 206.457 | 206.46 | 33.69466 | 3583819 | 0 | 0 | 0 |
| 95 | 95.8158 | 93.96 | 15.33471 | 1631024 | 0 | 0 | 0 |
| 96 | 41.6005 | 40.261 | 6.570712 | 698871.6 | 0 | 0 | 0 |
| 97 | 70.6096 | 70.61 | 11.52381 | 1225691 | 0 | 0 | 0 |
| 98 | 6.85575 | 6.7769 | 1.106021 | 117638.2 | 0 | 0 | 0 |
| 99 | 106.673 | 103.62 | 16.91087 | 1798668 | 0 | 0 | 0 |
| 100 | 92.9775 | 92.46 | 15.08987 | 1604983 | 0 | 0 | 0 |
| 101 | 13.3779 | 13.378 | 2.183328 | 232222.3 | 0 | 0 | 0 |
| 102 | 145.829 | 145.3 | 23.71443 | 2522305 | 0 | 0 | 0 |
| 103 | 43.5727 | 43.021 | 7.021204 | 746786.7 | 0 | 0 | 0 |
| 104 | 19.4908 | 18.265 | 2.980943 | 317057.9 | 0 | 0 | 0 |
| 105 | 9.79696 | 9.797 | 1.598909 | 170062.5 | 0 | 0 | 0 |
| 106 | 93.8137 | 92.604 | 15.11333 | 1607479 | 0 | 0 | 0 |
| 107 | 90.035 | 66.503 | 10.85357 | 1154403 | 14.60654 | 2.15087075 | 117281.2 |
| 108 | 2.85311 | 1.994 | 0.325435 | 34613.84 | 0 | 0 | 0 |
| 109 | 0.54821 | 0 | 0 | 0 | 0 | 0 | 0 |
| 110 | 1.22313 | 0 | 0 | 0 | 0 | 0 | 0 |
| 111 | 17.6895 | 17.575 | 2.868349 | 305082.3 | 0 | 0 | 0 |
| 112 | 1.73676 | 0 | 0 | 0 | 0 | 0 | 0 |
| 113 | 1.21832 | 0.9363 | 0.152809 | 16253.02 | 0 | 0 | 0 |
| 114 | 1.11885 | 0.2862 | 0.046716 | 4968.737 | 0 | 0 | 0 |
| 115 | 1.67391 | 0.3384 | 0.055235 | 5874.878 | 0 | 0 | 0 |
| 116 | 4.15133 | 3.3472 | 0.546274 | 58102.61 | 0 | 0 | 0 |
| 117 | 0.72829 | 0 | 0 | 0 | 0 | 0 | 0 |
| 118 | 0.4152 | 0 | 0 | 0 | 0 | 0 | 0 |
| 119 | 0.13994 | 0 | 0 | 0 | 0 | 0 | 0 |
| 120 | 2.38346 | 0 | 0 | 0 | 0 | 0 | 0 |
| 121 | 1.42991 | 0 | 0 | 0 | 0 | 0 | 0 |
| 122 | 1.03059 | 0 | 0 | 0 | 0 | 0 | 0 |
| 123 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 124 | 622.399 | 0 | 0 | 0 | 622.3991 | 91.6507466 | 4997469 |
| 125 | 27.8828 | 0 | 0 | 0 | 0 | 0 | 0 |
| 126 | 151.642 | 91.649 | 14.95752 | 1590906 | 0 | 0 | 0 |
| 127 | 256.094 | 212.42 | 34.66771 | 3687314 | 0 | 0 | 0 |
| 128 | 461.735 | 460.73 | 75.19348 | 7997701 | 0 | 0 | 0 |
| 129 | 898.344 | 33.929 | 5.537337 | 588960.2 | 864.415 | 127.288551 | 6940702 |
| 130 | 211.597 | 211.6 | 34.53357 | 3673047 | 0 | 0 | 0 |
| 131 | 588.157 | 580.37 | 94.71837 | 10074401 | 0 | 0 | 0 |
| 132 | 159.347 | 121.45 | 19.82118 | 2108213 | 0 | 0 | 0 |
| 133 | 199.025 | 193.41 | 31.56497 | 3357301 | 0 | 0 | 0 |
| 134 | 217.012 | 214.7 | 35.03973 | 3726883 | 0 | 0 | 0 |
| 135 | 10.1192 | 0 | 0 | 0 | 0 | 0 | 0 |
| 136 | 0.06766 | 0 | 0 | 0 | 0 | 0 | 0 |
| 137 | 178.926 | 165.6 | 27.02612 | 2874543 | 0 | 0 | 0 |
| 138 | 24.9807 | 23.894 | 3.899591 | 414766.9 | 0 | 0 | 0 |
| 139 | 190.452 | 28.847 | 4.707917 | 500741.7 | 160.7193 | 23.6665587 | 1290474 |
| 140 | 0.44802 | 0 | 0 | 0 | 0 | 0 | 0 |
| 141 | 4.23558 | 1.8602 | 0.30359 | 32290.38 | 0 | 0 | 0 |
| 142 | 14.1396 | 13.719 | 2.238926 | 238135.8 | 0 | 0 | 0 |
| 143 | 33.25 | 32.783 | 5.350272 | 569063.6 | 0 | 0 | 0 |
| 144 | 201.297 | 200.46 | 32.71544 | 3479668 | 0 | 0 | 0 |
| 145 | 87.9146 | 85.614 | 13.9726 | 1486149 | 0 | 0 | 0 |
| 146 | 100.468 | 96.348 | 15.72441 | 1672473 | 0 | 0 | 0 |
| 147 | 40.2181 | 36.08 | 5.888357 | 626295.3 | 0 | 0 | 0 |
| 148 | 65.5928 | 21.11 | 3.445309 | 366448.6 | 0 | 0 | 0 |
| 149 | 47.4392 | 45.74 | 7.46497 | 793986.4 | 0 | 0 | 0 |
| 150 | 212.213 | 204.69 | 33.40687 | 3553209 | 0 | 0 | 0 |
| 151 | 115.565 | 109.91 | 17.93849 | 1907967 | 0 | 0 | 0 |
| 152 | 2.97927 | 0 | 0 | 0 | 0 | 0 | 0 |
| 153 | 58.8112 | 57.975 | 9.461785 | 1006371 | 0 | 0 | 0 |
| 154 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 155 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 156 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 157 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 158 | 937.777 | 792.01 | 129.2602 | 13748326 | 133.4165 | 19.6461058 | 1071249 |
| 159 | 319.639 | 297.41 | 48.53918 | 5162706 | 21.23658 | 3.1271715 | 170516.2 |
| 160 | 516.832 | 516.83 | 84.3494 | 8971540 | 0 | 0 | 0 |
| 161 | 261.97 | 207.22 | 33.81843 | 3596984 | 50.32217 | 7.4101394 | 404055 |
| 162 | 2603.39 | 227.31 | 37.09774 | 3945776 | 2369.605 | 348.933713 | 19026416 |
| 163 | 104.931 | 98.437 | 16.06532 | 1708734 | 0 | 0 | 0 |
| 164 | 491.138 | 392.33 | 64.03017 | 6810353 | 95.23852 | 14.0242518 | 764704.7 |
| 165 | 427.687 | 341.4 | 55.71823 | 5926282 | 83.19993 | 12.2515218 | 668042.5 |
| 166 | 341.811 | 340.65 | 55.5956 | 5913238 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 167 | 0.58126 | 0 | 0 | 0 | 0 | 0 | 0 |
| 168 | 1.51959 | 0 | 0 | 0 | 0 | 0 | 0 |
| 169 | 16.8705 | 1.4471 | 0.236178 | 25120.31 | 0 | 0 | 0 |
| 170 | 0.43782 | 0 | 0 | 0 | 0 | 0 | 0 |
| 171 | 1.06557 | 0.5656 | 0.092306 | 9817.803 | 0 | 0 | 0 |
| 172 | 4.6287 | 4.6287 | 0.755425 | 80348.2 | 0 | 0 | 0 |
| 173 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 174 | 0.43473 | 0.4347 | 0.070949 | 7546.278 | 0 | 0 | 0 |
| 175 | 26.9745 | 26.974 | 4.402353 | 468241.4 | 0 | 0 | 0 |
| 176 | 4.29342 | 3.8993 | 0.636386 | 67687.07 | 0 | 0 | 0 |
| 177 | 3.91935 | 3.7024 | 0.604253 | 64269.37 | 0 | 0 | 0 |
| 178 | 2.07873 | 2.0787 | 0.339258 | 36084.07 | 0 | 0 | 0 |
| 179 | 10.3224 | 9.1028 | 1.485619 | 158012.9 | 0 | 0 | 0 |
| 180 | 436.636 | 435.13 | 71.0154 | 7553314 | 0 | 0 | 0 |
| 181 | 247.717 | 247.72 | 40.42846 | 4300037 | 0 | 0 | 0 |
| 182 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 183 | 115.713 | 115.71 | 18.88487 | 2008625 | 0 | 0 | 0 |
| 184 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 185 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 186 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 187 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 188 | 0.79127 | 0.7913 | 0.129138 | 13735.37 | 0 | 0 | 0 |
| 189 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 190 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 191 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 192 | 16.0313 | 5.7735 | 0.890475 | 110060.7 | 0 | 0 | 0 |
| 193 | 37.5542 | 28.881 | 4.454451 | 550560.1 | 0 | 0 | 0 |
| 194 | 373.85 | 372.38 | 57.43411 | 7098726 | 0 | 0 | 0 |
| 195 | 134.988 | 134.8 | 20.79073 | 2569688 | 0 | 0 | 0 |
| 196 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 197 | 236.939 | 0 | 0 | 0 | 236.7482 | 29.0749973 | 2529006 |
| 198 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 199 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 200 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 201 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 202 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 203 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 204 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 205 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 206 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 207 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 208 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 209 | 107.208 | 105.72 | 16.30548 | 2015321 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 210 | 196.025 | 114.88 | 17.71852 | 2189969 | 0 | 0 | 0 |
| 211 | 287.975 | 272.39 | 42.01276 | 5192682 | 0 | 0 | 0 |
| 212 | 601.397 | 600.01 | 92.54351 | 11438168 | 0 | 0 | 0 |
| 213 | 223.263 | 222.32 | 34.28907 | 4238051 | 0 | 0 | 0 |
| 214 | 15.4391 | 12.527 | 1.932065 | 238798.8 | 0 | 0 | 0 |
| 215 | 2262.71 | 94.225 | 14.53294 | 1796238 | 2163.311 | 265.675864 | 23109057 |
| 216 | 7.42497 | 0 | 0 | 0 | 0 | 0 | 0 |
| 217 | 462.973 | 459.88 | 70.93016 | 8766808 | 0 | 0 | 0 |
| 218 | 182.187 | 129.21 | 19.9293 | 2463216 | 0 | 0 | 0 |
| 219 | 368.693 | 143.69 | 22.16295 | 2739290 | 223.3091 | 27.4245523 | 2385446 |
| 220 | 1.83268 | 0 | 0 | 0 | 0 | 0 | 0 |
| 221 | 104.234 | 49.363 | 7.613547 | 941017.2 | 53.65245 | 6.58904741 | 573129.5 |
| 222 | 918.089 | 13.597 | 2.09719 | 259208 | 894.7985 | 109.890032 | 9558471 |
| 223 | 113.101 | 23.289 | 3.591935 | 443955 | 88.09079 | 10.818413 | 941008.8 |
| 224 | 5.31463 | 0.6915 | 0.106647 | 13181.35 | 0 | 0 | 0 |
| 225 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 226 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 227 | 4.36791 | 4.3679 | 0.673689 | 83266.46 | 0 | 0 | 0 |
| 228 | 0.45473 | 0.4547 | 0.070136 | 8668.685 | 0 | 0 | 0 |
| 229 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 230 | 3.05379 | 0 | 0 | 0 | 0 | 0 | 0 |
| 231 | 1.84029 | 0 | 0 | 0 | 0 | 0 | 0 |
| 232 | 18.8848 | 10.889 | 1.679513 | 207584 | 7.837453 | 0.96251608 | 83721.71 |
| 233 | 12.6554 | 12.45 | 1.920294 | 237344 | 0 | 0 | 0 |
| 234 | 0.33626 | 0 | 0 | 0 | 0 | 0 | 0 |
| 235 | 947.392 | 947.39 | 146.1221 | 18060356 | 0 | 0 | 0 |
| 236 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 237 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 238 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 239 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 240 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 241 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 242 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 243 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 244 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 245 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 246 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 247 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 248 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 249 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 250 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 251 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 252 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 253 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 254 | 774.736 | 576.28 | 88.88341 | 10985789 | 184.9055 | 22.7082144 | 1975209 |
| 255 | 201.206 | 189.23 | 29.18567 | 3607282 | 1.605243 | 0.19713958 | 17147.62 |
| 256 | 28.2522 | 0 | 0 | 0 | 0 | 0 | 0 |
| 257 | 46.7111 | 42.213 | 6.510836 | 804724.6 | 0 | 0 | 0 |
| 258 | 36.7623 | 36.762 | 5.670074 | 700808.4 | 0 | 0 | 0 |
| 259 | 308.224 | 11.44 | 1.764465 | 218083.8 | 295.9511 | 36.3457035 | 3161427 |
| 260 | 29.3527 | 0 | 0 | 0 | 0 | 0 | 0 |
| 261 | 69.7939 | 69.794 | 10.76475 | 1330498 | 0 | 0 | 0 |
| 262 | 4.23997 | 0.2841 | 0.043822 | 5416.286 | 0 | 0 | 0 |
| 263 | 504.145 | 128.67 | 19.84618 | 2452943 | 0 | 0 | 0 |
| 264 | 293.638 | 241.39 | 37.2311 | 4601680 | 0 | 0 | 0 |
| 265 | 83.6141 | 62.615 | 9.657537 | 1193650 | 0 | 0 | 0 |
| 266 | 100.366 | 70.376 | 10.85454 | 1341597 | 0 | 0 | 0 |
| 267 | 141.435 | 105.86 | 16.32779 | 2018078 | 0 | 0 | 0 |
| 268 | 119.285 | 107.64 | 16.60226 | 2052002 | 0 | 0 | 0 |
| 269 | 60.0812 | 49.152 | 7.581074 | 937003.6 | 0.392192 | 0.04816498 | 4189.493 |
| 270 | 104.15 | 10.116 | 1.560269 | 192845.7 | 0 | 0 | 0 |
| 271 | 640.26 | 637.39 | 98.30851 | 12150709 | 0 | 0 | 0 |
| 272 | 5.57398 | 2.8627 | 0.441531 | 54572.21 | 0 | 0 | 0 |
| 273 | 38.9609 | 35.824 | 5.52537 | 682923.3 | 0.262793 | 0.03227356 | 2807.223 |
| 274 | 198.573 | 194.94 | 30.06708 | 3716223 | 1.692408 | 0.20784435 | 18078.75 |
| 275 | 193.318 | 187.2 | 28.87321 | 3568664 | 0.436399 | 0.05359406 | 4661.727 |
| 276 | 161.928 | 160.74 | 24.79182 | 3064213 | 0.725638 | 0.08911548 | 7751.456 |
| 277 | 587.019 | 323.1 | 49.83433 | 6159411 | 1.75198 | 0.2151603 | 18715.1 |
| 278 | 256.719 | 200.72 | 30.95832 | 3826379 | 0.427713 | 0.05252736 | 4568.943 |
| 279 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 280 | 95.7455 | 94.092 | 14.51235 | 1793693 | 0 | 0 | 0 |
| 281 | 1.84057 | 0 | 0 | 0 | 0 | 0 | 0 |
| 282 | 69.8727 | 49.991 | 7.71047 | 952996.7 | 0 | 0 | 0 |
| 283 | 339.337 | 336.99 | 51.97593 | 6424108 | 2.147833 | 0.26377496 | 22943.71 |
| 284 | 15.2278 | 14.438 | 2.226896 | 275239.3 | 0 | 0 | 0 |
| 285 | 13.4843 | 10.68 | 1.647212 | 203591.7 | 0 | 0 | 0 |
| 286 | 48.3249 | 0 | 0 | 0 | 0 | 0 | 0 |
| 287 | 426.997 | 19.148 | 2.953284 | 365019.3 | 404.8765 | 49.722805 | 4324996 |
| 288 | 1699.66 | 1683.7 | 259.6841 | 32096366 | 14.61703 | 1.79511518 | 156143 |
| 289 | 288.475 | 285.15 | 43.97982 | 5435806 | 2.475525 | 0.3040188 | 26444.21 |
| 290 | 27.2736 | 27.274 | 4.206573 | 519923 | 0 | 0 | 0 |
| 291 | 213.229 | 194.81 | 30.04603 | 3713622 | 0 | 0 | 0 |
| 292 | 103.046 | 0 | 0 | 0 | 100.0345 | 14.7304856 | 803213.7 |
| 293 | 37.6355 | 2.3137 | 0.377608 | 40163.03 | 0 | 0 | 0 |
| 294 | 16.5721 | 0 | 0 | 0 | 0 | 0 | 0 |
| 295 | 1.60946 | 0 | 0 | 0 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 296 | 0.15347 | 0 | 0 | 0 | 0 | 0 | 0 |
| 297 | 0.22624 | 0 | 0 | 0 | 0 | 0 | 0 |
| 298 | 1.39257 | 0 | 0 | 0 | 0 | 0 | 0 |
| 299 | 0.86206 | 0 | 0 | 0 | 0 | 0 | 0 |
| 300 | 2.37879 | 0 | 0 | 0 | 0 | 0 | 0 |
| 301 | 14.7287 | 12.738 | 2.078883 | 221113.3 | 0 | 0 | 0 |
| 302 | 9.97739 | 7.483 | 1.221259 | 129895.1 | 0 | 0 | 0 |
| 303 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 304 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 305 | 80.0202 | 79.884 | 13.03735 | 1386674 | 0 | 0 | 0 |
| 306 | 132.065 | 66.706 | 10.88677 | 1157935 | 0 | 0 | 0 |
| 307 | 31.7336 | 0 | 0 | 0 | 0 | 0 | 0 |
| 308 | 11.9395 | 8.6494 | 1.411623 | 150142.5 | 0 | 0 | 0 |
| 309 | 151.598 | 117.95 | 19.24955 | 2047414 | 0 | 0 | 0 |
| 310 | 4.62871 | 3.1476 | 0.513699 | 54637.81 | 0 | 0 | 0 |
| 311 | 83.5731 | 71.565 | 11.67977 | 1242280 | 10.12929 | 1.4915789 | 81331.78 |
| 312 | 30.9521 | 0.989 | 0.161411 | 17167.91 | 0 | 0 | 0 |
| 313 | 153.334 | 153.24 | 25.00976 | 2660079 | 0 | 0 | 0 |
| 314 | 5.25741 | 4.973 | 0.811619 | 86325.13 | 0 | 0 | 0 |
| 315 | 1.79677 | 0 | 0 | 0 | 0 | 0 | 0 |
| 316 | 1.04658 | 0 | 0 | 0 | 0 | 0 | 0 |
| 317 | 3.6253 | 0 | 0 | 0 | 0 | 0 | 0 |
| 318 | 508.543 | 2.1586 | 0.33293 | 41149.34 | 505.0971 | 62.0308805 | 5395579 |
| 319 | 5.96282 | 5.2074 | 0.803164 | 99269.25 | 0 | 0 | 0 |
| 320 | 10.7162 | 2.2192 | 0.342274 | 42304.34 | 0 | 0 | 0 |
| 321 | 147.44 | 127.18 | 19.61636 | 2424538 | 0 | 0 | 0 |
| 322 | 4.22939 | 0 | 0 | 0 | 0 | 0 | 0 |
| 323 | 104.299 | 57.731 | 8.90423 | 1100543 | 0 | 0 | 0 |
| 324 | 349.603 | 49.54 | 7.640903 | 944398.4 | 197.1874 | 24.2165467 | 2106407 |
| 325 | 33.636 | 0 | 0 | 0 | 0 | 0 | 0 |
| 326 | 18.0366 | 0 | 0 | 0 | 0 | 0 | 0 |
| 327 | 5.6971 | 0 | 0 | 0 | 0 | 0 | 0 |
| 328 | 1.02284 | 0 | 0 | 0 | 0 | 0 | 0 |
| 329 | 7.07853 | 6.7544 | 1.041777 | 128761.3 | 0 | 0 | 0 |
| 330 | 61.2288 | 21.89 | 3.376275 | 417300 | 0 | 0 | 0 |
| 331 | 31.1123 | 20.165 | 3.110217 | 384415.9 | 0 | 0 | 0 |
| 332 | 2.1462 | 1.8052 | 0.278424 | 34412.62 | 0 | 0 | 0 |
| 333 | 139.967 | 139.37 | 21.49616 | 2656877 | 0 | 0 | 0 |
| 334 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 335 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 336 | 22.8023 | 22.503 | 3.470853 | 428989.5 | 0 | 0 | 0 |
| 337 | 689.542 | 688.52 | 106.1947 | 13125424 | 0 | 0 | 0 |
| 338 | 36.3493 | 33.105 | 5.106058 | 631097.2 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 339 | 86.7673 | 0 | 0 | 0 | 0 | 0 | 0 |
| 340 | 38.9391 | 38.939 | 6.005813 | 742304.9 | 0 | 0 | 0 |
| 341 | 15.5222 | 0 | 0 | 0 | 0 | 0 | 0 |
| 342 | 0.91329 | 0 | 0 | 0 | 0 | 0 | 0 |
| 343 | 22.5165 | 13.401 | 2.06698 | 255474.1 | 0 | 0 | 0 |
| 344 | 25.1887 | 0 | 0 | 0 | 0 | 0 | 0 |
| 345 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 346 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 347 | 0.28386 | 0 | 0 | 0 | 0 | 0 | 0 |
| 348 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 349 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 350 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 351 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 352 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 353 | 24.2814 | 15.581 | 2.542876 | 270464.4 | 0 | 0 | 0 |
| 354 | 43.9481 | 33.615 | 5.486045 | 583504.7 | 0 | 0 | 0 |
| 355 | 104.86 | 101.49 | 16.56299 | 1761666 | 0 | 0 | 0 |
| 356 | 87.2983 | 84.416 | 13.77706 | 1465351 | 0 | 0 | 0 |
| 357 | 170.992 | 45.162 | 7.370675 | 783957 | 0 | 0 | 0 |
| 358 | 0.68713 | 0 | 0 | 0 | 0 | 0 | 0 |
| 359 | 2.69204 | 0 | 0 | 0 | 0 | 0 | 0 |
| 360 | 18.4879 | 14.232 | 2.322706 | 247046.8 | 0 | 0 | 0 |
| 361 | 136.751 | 133.41 | 21.77353 | 2315869 | 0 | 0 | 0 |
| 362 | 105.743 | 103.97 | 16.9681 | 1804754 | 0 | 0 | 0 |
| 363 | 27.7054 | 14.936 | 2.437674 | 259275 | 0 | 0 | 0 |
| 364 | 5.77157 | 5.3281 | 0.869571 | 92488.98 | 0 | 0 | 0 |
| 365 | 1.43719 | 0 | 0 | 0 | 0 | 0 | 0 |
| 366 | 54.5469 | 47.88 | 7.814251 | 831136.4 | 0 | 0 | 0 |
| 367 | 9.74547 | 0 | 0 | 0 | 0 | 0 | 0 |
| 368 | 0.38067 | 0 | 0 | 0 | 0 | 0 | 0 |
| 369 | 1.09222 | 0 | 0 | 0 | 0 | 0 | 0 |
| 370 | 5.58952 | 4.8761 | 0.795794 | 84641.92 | 0 | 0 | 0 |
| 371 | 1.36398 | 0 | 0 | 0 | 0 | 0 | 0 |
| 372 | 1.53563 | 0 | 0 | 0 | 0 | 0 | 0 |
| 373 | 3.14205 | 2.6864 | 0.43844 | 46633.21 | 0 | 0 | 0 |
| 374 | 117.423 | 103.44 | 16.88168 | 1795563 | 0 | 0 | 0 |
| 375 | 829.013 | 3.3778 | 0.551276 | 58634.56 | 825.6352 | 121.578078 | 6629325 |
| 376 | 2.13746 | 1.8809 | 0.306966 | 32649.41 | 0 | 0 | 0 |
| 377 | 1.11028 | 0 | 0 | 0 | 0 | 0 | 0 |
| 378 | 1.06925 | 0.6689 | 0.109176 | 11612.09 | 0 | 0 | 0 |
| 379 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 380 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 381 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 382 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 383 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 384 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 385 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 386 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 387 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 388 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 389 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 390 | 0.96184 | 0 | 0 | 0 | 0 | 0 | 0 |
| 391 | 0.82175 | 0 | 0 | 0 | 0 | 0 | 0 |
| 392 | 0.67328 | 0 | 0 | 0 | 0 | 0 | 0 |
| 393 | 0.76165 | 0 | 0 | 0 | 0 | 0 | 0 |
| 394 | 2.32544 | 2.3254 | 0.379522 | 40366.55 | 0 | 0 | 0 |
| 395 | 14.6145 | 14.614 | 2.385151 | 253688.5 | 0 | 0 | 0 |
| 396 | 16.1129 | 0.2343 | 0.038241 | 4067.404 | 0 | 0 | 0 |
| 397 | 0.963 | 0.7631 | 0.124543 | 13246.56 | 0 | 0 | 0 |
| 398 | 397.564 | 0.1739 | 0.028389 | 3019.494 | 396.7943 | 58.429536 | 3186005 |
| 399 | 27.8765 | 27.209 | 4.440642 | 472314 | 0 | 0 | 0 |
| 400 | 96.7839 | 89.195 | 14.55699 | 1548305 | 0 | 0 | 0 |
| 401 | 221.546 | 218.38 | 35.64135 | 3790872 | 0 | 0 | 0 |
| 402 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 403 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 404 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 405 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 406 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 407 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 408 | 99.3396 | 22.886 | 3.735064 | 397267.5 | 75.18779 | 11.0717019 | 603710.1 |
| 409 | 418.959 | 93.68 | 15.28901 | 1626164 | 295.4344 | 43.5038992 | 2372151 |
| 410 | 8.63483 | 0 | 0 | 0 | 0 | 0 | 0 |
| 411 | 583.529 | 121 | 19.74704 | 2100327 | 429.7041 | 63.2756391 | 3450250 |
| 412 | 60.3985 | 44.327 | 7.234327 | 769454.8 | 0 | 0 | 0 |
| 413 | 25.9471 | 19.736 | 3.220988 | 342589.6 | 0.200729 | 0.02955816 | 1611.727 |
| 414 | 76.2574 | 74.01 | 12.07879 | 1284720 | 0 | 0 | 0 |
| 415 | 11.8521 | 6.5362 | 1.066734 | 113459.5 | 0 | 0 | 0 |
| 416 | 7.94067 | 6.4054 | 1.045398 | 111190.2 | 0 | 0 | 0 |
| 417 | 78.5764 | 78.383 | 12.79246 | 1360627 | 0 | 0 | 0 |
| 418 | 26.4573 | 15.368 | 2.508177 | 266773.8 | 0 | 0 | 0 |
| 419 | 20.591 | 20.167 | 3.291408 | 350079.5 | 0 | 0 | 0 |
| 420 | 12.121 | 8.4983 | 1.386958 | 147519.1 | 0 | 0 | 0 |
| 421 | 4.25596 | 0 | 0 | 0 | 0 | 0 | 0 |
| 422 | 8.17558 | 0 | 0 | 0 | 0 | 0 | 0 |
| 423 | 2.55035 | 0.0312 | 0.005089 | 541.3265 | 0.099791 | 0.01469464 | 801.2594 |
| 424 | 2.74834 | 0 | 0 | 0 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 425 | 6.29217 | 0.1963 | 0.032032 | 3406.929 | 0.628052 | 0.09248321 | 5042.861 |
| 426 | 2.62214 | 0 | 0 | 0 | 0 | 0 | 0 |
| 427 | 0.73811 | 0 | 0 | 0 | 0 | 0 | 0 |
| 428 | 1.53732 | 0 | 0 | 0 | 0 | 0 | 0 |
| 429 | 3.82956 | 0 | 0 | 0 | 0 | 0 | 0 |
| 430 | 1.12188 | 0 | 0 | 0 | 0 | 0 | 0 |
| 431 | 5.98271 | 0 | 0 | 0 | 0 | 0 | 0 |
| 432 | 5.72726 | 0 | 0 | 0 | 0 | 0 | 0 |
| 433 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 434 | 142.445 | 142.44 | 23.24763 | 2472656 | 0 | 0 | 0 |
| 435 | 257.986 | 246.9 | 40.2955 | 4285895 | 0 | 0 | 0 |
| 436 | 5.30653 | 0 | 0 | 0 | 0 | 0 | 0 |
| 437 | 389.439 | 373.65 | 60.98156 | 6486098 | 0 | 0 | 0 |
| 438 | 283.77 | 264.05 | 43.09367 | 4583513 | 0 | 0 | 0 |
| 439 | 82.9651 | 79.289 | 12.94041 | 1376363 | 0 | 0 | 0 |
| 440 | 4.09042 | 0 | 0 | 0 | 0 | 0 | 0 |
| 441 | 137.483 | 68.781 | 11.22542 | 1193954 | 67.88614 | 9.99650458 | 545082.5 |
| 442 | 205.4 | 197.67 | 32.26027 | 3431255 | 0 | 0 | 0 |
| 443 | 3.30724 | 0 | 0 | 0 | 0 | 0 | 0 |
| 444 | 3.00316 | 0 | 0 | 0 | 0 | 0 | 0 |
| 445 | 149.075 | 148.58 | 24.24955 | 2579222 | 0 | 0 | 0 |
| 446 | 12.7707 | 11.671 | 1.904783 | 202595.8 | 0 | 0 | 0 |
| 447 | 118.329 | 0 | 0 | 0 | 118.0486 | 17.3831264 | 947855.1 |
| 448 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 449 | 0.88664 | 0.8866 | 0.144704 | 15390.94 | 0 | 0 | 0 |
| 450 | 45.2408 | 44.867 | 7.32246 | 778828.8 | 0 | 0 | 0 |
| 451 | 116.567 | 116.45 | 19.00436 | 2021334 | 0 | 0 | 0 |
| 452 | 1.18737 | 0 | 0 | 0 | 0 | 0 | 0 |
| 453 | 17.0144 | 16.784 | 2.739284 | 291354.8 | 0 | 0 | 0 |
| 454 | 2.81599 | 2.4794 | 0.404655 | 43039.79 | 0 | 0 | 0 |
| 455 | 3.70036 | 2.9282 | 0.477902 | 50830.44 | 0 | 0 | 0 |
| 456 | 3.24075 | 3.2408 | 0.528906 | 56255.26 | 0 | 0 | 0 |
| 457 | 69.4259 | 69.426 | 11.33062 | 1205143 | 0 | 0 | 0 |
| 458 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 459 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 460 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 461 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 462 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 463 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 464 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 465 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 466 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 467 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 468 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 469 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 470 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 471 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 472 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 473 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 474 | 2.87889 | 2.2294 | 0.363843 | 38698.9 | 0 | 0 | 0 |
| 475 | 4.18822 | 3.8397 | 0.626656 | 66652.18 | 0 | 0 | 0 |
| 476 | 39.0969 | 7.3559 | 1.200518 | 127689.1 | 0 | 0 | 0 |
| 477 | 3.89221 | 2.7623 | 0.450814 | 47949.35 | 0 | 0 | 0 |
| 478 | 36.4445 | 34.086 | 5.563069 | 591697 | 0 | 0 | 0 |
| 479 | 70.2904 | 44.486 | 7.260238 | 772210.7 | 0 | 0 | 0 |
| 480 | 97.5626 | 87.74 | 14.31957 | 1523052 | 0 | 0 | 0 |
| 481 | 6.37915 | 6.1543 | 1.004414 | 106831.1 | 0 | 0 | 0 |
| 482 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 483 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 484 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 485 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 486 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 487 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 488 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 490 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 491 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 492 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 493 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 494 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 495 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 496 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 497 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 498 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 499 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 501 | 26.5349 | 0.1783 | 0.029102 | 3095.334 | 0 | 0 | 0 |
| 502 | 30.8289 | 22.632 | 3.693649 | 392862.6 | 0 | 0 | 0 |
| 503 | 7.93475 | 4.2022 | 0.685812 | 72944.05 | 0 | 0 | 0 |
| 504 | 15.4879 | 13.967 | 2.279544 | 242456 | 0 | 0 | 0 |
| 505 | 0.6357 | 0 | 0 | 0 | 0 | 0 | 0 |
| 506 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 507 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 510 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 511 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 512 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 513 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 514 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 515 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 516 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 517 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 518 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 519 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 520 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 521 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 522 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 523 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 524 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 525 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 526 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 527 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 528 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 529 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 530 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 531 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 532 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 533 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 534 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 535 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 536 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 537 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 538 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 539 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 540 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 541 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 542 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 543 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 544 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 545 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 546 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 547 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 548 | 0.40974 | 0 | 0 | 0 | 0 | 0 | 0 |
| 549 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 550 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 551 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 552 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 553 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 554 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 555 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 556 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 557 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 558 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 559 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 560 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 561 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 562 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 563 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 564 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 565 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 566 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 567 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 568 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 569 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 570 | 37.0038 | 37.004 | 5.855215 | 676128.7 | 0 | 0 | 0 |
| 571 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 572 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 573 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 574 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 575 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 576 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 577 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 578 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 579 | 0.21893 | 0 | 0 | 0 | 0 | 0 | 0 |
| 580 | 3.99724 | 0.1596 | 0.025259 | 2916.741 | 0 | 0 | 0 |
| 581 | 23.6176 | 1.3075 | 0.206892 | 23890.78 | 0 | 0 | 0 |
| 582 | 47.0214 | 0.6363 | 0.100677 | 11625.65 | 0 | 0 | 0 |
| 583 | 4.57509 | 3.0382 | 0.480736 | 55512.8 | 0 | 0 | 0 |
| 584 | 0.25512 | 0.2551 | 0.040369 | 4661.596 | 0 | 0 | 0 |
| 585 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 586 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 587 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 588 | 6.34295 | 6.3429 | 1.003663 | 115897.6 | 0 | 0 | 0 |
| 589 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 590 | 1.38873 | 0 | 0 | 0 | 0 | 0 | 0 |
| 591 | 0.17564 | 0 | 0 | 0 | 0 | 0 | 0 |
| 592 | 0.26489 | 0 | 0 | 0 | 0 | 0 | 0 |
| 593 | 0.84076 | 0 | 0 | 0 | 0 | 0 | 0 |
| 594 | 0.88972 | 0.1362 | 0.021551 | 2488.558 | 0 | 0 | 0 |
| 595 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 596 | 1.97886 | 1.9789 | 0.313121 | 36157.5 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 597 | 3.96741 | 1.2419 | 0.196516 | 22692.6 | 0 | 0 | 0 |
| 598 | 5.67477 | 0 | 0 | 0 | 0 | 0 | 0 |
| 599 | 11.4185 | 0 | 0 | 0 | 0 | 0 | 0 |
| 600 | 20.907 | 17.154 | 2.714394 | 313443.6 | 0 | 0 | 0 |
| 601 | 1.1347 | 1.1347 | 0.179546 | 20733.03 | 0 | 0 | 0 |
| 602 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 603 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 604 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 605 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 606 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 607 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 608 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 609 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 610 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 611 | 25.5413 | 19.161 | 3.031922 | 350110 | 0 | 0 | 0 |
| 612 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 613 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 614 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 615 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 616 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 617 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 618 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 619 | 0.52823 | 0.5282 | 0.083584 | 9651.831 | 0 | 0 | 0 |
| 620 | 634.234 | 17.746 | 2.808079 | 324261.8 | 602.9448 | 89.1910711 | 4806730 |
| 621 | 23.3987 | 22.461 | 3.554053 | 410402.9 | 0 | 0 | 0 |
| 622 | 144.4 | 144.27 | 22.82824 | 2636083 | 0 | 0 | 0 |
| 623 | 1.57198 | 1.1114 | 0.175854 | 20306.72 | 0 | 0 | 0 |
| 624 | 192.97 | 181.29 | 28.68551 | 3312449 | 0 | 0 | 0 |
| 625 | 110.639 | 110.64 | 17.50679 | 2021590 | 0 | 0 | 0 |
| 626 | 1.28094 | 1.0064 | 0.159249 | 18389.19 | 0 | 0 | 0 |
| 627 | 0.32983 | 0 | 0 | 0 | 0 | 0 | 0 |
| 628 | 2.58443 | 0 | 0 | 0 | 0 | 0 | 0 |
| 629 | 0.96215 | 0 | 0 | 0 | 0 | 0 | 0 |
| 630 | 1.12856 | 0.6602 | 0.104467 | 12063.28 | 0 | 0 | 0 |
| 631 | 2.36135 | 1.2468 | 0.197289 | 22781.88 | 0 | 0 | 0 |
| 632 | 0.87204 | 0 | 0 | 0 | 0 | 0 | 0 |
| 633 | 4.80211 | 4.8021 | 0.759852 | 87743.6 | 0 | 0 | 0 |
| 634 | 0.29469 | 0 | 0 | 0 | 0 | 0 | 0 |
| 635 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 636 | 1.35731 | 0.5679 | 0.089868 | 10377.5 | 0 | 0 | 0 |
| 637 | 0.11739 | 0 | 0 | 0 | 0 | 0 | 0 |
| 638 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 639 | 3.45544 | 0 | 0 | 0 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 640 | 0.20078 | 0 | 0 | 0 | 0 | 0 | 0 |
| 641 | 0.61859 | 0 | 0 | 0 | 0 | 0 | 0 |
| 642 | 6.42225 | 0 | 0 | 0 | 0 | 0 | 0 |
| 643 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 644 | 7.60396 | 0 | 0 | 0 | 0 | 0 | 0 |
| 645 | 12.7815 | 0.6034 | 0.095484 | 11025.97 | 11.34893 | 1.67879912 | 90474.69 |
| 646 | 12.7554 | 12.755 | 2.018332 | 233066.1 | 0 | 0 | 0 |
| 647 | 2.86256 | 2.7326 | 0.432395 | 49930.59 | 0 | 0 | 0 |
| 648 | 5.46681 | 0 | 0 | 0 | 0 | 0 | 0 |
| 649 | 9.24551 | 0 | 0 | 0 | 0 | 0 | 0 |
| 650 | 6.10941 | 3.0775 | 0.486956 | 56231.01 | 0 | 0 | 0 |
| 651 | 6.15162 | 6.1516 | 0.973388 | 112401.6 | 0 | 0 | 0 |
| 652 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 653 | 1.13639 | 0.429 | 0.067888 | 7839.388 | 0 | 0 | 0 |
| 654 | 15.0691 | 14.304 | 2.263369 | 261361.7 | 0 | 0 | 0 |
| 655 | 1.02677 | 1.0268 | 0.162469 | 18761.08 | 0 | 0 | 0 |
| 656 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 657 | 0.94412 | 0 | 0 | 0 | 0 | 0 | 0 |
| 658 | 2.24435 | 0.8957 | 0.141732 | 16366.42 | 0 | 0 | 0 |
| 659 | 0.57459 | 0.4241 | 0.067106 | 7749.033 | 0 | 0 | 0 |
| 660 | 54.4201 | 54.42 | 8.611051 | 994357.8 | 0 | 0 | 0 |
| 661 | 40.9217 | 40.228 | 6.365471 | 735050.3 | 0 | 0 | 0 |
| 662 | 1.39731 | 1.2005 | 0.189956 | 21935.12 | 0 | 0 | 0 |
| 663 | 1.55232 | 1.0529 | 0.16661 | 19239.27 | 0 | 0 | 0 |
| 664 | 122.749 | 19.756 | 3.125987 | 360972.1 | 0 | 0 | 0 |
| 665 | 70.6657 | 70.666 | 11.18164 | 1291195 | 0 | 0 | 0 |
| 666 | 37.1376 | 37.138 | 5.876393 | 678574.3 | 0 | 0 | 0 |
| 667 | 159.157 | 157.56 | 24.93193 | 2879005 | 0 | 0 | 0 |
| 668 | 107.398 | 0.8448 | 0.133679 | 15436.51 | 106.1387 | 15.7006495 | 846147.3 |
| 669 | 88.2409 | 87.356 | 13.82262 | 1596161 | 0 | 0 | 0 |
| 670 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 671 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 672 | 29.7037 | 29.334 | 4.641632 | 535990.7 | 0 | 0 | 0 |
| 673 | 0.71918 | 0.7192 | 0.113798 | 13140.81 | 0 | 0 | 0 |
| 674 | 1.13569 | 1.1357 | 0.179704 | 20751.2 | 0 | 0 | 0 |
| 675 | 3.01226 | 3.0123 | 0.476639 | 55039.74 | 0 | 0 | 0 |
| 676 | 2.69432 | 2.41 | 0.381345 | 44035.72 | 0 | 0 | 0 |
| 677 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 678 | 222.952 | 0.0787 | 0.012447 | 1437.285 | 222.8735 | 32.9687406 | 1776768 |
| 679 | 125.419 | 122.9 | 19.44632 | 2245557 | 0 | 0 | 0 |
| 680 | 0.82862 | 0 | 0 | 0 | 0 | 0 | 0 |
| 681 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 682 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 683 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 684 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 685 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 686 | 3.99644 | 3.9964 | 0.632368 | 73022.42 | 0 | 0 | 0 |
| 687 | 3433.88 | 5.275 | 0.834684 | 96384.81 | 3427.248 | 506.978249 | 27322326 |
| 688 | 10.6979 | 8.7779 | 1.388949 | 160388.4 | 0 | 0 | 0 |
| 689 | 0.39641 | 0.1448 | 0.022905 | 2644.983 | 0 | 0 | 0 |
| 690 | 152.089 | 150.89 | 23.87628 | 2757104 | 0 | 0 | 0 |
| 691 | 0.01327 | 0.0133 | 0.0021 | 242.4862 | 0 | 0 | 0 |
| 692 | 52.0356 | 28.065 | 4.440796 | 512799.2 | 0 | 0 | 0 |
| 693 | 212.262 | 212.26 | 33.58687 | 3878430 | 0 | 0 | 0 |
| 694 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 695 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 696 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 697 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 698 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 699 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 700 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 701 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 702 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 703 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 704 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 705 | 0.62238 | 0.6224 | 0.090302 | 13129.09 | 0 | 0 | 0 |
| 706 | 3.76135 | 0 | 0 | 0 | 0 | 0 | 0 |
| 707 | 3.65082 | 1.5785 | 0.229027 | 33298.32 | 0 | 0 | 0 |
| 708 | 10.6077 | 0 | 0 | 0 | 0 | 0 | 0 |
| 709 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 710 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 711 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 712 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 713 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 714 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 715 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 716 | 294.973 | 254.21 | 36.8837 | 5362542 | 20.20078 | 2.64719784 | 194851.9 |
| 717 | 28.0541 | 10.671 | 1.548242 | 225099.8 | 0 | 0 | 0 |
| 718 | 35.0714 | 27.286 | 3.959061 | 575610.1 | 0 | 0 | 0 |
| 719 | 2079.99 | 1807.4 | 262.2445 | 38127875 | 142.8017 | 18.713358 | 1377431 |
| 720 | 1.41116 | 1.4112 | 0.204749 | 29768.6 | 0 | 0 | 0 |
| 721 | 21.3738 | 0 | 0 | 0 | 0 | 0 | 0 |
| 722 | 8.9439 | 0 | 0 | 0 | 0 | 0 | 0 |
| 723 | 54.4613 | 21.111 | 3.063009 | 445332.6 | 1.408561 | 0.18458397 | 13586.64 |
| 724 | 123.819 | 104.9 | 15.22052 | 2212920 | 6.9216 | 0.9070365 | 66764.09 |
| 725 | 20.5934 | 19.738 | 2.863807 | 416370.4 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 726 | 3.47463 | 0 | 0 | 0 | 0 | 0 | 0 |
| 727 | 3.79528 | 0.195 | 0.028293 | 4113.589 | 0 | 0 | 0 |
| 728 | 2.35154 | 0 | 0 | 0 | 0 | 0 | 0 |
| 729 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 730 | 0.36807 | 0 | 0 | 0 | 0 | 0 | 0 |
| 731 | 11.4055 | 5.201 | 0.754624 | 109715.2 | 0 | 0 | 0 |
| 732 | 18.2153 | 6.4247 | 0.932175 | 135529.4 | 0 | 0 | 0 |
| 733 | 3.52776 | 0 | 0 | 0 | 0 | 0 | 0 |
| 734 | 9.23001 | 0 | 0 | 0 | 0 | 0 | 0 |
| 735 | 0.306 | 0 | 0 | 0 | 0 | 0 | 0 |
| 736 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 737 | 12.1352 | 0 | 0 | 0 | 0 | 0 | 0 |
| 738 | 14.6129 | 0 | 0 | 0 | 0 | 0 | 0 |
| 739 | 101.116 | 94.061 | 13.6476 | 1984233 | 0 | 0 | 0 |
| 740 | 4.05175 | 1.618 | 0.234759 | 34131.8 | 0 | 0 | 0 |
| 741 | 0.67795 | 0 | 0 | 0 | 0 | 0 | 0 |
| 742 | 6.13585 | 6.1359 | 0.890267 | 129436.5 | 0 | 0 | 0 |
| 743 | 4.42445 | 3.2976 | 0.478451 | 69562.2 | 0 | 0 | 0 |
| 744 | 15.4387 | 11.897 | 1.726161 | 250967.6 | 0 | 0 | 0 |
| 745 | 0.96893 | 0 | 0 | 0 | 0 | 0 | 0 |
| 746 | 23.1536 | 0 | 0 | 0 | 0 | 0 | 0 |
| 747 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 748 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 749 | 3.25305 | 3.253 | 0.471994 | 68623.43 | 0 | 0 | 0 |
| 750 | 5.74239 | 5.7424 | 0.833179 | 121136.4 | 0 | 0 | 0 |
| 751 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 753 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 754 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 755 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 756 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 757 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 758 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 759 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 760 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 761 | 148.001 | 143.45 | 20.81311 | 3026030 | 0 | 0 | 0 |
| 762 | 39.4092 | 28.617 | 4.152077 | 603672.8 | 0 | 0 | 0 |
| 763 | 0.54961 | 0 | 0 | 0 | 0 | 0 | 0 |
| 764 | 37.8136 | 37.695 | 5.469342 | 795190.7 | 0 | 0 | 0 |
| 765 | 434.588 | 434.59 | 63.05556 | 9167684 | 0 | 0 | 0 |
| 766 | 12.6067 | 12.607 | 1.829136 | 265939.1 | 0 | 0 | 0 |
| 767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 768 | 45.2563 | 40.027 | 5.807668 | 844380.1 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 769 | 404.877 | 404.88 | 58.74475 | 8540933 | 0 | 0 | 0 |
| 770 | 2.08988 | 0 | 0 | 0 | 0 | 0 | 0 |
| 771 | 108.702 | 108.7 | 15.77191 | 2293086 | 0 | 0 | 0 |
| 772 | 7.9179 | 7.7027 | 1.117601 | 162488.6 | 0 | 0 | 0 |
| 773 | 65.7679 | 65.533 | 9.508385 | 1382429 | 0 | 0 | 0 |
| 774 | 13.8533 | 13.144 | 1.907071 | 277270.1 | 0 | 0 | 0 |
| 775 | 2.17636 | 1.98 | 0.287283 | 41768.17 | 0 | 0 | 0 |
| 776 | 0.36581 | 0 | 0 | 0 | 0 | 0 | 0 |
| 777 | 3.84905 | 1.5906 | 0.230782 | 33553.5 | 0 | 0 | 0 |
| 778 | 100.323 | 100.17 | 14.53364 | 2113054 | 0 | 0 | 0 |
| 779 | 1.12097 | 0 | 0 | 0 | 0 | 0 | 0 |
| 780 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 781 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 782 | 851.1 | 834.51 | 121.0817 | 17604138 | 0 | 0 | 0 |
| 783 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 784 | 859.514 | 739.86 | 107.3483 | 15607427 | 58.79343 | 7.70454573 | 567107.3 |
| 785 | 0.96335 | 0.9633 | 0.139775 | 20321.93 | 0 | 0 | 0 |
| 786 | 34.611 | 34.611 | 5.021807 | 730123.3 | 0 | 0 | 0 |
| 787 | 667.821 | 586.78 | 85.13717 | 12378142 | 42.46027 | 5.56417795 | 409561.6 |
| 788 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 789 | 1.45662 | 0 | 0 | 0 | 0 | 0 | 0 |
| 790 | 0.91642 | 0.9164 | 0.132966 | 19331.98 | 0 | 0 | 0 |
| 791 | 0.34718 | 0.3472 | 0.050374 | 7323.843 | 0 | 0 | 0 |
| 792 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 793 | 997.974 | 0 | 0 | 0 | 0 | 0 | 0 |
| 794 | 0.4005 | 0.4005 | 0.05811 | 8448.634 | 0 | 0 | 0 |
| 795 | 85.1108 | 85.111 | 12.34895 | 1795421 | 0 | 0 | 0 |
| 796 | 199.772 | 110.67 | 16.0575 | 2334610 | 0 | 0 | 0 |
| 797 | 11.0923 | 1.6968 | 0.246189 | 35793.57 | 0 | 0 | 0 |
| 798 | 3.59529 | 0.145 | 0.021043 | 3059.487 | 0 | 0 | 0 |
| 799 | 0.286 | 0 | 0 | 0 | 0 | 0 | 0 |
| 800 | 0.86878 | 0 | 0 | 0 | 0 | 0 | 0 |
| 801 | 3.88162 | 0 | 0 | 0 | 0 | 0 | 0 |
| 802 | 0.36158 | 0.3616 | 0.052463 | 7627.633 | 0 | 0 | 0 |
| 803 | 2.38513 | 0 | 0 | 0 | 0 | 0 | 0 |
| 804 | 1.21555 | 1.0622 | 0.154124 | 22408.13 | 0 | 0 | 0 |
| 805 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 806 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 808 | 259.744 | 16.877 | 2.448667 | 356013.1 | 0 | 0 | 0 |
| 809 | 10.6231 | 4.2255 | 0.61309 | 89137.56 | 0 | 0 | 0 |
| 810 | 85.7528 | 47.232 | 6.853062 | 996370.5 | 0 | 0 | 0 |
| 811 | 535.518 | 451.07 | 65.44647 | 9515299 | 84.12983 | 11.0247377 | 811496.1 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 812 | 0.16305 | 0.163 | 0.023657 | 3439.473 | 0 | 0 | 0 |
| 813 | 1.61875 | 1.6187 | 0.234868 | 34147.61 | 0 | 0 | 0 |
| 814 | 113.549 | 113.55 | 16.47511 | 2395326 | 0 | 0 | 0 |
| 815 | 3.79278 | 3.7928 | 0.550305 | 80009.09 | 0 | 0 | 0 |
| 816 | 36.6024 | 36.602 | 5.310745 | 772132.3 | 0 | 0 | 0 |
| 817 | 653.844 | 2.715 | 0.393924 | 57272.85 | 651.1288 | 85.3267334 | 6280631 |
| 818 | 54.0713 | 54.071 | 7.845356 | 1140641 | 0 | 0 | 0 |
| 819 | 22.0121 | 22.012 | 3.193793 | 464347.4 | 0 | 0 | 0 |
| 820 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 821 | 3.93516 | 3.9352 | 0.570962 | 83012.55 | 0 | 0 | 0 |
| 822 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 823 | 15.006 | 2.5472 | 0.369586 | 53734.31 | 0 | 0 | 0 |
| 824 | 4.82558 | 4.8256 | 0.700156 | 101796.1 | 0 | 0 | 0 |
| 825 | 6.64243 | 6.1567 | 0.893299 | 129877.2 | 0 | 0 | 0 |
| 826 | 19.7491 | 0 | 0 | 0 | 0 | 0 | 0 |
| 827 | 3.25822 | 3.2582 | 0.472744 | 68732.45 | 0 | 0 | 0 |
| 828 | 74.0345 | 74.034 | 10.74186 | 1561765 | 0 | 0 | 0 |
| 829 | 0.04748 | 0.0475 | 0.006888 | 1001.511 | 0 | 0 | 0 |
| 830 | 16.8685 | 16.869 | 2.447502 | 355843.7 | 0 | 0 | 0 |
| 831 | 141.455 | 81.306 | 11.79695 | 1715165 | 0 | 0 | 0 |
| 832 | 0.27293 | 0.2729 | 0.0396 | 5757.404 | 0 | 0 | 0 |
| 833 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 834 | 458.711 | 379.37 | 55.04438 | 8002934 | 70.46084 | 9.23349373 | 679648.3 |
| 835 | 67.3162 | 0 | 0 | 0 | 0 | 0 | 0 |
| 836 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 837 | 45.1748 | 41.944 | 6.085716 | 884805.6 | 0 | 0 | 0 |
| 838 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 839 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 840 | 1.05522 | 0 | 0 | 0 | 0 | 0 | 0 |
| 841 | 4.02436 | 0 | 0 | 0 | 0 | 0 | 0 |
| 842 | 2.5326 | 0 | 0 | 0 | 0 | 0 | 0 |
| 843 | 12.6088 | 0 | 0 | 0 | 0 | 0 | 0 |
| 844 | 99.1732 | 47.431 | 6.881902 | 1000564 | 0 | 0 | 0 |
| 845 | 68.3639 | 68.364 | 9.919107 | 1442145 | 0 | 0 | 0 |
| 846 | 2.18074 | 2.1807 | 0.31641 | 46002.99 | 0 | 0 | 0 |
| 847 | 5.28099 | 0.0939 | 0.013618 | 1979.966 | 0 | 0 | 0 |
| 848 | 32.8891 | 32.889 | 4.771967 | 693799 | 0 | 0 | 0 |
| 849 | 298.094 | 294.67 | 42.75514 | 6216193 | 0 | 0 | 0 |
| 850 | 122.963 | 122.96 | 17.84109 | 2593926 | 0 | 0 | 0 |
| 851 | 121.401 | 121.4 | 17.61438 | 2560965 | 0 | 0 | 0 |
| 852 | 213.182 | 213.18 | 30.93117 | 4497100 | 0 | 0 | 0 |
| 853 | 658.767 | 265.81 | 38.5677 | 5607380 | 0 | 0 | 0 |
| 854 | 80.371 | 80.241 | 11.64235 | 1692688 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 855 | 180.865 | 151.68 | 22.00761 | 3199699 | 28.29025 | 3.70727665 | 272880.9 |
| 856 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 857 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 858 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 859 | 42.5134 | 0 | 0 | 0 | 0 | 0 | 0 |
| 860 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 861 | 473.323 | 150.89 | 21.89319 | 3183064 | 28.14316 | 3.68800181 | 271462.2 |
| 862 | 4.84744 | 2.0614 | 0.299096 | 43485.67 | 0 | 0 | 0 |
| 863 | 14.3005 | 14.301 | 2.0749 | 301670.9 | 0 | 0 | 0 |
| 864 | 1130.75 | 1048.2 | 152.0872 | 22112047 | 0 | 0 | 0 |
| 865 | 29.7597 | 27.963 | 4.057161 | 589872.9 | 0 | 0 | 0 |
| 866 | 0.6301 | 0.2121 | 0.03078 | 4475.117 | 0 | 0 | 0 |
| 867 | 20.8736 | 20.874 | 3.028612 | 440331.6 | 0 | 0 | 0 |
| 868 | 80.5992 | 80.519 | 11.68267 | 1698550 | 0 | 0 | 0 |
| 869 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 870 | 40.3904 | 40.39 | 5.860356 | 852040.5 | 0 | 0 | 0 |
| 871 | 10.1313 | 10.131 | 1.469974 | 213720.4 | 0 | 0 | 0 |
| 872 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 873 | 75.8413 | 0 | 0 | 0 | 0 | 0 | 0 |
| 874 | 3.824 | 3.769 | 0.54686 | 79508.23 | 0 | 0 | 0 |
| 875 | 75.4058 | 71.307 | 10.34612 | 1504228 | 0 | 0 | 0 |
| 876 | 633.909 | 160 | 23.21426 | 3375135 | 472.223 | 61.8821476 | 4554949 |
| 877 | 196.57 | 194.02 | 28.15076 | 4092855 | 0 | 0 | 0 |
| 878 | 192.241 | 92.332 | 13.39664 | 1947746 | 99.90926 | 13.0925426 | 963700.7 |
| 879 | 198.363 | 18.723 | 2.716544 | 394959.9 | 175.9295 | 23.0545684 | 1696974 |
| 880 | 13.7803 | 2.893 | 0.41975 | 61027.71 | 10.06063 | 1.31838866 | 97042.42 |
| 881 | 47.1989 | 26.874 | 3.899195 | 566906.2 | 19.71216 | 2.58316721 | 190138.8 |
| 882 | 24.5944 | 24.594 | 3.568464 | 518821 | 0 | 0 | 0 |
| 883 | 289.834 | 289.83 | 42.05273 | 6114070 | 0 | 0 | 0 |
| 884 | 24.4356 | 19.496 | 2.828738 | 411271.9 | 0 | 0 | 0 |
| 885 | 80.6335 | 76.732 | 11.13325 | 1618669 | 0 | 0 | 0 |
| 886 | 1511.55 | 1277.8 | 185.4027 | 26955804 | 232.6346 | 30.4854444 | 2243937 |
| 887 | 425.274 | 425.27 | 61.70421 | 8971210 | 0 | 0 | 0 |
| 888 | 859.993 | 854.38 | 123.9647 | 18023303 | 5.610442 | 0.73521662 | 54116.97 |
| 889 | 1578.52 | 1543.7 | 223.9856 | 32565393 | 34.5161 | 4.52313925 | 332934 |
| 890 | 375.456 | 2.0727 | 0.300735 | 43724.03 | 373.3834 | 48.9297841 | 3601567 |
| 891 | 1776.83 | 8.7595 | 1.270945 | 184783.4 | 1767.879 | 231.670578 | 17052539 |
| 892 | 561.722 | 559.81 | 81.22369 | 11809159 | 0 | 0 | 0 |
| 893 | 1953.24 | 575.6 | 83.51551 | 12142367 | 1377.227 | 180.477844 | 13284404 |
| 894 | 597.911 | 143.8 | 20.86447 | 3033497 | 442.0047 | 57.9222099 | 4263471 |
| 895 | 542.501 | 140.63 | 20.40464 | 2966642 | 400.3688 | 52.4660621 | 3861861 |
| 896 | 1885.85 | 713.85 | 103.5742 | 15058714 | 1168.796 | 153.164129 | 11273927 |
| 897 | 1263.39 | 980.7 | 142.2924 | 20687976 | 270.4395 | 35.4395581 | 2608594 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 898 | 703.158 | 367.19 | 53.27694 | 7745965 | 218.6913 | 28.6582523 | 2109443 |
| 899 | 234.421 | 210.06 | 30.47859 | 4431300 | 24.35763 | 3.19192932 | 234947.8 |
| 900 | 553.429 | 284.76 | 41.31695 | 6007094 | 265.2423 | 34.7585054 | 2558464 |
| 901 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 902 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 903 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 904 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 905 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 906 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 907 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 908 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 909 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 910 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 911 | 123.233 | 123.23 | 17.88024 | 2599618 | 0 | 0 | 0 |
| 912 | 143.165 | 47.822 | 6.938672 | 1008817 | 0 | 0 | 0 |
| 913 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 914 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 915 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 916 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 917 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 918 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 919 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 920 | 7.0811 | 0 | 0 | 0 | 0 | 0 | 0 |
| 921 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 922 | 1.06897 | 1.069 | 0.1551 | 22550.1 | 0 | 0 | 0 |
| 923 | 10.7237 | 4.5324 | 0.657616 | 95611.21 | 0 | 0 | 0 |
| 924 | 27.763 | 27.763 | 4.028209 | 585663.6 | 0 | 0 | 0 |
| 925 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 926 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 927 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 928 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 929 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 930 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 931 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 932 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 933 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 934 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 935 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 936 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 937 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 938 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 939 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 940 | 1.56411 | 0 | 0 | 0 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 942 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 943 | 1.70862 | 1.7086 | 0.247908 | 36043.53 | 0 | 0 | 0 |
| 944 | 1.3087 | 1.3087 | 0.189883 | 27607.19 | 0 | 0 | 0 |
| 945 | 0.55853 | 0.5585 | 0.081038 | 11782.15 | 0 | 0 | 0 |
| 946 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 947 | 0.12448 | 0 | 0 | 0 | 0 | 0 | 0 |
| 948 | 0.88715 | 0 | 0 | 0 | 0 | 0 | 0 |
| 949 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 950 | 1.00668 | 0 | 0 | 0 | 0 | 0 | 0 |
| 951 | 8.17962 | 0 | 0 | 0 | 0 | 0 | 0 |
| 952 | 1.88258 | 0 | 0 | 0 | 0 | 0 | 0 |
| 953 | 0.62086 | 0 | 0 | 0 | 0 | 0 | 0 |
| 954 | 1.24569 | 0 | 0 | 0 | 0 | 0 | 0 |
| 955 | 1.97904 | 0 | 0 | 0 | 0 | 0 | 0 |
| 956 | 8.55668 | 0 | 0 | 0 | 0 | 0 | 0 |
| 957 | 26.8806 | 21.97 | 2.775599 | 582993.4 | 0 | 0 | 0 |
| 958 | 7.01392 | 7.0139 | 0.886095 | 186117.5 | 0 | 0 | 0 |
| 959 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 960 | 212.857 | 211.35 | 26.70114 | 5608370 | 0 | 0 | 0 |
| 961 | 11.8303 | 11.83 | 1.49457 | 313923 | 0 | 0 | 0 |
| 962 | 276.957 | 263.2 | 33.2505 | 6984014 | 0 | 0 | 0 |
| 963 | 1072.12 | 991.72 | 125.2883 | 26315861 | 80.12887 | 9.0171399 | 982067.3 |
| 964 | 3.31537 | 2.4894 | 0.314493 | 66056.94 | 0 | 0 | 0 |
| 965 | 376.49 | 376.17 | 47.5228 | 9981802 | 0 | 0 | 0 |
| 966 | 475.644 | 475.64 | 60.08995 | 12621436 | 0 | 0 | 0 |
| 967 | 200.427 | 200.43 | 25.32069 | 5318417 | 0 | 0 | 0 |
| 968 | 14.4678 | 14.44 | 1.824208 | 383160.9 | 0 | 0 | 0 |
| 969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 970 | 71.2331 | 71.233 | 8.999152 | 1890203 | 0 | 0 | 0 |
| 971 | 424.877 | 424.88 | 53.67633 | 11274304 | 0 | 0 | 0 |
| 972 | 21.2471 | 21.247 | 2.684225 | 563801 | 0 | 0 | 0 |
| 973 | 34.5389 | 34.059 | 4.302795 | 903769.3 | 0 | 0 | 0 |
| 974 | 339.813 | 339.81 | 42.92989 | 9017097 | 0 | 0 | 0 |
| 975 | 1354.74 | 1354.7 | 171.149 | 35948533 | 0 | 0 | 0 |
| 976 | 487.596 | 487.14 | 61.54219 | 12926469 | 0 | 0 | 0 |
| 977 | 1.77871 | 0 | 0 | 0 | 0 | 0 | 0 |
| 978 | 30.8663 | 27.233 | 3.440442 | 722638.7 | 0 | 0 | 0 |
| 979 | 3.76175 | 0 | 0 | 0 | 0 | 0 | 0 |
| 980 | 0.73564 | 0 | 0 | 0 | 0 | 0 | 0 |
| 981 | 5.24789 | 0 | 0 | 0 | 0 | 0 | 0 |
| 982 | 36.2409 | 30.371 | 3.836898 | 805911.2 | 0 | 0 | 0 |
| 983 | 136.163 | 132.44 | 16.73141 | 3514305 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 984 | 95.2683 | 84.381 | 10.66018 | 2239090 | 0 | 0 | 0 |
| 985 | 122.862 | 114.83 | 14.5074 | 3047169 | 0 | 0 | 0 |
| 986 | 253.695 | 249.03 | 31.46098 | 6608140 | 0 | 0 | 0 |
| 987 | 234.215 | 172.55 | 21.79842 | 4578593 | 56.65568 | 6.37563151 | 694377.5 |
| 988 | 425.784 | 226.62 | 28.62994 | 6013502 | 195.4022 | 21.9891851 | 2394868 |
| 989 | 387.025 | 373.43 | 47.17679 | 9909125 | 0 | 0 | 0 |
| 990 | 359.919 | 344.75 | 43.55386 | 9148157 | 0 | 0 | 0 |
| 991 | 968.879 | 800.19 | 101.0905 | 21233296 | 167.2462 | 18.8207101 | 2049786 |
| 992 | 245.928 | 231.25 | 29.21533 | 6136458 | 0 | 0 | 0 |
| 993 | 573.014 | 545.24 | 68.88281 | 14468310 | 22.93703 | 2.58117154 | 281118.4 |
| 994 | 572.725 | 563.4 | 71.17591 | 14949957 | 0 | 0 | 0 |
| 995 | 645.494 | 641.48 | 81.04038 | 17021913 | 0 | 0 | 0 |
| 996 | 133.571 | 129.51 | 16.36207 | 3436729 | 0 | 0 | 0 |
| 997 | 20.2975 | 16.66 | 2.104724 | 442081.2 | 0 | 0 | 0 |
| 998 | 307.362 | 306.83 | 38.76294 | 8141859 | 0 | 0 | 0 |
| 999 | 83.0693 | 9.3744 | 1.184304 | 248753.9 | 0 | 0 | 0 |
| 1000 | 236.802 | 234.96 | 29.68378 | 6234852 | 0 | 0 | 0 |
| 1001 | 75.6208 | 74.625 | 9.427681 | 1980213 | 0 | 0 | 0 |
| 1002 | 53.3406 | 48.36 | 6.109531 | 1283260 | 0 | 0 | 0 |
| 1003 | 47.2158 | 46.915 | 5.926954 | 1244912 | 0 | 0 | 0 |
| 1004 | 232.25 | 212.47 | 26.84232 | 5638024 | 0 | 0 | 0 |
| 1005 | 8.93366 | 1.6221 | 0.204923 | 43042.44 | 0 | 0 | 0 |
| 1006 | 30.096 | 29.709 | 3.753203 | 788331.7 | 0 | 0 | 0 |
| 1007 | 712.035 | 703.75 | 88.90698 | 18674234 | 0 | 0 | 0 |
| 1008 | 485.729 | 460.49 | 58.17497 | 12219210 | 23.39056 | 2.63220969 | 286677.1 |
| 1009 | 200.191 | 199.55 | 25.21055 | 5295283 | 0 | 0 | 0 |
| 1010 | 99.661 | 99.661 | 12.59057 | 2644552 | 0 | 0 | 0 |
| 1011 | 0.42569 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1012 | 8.26572 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1013 | 9.18216 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1014 | 1354.21 | 13.798 | 1.743151 | 366135.6 | 1340.047 | 150.79941 | 16423741 |
| 1015 | 594.935 | 594.75 | 75.13708 | 15781970 | 0 | 0 | 0 |
| 1016 | 282.29 | 24.043 | 3.037408 | 637984.5 | 256.3043 | 28.8426819 | 3141290 |
| 1017 | 328.305 | 17.803 | 2.249165 | 472420 | 288.3356 | 32.4472651 | 3533870 |
| 1018 | 153.963 | 153.11 | 19.34304 | 4062857 | 0 | 0 | 0 |
| 1019 | 2365.85 | 227.62 | 28.75608 | 6039996 | 1210.999 | 136.277327 | 14842124 |
| 1020 | 938.214 | 768.43 | 97.07854 | 20390608 | 169.5098 | 19.0754406 | 2077529 |
| 1021 | 1248.18 | 1132.8 | 143.1165 | 30060537 | 113.901 | 12.817615 | 1395982 |
| 1022 | 2894.84 | 712.52 | 90.01512 | 18906989 | 2182.055 | 245.553099 | 26743477 |
| 1023 | 862.083 | 440.22 | 55.61506 | 11681519 | 44.11541 | 4.96443795 | 540682.8 |
| 1024 | 2151.16 | 1278.4 | 161.509 | 33923731 | 79.02543 | 8.89296656 | 968543.5 |
| 1025 | 454.722 | 420.76 | 53.15586 | 11164983 | 33.8531 | 3.80958987 | 414906.9 |
| 1026 | 61.6326 | 52.131 | 6.585962 | 1383331 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 1027 | 55.7474 | 54.88 | 6.9332 | 1456266 | 0 | 0 | 0 |
| 1028 | 83.3054 | 82.639 | 10.44009 | 2192861 | 0 | 0 | 0 |
| 1029 | 818.503 | 817.85 | 103.3224 | 21702081 | 0 | 0 | 0 |
| 1030 | 306.913 | 306.91 | 38.77347 | 8144071 | 0 | 0 | 0 |
| 1031 | 1117.24 | 937.14 | 118.3922 | 24867386 | 53.97115 | 6.07353416 | 661475.8 |
| 1032 | 259.725 | 228.72 | 28.89499 | 6069173 | 29.91338 | 3.36624105 | 366621.3 |
| 1033 | 7.01842 | 6.6459 | 0.839606 | 176352.8 | 0 | 0 | 0 |
| 1034 | 2.10543 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1035 | 1.96222 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1036 | 10.3639 | 10.151 | 1.282412 | 269360.9 | 0 | 0 | 0 |
| 1037 | 376.487 | 335.93 | 42.43948 | 8914090 | 40.42306 | 4.54892705 | 495429 |
| 1038 | 140.434 | 123.17 | 15.56103 | 3268475 | 16.22191 | 1.8254996 | 198817.3 |
| 1039 | 91.3099 | 88.851 | 11.22486 | 2357697 | 2.451039 | 0.27582266 | 30040.17 |
| 1040 | 15.8026 | 15.67 | 1.979606 | 415801.1 | 0 | 0 | 0 |
| 1041 | 81.1248 | 81.125 | 10.24881 | 2152684 | 0 | 0 | 0 |
| 1042 | 85.4882 | 85.488 | 10.80006 | 2268470 | 0 | 0 | 0 |
| 1043 | 75.8172 | 75.817 | 9.578281 | 2011845 | 0 | 0 | 0 |
| 1044 | 127.05 | 118.06 | 14.91493 | 3132767 | 8.905837 | 1.0022003 | 109150.8 |
| 1045 | 18.4737 | 18.474 | 2.333854 | 490208.3 | 0 | 0 | 0 |
| 1046 | 70.896 | 70.862 | 8.952238 | 1880349 | 0 | 0 | 0 |
| 1047 | 657.628 | 273.91 | 34.60416 | 7268341 | 35.42519 | 3.98650213 | 434174.6 |
| 1048 | 971.928 | 434.68 | 54.91491 | 11534458 | 455.9367 | 51.3079047 | 5588004 |
| 1049 | 199.267 | 2.6841 | 0.339091 | 71223.48 | 76.59891 | 8.61990249 | 938803.7 |
| 1050 | 0.48251 | 0.4825 | 0.060958 | 12803.71 | 0 | 0 | 0 |
| 1051 | 203.692 | 168.16 | 21.24411 | 4462164 | 23.24577 | 2.61591582 | 284902.5 |
| 1052 | 614.94 | 540.04 | 68.22538 | 14330221 | 74.65371 | 8.40100333 | 914963.2 |
| 1053 | 397.91 | 347.08 | 43.84798 | 9209933 | 48.78905 | 5.49037709 | 597963.4 |
| 1054 | 825.283 | 463.85 | 58.60024 | 12308534 | 361.0989 | 40.6355271 | 4425663 |
| 1055 | 637.897 | 253.71 | 32.05159 | 6732192 | 382.603 | 43.0554555 | 4689220 |
| 1056 | 799.314 | 218.14 | 27.55879 | 5788514 | 579.7017 | 65.2355475 | 7104880 |
| 1057 | 0.96051 | 0.2532 | 0.031982 | 6717.569 | 0.034995 | 0.00393813 | 428.9067 |
| 1058 | 175.307 | 149.61 | 18.9006 | 3969926 | 18.83248 | 2.11927488 | 230812.7 |
| 1059 | 258.685 | 18.124 | 2.289723 | 480938.9 | 229.4923 | 25.8254468 | 2812680 |
| 1060 | 75.2356 | 64.339 | 8.12818 | 1707262 | 4.24816 | 0.47805805 | 52065.87 |
| 1061 | 190.409 | 181.44 | 22.92173 | 4814535 | 8.301094 | 0.9341467 | 101739 |
| 1062 | 168.282 | 168.28 | 21.25968 | 4465433 | 0 | 0 | 0 |
| 1063 | 591.061 | 162.4 | 20.51663 | 4309361 | 416.2907 | 46.8464333 | 5102100 |
| 1064 | 211.24 | 49.216 | 6.21767 | 1305974 | 157.4918 | 17.7230147 | 1930234 |
| 1065 | 202.074 | 33.916 | 4.284793 | 899988.1 | 108.5325 | 12.213489 | 1330185 |
| 1066 | 437.653 | 100.75 | 12.72767 | 2673351 | 319.9165 | 36.0011533 | 3920928 |
| 1067 | 545.232 | 126.19 | 15.9422 | 3348537 | 402.2145 | 45.2623881 | 4929580 |
| 1068 | 157.85 | 103.69 | 13.09928 | 2751405 | 0 | 0 | 0 |
| 1069 | 49.3836 | 49.384 | 6.238817 | 1310416 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 1070 | 403.94 | 352.53 | 44.53695 | 9354647 | 48.73331 | 5.48410394 | 597280.2 |
| 1071 | 201.975 | 176.51 | 22.29867 | 4683665 | 24.39969 | 2.74576984 | 299045 |
| 1072 | 226.588 | 198.99 | 25.13917 | 5280291 | 27.50783 | 3.09553776 | 337138.7 |
| 1073 | 236.711 | 207.88 | 26.26223 | 5516182 | 28.73671 | 3.23382754 | 352200 |
| 1074 | 55.7269 | 48.939 | 6.182702 | 1298629 | 6.765248 | 0.76131342 | 82915.54 |
| 1075 | 46.2528 | 40.619 | 5.131583 | 1077850 | 5.615091 | 0.63188285 | 68819.1 |
| 1076 | 32.4878 | 8.122 | 1.026078 | 215519.9 | 24.36587 | 2.74196311 | 298630.4 |
| 1077 | 28.888 | 7.222 | 0.912384 | 191639.3 | 21.66602 | 2.43814174 | 265540.9 |
| 1078 | 41.9 | 10.475 | 1.323348 | 277959.2 | 31.42502 | 3.53635022 | 385148.1 |
| 1079 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1080 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1081 | 556.235 | 0 | 0 | 0 | 556.2353 | 62.5948137 | 6817275 |
| 1082 | 300.173 | 84.864 | 10.7212 | 2251907 | 197.119 | 22.1823853 | 2415910 |
| 1083 | 84.1497 | 84.15 | 10.63096 | 2232953 | 0 | 0 | 0 |
| 1084 | 270.134 | 14.267 | 1.802356 | 378571.1 | 249.0007 | 28.0207904 | 3051777 |
| 1085 | 792.689 | 9.6515 | 1.219311 | 256106.9 | 769.5891 | 86.604148 | 9432160 |
| 1086 | 15.6389 | 2.736 | 0.345644 | 72599.79 | 0 | 0 | 0 |
| 1087 | 103.061 | 47.077 | 5.94746 | 1249219 | 12.51763 | 1.40864586 | 153417.3 |
| 1088 | 199.542 | 29.367 | 3.710105 | 779279.4 | 0 | 0 | 0 |
| 1089 | 146.782 | 8.185 | 1.03404 | 217192.2 | 138.006 | 15.5302198 | 1691415 |
| 1090 | 121.204 | 10.422 | 1.3166 | 276541.8 | 30.81803 | 3.46804451 | 377708.8 |
| 1091 | 41.5738 | 20.808 | 2.628788 | 552156.9 | 0 | 0 | 0 |
| 1092 | 18.76 | 2.0597 | 0.260208 | 54654.8 | 0.647378 | 0.07285131 | 7934.322 |
| 1093 | 323.271 | 239.66 | 30.27742 | 6359541 | 76.20551 | 8.57563194 | 933982.2 |
| 1094 | 4.66677 | 0.5021 | 0.063432 | 13323.48 | 1.506302 | 0.16950866 | 18461.39 |
| 1095 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1096 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1097 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1098 | 49.8648 | 12.466 | 1.574905 | 330796.7 | 37.39863 | 4.20857868 | 458361.3 |
| 1099 | 179.196 | 44.799 | 5.659639 | 1188764 | 134.3972 | 15.124114 | 1647185 |
| 1100 | 201.421 | 50.336 | 6.359199 | 1335701 | 151.0093 | 16.9935303 | 1850785 |
| 1101 | 190.309 | 47.549 | 6.007107 | 1261747 | 142.6484 | 16.0526443 | 1748312 |
| 1102 | 97.6383 | 24.41 | 3.083757 | 647719.6 | 73.22874 | 8.24064731 | 897498.6 |
| 1103 | 9.63925 | 2.4098 | 0.304441 | 63945.52 | 7.22944 | 0.81355031 | 88604.72 |
| 1104 | 3.51047 | 0.8776 | 0.110873 | 23288 | 2.632854 | 0.29628288 | 32268.52 |
| 1105 | 7.39232 | 1.8481 | 0.233475 | 49039.64 | 5.544237 | 0.62390945 | 67950.71 |
| 1106 | 28.7731 | 7.1933 | 0.908754 | 190876.8 | 21.57981 | 2.42843965 | 264484.2 |
| 1107 | 70.9144 | 17.657 | 2.230718 | 468545.3 | 52.97196 | 5.96109207 | 649229.6 |
| 1108 | 153.712 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1109 | 54.1811 | 1.3059 | 0.164977 | 34652.22 | 3.917649 | 0.44086467 | 48015.09 |
| 1110 | 77.2387 | 7.6108 | 0.961503 | 201956.4 | 22.83242 | 2.56940036 | 279836.4 |
| 1111 | 204.307 | 44.524 | 5.62487 | 1181461 | 133.5715 | 15.0312008 | 1637066 |
| 1112 | 45.7963 | 24.818 | 3.135388 | 658564.3 | 18.93122 | 2.13038607 | 232022.9 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 1113 | 33.6176 | 17.99 | 2.272764 | 477376.7 | 14.39483 | 1.61989348 | 176424.5 |
| 1114 | 1.00356 | 0.5867 | 0.074119 | 15568.17 | 0 | 0 | 0 |
| 1115 | 10.786 | 2.6572 | 0.335694 | 70509.94 | 7.971588 | 0.89706646 | 97700.56 |
| 1116 | 56.4344 | 31.041 | 3.921562 | 823694.3 | 23.979 | 2.69842763 | 293888.9 |
| 1117 | 12.3845 | 3.0502 | 0.385348 | 80939.38 | 9.150701 | 1.02975557 | 112151.9 |
| 1118 | 25.0063 | 4.0589 | 0.512772 | 107703.8 | 12.17659 | 1.37026762 | 149237.5 |
| 1119 | 40.5794 | 7.0095 | 0.88554 | 186000.8 | 21.02855 | 2.36640535 | 257728 |
| 1120 | 70.84 | 16.294 | 2.058467 | 432365.3 | 48.88159 | 5.50079022 | 599097.5 |
| 1121 | 93.0978 | 8.8347 | 1.116123 | 234433 | 26.50412 | 2.98258682 | 324837 |
| 1122 | 1.6689 | 0.1399 | 0.017675 | 3712.465 | 0.419717 | 0.04723203 | 5144.096 |
| 1123 | 111.08 | 0 | 0 | 0 | 109.508 | 12.3232611 | 1342141 |
| 1124 | 2.75999 | 0.1302 | 0.016449 | 3454.958 | 0.390605 | 0.04395588 | 4787.287 |
| 1125 | 39.6435 | 0.6656 | 0.084083 | 17661.05 | 1.996692 | 0.22469368 | 24471.65 |
| 1126 | 160.459 | 155.9 | 19.69544 | 4136878 | 4.559386 | 0.51308121 | 55880.28 |
| 1127 | 5.61177 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1128 | 15.7331 | 0.8098 | 0.102301 | 21487.61 | 14.69859 | 1.65407591 | 180147.4 |
| 1129 | 27.4797 | 1.8222 | 0.2302 | 48351.7 | 4.903619 | 0.55181883 | 60099.24 |
| 1130 | 15.3726 | 2.7111 | 0.342508 | 71941.14 | 5.247322 | 0.59049669 | 64311.69 |
| 1131 | 16.1793 | 3.8444 | 0.485674 | 102012.1 | 11.5331 | 1.29785451 | 141350.9 |
| 1132 | 33.017 | 0.1801 | 0.022752 | 4778.879 | 0 | 0 | 0 |
| 1133 | 29.7728 | 21.827 | 2.757541 | 579200.4 | 3.54852 | 0.39932549 | 43491.01 |
| 1134 | 2.14253 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1135 | 0.2506 | 0.1357 | 0.017146 | 3601.341 | 0 | 0 | 0 |
| 1136 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1137 | 107.735 | 26.417 | 3.337412 | 700998 | 73.83365 | 8.3087194 | 904912.4 |
| 1138 | 134.156 | 17.683 | 2.233973 | 469229.1 | 26.86625 | 3.02333914 | 329275.4 |
| 1139 | 74.301 | 32.549 | 4.112009 | 863696.2 | 15.69612 | 1.76633044 | 192373.1 |
| 1140 | 118.94 | 1.0661 | 0.134681 | 28288.67 | 0 | 0 | 0 |
| 1141 | 2.30592 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1142 | 10.0709 | 8.7983 | 1.111518 | 233465.8 | 0 | 0 | 0 |
| 1143 | 13.1264 | 11.834 | 1.495084 | 314031 | 0 | 0 | 0 |
| 1144 | 2.5389 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1145 | 35.9286 | 26.727 | 3.376578 | 709224.4 | 0 | 0 | 0 |
| 1146 | 0.2619 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1147 | 7.09538 | 0 | 0 | 0 | 6.70776 | 0.75484414 | 82210.96 |
| 1148 | 107.094 | 79.024 | 9.983441 | 2096946 | 27.66014 | 3.11267721 | 339005.3 |
| 1149 | 16.8706 | 15.584 | 1.968777 | 413526.5 | 0 | 0 | 0 |
| 1150 | 5.81823 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1151 | 245.556 | 88.679 | 11.20322 | 2353151 | 156.8767 | 17.6538011 | 1922696 |
| 1152 | 2.45199 | 2.1704 | 0.274201 | 57593.78 | 0 | 0 | 0 |
| 1153 | 14.7771 | 3.8122 | 0.481613 | 101159.2 | 0 | 0 | 0 |
| 1154 | 10.9425 | 8.978 | 1.134226 | 238235.5 | 0 | 0 | 0 |
| 1155 | 531.997 | 525.08 | 66.33521 | 13933205 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 1156 | 4.95974 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1157 | 212.964 | 186.41 | 23.55025 | 4946550 | 0 | 0 | 0 |
| 1158 | 60.0499 | 57.492 | 7.263147 | 1525569 | 0 | 0 | 0 |
| 1159 | 60.4209 | 17.79 | 2.247442 | 472058.1 | 0 | 0 | 0 |
| 1160 | 55.2808 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1161 | 201.058 | 26.797 | 3.385337 | 711064.2 | 170.6588 | 19.2047391 | 2091611 |
| 1162 | 15.4642 | 6.3746 | 0.805325 | 169152.4 | 0 | 0 | 0 |
| 1163 | 26.2875 | 11.22 | 1.417525 | 297740.4 | 0 | 0 | 0 |
| 1164 | 626.32 | 142.66 | 18.02323 | 3785643 | 472.4013 | 53.1607221 | 5789797 |
| 1165 | 203.833 | 62.421 | 7.88595 | 1656384 | 0 | 0 | 0 |
| 1166 | 0.23216 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1167 | 5.05806 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1168 | 26.9204 | 0.5554 | 0.070167 | 14738.12 | 0 | 0 | 0 |
| 1169 | 103.776 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1170 | 253.953 | 209.99 | 26.52846 | 5572102 | 0 | 0 | 0 |
| 1171 | 164.591 | 161.87 | 20.44918 | 4295194 | 1.969025 | 0.22158021 | 24132.56 |
| 1172 | 28.0288 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1173 | 212.275 | 200.01 | 25.2675 | 5307247 | 0 | 0 | 0 |
| 1174 | 56.3817 | 46.905 | 5.925747 | 1244658 | 0 | 0 | 0 |
| 1175 | 132.603 | 104.97 | 13.26147 | 2785472 | 0 | 0 | 0 |
| 1176 | 343.424 | 300.03 | 37.90414 | 7961476 | 39.5747 | 4.45345815 | 485031.4 |
| 1177 | 1.92292 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1178 | 1.56494 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1179 | 96.0237 | 96.024 | 12.13105 | 2548035 | 0 | 0 | 0 |
| 1180 | 6.20368 | 6.2037 | 0.783735 | 164617.7 | 0 | 0 | 0 |
| 1181 | 855.446 | 13.18 | 1.665083 | 349738.1 | 367.5869 | 41.3656461 | 4505181 |
| 1182 | 278.983 | 227.36 | 28.72313 | 6033075 | 0 | 0 | 0 |
| 1183 | 62.4724 | 32.814 | 4.145557 | 870742.7 | 0 | 0 | 0 |
| 1184 | 185.068 | 45.995 | 5.810699 | 1220493 | 80.9115 | 9.10521127 | 991659.3 |
| 1185 | 42.0666 | 5.8368 | 0.737391 | 154883.3 | 0 | 0 | 0 |
| 1186 | 2.39893 | 2.1067 | 0.266152 | 55903.3 | 0.29123 | 0.03277296 | 3569.342 |
| 1187 | 11.5269 | 1.2601 | 0.15919 | 33436.68 | 0 | 0 | 0 |
| 1188 | 12.1791 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1189 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1190 | 9.18742 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1191 | 94.1839 | 42.939 | 5.424668 | 1139410 | 0 | 0 | 0 |
| 1192 | 5.22381 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1193 | 3.5154 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1194 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1195 | 14.5839 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1196 | 6.94752 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1197 | 114.512 | 109.65 | 13.8528 | 2909675 | 0 | 0 | 0 |
| 1198 | 6.24689 | 0 | 0 | 0 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 1199 | 25.5106 | 25.232 | 3.18765 | 669541.6 | 0 | 0 | 0 |
| 1200 | 170.344 | 170.34 | 21.52017 | 4520147 | 0 | 0 | 0 |
| 1201 | 0.50172 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1202 | 0.39943 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1203 | 5.10445 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1204 | 5.50266 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1205 | 84.9625 | 69.914 | 8.832471 | 1855193 | 9.025197 | 1.01563223 | 110613.7 |
| 1206 | 8.68352 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1207 | 4.2673 | 2.9563 | 0.373486 | 78447.97 | 0 | 0 | 0 |
| 1208 | 33.2154 | 10.822 | 1.367155 | 287160.4 | 0 | 0 | 0 |
| 1209 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**Table 2. Ionian Sea:** Total fish NASC (Nautical Area Scattering Coefficient, in $m^2/nm^2$) per EDSU (Elementary Distance Sampling Unit), and also NASC, biomass, and abundance of anchovy and sardine (target species) per EDSU.

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 1 | 175.332 | 0.11958 | 0.014083 | 3150.33 | 170.77912 | 19.7886 | 1951156 |
| 2 | 8.8389 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 55.5875 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0.36954 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 260.629 | 241.868 | 28.48522 | 6371860 | 0 | 0 | 0 |
| 10 | 112.633 | 100.135 | 11.79302 | 2637981 | 0 | 0 | 0 |
| 11 | 489.913 | 129.709 | 15.27601 | 3417090 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | 550.531 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18 | 169.22 | 121.223 | 14.27658 | 3193528 | 0 | 0 | 0 |
| 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 23 | 0.0241 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24 | 1.6832 | 1.6832 | 0.198233 | 44342.7 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 28 | 7.06598 | 0 | 0 | 0 | 0 | 0 | 0 |
| 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 32 | 32.4515 | 0 | 0 | 0 | 0 | 0 | 0 |
| 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 35 | 5.39086 | 0 | 0 | 0 | 0 | 0 | 0 |
| 36 | 62.919 | 0 | 0 | 0 | 0 | 0 | 0 |
| 37 | 13.527 | 4.31535 | 0.508226 | 113685 | 0 | 0 | 0 |
| 38 | 21.604 | 0 | 0 | 0 | 0 | 0 | 0 |
| 39 | 181.689 | 0.69594 | 0.081962 | 18334 | 0 | 0 | 0 |
| 40 | 61.532 | 23.5387 | 2.772184 | 620110 | 0 | 0 | 0 |
| 41 | 66.6676 | 57.6235 | 6.786406 | 1518051 | 7.346713 | 0.85128 | 83936.4 |
| 42 | 38.3668 | 0 | 0 | 0 | 33.198968 | 3.84684 | 379299 |
| 43 | 32.8161 | 5.98106 | 0.704399 | 157567 | 0 | 0 | 0 |
| 44 | 9.26113 | 4.56769 | 0.537944 | 120333 | 0 | 0 | 0 |
| 45 | 0.35587 | 0 | 0 | 0 | 0 | 0 | 0 |
| 46 | 0.92661 | 0 | 0 | 0 | 0 | 0 | 0 |
| 47 | 65.3425 | 32.348 | 3.809679 | 852187 | 0 | 0 | 0 |
| 48 | 26.4259 | 19.7441 | 2.32529 | 520144 | 0 | 0 | 0 |
| 49 | 37.7213 | 25.9895 | 3.060829 | 684677 | 0 | 0 | 0 |
| 50 | 104.706 | 104.247 | 12.27733 | 2746315 | 0 | 0 | 0 |
| 51 | 37.1155 | 27.4653 | 3.234635 | 723556 | 0 | 0 | 0 |
| 52 | 13.6314 | 0.31832 | 0.037489 | 8385.9 | 0 | 0 | 0 |
| 53 | 32.2986 | 29.0466 | 3.420858 | 765212 | 0 | 0 | 0 |
| 54 | 10.0827 | 10.0827 | 1.18745 | 265621 | 0 | 0 | 0 |
| 55 | 188.809 | 162.49 | 19.13671 | 4280690 | 0 | 0 | 0 |
| 56 | 506.462 | 501.146 | 59.02078 | 1.3E+07 | 0 | 0 | 0 |
| 57 | 310.46 | 58.5493 | 6.895446 | 1542442 | 245.36851 | 28.4314 | 2803342 |
| 58 | 218.719 | 205.574 | 24.21078 | 5415710 | 0 | 0 | 0 |
| 59 | 80.5024 | 72.236 | 8.507341 | 1903007 | 0 | 0 | 0 |
| 60 | 227.766 | 81.7648 | 9.629572 | 2154039 | 146.00074 | 16.9175 | 1668062 |
| 61 | 47.5026 | 47.361 | 5.577779 | 1247693 | 0 | 0 | 0 |
| 62 | 61.2935 | 13.5087 | 1.590944 | 355878 | 0 | 0 | 0 |
| 63 | 25.0997 | 17.0752 | 2.010969 | 449834 | 0 | 0 | 0 |
| 64 | 32.2636 | 26.0413 | 3.066919 | 686039 | 0 | 0 | 0 |
| 65 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 66 | 39.086 | 30.0201 | 3.535518 | 790860 | 0 | 0 | 0 |
| 67 | 97.691 | 91.9277 | 10.82647 | 2421773 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 68 | 754.521 | 752.606 | 88.6356 | 2E+07 | 0 | 0 | 0 |
| 69 | 2.65263 | 2.54871 | 0.300165 | 67143.9 | 0 | 0 | 0 |
| 70 | 2.60372 | 2.60372 | 0.306644 | 68593.2 | 0 | 0 | 0 |
| 71 | 12.5701 | 1.39604 | 0.164413 | 36777.6 | 11.000739 | 1.27468 | 125684 |
| 72 | 28.5196 | 6.55547 | 0.772048 | 172699 | 21.964167 | 2.54504 | 250941 |
| 73 | 8.38677 | 5.57984 | 0.657147 | 146997 | 2.117594 | 0.24537 | 24193.6 |
| 74 | 20.6156 | 3.4819 | 0.410069 | 91728.2 | 17.007076 | 1.97065 | 194306 |
| 75 | 47.649 | 45.9018 | 5.405927 | 1209252 | 0 | 0 | 0 |
| 76 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 77 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 78 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 79 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 80 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 81 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 82 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 83 | 2.53798 | 0 | 0 | 0 | 0 | 0 | 0 |
| 84 | 0.13561 | 0 | 0 | 0 | 0 | 0 | 0 |
| 85 | 0.02497 | 0 | 0 | 0 | 0 | 0 | 0 |
| 86 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 87 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 88 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 89 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 91 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 92 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 93 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 94 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 95 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 96 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 97 | 69.8753 | 0 | 0 | 0 | 0 | 0 | 0 |
| 98 | 53.797 | 46.6859 | 5.498273 | 1229909 | 0 | 0 | 0 |
| 99 | 397.143 | 1.1323 | 0.133353 | 29829.8 | 395.77726 | 45.8597 | 4521766 |
| 100 | 15.3099 | 15.3099 | 1.803072 | 403329 | 0 | 0 | 0 |
| 101 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 102 | 83.6469 | 0 | 0 | 0 | 0 | 0 | 0 |
| 103 | 0.19493 | 0 | 0 | 0 | 0 | 0 | 0 |
| 104 | 28.4065 | 28.1946 | 3.320526 | 742768 | 0 | 0 | 0 |
| 105 | 90.4286 | 86.536 | 10.19148 | 2279733 | 0 | 0 | 0 |
| 106 | 0.26009 | 0 | 0 | 0 | 0 | 0 | 0 |
| 107 | 30.0168 | 2.24738 | 0.264677 | 59205.6 | 0 | 0 | 0 |
| 108 | 215.012 | 197.325 | 23.23929 | 5198396 | 0 | 0 | 0 |
| 109 | 47.868 | 37.3342 | 4.396912 | 983545 | 0 | 0 | 0 |
| 110 | 154.671 | 154.671 | 18.21579 | 4074691 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 111 | 22.9638 | 20.6156 | 2.427928 | 543103 | 0 | 0 | 0 |
| 112 | 45.2366 | 32.4531 | 3.822049 | 854954 | 0 | 0 | 0 |
| 113 | 207.899 | 129.263 | 15.22346 | 3405337 | 0 | 0 | 0 |
| 114 | 149.876 | 132.798 | 15.63977 | 3498461 | 0 | 0 | 0 |
| 115 | 167.897 | 159.953 | 18.83795 | 4213862 | 0 | 0 | 0 |
| 116 | 67.8318 | 65.1797 | 7.676316 | 1717115 | 0 | 0 | 0 |
| 117 | 232.829 | 214.275 | 25.23547 | 5644923 | 0 | 0 | 0 |
| 118 | 2.61893 | 0 | 0 | 0 | 0 | 0 | 0 |
| 119 | 16.5588 | 6.92751 | 0.619904 | 351182 | 0 | 0 | 0 |
| 120 | 156.899 | 151.034 | 13.51515 | 7656464 | 0 | 0 | 0 |
| 121 | 3.35945 | 0 | 0 | 0 | 0 | 0 | 0 |
| 122 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 123 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 124 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 125 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 126 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 127 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 128 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 129 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 130 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 131 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 132 | 916.658 | 114.926 | 10.28407 | 5826027 | 14.499703 | 1.14283 | 329319 |
| 133 | 27.0953 | 16.9896 | 1.520308 | 861270 | 0.0012716 | 0.0001 | 28.8806 |
| 134 | 137.204 | 46.4867 | 4.159834 | 2356587 | 0 | 0 | 0 |
| 135 | 129.092 | 72.3465 | 6.473883 | 3667518 | 0 | 0 | 0 |
| 136 | 104.162 | 0 | 0 | 0 | 54.113797 | 4.26511 | 1229038 |
| 137 | 160.204 | 0 | 0 | 0 | 0 | 0 | 0 |
| 138 | 77.1031 | 62.2645 | 5.571703 | 3156424 | 0.0143536 | 0.00113 | 326.001 |
| 139 | 19.5266 | 0 | 0 | 0 | 0.3612428 | 0.02847 | 8204.58 |
| 140 | 204.401 | 125.665 | 11.24504 | 6370426 | 0 | 0 | 0 |
| 141 | 125.514 | 123.711 | 11.07018 | 6271366 | 0 | 0 | 0 |
| 142 | 21.2597 | 16.1987 | 1.449532 | 821174 | 0 | 0 | 0 |
| 143 | 214.807 | 30.9745 | 2.771732 | 1570213 | 0 | 0 | 0 |
| 144 | 20.4531 | 19.4997 | 1.744919 | 988514 | 0 | 0 | 0 |
| 145 | 4.02359 | 0 | 0 | 0 | 0 | 0 | 0 |
| 146 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 147 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 148 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 149 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 150 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 151 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 152 | 0.73427 | 0.73427 | 0.065706 | 37222.9 | 0 | 0 | 0 |
| 153 | 6.52596 | 6.10787 | 0.546559 | 309631 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 154 | 263.522 | 45.2882 | 4.052585 | 2295829 | 214.09281 | 16.8743 | 4862496 |
| 155 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 156 | 12.885 | 10.8111 | 0.967426 | 548056 | 0.0063152 | 0.0005 | 143.431 |
| 157 | 22.2047 | 21.0597 | 1.884515 | 1067596 | 0 | 0 | 0 |
| 158 | 145.074 | 59.056 | 5.284596 | 2993775 | 0 | 0 | 0 |
| 159 | 31.1986 | 17.5016 | 1.566122 | 887223 | 0 | 0 | 0 |
| 160 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 161 | 17.7325 | 5.33165 | 0.4771 | 270282 | 0 | 0 | 0 |
| 162 | 0.05398 | 0 | 0 | 0 | 0 | 0 | 0 |
| 163 | 4.16132 | 0 | 0 | 0 | 0 | 0 | 0 |
| 164 | 8.37724 | 0 | 0 | 0 | 0 | 0 | 0 |
| 165 | 58.228 | 0 | 0 | 0 | 0 | 0 | 0 |
| 166 | 64.3146 | 1.28858 | 0.115308 | 65323.1 | 0 | 0 | 0 |
| 167 | 8.9105 | 0 | 0 | 0 | 0 | 0 | 0 |
| 168 | 0.92138 | 0.92138 | 0.082449 | 46708.2 | 0 | 0 | 0 |
| 169 | 0.08403 | 0 | 0 | 0 | 0 | 0 | 0 |
| 170 | 0.24095 | 0 | 0 | 0 | 0 | 0 | 0 |
| 171 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 172 | 15.1271 | 0 | 0 | 0 | 0 | 0 | 0 |
| 173 | 5.75578 | 0 | 0 | 0 | 0 | 0 | 0 |
| 174 | 3.39745 | 0 | 0 | 0 | 0 | 0 | 0 |
| 175 | 24.1087 | 18.8573 | 1.687432 | 955947 | 0 | 0 | 0 |
| 176 | 6.93548 | 0 | 0 | 0 | 0 | 0 | 0 |
| 177 | 0.07534 | 0 | 0 | 0 | 0 | 0 | 0 |
| 178 | 0.04102 | 0 | 0 | 0 | 0 | 0 | 0 |
| 179 | 0.14731 | 0 | 0 | 0 | 0 | 0 | 0 |
| 180 | 75.3837 | 75.3837 | 6.745667 | 3821486 | 0 | 0 | 0 |
| 181 | 317.591 | 104.401 | 9.342297 | 5292503 | 210.68873 | 16.606 | 4785182 |
| 182 | 104.059 | 3.11999 | 0.27919 | 158164 | 73.700263 | 5.80887 | 1673887 |
| 183 | 86.1533 | 36.1128 | 3.231529 | 1830693 | 1.7780671 | 0.14014 | 40383.6 |
| 184 | 47.4192 | 0 | 0 | 0 | 0 | 0 | 0 |
| 185 | 24.4235 | 0 | 0 | 0 | 0 | 0 | 0 |
| 186 | 121.311 | 39.234 | 3.510829 | 1988919 | 0 | 0 | 0 |
| 187 | 14.6356 | 2.95945 | 0.264825 | 150026 | 0 | 0 | 0 |
| 188 | 8.39668 | 0 | 0 | 0 | 0 | 0 | 0 |
| 189 | 1.05274 | 0 | 0 | 0 | 0 | 0 | 0 |
| 190 | 0.51993 | 0 | 0 | 0 | 0 | 0 | 0 |
| 191 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 192 | 8.14418 | 7.15602 | 0.640352 | 362766 | 0 | 0 | 0 |
| 193 | 86.2784 | 52.2424 | 4.674882 | 2648366 | 0 | 0 | 0 |
| 194 | 17.8359 | 12.2362 | 1.094946 | 620297 | 0.656409 | 0.05174 | 14908.4 |
| 195 | 63.5817 | 0 | 0 | 0 | 0 | 0 | 0 |
| 196 | 19.8054 | 0 | 0 | 0 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 197 | 262.224 | 169.636 | 15.17977 | 8599487 | 0 | 0 | 0 |
| 198 | 3.98048 | 0 | 0 | 0 | 0 | 0 | 0 |
| 199 | 32.3618 | 0 | 0 | 0 | 0 | 0 | 0 |
| 200 | 117.878 | 0 | 0 | 0 | 0 | 0 | 0 |
| 201 | 29.8679 | 23.1492 | 2.071496 | 1173522 | 0 | 0 | 0 |
| 202 | 28.5485 | 28.5485 | 2.554647 | 1447232 | 0 | 0 | 0 |
| 203 | 0.52866 | 0 | 0 | 0 | 0 | 0 | 0 |
| 204 | 6.59004 | 0 | 0 | 0 | 0 | 0 | 0 |
| 205 | 3.83214 | 1.16273 | 0.104046 | 58943.3 | 0 | 0 | 0 |
| 206 | 15.6042 | 3.08065 | 0.275671 | 156170 | 0 | 0 | 0 |
| 207 | 8.52971 | 4.10566 | 0.367392 | 208131 | 0 | 0 | 0 |
| 208 | 0.24201 | 0 | 0 | 0 | 0 | 0 | 0 |
| 209 | 1.86816 | 0 | 0 | 0 | 0 | 0 | 0 |
| 210 | 1.88563 | 0 | 0 | 0 | 0 | 0 | 0 |
| 211 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 212 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 213 | 0.7475 | 0 | 0 | 0 | 0 | 0 | 0 |
| 214 | 0.23913 | 0 | 0 | 0 | 0 | 0 | 0 |
| 215 | 26.6665 | 0 | 0 | 0 | 0 | 0 | 0 |
| 216 | 12.9199 | 0.00099 | 8.87E-05 | 50.2726 | 0.0207411 | 0.00163 | 471.074 |
| 217 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 218 | 1.96294 | 0 | 0 | 0 | 0 | 0 | 0 |
| 219 | 0.18262 | 0 | 0 | 0 | 0 | 0 | 0 |
| 220 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 221 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 222 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 223 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 224 | 6.68044 | 5.42385 | 0.48535 | 274955 | 0.6613634 | 0.05213 | 15020.9 |
| 225 | 3.33394 | 0 | 0 | 0 | 0 | 0 | 0 |
| 226 | 7.25469 | 0 | 0 | 0 | 0 | 0 | 0 |
| 227 | 43.7531 | 16.4086 | 1.468315 | 831815 | 2.0008039 | 0.1577 | 45442.4 |
| 228 | 44.159 | 3.8207 | 0.341893 | 193686 | 0 | 0 | 0 |
| 229 | 26.2932 | 17.6477 | 1.579196 | 894630 | 0 | 0 | 0 |
| 230 | 16.5846 | 11.0723 | 0.990796 | 561295 | 0.0907003 | 0.00715 | 2059.99 |
| 231 | 26.1172 | 25.3832 | 2.271399 | 1286770 | 0 | 0 | 0 |
| 232 | 6.50093 | 0 | 0 | 0 | 0 | 0 | 0 |
| 233 | 14.2143 | 0 | 0 | 0 | 0 | 0 | 0 |
| 234 | 1.7073 | 0 | 0 | 0 | 0 | 0 | 0 |
| 235 | 0.3096 | 0 | 0 | 0 | 0 | 0 | 0 |
| 236 | 2.8175 | 0 | 0 | 0 | 0 | 0 | 0 |
| 237 | 1.88598 | 0 | 0 | 0 | 0 | 0 | 0 |
| 238 | 3.6625 | 0 | 0 | 0 | 0 | 0 | 0 |
| 239 | 200.199 | 0 | 0 | 0 | 197.80377 | 15.5904 | 4492537 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 240 | 4.3139 | 0 | 0 | 0 | 0 | 0 | 0 |
| 241 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 242 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 243 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 244 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 245 | 6.18703 | 0 | 0 | 0 | 0 | 0 | 0 |
| 246 | 8.30187 | 0 | 0 | 0 | 0 | 0 | 0 |
| 247 | 213.718 | 0 | 0 | 0 | 0 | 0 | 0 |
| 248 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 249 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 250 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 251 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 252 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 253 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 254 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 255 | 37.1388 | 0 | 0 | 0 | 0 | 0 | 0 |
| 256 | 98.3096 | 41.7109 | 3.732473 | 2114482 | 5.086065 | 0.40087 | 115515 |
| 257 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 258 | 2.633 | 0 | 0 | 0 | 0 | 0 | 0 |
| 259 | 4.12003 | 0 | 0 | 0 | 0 | 0 | 0 |
| 260 | 30.0596 | 27.1964 | 2.433651 | 1378687 | 0 | 0 | 0 |
| 261 | 58.7523 | 55.8465 | 4.997394 | 2831072 | 0.0333703 | 0.00263 | 757.91 |
| 262 | 10.5664 | 1.01077 | 0.090448 | 51239.8 | 0 | 0 | 0 |
| 263 | 52.7738 | 4.91803 | 0.440087 | 249314 | 28.670466 | 2.25973 | 651166 |
| 264 | 53.0647 | 31.2318 | 2.794758 | 1583258 | 0 | 0 | 0 |
| 265 | 27.8973 | 16.5372 | 1.479826 | 838336 | 0 | 0 | 0 |
| 266 | 0.32737 | 0 | 0 | 0 | 0 | 0 | 0 |
| 267 | 144.594 | 101.449 | 9.078136 | 5142853 | 10.415878 | 0.82095 | 236566 |
| 268 | 35.7615 | 0 | 0 | 0 | 0 | 0 | 0 |
| 269 | 1549.46 | 0 | 0 | 0 | 1546.307 | 121.876 | 3.5E+07 |
| 270 | 2.50539 | 2.40471 | 0.215184 | 121904 | 0 | 0 | 0 |
| 271 | 9.6419 | 2.5024 | 0.223925 | 126856 | 0 | 0 | 0 |
| 272 | 23.6846 | 0 | 0 | 0 | 0 | 0 | 0 |
| 273 | 1.18316 | 0 | 0 | 0 | 0 | 0 | 0 |
| 274 | 31.002 | 30.3278 | 2.71387 | 1537434 | 0 | 0 | 0 |
| 275 | 26.753 | 26.199 | 2.344404 | 1328128 | 0 | 0 | 0 |
| 276 | 4.46118 | 1.866 | 0.166978 | 94594.6 | 0 | 0 | 0 |
| 277 | 2.45021 | 2.23607 | 0.200093 | 113355 | 0 | 0 | 0 |
| 278 | 18.2551 | 12.2534 | 1.096485 | 621169 | 0.164236 | 0.01294 | 3730.14 |
| 279 | 40.5813 | 36.0134 | 3.222637 | 1825656 | 0 | 0 | 0 |
| 280 | 21.6576 | 19.1832 | 1.716594 | 972467 | 0 | 0 | 0 |
| 281 | 12.1677 | 4.79651 | 0.429212 | 243153 | 6.415186 | 0.50563 | 145702 |
| 282 | 15.5645 | 11.5378 | 1.032457 | 584897 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 283 | 115.045 | 109.442 | 9.79332 | 5548011 | 0 | 0 | 0 |
| 284 | 31.9102 | 22.3176 | 1.997074 | 1131362 | 0 | 0 | 0 |
| 285 | 135.588 | 133.143 | 11.91421 | 6749516 | 0 | 0 | 0 |
| 286 | 100.457 | 96.9581 | 8.67624 | 4915175 | 0 | 0 | 0 |
| 287 | 1504.9 | 1504.9 | 134.6649 | 7.6E+07 | 0 | 0 | 0 |
| 288 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 289 | 7.44396 | 0 | 0 | 0 | 0 | 0 | 0 |
| 290 | 0.4316 | 0 | 0 | 0 | 0 | 0 | 0 |
| 291 | 0.33569 | 0 | 0 | 0 | 0 | 0 | 0 |
| 292 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 293 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 294 | 1.49978 | 0.10175 | 0.01092 | 3344.22 | 0 | 0 | 0 |
| 295 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 296 | 0.28398 | 0 | 0 | 0 | 0 | 0 | 0 |
| 297 | 0.36849 | 0 | 0 | 0 | 0 | 0 | 0 |
| 298 | 4.61391 | 0 | 0 | 0 | 0 | 0 | 0 |
| 299 | 0.93939 | 0 | 0 | 0 | 0 | 0 | 0 |
| 300 | 1.36191 | 0 | 0 | 0 | 0 | 0 | 0 |
| 301 | 124.898 | 110.31 | 11.83952 | 3625675 | 0 | 0 | 0 |
| 302 | 18.8269 | 7.38782 | 0.792929 | 242822 | 0 | 0 | 0 |
| 303 | 6.26433 | 1.47288 | 0.158083 | 48410.4 | 0 | 0 | 0 |
| 304 | 6.88354 | 6.44209 | 0.691424 | 211738 | 0 | 0 | 0 |
| 305 | 0.17251 | 0 | 0 | 0 | 0 | 0 | 0 |
| 306 | 2.5967 | 0 | 0 | 0 | 0 | 0 | 0 |
| 307 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 308 | 32.4231 | 29.3562 | 3.150781 | 964879 | 0 | 0 | 0 |
| 309 | 104.259 | 102.761 | 11.02927 | 3377548 | 0 | 0 | 0 |
| 310 | 33.232 | 26.2585 | 2.818308 | 863064 | 0 | 0 | 0 |
| 311 | 4.82715 | 0 | 0 | 0 | 0 | 0 | 0 |
| 312 | 2.45069 | 0 | 0 | 0 | 0 | 0 | 0 |
| 313 | 0.21464 | 0.21464 | 0.023037 | 7054.71 | 0 | 0 | 0 |
| 314 | 0.12359 | 0 | 0 | 0 | 0 | 0 | 0 |
| 315 | 5.54039 | 3.08064 | 0.330643 | 101254 | 0 | 0 | 0 |
| 316 | 1.2598 | 0 | 0 | 0 | 0 | 0 | 0 |
| 317 | 3.17841 | 0.67103 | 0.072022 | 22055.5 | 0 | 0 | 0 |
| 318 | 99.0618 | 98.3412 | 10.55488 | 3232273 | 0 | 0 | 0 |
| 319 | 43.8947 | 43.2454 | 4.641498 | 1421389 | 0 | 0 | 0 |
| 320 | 95.8736 | 19.3871 | 2.080801 | 637214 | 75.653056 | 6.81146 | 1355319 |
| 321 | 2.26089 | 1.90484 | 0.204445 | 62608.1 | 0 | 0 | 0 |
| 322 | 88.9582 | 87.2092 | 9.360096 | 2866387 | 0.756013 | 0.1026 | 6515.91 |
| 323 | 99.1214 | 69.9606 | 7.508818 | 2299462 | 22.140235 | 3.00481 | 190822 |
| 324 | 33.6922 | 32.7924 | 3.519584 | 1077819 | 0 | 0 | 0 |
| 325 | 118.34 | 109.783 | 11.78296 | 3608352 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 326 | 155.556 | 148.948 | 15.98645 | 4895608 | 0 | 0 | 0 |
| 327 | 269.326 | 112.783 | 12.10489 | 3706938 | 129.96408 | 17.6383 | 1120132 |
| 328 | 87.0905 | 86.0501 | 9.235689 | 2828290 | 0 | 0 | 0 |
| 329 | 156.982 | 156.647 | 16.81285 | 5148682 | 0 | 0 | 0 |
| 330 | 172.788 | 166.416 | 17.86134 | 5469764 | 0 | 0 | 0 |
| 331 | 141.71 | 125.485 | 13.46826 | 4124450 | 0 | 0 | 0 |
| 332 | 1101.08 | 1101.08 | 118.1776 | 3.6E+07 | 0 | 0 | 0 |
| 333 | 287.976 | 283.757 | 30.45546 | 9326524 | 0 | 0 | 0 |
| 334 | 327.205 | 327.205 | 35.11868 | 1.1E+07 | 0 | 0 | 0 |
| 335 | 200.343 | 37.761 | 4.052855 | 1241125 | 133.88602 | 18.1706 | 1153934 |
| 336 | 18.4127 | 6.36758 | 0.683427 | 209289 | 0 | 0 | 0 |
| 337 | 54.0781 | 42.8803 | 4.602308 | 1409387 | 0 | 0 | 0 |
| 338 | 30.4384 | 30.4384 | 3.266929 | 1000447 | 0 | 0 | 0 |
| 339 | 110.949 | 74.2507 | 7.969275 | 2440470 | 0 | 0 | 0 |
| 340 | 348.531 | 9.51854 | 1.021618 | 312855 | 337.96082 | 45.8671 | 2912810 |
| 341 | 134.177 | 122.431 | 13.14047 | 4024071 | 8.56792 | 1.16281 | 73845 |
| 342 | 75.7252 | 75.7252 | 8.127527 | 2488932 | 0 | 0 | 0 |
| 343 | 37.8941 | 37.8941 | 4.067146 | 1245502 | 0 | 0 | 0 |
| 344 | 4.51113 | 3.6528 | 0.392052 | 120060 | 0 | 0 | 0 |
| 345 | 2.53809 | 2.53809 | 0.272411 | 83421.9 | 0 | 0 | 0 |
| 346 | 40.5432 | 40.5109 | 4.348 | 1331509 | 0 | 0 | 0 |
| 347 | 2.89263 | 2.29837 | 0.246683 | 75542.9 | 0 | 0 | 0 |
| 348 | 27.9922 | 24.0878 | 2.58532 | 791715 | 0 | 0 | 0 |
| 349 | 58.1847 | 57.0049 | 6.118295 | 1873635 | 0 | 0 | 0 |
| 350 | 154.545 | 154.124 | 16.54199 | 5065734 | 0 | 0 | 0 |
| 351 | 53.1957 | 53.1957 | 5.709453 | 1748433 | 0 | 0 | 0 |
| 352 | 112.503 | 112.503 | 12.07485 | 3697739 | 0 | 0 | 0 |
| 353 | 27.6536 | 27.6536 | 2.968041 | 908917 | 0 | 0 | 0 |
| 354 | 308.031 | 306.752 | 32.92341 | 1E+07 | 0 | 0 | 0 |
| 355 | 19.7205 | 18.5027 | 1.985885 | 608147 | 0 | 0 | 0 |
| 356 | 104.966 | 88.6589 | 9.515692 | 2914036 | 0 | 0 | 0 |
| 357 | 22.978 | 19.8182 | 2.12707 | 651383 | 0 | 0 | 0 |
| 358 | 19.7882 | 18.3818 | 1.972905 | 604172 | 0 | 0 | 0 |
| 359 | 27.3673 | 25.9885 | 2.789329 | 854190 | 0 | 0 | 0 |
| 360 | 10.3923 | 0 | 0 | 0 | 0 | 0 | 0 |
| 361 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 362 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 363 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 364 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 365 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 366 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 367 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 368 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 369 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 370 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 371 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 372 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 373 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 374 | 3.68068 | 0 | 0 | 0 | 0 | 0 | 0 |
| 375 | 4.76273 | 0 | 0 | 0 | 0 | 0 | 0 |
| 376 | 5.17176 | 4.52373 | 0.532767 | 119175 | 0 | 0 | 0 |
| 377 | 66.9072 | 0 | 0 | 0 | 0 | 0 | 0 |
| 378 | 93.5346 | 86.677 | 10.20808 | 2283446 | 0 | 0 | 0 |
| 379 | 79.7852 | 74.1779 | 8.736049 | 1954167 | 0 | 0 | 0 |
| 380 | 10.1096 | 9.29455 | 0.997577 | 305493 | 0 | 0 | 0 |
| 381 | 0.9055 | 0 | 0 | 0 | 0 | 0 | 0 |
| 382 | 1.05356 | 0.5374 | 0.057678 | 17663.1 | 0 | 0 | 0 |
| 383 | 45.4863 | 45.3032 | 4.862355 | 1489023 | 0 | 0 | 0 |
| 384 | 31.0686 | 0 | 0 | 0 | 29.965411 | 4.06682 | 258265 |
| 385 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 386 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 387 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 388 | 153.31 | 0 | 0 | 0 | 118.36239 | 16.0638 | 1020140 |
| 389 | 0.11393 | 0 | 0 | 0 | 0 | 0 | 0 |
| 390 | 92.3421 | 62.7066 | 6.730251 | 2061037 | 0 | 0 | 0 |
| 391 | 0.13224 | 0 | 0 | 0 | 0 | 0 | 0 |
| 392 | 35.9342 | 34.2626 | 3.677374 | 1126140 | 0 | 0 | 0 |
| 393 | 45.5246 | 44.5623 | 4.78284 | 1464672 | 0 | 0 | 0 |
| 394 | 65.8818 | 60.9836 | 6.545319 | 2004405 | 0 | 0 | 0 |
| 395 | 12.0571 | 4.11128 | 0.44126 | 135129 | 7.337544 | 0.99583 | 63240.7 |
| 396 | 141.543 | 134.754 | 14.46307 | 4429095 | 3.510186 | 0.47639 | 30253.5 |
| 397 | 305.193 | 115.574 | 12.40442 | 3798666 | 189.61908 | 25.7345 | 1634285 |
| 398 | 16.0956 | 7.33023 | 0.786748 | 240930 | 0 | 0 | 0 |
| 399 | 0.88976 | 0.88976 | 0.095497 | 29244.7 | 0 | 0 | 0 |
| 400 | 6.46497 | 6.46497 | 0.693881 | 212490 | 0 | 0 | 0 |
| 401 | 7.33093 | 7.33093 | 0.786823 | 240953 | 0 | 0 | 0 |
| 402 | 16.2681 | 16.2681 | 1.746046 | 534700 | 0 | 0 | 0 |
| 403 | 252.412 | 13.9603 | 1.644126 | 367774 | 0 | 0 | 0 |
| 404 | 6.76689 | 0 | 0 | 0 | 0 | 0 | 0 |
| 405 | 4.74233 | 0.28453 | 0.033509 | 7495.72 | 0 | 0 | 0 |
| 406 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 407 | 286.302 | 0 | 0 | 0 | 0 | 0 | 0 |
| 408 | 1.96564 | 0 | 0 | 0 | 0 | 0 | 0 |
| 409 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 410 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 411 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 412 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 413 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 414 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 415 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 416 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 417 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 418 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 419 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 420 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 421 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 422 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 423 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 424 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 425 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 427 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 428 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 429 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 430 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 431 | 2.45398 | 0 | 0 | 0 | 0 | 0 | 0 |
| 432 | 1.7064 | 0 | 0 | 0 | 0 | 0 | 0 |
| 433 | 0.74531 | 0 | 0 | 0 | 0 | 0 | 0 |
| 434 | 4.16966 | 0.0804 | 0.009469 | 2118.03 | 0 | 0 | 0 |
| 435 | 0.74451 | 0 | 0 | 0 | 0 | 0 | 0 |
| 436 | 12.4934 | 0 | 0 | 0 | 0 | 0 | 0 |
| 437 | 2.96645 | 0 | 0 | 0 | 0 | 0 | 0 |
| 438 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 439 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 440 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 441 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 442 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 443 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 444 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 445 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 446 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 447 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 448 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 449 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 450 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 451 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 452 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 453 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 454 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Aa EDSU | Total NASC | Anchovy NASC | Anchovy biomass (t) | No. of individuals of anchovy | Sardine NASC | Sardine biomass (t) | No. of individuals of sardine |
|---|---|---|---|---|---|---|---|
| 455 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 456 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 457 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 458 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 459 | 2485.22 | 2483.73 | 280.3453 | 7.2E+07 | 1.4911302 | 0.17775 | 16196.4 |
| 460 | 402.138 | 374.508 | 42.27175 | 1.1E+07 | 0.2248395 | 0.0268 | 2442.17 |
| 461 | 454.533 | 431.715 | 48.72892 | 1.3E+07 | 22.817534 | 2.71995 | 247840 |
| 462 | 1369.27 | 1300.54 | 146.7952 | 3.8E+07 | 68.737499 | 8.19382 | 746616 |
| 463 | 2547.83 | 2419.93 | 273.144 | 7.1E+07 | 127.90091 | 15.2464 | 1389239 |
| 464 | 150.438 | 99.9599 | 11.28277 | 2913936 | 50.478412 | 6.01726 | 548288 |
| 465 | 1467.88 | 975.345 | 110.0901 | 2.8E+07 | 492.53618 | 58.7126 | 5349849 |
| 466 | 1774.47 | 1179.06 | 133.0839 | 3.4E+07 | 595.40914 | 70.9755 | 6467238 |
| 467 | 424.311 | 419.898 | 47.39508 | 1.2E+07 | 4.4128305 | 0.52603 | 47931.5 |
| 468 | 20.6601 | 20.4452 | 2.307714 | 596000 | 0.2148651 | 0.02561 | 2333.83 |
| 469 | 3860.21 | 3820.07 | 431.1819 | 1.1E+08 | 40.146205 | 4.78561 | 436062 |
| 470 | 1783.99 | 1739.03 | 196.2893 | 5.1E+07 | 44.956461 | 5.35902 | 488310 |
| 471 | 2689.99 | 2622.2 | 295.9757 | 7.6E+07 | 67.787774 | 8.08061 | 736300 |
| 472 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 473 | 489.51 | 471.055 | 53.16936 | 1.4E+07 | 18.454518 | 2.19986 | 200450 |
| 474 | 1510.58 | 1453.63 | 164.0754 | 4.2E+07 | 56.948799 | 6.78856 | 618569 |
| 475 | 724.145 | 696.845 | 78.6549 | 2E+07 | 27.300274 | 3.25432 | 296531 |
| 476 | 11.7301 | 11.2879 | 1.274097 | 329054 | 0.4422254 | 0.05272 | 4803.38 |
| 477 | 38.687 | 37.2285 | 4.202084 | 1085248 | 1.4584983 | 0.17386 | 15842 |
| 478 | 488.252 | 469.845 | 53.0328 | 1.4E+07 | 18.407117 | 2.19421 | 199935 |
| 479 | 451.644 | 434.617 | 49.05645 | 1.3E+07 | 17.02697 | 2.02969 | 184944 |
| 480 | 569.451 | 547.982 | 61.85235 | 1.6E+07 | 21.468288 | 2.55912 | 233185 |
| 481 | 658.125 | 633.313 | 71.4839 | 1.8E+07 | 24.811298 | 2.95762 | 269496 |
| 482 | 285.139 | 274.39 | 30.97114 | 7998742 | 10.749753 | 1.28142 | 116762 |
| 483 | 1026.27 | 987.579 | 111.4709 | 2.9E+07 | 38.690344 | 4.61207 | 420248 |
| 484 | 186.228 | 179.207 | 20.22759 | 5224066 | 7.0207813 | 0.83691 | 76258.6 |
| 485 | 269.425 | 259.268 | 29.2643 | 7557926 | 10.157327 | 1.2108 | 110327 |
| 486 | 291.091 | 280.117 | 31.61758 | 8165694 | 10.974125 | 1.30817 | 119199 |
| 487 | 644.465 | 620.168 | 70.00018 | 1.8E+07 | 24.296313 | 2.89623 | 263903 |
| 488 | 2160.04 | 2078.61 | 234.6184 | 6.1E+07 | 81.433553 | 9.70725 | 884518 |

**Table 3.** Biomass estimation of anchovy in Aegean and Ionian Sea per length class based on the results of the acoustic surveys in 2016.

| Aegean Sea | | | Ionian Sea | | |
|---|---|---|---|---|---|
| Total biomass (t):77 531.13 | | | Total biomass (t):20 007.64 | | |
| Length class | No. of individuals | Biomass (t) | Length class | No. of individuals | Biomass (t) |
| 52.5 | 0 | 0.00 | 42.5 | 6 781 | 0.01 |
| 57.5 | 0 | 0.00 | 47.5 | 0 | 0.00 |
| 62.5 | 0 | 0.00 | 52.5 | 12 980 | 0.02 |
| 67.5 | 61 622 | 0.08 | 57.5 | 39 587 | 0.08 |
| 72.5 | 1 927 344 | 3.18 | 62.5 | 73 491 | 0.19 |
| 77.5 | 207 137 | 0.43 | 67.5 | 135 938 | 0.43 |
| 82.5 | 2 406 210 | 6.10 | 72.5 | 6 943 448 | 26.28 |
| 87.5 | 316 696 860 | 974.84 | 77.5 | 17 484 645 | 79.19 |
| 92.5 | 2 896 363 164 | 10 708.97 | 82.5 | 100 357 000 | 538.81 |
| 97.5 | 5 321 387 611 | 23 400.17 | 87.5 | 464 416 479 | 2 930.89 |
| 102.5 | 2 774 759 362 | 14 383.19 | 92.5 | 1 327 135 924 | 9 769.31 |
| 107.5 | 1 166 946 435 | 7 073.44 | 97.5 | 598 534 305 | 5 103.34 |
| 112.5 | 873 368 790 | 6 145.62 | 102.5 | 123 256 835 | 1 209.53 |
| 117.5 | 887 579 608 | 7 202.50 | 107.5 | 30 447 805 | 341.87 |
| 122.5 | 494 072 611 | 4 595.57 | 112.5 | 521 797 | 6.67 |
| 127.5 | 181 243 060 | 1 921.60 | 117.5 | 17 888 | 0.26 |
| 132.5 | 80 422 794 | 966.95 | 122.5 | 15 176 | 0.25 |
| 137.5 | 8 668 592 | 117.63 | 127.5 | 13 755 | 0.25 |
| 142.5 | 483 321 | 7.37 | 132.5 | 13 497 | 0.28 |
| 147.5 | 606 564 | 10.35 | 137.5 | 6 135 | 0.01 |
| 152.5 | 487 775 | 9.28 | | | |
| 157.5 | 182 637 | 3.86 | | | |
| Sum | 15 007 871 495 | 77 531.13 | Sum | 2 669 433 465 | 20 007.64 |

**Table 4.** Biomass estimation of anchovy in Aegean and Ionian Sea per age class based on the results of the acoustic surveys in 2016.

| Aegean Sea | | | Ionian Sea | | |
|---|---|---|---|---|---|
| Age | No. of individuals | Biomass (t) | Age | No. of individuals | Biomass (t) |
| 0 | 4 602 312 | 9.79 | 0 | 7 212 225 | 27.00 |
| 1 | 14 839 527 721 | 75 876.17 | 1 | 2 662 211 994 | 19 980.51 |
| 2 | 163 711 022 | 1 644.53 | 2 | 9 246 | 0.14 |
| 3 | 30 440 | 0.64 | 3 | 0 | 0.00 |
| Sum | 15 007 871 495 | 77 531.13 | Sum | 2 669 433 465 | 20 007.64 |

**Table 5.** Biomass estimation of sardine in Aegean and Ionian Sea per length class based on the results of the acoustic surveys in 2016.

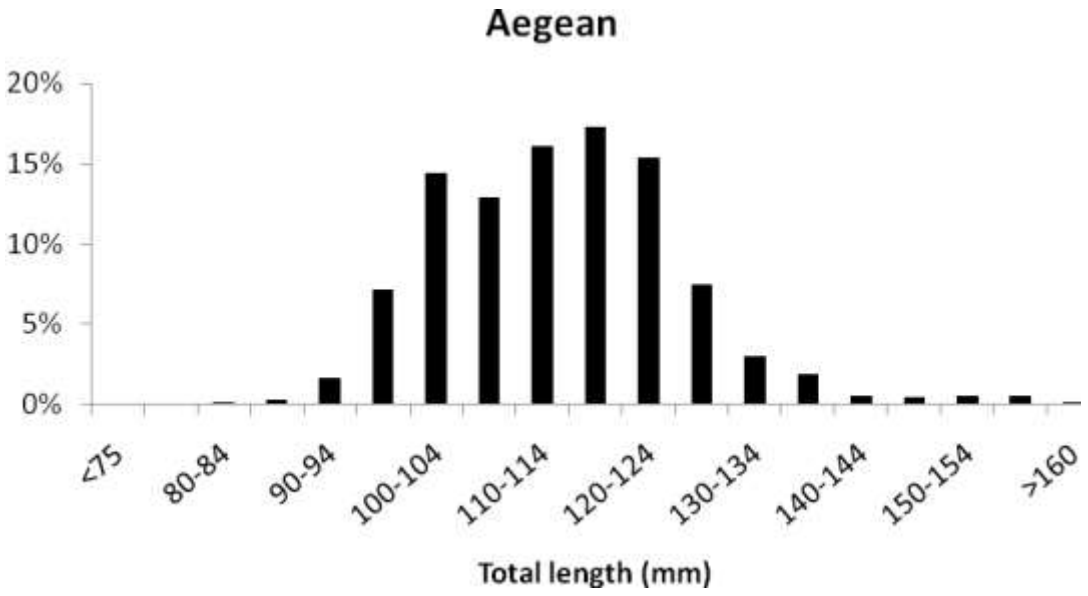
| Aegean Sea | | | Ionian Sea | | |
|---|---|---|---|---|---|
| Total biomass (t):31 077.28 | | | Total biomass (t):3 757.68 | | |
| Length class | No. of individuals | Biomass (t) | Length class | No.of individuals | Biomass (t) |
| 77.5 | 5 049 160 | 15.33 | 57.5 | 69 937 | 0.09 |
| 82.5 | 12 791 424 | 47.64 | 67.5 | 171 664 | 0.35 |
| 87.5 | 16 276 424 | 73.49 | 72.5 | 171 664 | 0.44 |
| 92.5 | 23 695 820 | 128.33 | 77.5 | 268 622 | 0.85 |
| 97.5 | 19 883 590 | 127.92 | 82.5 | 367 170 | 1.41 |
| 102.5 | 57 675 391 | 437.02 | 87.5 | 734 340 | 3.39 |
| 107.5 | 330 562 368 | 2 927.13 | 92.5 | 3 556 463 | 19.53 |
| 112.5 | 572 939 503 | 5 887.01 | 97.5 | 2 407 268 | 15.58 |
| 117.5 | 429 863 606 | 5 092.18 | 102.5 | 17 636 876 | 133.46 |
| 122.5 | 530 426 862 | 7 201.29 | 107.5 | 95 252 800 | 836.35 |
| 127.5 | 274 172 991 | 4 242.80 | 112.5 | 67 657 034 | 684.63 |
| 132.5 | 130 240 842 | 2 285.76 | 117.5 | 33 394 986 | 387.06 |
| 137.5 | 54 046 410 | 1 070.73 | 122.5 | 31 103 750 | 410.59 |
| 142.5 | 38 140 847 | 849.29 | 127.5 | 23 552 923 | 352.27 |
| 147.5 | 9 435 134 | 235.19 | 132.5 | 20 685 500 | 348.86 |
| 152.5 | 11 516 317 | 320.15 | 137.5 | 16 348 602 | 309.51 |
| 157.5 | 1 771 405 | 54.73 | 142.5 | 6 993 714 | 148.02 |
| 162.5 | 578 106 | 19.78 | 147.5 | 2 192 688 | 51.68 |
| 167.5 | 508 297 | 19.21 | 152.5 | 1 588 686 | 41.55 |
| 172.5 | 1 016 595 | 42.29 | 157.5 | 416 444 | 12.05 |
| | | | 162.5 | 0 | 0.00 |
| Sum | 2 520 591 093 | 31 077.28 | Sum | 324 571 131 | 3 757.68 |

**Table 6.** Biomass estimation of sardine in Aegean and Ionian Sea per age class based on the results of the acoustic surveys in 2016.

| Aegean Sea | | | Ionian Sea | | |
|---|---|---|---|---|---|
| Age | No. of individuals | Biomass (t) | Age | No. of individuals | Biomass (t) |
| 0 | 966 972 951 | 9 860.10 | 0 | 138 747 942 | 1 249.11 |
| 1 | 1 066 843 733 | 13 852.79 | 1 | 156 220 986 | 1 926.70 |
| 2 | 486 774 409 | 7 364.39 | 2 | 29 602 203 | 581.87 |
| 3 | 0 | 0.00 | 3 | 0 | 0.00 |
| Sum | 2 520 591 093 | 31 077.28 | Sum | 324 571 131 | 3 757.68 |

**Table 7.** Length-Weight relationships (TW (gr) - TL (mm)) for the main species in Aegean and Ionian Sea.

| **Species** | **Aegean Sea** | **Ionian Sea** |
|---|---|---|
| Anchovy (*Engraulis encrasicolus*) | $TW = 3E\text{-}06TL^{3.1884}$ | $TW = 2E\text{-}06TL^{3.2322}$ |
| Sardine (*Sardina pilchardus*) | $TW = 7E\text{-}07TL^{3.5165}$ | $TW = 6E\text{-}06TL^{3.048}$ |
| Round sardinella (*Sardinella aurita*) | $TW = 1E\text{-}05TL^{2.9282}$ | $TW = 6E\text{-}06TL^{3.0513}$ |
| Mediterranean horse mackerel (*Trachurus mediterraneus*) | $TW = 1E\text{-}05T^{2.9532}$ | $TW = 1E\text{-}05TL^{2.9278}$ |
| Atlantic horse mackerel (*Trachurus trachurus*) | $TW = 6E\text{-}06TL^{3.0519}$ | $TW = 1E\text{-}05TL^{2.9325}$ |
| Bogue (*Boops boops*) | | $TW = 3E\text{-}06TL^{3.2022}$ |
| Chub mackerel (*Scomber colias*) | $TW = 2E\text{-}06*TL^{3.2407}$ | $TW = 2E\text{-}06*TL^{3.2571}$ |



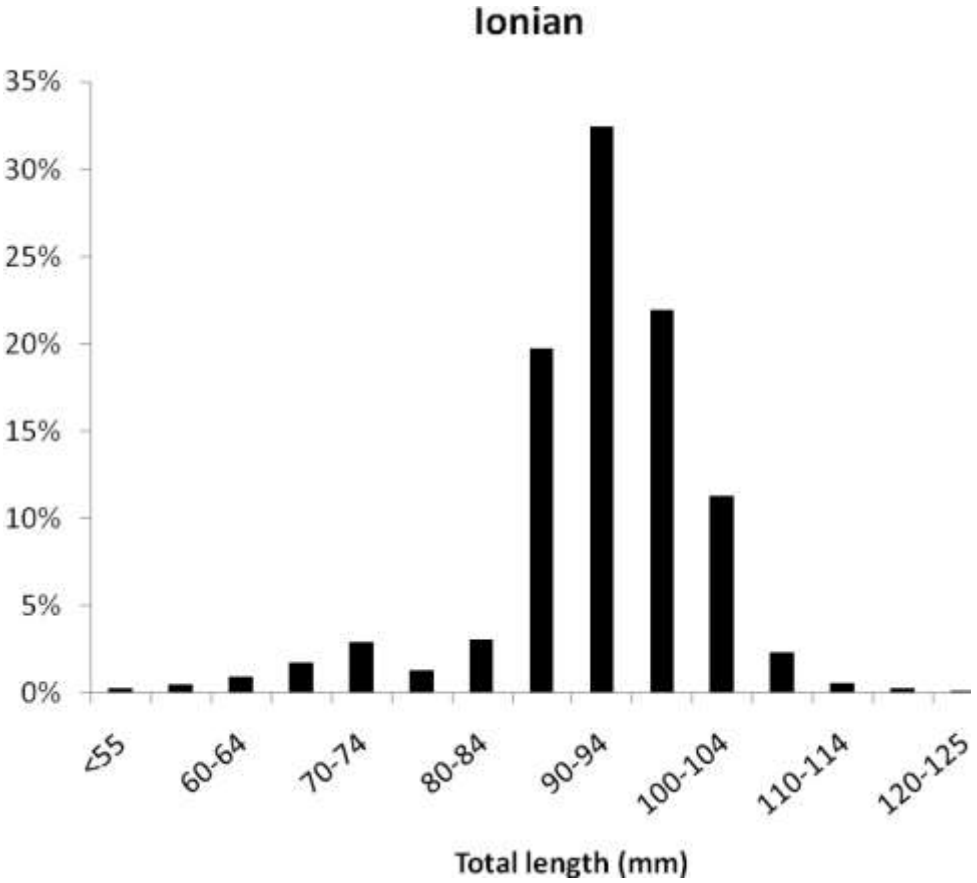




**Fig 1. Anchovy** (*Engraulis encrasicolus*): Length frequency distribution in Aegean and Ionian Sea during June and September 2016, respectively.

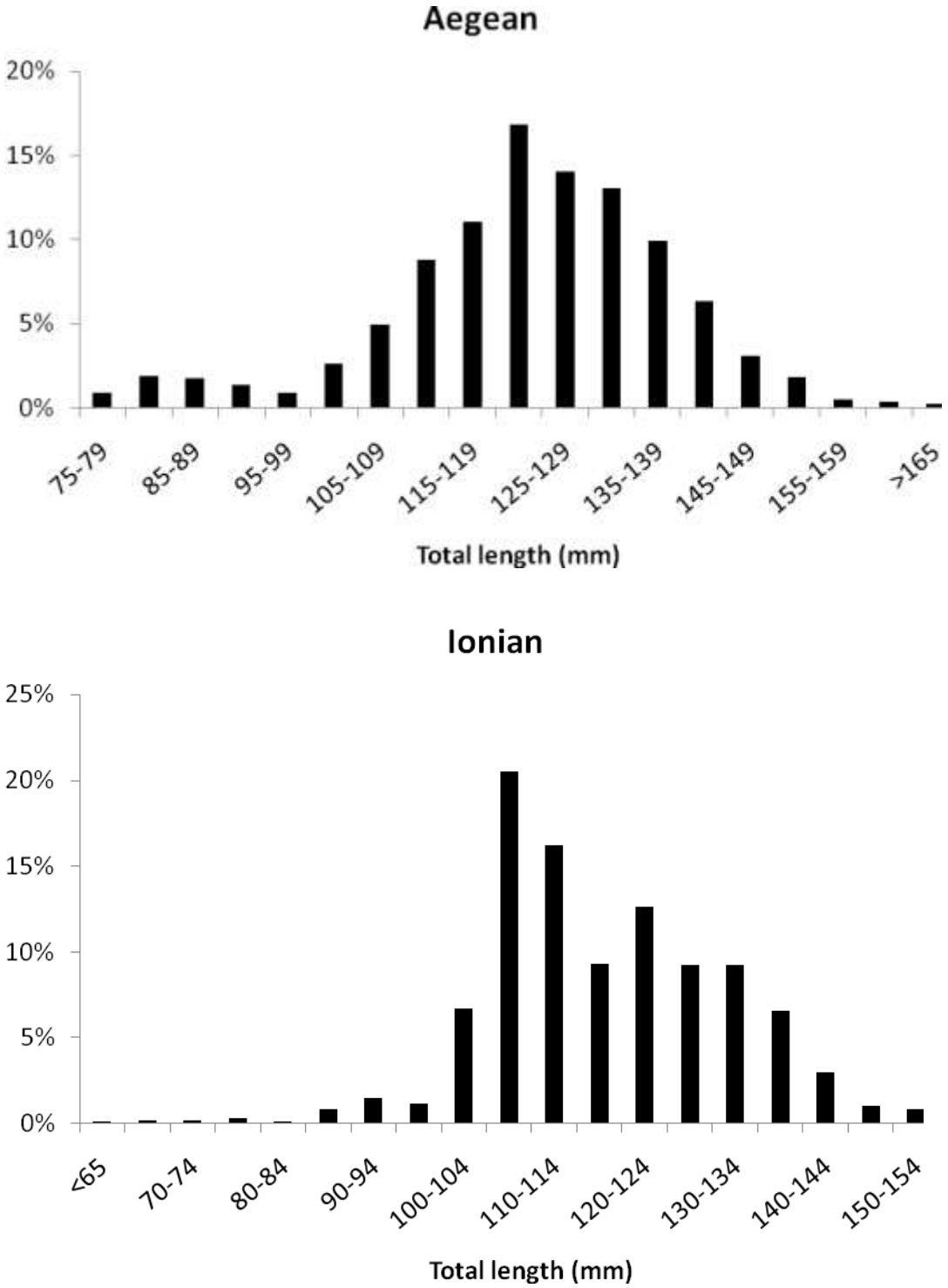



**Fig 2. Sardine** (*Sardina pilchardus*)**:** Length frequency distribution in Aegean and Ionian Sea during June and September 2016, respectively.

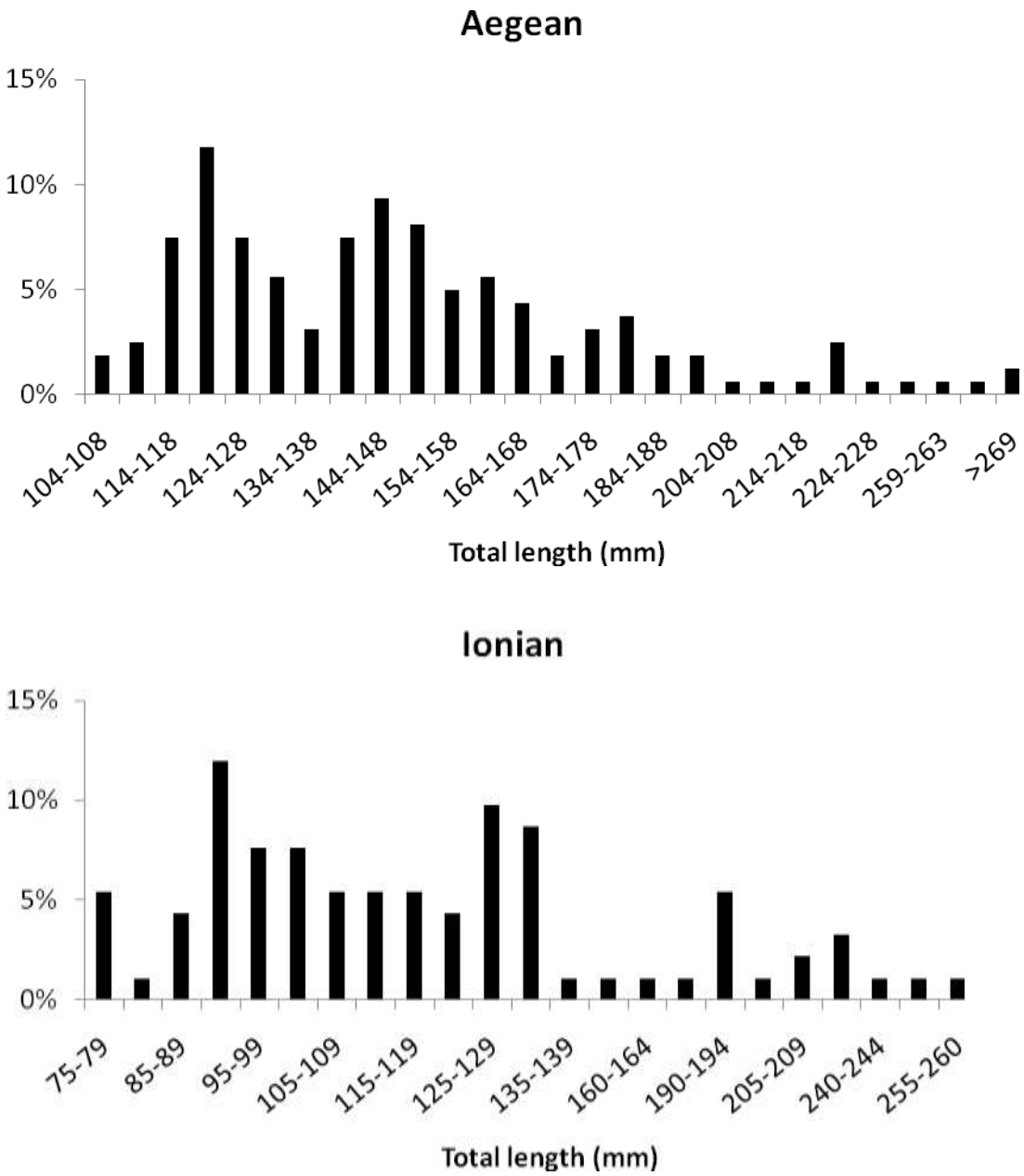



**Fig 3. Mediterranean horse mackerel** (*Trachurus mediterraneus*)**:** Length frequency distribution in Aegean and Ionian Sea during June and September 2016, respectively.

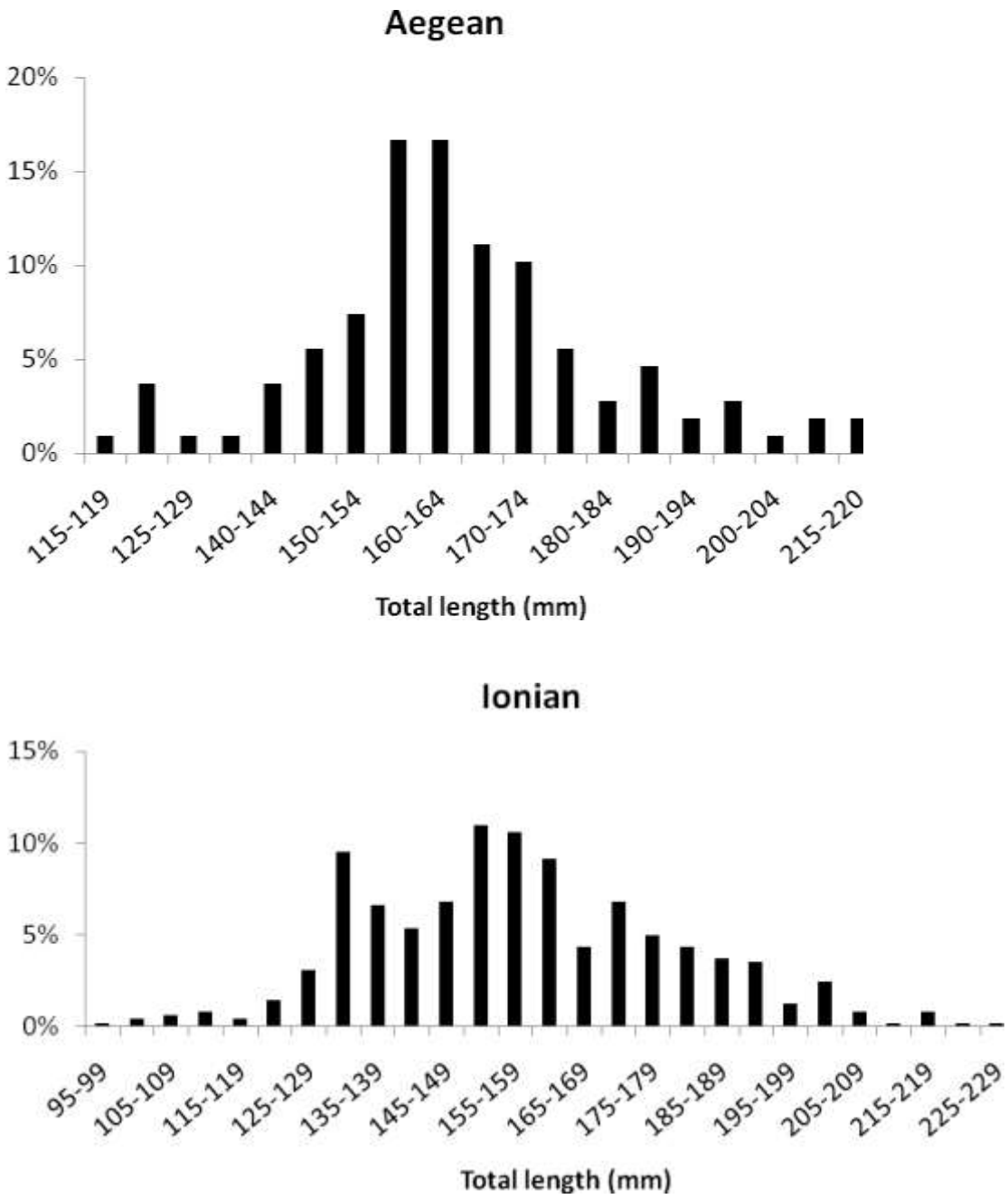



**Fig 4. Bogue** (*Boops boops*)**:** Length frequency distribution in Aegean and Ionian Sea during June and September 2016, respectively.

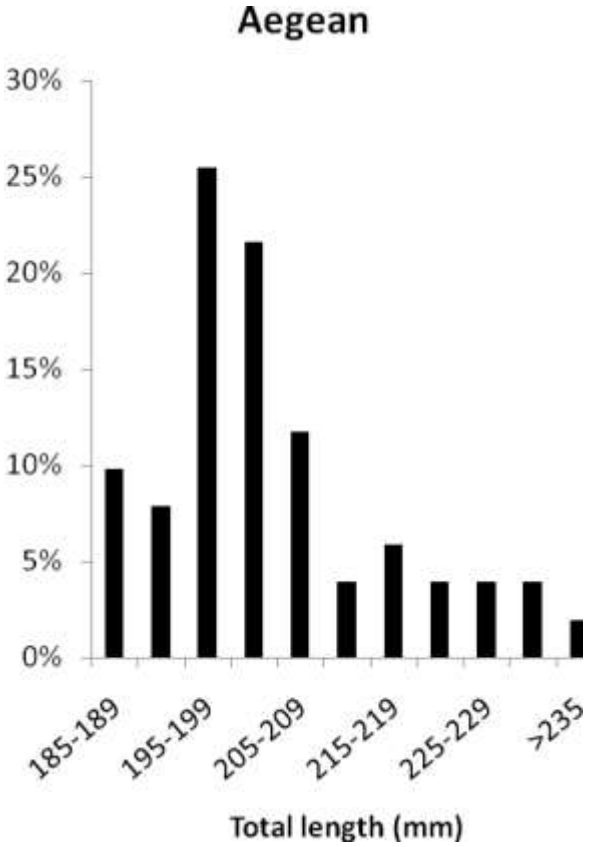



**Fig 5.** Atlantic chub mackerel (*Scomber colias*): Length frequency distribution in Aegean Sea during June 2016.