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|  | EUROPEAN COMMISSION  DIRECTORATE-GENERAL FOR MARITIME AFFAIRS AND FISHERIES  Fisheries Policy Atlantic, North Sea, Baltic and Outermost Regions  **Data Management** |

MARE/C/4/TL

Note for the File

Subject: FMZ and Fishing Stocks Geodata v7.1 Documentation

# Introduction

This document describes the content of the Fisheries Management Zones (FMZ) geodataset and provides additional background information. Version 7.1 contains the FMZ polygons and related stocks for 2012-2022 (2022 amendments to be completed), as well as the multiannual plans and the SFPA fishing category areas.

# Background

The management of fish resources under the EU Common Fisheries Policy (CFP) is largely based on the definition of fishing stocks and related quota. These fishing stocks are described in the yearly regulations setting the fishing quota for each EU Member State.

For managing the stocks in an IT system, there is a need to describe them digitally by means of a GIS (Geographic Information System) dataset, both for DG MARE as for the EU Member States. This is why the FMZ geodataset was initially created, as well as the EU Fishing Stocks table which is linked to it.

The FMZ geodataset is basically a set of polygons with a unique numeric identifier (FMZ ID, see Annex) and a description. The FMZ ID can be used to link information from other datasets to a geographic object. The FMZ polygons are unique (no duplicate geographic objects in the geodataset) but can overlap. The ID and definition of an FMZ is stable and will never be changed in future releases; if a new area definition is needed a new FMZ polygon will be added to the geodataset.

**These data have been compiled for information purposes only. In case of doubt, the definition of the stock areas in EU legislation prevails.**

# Data Structure

The *FMZ* (Fisheries Management Zones) geodataset contains all unique polygons used for describing fishing stocks or other fisheries management areas. It has a one-to-many relationship with the thematic datasets (tables).

The *Stocks* dataset is a table containing all stocks defined in the yearly EU fishing opportunities legislation. It holds one record per stock, containing the stock ID and stock area name as defined in the regulations, and a link to the geographic FMZ dataset using FMZ ID.

The *MAPlan* dataset holds the MultiAnnual Plans currently in force in the EU legislation. The dataset has one record per are defined in the plan, e.g. for the "Cod plan" 6 areas are included relating to the defined effort zones.

As from 2020, the *SFPACat* table has been added, containing all fishing categories from SFPAs active since 2013 with the relevant area description.



Figure 1: FMZ data model

Table 1: FMZ geodataset

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| --- | --- | --- |
| **Field name** | **Definition** | **Field type** |
| FID | Internal unique identifier | Long Integer |
| FMZ\_ID | Unique identifier of the FMZ polygon | String(8) |
| Shape | FMZ geographical object | Geometry |
| Description | Text description of the FMZ polygon (Field length in dbf is 10 characters, hence "descriptio") | String(254) |
| Def\_analyt | Analytical description of the FMZ polygon in pseudo-code | String(254) |
| Edited | Date of last edit on this record | Date |

Table 2: Stocks table

|  |  |  |
| --- | --- | --- |
| **Field name** | **Definition** | **Field type** |
| ObjectID | Internal unique identifier | Long Integer |
| Stock\_ID | Unique code for this stock, as defined in the fishing opportunities regulations | String(10) |
| Stock\_Area | Area description for this stock, as defined in the fishing opportunities regulations | String(254) |
| Year\_ID | Year for which the stock is defined | Short Integer |
| FMZ\_ID | Unique identifier of the corresponding FMZ polygon (foreign key) | String(8) |
| Edited | Date of last edit on this record | Date |

Table 3: MultiAnnual Plans table (MAPlan)

|  |  |  |
| --- | --- | --- |
| **Field name** | **Definition** | **Field type** |
| ObjectID | Internal unique identifier | Long Integer |
| MAP\_ID | Unique code for this multiannual plan | String(10) |
| Species | FAO Alpha-3 species code of the species involved for this plan | String(3) |
| Description | Description of the multiannual plan | String(254) |
| Date\_From | Date from which the multiannual plan is in force | Date/time |
| Date\_To | End date of the multiannual plan | Date/time |
| FMZ\_ID | Unique identifier of the corresponding FMZ polygon (foreign key) | String(8) |
| Eurlex\_Ref | Reference to the EurLex code of the Regulation defining this multiannual plan | String(12) |
| Edited | Date of last edit on this record | Date |

Table 4: SFPA Fishing Categories table (SFPACat)

|  |  |  |
| --- | --- | --- |
| **Field name** | **Definition** | **Field type** |
| ObjectID | Internal unique identifier | Long Integer |
| FishCatCode | Unique code for this fishing category within a certain agreement (as used in the FAONT system) | String(100) |
| AgrCode | Unique code for this agreement (as used in the FAONT system) | String(100) |
| FishCatArea | Description of the multiannual plan (Field length in dbf is 10 characters, hence "FishCatAre") | String(254) |
| Date\_From | Date from which the multiannual plan is in force | Date/time |
| Date\_To | End date of the multiannual plan | Date/time |
| FMZ\_ID | Unique identifier of the corresponding FMZ polygon (foreign key) | String(8) |
| Edited | Date of last edit on this record | Date |

# Examples

* The stock area with code "HKE/8C3411" is defined as "VIIIc, IX and X; EU waters of CECAF 34.1.1" in the 2013 regulation (32013R0039). The corresponding FMZ ID is 99000011, which has a related geometry and analytical definition "27.(8.c-9-10)-34.1.1.XEU". The textual description of the FMZ is " ICES VIIIc, IX and X; EU waters of CECAF 34.1.1", which is very similar to the stock description.
* The stock area with code "COD/04-N." is defined as "Norwegian waters south of 62° N" in the 2013 regulation (32013R0040). The corresponding FMZ ID is 27000052, which has a related geometry and analytical definition "27.(3-4).NOR". The textual description of the FMZ is "Norwegian waters of ICES III and IV (= south of 62°N)" since there are two ways to define this polygon.
* The multiannual plan for BFT in the eastern Atlantic and Mediterranean coded as "BFT\_ICCAT" has EurLex reference "32009R0302" (Regulation no. 302/2009). It is in force since 9/4/2009. It is linked to the FMZ with ID "99000233" defined as "Atlantic Ocean east of 45°W" – as in the FAO classification the Mediterranean Sea is included in the Atlantic basin.

# Distribution

Currently the FMZ Geodata are distributed as shapefile. A zip file containing the Stocks table and linked FMZ shapefile can be found on the Master Data Register (MDR). The Stocks table is also available as an Excel file (xlsx). An Oracle export of the geodataset is not possible because spatial objects are not supported in an SQL dump file.

**These data have been compiled for information purposes only. In case of doubt, the definition of the stock areas in EU legislation prevails.**

For further information about this dataset, please contact DG MARE Unit C.4 at [MARE-D ATA-MANAGEMENT@ec.europa.eu](mailto:MARE-D%09ATA-MANAGEMENT@ec.europa.eu).

# Version history

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| --- | --- | --- |
| **Version** | **Content** | **Date** |
| 1.0 | **2013 EU Fishing Stocks** | 17/01/2014 |
| 2.0 | **Addition of 2014 EU Fishing Stocks** |  |
| 2.1 | Corrections on 2014 EU Fishing Stocks | 21/02/2014 |
| 2.2 | Detailed corrections of FMZ polygons (~slivers)  Addition of 2014 quota amendments  Addition of multiannual plans table | 15/05/2014 |
| 2.3 | Addition of third 2014 amendment  Correction of COD/1/2B. so it includes XSV | 05/09/2014 |
| 2.4 | Inclusion of an "EU waters" FMZ polygon |  |
| 3.0 | Corrections of some 2014 EU Fishing Stocks  **2015 EU Fishing Stocks** | 08/04/2015 |
| 3.1 | Addition of first 2015 amendment | 17/04/2015 |
| 3.2 | Addition of FMZ "areas outside EU waters" | 05/05/2015 |
| 3.3 | Addition of OTH/\*C-FRA, OTH/\*C-CUB | 27/05/2015 |
| 3.4 | Correction of RJU/89-C. (should include all EU VIII zones), HER/04A., HER/04B. (should exclude Norwegian waters) | 26/08/2015 |
| 3.5 | Insertion of EU waters of IIa into 2014 stock of MAC/\*4A-EN | 23/09/2015 |
| 3.6 | Update of RJU/67AKXD to "Union waters of VIa, VIb, VIIa-c and VIIe-k" (of which strictly only VIIe catches are allowed) | 30/09/2015 |
| 3.7 | Update of RJU/89-C. to "Union waters of VIII and IX" (of which strictly only VIII catches are allowed) | 28/10/2015 |
| 4.0 | **Inclusion of 2017 stocks**, including the codes as defined in the 1st amendment of the Regulation;  Corrections for HER/1/2-/2015, stocks with code \*/F483., RED/N1G14D, stocks covering the Atlantic Ocean, SEAFO stocks, stocks bordering the Murmansk Agreement line, GHL/\*2A6-C, COD/7XAD34, KRI/F48. | 30/03/2017 |
| 4.1 | Stock FMZ reference corrected: LIN/\*5B67-, OTH/\*6X14-, SBF/41-81, MAC/2X12/2014  Stock FMZ and reference corrected: COD/GRL1  Stock code corrected: GR2/F5852./2017, HKE/\*03A./2017  FMZ description corrected: 34000113  FMZ extent corrected: 99000233 (include Med again); 27002179, 27002261, 27002421 (FRO part deleted)  New FMZs: 99000455, 99000462, 27002681 | 26/04/2017 |
| 5.0 | **2012, 2016, 2018 and 2019 stocks inserted**  The Clyde boundary updated for HER/5B6ANB from 2014 onwards (new FMZ 27002650).  COD/1/2B. limited to Svalbard FPZ only (new FMZ 27002919).  2018 stock LIN/03A. changed from "3a" to "Union waters of 3a" following amendment of the Regulation.  FAO area 87 added for stock SBF/41-81 (new FMZ 99000479).  Polygons 27000199 and 27000267 clipped to eliminate IRL west-coast  Various small boundary edits | 18/03/2019 |
| 6.0 | **2020 Stocks added.**  Stock TOP/SPRFMO replaced by TOT/SPR-AE for 2019 onwards (new FMZ 99000486).  Data structure adapted to properly manage SFPA fishing categories separately from TAC and Quota stocks  SFPA fishing categories correctly encoded so they refer to the real fishing zone only (not the EEZ - most of the time the fishing zone is smaller / in case of the MAR, SEN, GNB it is larger)  MAC/2X12 FMZ 27002841: excluded ICES 3b-c-d  All NAFO stocks: included EEZ and depth restrictions - applies to COD/N3NO., GHL/\*C-FRA, GHL/N3LMNO, HKW/N3NO., OTH/\*C-CUB, OTH/\*C-FRA, PLA/N3LNO., PRA/\*C-FRA, PRA/N3L., PRA/N3LNO., RED/\*C-CUL, RED/N1F3K., RED/N3LN., RED/N3O., SKA/N3LNO., SQI/\*C-CUB, SQI/N34., WIT/N2J3KL, WIT/N3L., WIT/N3NO., YEL/\*C-CAN, YEL/\*C-FRA, YEL/N3LNO.  New stocks: BET/\*ATLPS, BET/\*ATLLL, YFT/\*ATLPS, YFT/\*ATLLL  Updated FMZ 27002964 for COD/1/2B. (International waters of ICES I and IIb plus all Svalbard waters)  Added PLE/\*03AN.  Added OTH/\*C-FRA, YEL/\*C-FRA for 2017 and 2018  Added DGS/\*15X14  Updated FMZ for LEZ/56-14 (27002261)  Updated FMZ for OTH/\*6AB. (27000861) | 02/04/2020 |
| 6.1 | Added EFF/\*C-CUB2  Added missing SFPA fishing categories active since 2014  Updated BET/ATLANT, YFT/ATLANT, BUM/ATLANT, WHM/ATLANT, SAI/AE45W and BSH/AN05N to include the Mediterranean and Black Sea. | 08/05/2020 |
| 6.2 | Added FMZ ICCAT  Added stocks SPR/03A.2 and OTH/\*03A.2  Added FishCat NAM\_CHARTER | 2020 |
| 7.0 | **2021 stocks added** / no release  Adaptation of all Union stocks covering UK waters.  Corrected FMZ ID for BSH/AS05N 2021 (99000264).  Added \*\_AMS and \*\_TOT stock codes for many stocks.  SFPACat: replaced DIR\_AG with DIR\_AUT and ISO3\_DIR codes.  BSH/AN05N: FMZ id corrected (no longer incl. Med)  COD/1/2B.: FMZ id corrected (no longer incl. IIa) | 2021 |
| 7.1 | **2022 stocks added.**  Update of ICES numbering in FMZ area descriptions (Arabic numbers).  SFPA stocks added for MRT 2021 and TKL. | 31/03/2022 |
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# Annex: FMZ ID construction

The FMZ ID is a numeric value of 8 digits. The first 7 digits are a unique number, of which the first two are normally taken from the FAO Fishing Area of where the FMZ is located (99 in case of multiple areas). The 8th digit is a checksum digit based on the first 7 digits and can be used to validate an FMZ ID if the FMZ reference table is not available.

The checksum is calculated by taking each digit in the code, multiplied with a varying weight value, and finally summed up. The checksum digit is then the digit which must be added to this sum to get a number evenly divisible by 10 (i.e. the additive inverse of the sum, modulo 10).

The weight for a specific position in the code is either 3 or 1, which alternate so that the final data digit has a weight of 3. This means that for our 7-digit code, the weight is 3 for odd positions and 1 for even positions.

Taking the numbers from an imaginary code 6273254 we could calculate as follows:

1. Multiply the even positioned digits by 3: 6\*3 + 7\*3 + 2\*3 + 4\*3 = 57
2. Add to this the sum of the odd positioned digits: 57 + 2 + 3 + 5 = 67
3. Take modulo 10: 67 modulo 10 = 7
4. Deduct this from 10 to get the check digit: 10 - 7 = 3
5. (Take modulo 10 again for the case that the result was 10: 3 modulo 10 = 3)

The complete 8-character code is then: 62732543.