

# Variable names and descriptions and how they link to the [MEDBS](#) data technical Annex and the [MEDITS](#) handbook.

## Acoustic and Index data (files ABUNDANCE, BIOMASS and ABUND\_BIOM):

These files represent aggregated data worked up to estimates of catches to the entire GSA survey area. They are classified by age, sex and species for a selection of species of fisheries management interest. These species are predominantly pelagic, but some trawl surveys, particularly in the Black Sea, are also worked up to these absolute abundance indices. See the name\_of\_survey variable to identify the survey data used.

### t\_abund\_biom

MEB&BS data variable	Variable in data call Annex1 (MEDBS data)	Specification	comment
country	COUNTRY	this should be given according to the code list ( <a href="#">country</a> )	
year	YEAR	this should be given in a four digits integer	
start_day	START_DAY	integer number	indicating the starting day of the survey
end_day	END_DAY	integer number	indicating the ending day of the survey e.g.: 01 to 31
start_month	START_MONTH	integer number	indicating the starting month of the survey e.g.: 01 to 12
end_month	END_MONTH	integer number	indicating the end month of the survey e.g.: 01 to 12
area	AREA	GFCM GSA ( <a href="#">areas</a> )	given in Appendix 1.6 e.g. GSA 1
species	SPECIES	the species should be given according to the code list ( <a href="#">species</a> )	
sex	SEX	female=F; male=M; unidentified=U; combined=C	
agegroup0abund	AGEGROUP0ABUND	number in thousands	maximum precision admitted 5 digits after the point
agegroup0biom	AGEGROUP0BIOM	number in tonnes	maximum precision admitted 5 digits after the point
agegroup1abund	AGEGROUP1ABUND	number in thousands	maximum precision admitted 5 digits after the point
agegroup1biom	AGEGROUP1BIOM	number in tonnes	maximum precision admitted 5 digits after the point
agegroup2abund	AGEGROUP2ABUND	number in thousands	maximum precision admitted 5 digits after the point
agegroup2biom	AGEGROUP2BIOM	number in tonnes	maximum precision admitted 5 digits after the point
agegroup3abund	AGEGROUP3ABUND	number in thousands	maximum precision admitted 5 digits after the point
agegroup3biom	AGEGROUP3BIOM	number in tonnes	maximum precision admitted 5 digits after the point
agegroup4abund	AGEGROUP4ABUND	number in thousands	maximum precision admitted 5 digits after the point
agegroup4biom	AGEGROUP4BIOM	number in tonnes	maximum precision admitted 5 digits after the point

agegroup5abund	AGEGROUP5ABUND	number in thousands	maximum precision admitted 5 digits after the point
agegroup5biom	AGEGROUP5BIOM	number in tonnes	maximum precision admitted 5 digits after the point
agegroup6abund	AGEGROUP6ABUND	number in thousands	maximum precision admitted 5 digits after the point
agegroup6biom	AGEGROUP6BIOM	number in tonnes	maximum precision admitted 5 digits after the point
agegroup7abund	AGEGROUP7ABUND	number in thousands	maximum precision admitted 5 digits after the point
agegroup7biom	AGEGROUP7BIOM	number in tonnes	maximum precision admitted 5 digits after the point
agegroup8abund	AGEGROUP8ABUND	number in thousands	maximum precision admitted 5 digits after the point
agegroup8biom	AGEGROUP8BIOM	number in tonnes	maximum precision admitted 5 digits after the point
agegroup9abund	AGEGROUP9ABUND	number in thousands	maximum precision admitted 5 digits after the point
agegroup9biom	AGEGROUP9BIOM	number in tonnes	maximum precision admitted 5 digits after the point
agegroup10abund	AGEGROUP10ABUND	number in thousands	maximum precision admitted 5 digits after the point
agegroup10biom	AGEGROUP10BIOM	number in tonnes	maximum precision admitted 5 digits after the point
agegroup11abund	AGEGROUP11ABUND	number in thousands	maximum precision admitted 5 digits after the point
agegroup11biom	AGEGROUP11BIOM	number in tonnes	maximum precision admitted 5 digits after the point
agegroup12abund	AGEGROUP12ABUND	number in thousands	maximum precision admitted 5 digits after the point
agegroup12biom	AGEGROUP12BIOM	number in tonnes	maximum precision admitted 5 digits after the point
agegroup13abund	AGEGROUP13ABUND	number in thousands	maximum precision admitted 5 digits after the point
agegroup13biom	AGEGROUP13BIOM	number in tonnes	maximum precision admitted 5 digits after the point
agegroup14abund	AGEGROUP14ABUND	number in thousands	maximum precision admitted 5 digits after the point
agegroup14biom	AGEGROUP14BIOM	number in tonnes	maximum precision admitted 5 digits after the point
agegroup15abund	AGEGROUP15ABUND	number in thousands	maximum precision admitted 5 digits after the point
agegroup15biom	AGEGROUP15BIOM	number in tonnes	maximum precision admitted 5 digits after the point
agegroup16abund	AGEGROUP16ABUND	number in thousands	maximum precision admitted 5 digits after the point
agegroup16biom	AGEGROUP16BIOM	number in tonnes	maximum precision admitted 5 digits after the point
agegroup17abund	AGEGROUP17ABUND	number in thousands	maximum precision admitted 5 digits after the point
agegroup17biom	AGEGROUP17BIOM	number in tonnes	maximum precision admitted 5 digits after the point
agegroup18abund	AGEGROUP18ABUND	number in thousands	maximum precision admitted 5 digits after the point
agegroup18biom	AGEGROUP18BIOM	number in tonnes	maximum precision admitted 5 digits after the point
agegroup19abund	AGEGROUP19ABUND	number in thousands	maximum precision admitted 5 digits after the point
agegroup19biom	AGEGROUP19BIOM	number in tonnes	maximum precision admitted 5 digits after the point
agegroup20_plusabund	AGEGROUP20_PLUSABUND	number in thousands	maximum precision admitted 5 digits after the point
agegroup20_plusbiom	AGEGROUP20_PLUSBIOM	number in tonnes	maximum precision admitted 5 digits after the point

name_survey	NAME_OF_SURVEY	free text string 10 characters	ECOMED;PELMED; DEPM (i.e. MEDIAS surveys); or any other
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## t\_abundance

MEB&BS data variable	Variable in data call Annex1 (MEDBS data)	Specification	comment
country	COUNTRY	this should be given according to the code list provided ( <a href="#">country</a> )	
year	YEAR	this should be given in a four digits integer	
start_day	START_DAY	integer number	indicating the starting day of the survey
end_day	END_DAY	integer number	indicating the ending day of the survey e.g.: 01 to 31
start_month	START_MONTH	integer number	indicating the starting month of the survey e.g.: 01 to 12
end_month	END_MONTH	integer number	indicating the end month of the survey e.g.: 01 to 12
area	AREA	GFCM GSA ( <a href="#">areas</a> )	given in Appendix 1.6 e.g. GSA 1
species	SPECIES	the species should be given according to the code list ( <a href="#">species</a> )	
sex	SEX	female=F; male=M; unidentified=U; combined=C	
unit	UNIT	unit of length classes	
lengthclass0	LENGTHCLASS0	number in thousands	maximum precision admitted 5 digits after the point
lengthclass1	LENGTHCLASS1	number in thousands	maximum precision admitted 5 digits after the point
lengthclass2	LENGTHCLASS2	number in thousands	maximum precision admitted 5 digits after the point
lengthclass3	LENGTHCLASS3	number in thousands	maximum precision admitted 5 digits after the point
lengthclass4	LENGTHCLASS4	number in thousands	maximum precision admitted 5 digits after the point
lengthclass5	LENGTHCLASS5	number in thousands	maximum precision admitted 5 digits after the point
lengthclass6	LENGTHCLASS6	number in thousands	maximum precision admitted 5 digits after the point
lengthclass7	LENGTHCLASS7	number in thousands	maximum precision admitted 5 digits after the point
lengthclass8	LENGTHCLASS8	number in thousands	maximum precision admitted 5 digits after the point
lengthclass9	LENGTHCLASS9	number in thousands	maximum precision admitted 5 digits after the point
lengthclass10	LENGTHCLASS10	number in thousands	maximum precision admitted 5 digits after the point
lengthclass11	LENGTHCLASS11	number in thousands	maximum precision admitted 5 digits after the point
lengthclass12	LENGTHCLASS12	number in thousands	maximum precision admitted 5 digits after the point
lengthclass13	LENGTHCLASS13	number in thousands	maximum precision admitted 5 digits after the point
lengthclass14	LENGTHCLASS14	number in thousands	maximum precision admitted 5 digits after the point
lengthclass15	LENGTHCLASS15	number in thousands	maximum precision admitted 5 digits after the point

[illegible]

[illegible]

lengthclass80	LENGTHCLASS80	number in thousands	maximum precision admitted 5 digits after the point
lengthclass81	LENGTHCLASS81	number in thousands	maximum precision admitted 5 digits after the point
lengthclass82	LENGTHCLASS82	number in thousands	maximum precision admitted 5 digits after the point
lengthclass83	LENGTHCLASS83	number in thousands	maximum precision admitted 5 digits after the point
lengthclass84	LENGTHCLASS84	number in thousands	maximum precision admitted 5 digits after the point
lengthclass85	LENGTHCLASS85	number in thousands	maximum precision admitted 5 digits after the point
lengthclass86	LENGTHCLASS86	number in thousands	maximum precision admitted 5 digits after the point
lengthclass87	LENGTHCLASS87	number in thousands	maximum precision admitted 5 digits after the point
lengthclass88	LENGTHCLASS88	number in thousands	maximum precision admitted 5 digits after the point
lengthclass89	LENGTHCLASS89	number in thousands	maximum precision admitted 5 digits after the point
lengthclass90	LENGTHCLASS90	number in thousands	maximum precision admitted 5 digits after the point
lengthclass91	LENGTHCLASS91	number in thousands	maximum precision admitted 5 digits after the point
lengthclass92	LENGTHCLASS92	number in thousands	maximum precision admitted 5 digits after the point
lengthclass93	LENGTHCLASS93	number in thousands	maximum precision admitted 5 digits after the point
lengthclass94	LENGTHCLASS94	number in thousands	maximum precision admitted 5 digits after the point
lengthclass95	LENGTHCLASS95	number in thousands	maximum precision admitted 5 digits after the point
lengthclass96	LENGTHCLASS96	number in thousands	maximum precision admitted 5 digits after the point
lengthclass97	LENGTHCLASS97	number in thousands	maximum precision admitted 5 digits after the point
lengthclass98	LENGTHCLASS98	number in thousands	maximum precision admitted 5 digits after the point
lengthclass99	LENGTHCLASS99	number in thousands	maximum precision admitted 5 digits after the point
lengthclass100_plus	LENGTHCLASS100_PLUS	number in thousands	maximum precision admitted 5 digits after the point
name_survey	NAME_OF_SURVEY	free text string 10 characters	ECOMED;PELMED; DEPM (i.e. MEDIAS surveys); or any other

## T\_biomass

MEB&BS data variable	Variable in data call Annex1 (MEDBS data)	specification	Comment
country	COUNTRY	this should be given according to the code list provided <a href="#">(country)</a>	
year	YEAR	this should be given in a four digits integer	
start_day	START_DAY	integer number	indicating the starting day of the survey
end_day	END_DAY	integer number	indicating the ending day of the survey e.g.: 01 to 31
start_month	START_MONTH	integer number	indicating the starting month of the survey e.g.: 01 to 12
end_month	END_MONTH	integer number	indicating the end month of the survey e.g.: 01 to 12
area	AREA	GFCM GSA <a href="#">(areas)</a>	given in Appendix 1.6 e.g. GSA 1
species	SPECIES	the species should be given according to the code list <a href="#">(species)</a>	
sex	SEX	female=F; male=M; unidentified=U; combined=C	
unit	UNIT	unit of length classes	mm=millimeter cm=centimeter
lengthclass0	LENGTHCLASS0	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass1	LENGTHCLASS1	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass2	LENGTHCLASS2	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass3	LENGTHCLASS3	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass4	LENGTHCLASS4	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass5	LENGTHCLASS5	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass6	LENGTHCLASS6	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass7	LENGTHCLASS7	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass8	LENGTHCLASS8	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass9	LENGTHCLASS9	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass10	LENGTHCLASS10	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass11	LENGTHCLASS11	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass12	LENGTHCLASS12	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass13	LENGTHCLASS13	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass14	LENGTHCLASS14	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass15	LENGTHCLASS15	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass16	LENGTHCLASS16	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass17	LENGTHCLASS17	number in tonnes	maximum precision admitted 5 digits after the point

[illegible]



[illegible]

lengthclass82	LENGTHCLASS82	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass83	LENGTHCLASS83	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass84	LENGTHCLASS84	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass85	LENGTHCLASS85	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass86	LENGTHCLASS86	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass87	LENGTHCLASS87	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass88	LENGTHCLASS88	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass89	LENGTHCLASS89	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass90	LENGTHCLASS90	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass91	LENGTHCLASS91	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass92	LENGTHCLASS92	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass93	LENGTHCLASS93	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass94	LENGTHCLASS94	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass95	LENGTHCLASS95	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass96	LENGTHCLASS96	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass97	LENGTHCLASS97	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass98	LENGTHCLASS98	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass99	LENGTHCLASS99	number in tonnes	maximum precision admitted 5 digits after the point
lengthclass100_plus	LENGTHCLASS100_PLUS	number in tonnes	maximum precision admitted 5 digits after the point
name_survey	NAME_OF_SURVEY	free text string 10 characters	ECOMED;PELMED; DEPM (i.e. MEDIAS surveys); or any other

## Trawl Survey Data (files MEDITS\_TA MEDITS\_TB, MEDITS\_TC)

The trawl survey data held by the JRC is uploaded by member states in the MEDITS format. However the names and order of the variables are changed in the storing / extraction process and thus reflected in the data you have been provided. To provide more clarity on this process and to ease the interpretation of the data from a scientific perspective, the JRC has created this Annex as a stand-alone document. It relies on the 2009 MEDITS manual to accomplish this. Below you will find the MEDITS format definition with an extra column to the left of the MEDITS specification ('Med&BS data variable'), specifying the name and order of the variable, based on the information of the data provided to the JRC.

Additional tables relating to the MEDITS protocol for species coding and measurement of specific metrics are also provided where deemed appropriate. However, in all cases, where information is not available in this file, the MEDITS protocol should be consulted to see if there is additional information provided therein. In case of conflict, the MEDITS manual takes precedence over the information provided here as it is updated more regularly than this document.

### Trawl survey file TA

ME&BS data variable	MEDITS variable and reference	Type	Position	Range	Comments
Country	COUNTRY	3A	3 - 5	See <a href="#">(country)</a>	ISO Code
Area	AREA	2N	6 - 7	See <a href="#">(area)</a>	GFCM Code
Vessel	VESSEL	3A	8 - 10	See <a href="#">(vessel codes)</a> I	MEDITS Code
Gear	GEAR	5AN	11 - 15	See <a href="#">(gear codes)</a>	MEDITS Code
Rigging	RIGGING	4AN	16 - 19	See Annex I <a href="#">Medits Manual</a>	MEDITS Code
Year	YEAR	4N	24 - 27		e.g. 2000
Month	MONTH	2N	28 - 29	1 to 12	
Day	DAY	2N	30 - 31	1 to 28/29/30/31	
haul_number	HAUL_NUMBER	3N	32 - 34	1 to 999	One series by vessel/year
codend_closing	CODEND_CLOSING	1A	35 - 35	S, C	S: without; C: controlled
shooting_time	SHOOTING_TIME	4N	37 - 40	0 to 2400	In UT Ex: 7 h 25 min > 725
shooting_quadrant	SHOOTING_QUADRANT	1N	41 - 41	1, 3, 5, 7	See Annex IV
shooting_latitude	SHOOTING_LATITUDE	7N	42 - 48	3400 to 4600	Ex: 36° 40,22' > 3640,22.
shooting_longitude	SHOOTING_LONGITUDE	7N	49 - 55	0 to 3500	Ex: 4° 19,84' > 419,84
shooting_depth	SHOOTING_DEPTH	3N	56 - 58	0, 10 to 800	At the trawl position, in meters; unknown: 0
hauling_time	HAULING_TIME	4N	59 - 62	0 to 2400	In UT Ex: 7 h 25 min > 725
hauling_quadrant	HAULING_QUADRANT	1N	63 - 63	1, 3, 5, 7 <a href="#">(quadrant)</a>	See Annex IV
hauling_latitude	HAULING_LATITUDE	7N	64 - 70	3400 to 4600	Ex: 36° 40,22' > 3640,22.
hauling_longitude	HAULING_LONGITUDE	7N	71 - 77	0 to 2900	Ex: 4° 19,84' > 419,84
hauling_depth	HAULING_DEPTH	3N	78 - 80	0, 10 to 800	At the trawl position, in meters; unknown: 0
Validity	VALIDITY	1A	83 - 83	V, I	V: valid; I: invalid.

Course	COURSE	1A	84 - 84	R, N	R: rectilinear; N: not rectilinear
recorded_species	RECORDED_SPECIES	2N	85 - 86	See <a href="#">(rec species)</a>	MEDITS code
Distance	DISTANCE	4N	87 - 90	1000 to 9999	Distance over ground in meters
vertical_opening	VERTICAL_OPENING	3N	91 - 93	10 to 100	In decimeters
wing_opening	WING_OPENING	3N	94 - 96	50 to 250	In decimeters
geometrical_precision	GEOMETRICAL_PRECISION	1A	97 - 97	M, E	M: measured; E: estimated.
bridles_length	BRIDLES_LENGTH	3N	98 - 100	100, 150 or 200	In meters
warp_length	WARP_LENGTH	4N	101 - 104	100 to 2200	In meters
warp_diameter	WARP_DIAMETER	2N	105 - 106	10 to 30	In millimeters
hydrological_station	HYDROLOGICAL_STATION	5A or 2A	107 - 111		National coding or NA if not available
Door	DOORS	4AN	20 - 23	See Annex I <a href="#">Meditis Manual</a>	MEDITS Code
hauling_duration	HAUL_DURATION	2N	81 - 82	5 to 90	In minutes
Observations	OBSERVATIONS	1N	112 - 112	0 to 9	MEDITS code (Annex IV)
name_of_survey		10A			NOT part of the Medits file
bottom_salinity_beginning	BOTTOM_TEMPERATURE_BEGINNING	5N or 2A	113 - 117	0 to 30	in °C with two decimals; NA if not available
bottom_salinity_end	BOTTOM_TEMPERATURE_END	5N or 2A	118 - 122	0 to 30	in °C with two decimals; NA if not available
measuring_system_sal	MEASURING_SYSTEM	2A	123 - 124	see Annex X. <a href="#">Meditis Manual</a>	see Annex X.a; NA if not available
part_of_the_codend	PART_OF_THE_CODEND	1A	36 - 36	A, M, P, S	Mandatory if codend closing = C; A: anterior, M: middle; P: posterior; S sum of the 3 parts
bottom_temperature_beginning	BOTTOM_SALINITY_BEGINNING	5N or 2A	131-135	0 to 50	in ppt with two decimals; NA if not available
bottom_temperature_end	BOTTOM_SALINITY_END	5N or 2A	136-140	0 to 50	in ppt with two decimals; NA if not available
measuring_system_temp	MEASURING_SYSTEM	2A	141-142	see Annex X.a <a href="#">Meditis Manual</a>	see Annex X.a; NA if not available
number_of_the_stratum	NUMBER_OF_THE_STRATUM	6AN	125 - 130	see Annex II in <a href="#">Meditis Manual</a>	
type_of_file	TYPE_OF_FILE	2A	1 - 2	TA	Fixed value

### Legend

A: alphabetic field; N: numerical field; AN alpha-numeric field

Before the type of the field there is the number of digit allowed for the field (e.g. 2N: numeric field with length 2)

(1) For the invalid hauls (I), no information on species

## Trawl survey file TB

MEB&BS data variable	MEDITS variable and reference	Type	Position	Range	Comments
Country	COUNTRY	3A	3 - 5	See ( <a href="#">country</a> )	ISO Code
Area	AREA	2N	6 - 7	See ( <a href="#">area</a> )	GFCM Code
Vessel	VESSEL	3A	8 - 10	See ( <a href="#">vessel codes</a> ) I	MEDITS Code
Year	YEAR	4N	11 - 14		e.g. 2000
Month	MONTH	2N	15 - 16	1 to 12	
Day	DAY	2N	17 - 18	1 to 28/29/30/31	
haul_number	HAUL_NUMBER	3N	19 - 21	1 to 999	One series by vessel/year
codend_closing	CODEND_CLOSING	1A	22 - 22	S, C	S: without; C: controlled
Genus	GENUS	4A	27 - 30	See Annex XV <a href="#">Medits Manual</a>	Following the Reference List
Species	SPECIES	3A	31 - 33	See Annex XV <a href="#">Medits Manual</a>	Following the Reference List
Nbmal	NB_OF_MALES	7N	57 - 63	0 to 9999999 *	
Nbind	NB_OF_UNDETERMINED	7N	64 - 70	0 to 9999999 *	Undetermined or not determined
Nbfem	NB_OF_FEMALES	7N	50 - 56	0 to 9999999*	
Tf	TYPE_OF_FILE	2A	1 - 2	TB	Fixed value
Catfau	FAUNISTIC_CATEGORY	3A	24 - 26	See ( <a href="#">taxonomic categories</a> )	MEDITS code
Nbtot	TOTAL_NUMBER_IN_THE_HAUL	7N	43 - 49	0 to 9999999 *	For the given species. Should be equal to the sum of the 3 following fields.
Lref	NAME_OF_THE_REFERENCE_LIST	2A	34 - 35	See Annex XV <a href="#">Medits Manual</a>	NCC or MEDITS FM list
Partit	PART_OF_THE_CODEND	1A	23 - 23	A, M, P, S	Mandatory if Codend closing = C; A: anterior, M: middle; P: posterior; S sum of the 3 parts
Ptot	TOTAL_WEIGHT_IN_THE_HAUL	7N	36 - 42	0 to 9999999	For the given species, in grams
name_of_survey		10A		( <a href="#">survey code</a> ) I	NOT part of the formal Medits file

### Legend

A: alphabetic field; N: numerical field; AN alpha-numeric field

Before the type of the field there is the number of digit allowed for the field (e.g. 2N: numeric field with length 2)

\*Not mandatory for faunistic category V,G,H, D, and E, in this case the number will be 0.

**Note:** the fields, NB\_OF\_FEMALES, NB\_OF\_MALES, are mandatory for the years 1994-2011 for the MEDITS target species, while since 2012 NB\_OF\_FEMALES, NB\_OF\_MALES are mandatory for the MEDITS G1 species list, unless the individuals are all UNDETERMINED (in TC as well). In case the species was not a target in 1994-2011 or is not a G1 species since 2012, the field NB\_OF\_UNDETERMINED should be always filled and should be equal to the field TOTAL\_NUMBER\_IN\_THE\_HAUL. The fields, NB\_OF\_FEMALES and NB\_OF\_MALES will be 0.

## Trawl survey file TC

MEB&BS variable	MEDITS variable and reference	Type	Position	Range	Comments
country	COUNTRY	3A	3 - 5	See ( <a href="#">country</a> )	ISO Code
area	AREA	2N	6 - 7	See ( <a href="#">area</a> )	GFCM Code Codes for areas
vessel	VESSEL	3A	8 - 10	See ( <a href="#">vessel codes</a> ) I	MEDITS Code
year	YEAR	4N	11 - 14		e.g. 2000
month	MONTH	2N	15 - 16	1 to 12	
day	DAY	2N	17 - 18	1 to 28/29/30/31	
haul_number	HAUL_NUMBER	3N	19 - 21	1 to 999	One series by vessel/year
codend_closing	CODEND_CLOSING	1A	22 - 22	S, C	S: without; C: controlled
genus	GENUS	4A	27 - 30	See Annex XV <a href="#">Medits Manual</a>	Following the Reference List
species	SPECIES	3A	31 - 33	See Annex XV <a href="#">Medits Manual</a>	Following the Reference List
tf	TYPE_OF_FILE	2A	1 - 2	TC	Fixed value
catfau	FAUNISTIC_CATEGORY	3A	24 - 26	See ( <a href="#">taxonomic categories</a> )	MEDITS code
partit	PART_OF_THE_CODEND	1A	23 - 23	A, M, P, S	Mandatory if Codend closing = C; A: anterior; M: middle; P: posterior; S sum of the 3 parts
matsub	MATSUB##	2A	60 - 61	from A to E; ND***; Not Determined (allowed from 2012)	introduced in 2007; See Annexes VIIIa- VIIIe maturity codes are according to the blue column since 2007 onwards; ND: Not Determined (allowed from 2012 for species G2 and for species G1 only in case staging is particularly difficult, despite the specimens are sexed).
maturity	NUMBER_OF_INDIVIDUALS_IN_THE_LENGTH_CLASS_AND_MATURITY_STAGE	6N	62 - 67	1 to 999999	No of individuals per maturity stage and length class for a given sex. The length classes without any individual are excluded from the file. The sum of No of individuals per class and sex is the No of individuals measured per sex. When maturity stage is ND (since 2012) this field is the No per class and sex.
length_class	LENGTH_CLASS	4N	54 - 57	1 to 9999	Identifier: lower limit of the class in mm; e.g. 30.5-31 cm ->305 (LENGTH_CLASS_CODE:0)
sex	SEX	1A	47 - 47	M, F, I, N	M: male; F: female; I: indetermined; N: not determined
name_of_survey		10A		( <a href="#">survey code</a> )	NOT part of the formal Medits file
codlon	LENGTH_CLASSES_CODE	1A or 1N	34 - 34	m, 0, 1#	Type of classes: m: 1 mm; 0: 0.5 cm; 1: 1cm
pfrac	WEIGHT_OF_THE_FRACTION	6N	35 - 40	0 to 999999	Weight of the fraction in the whole haul in grams
nbsex	NO_OF_INDIVIDUAL_OF_THE_ABOVE_SEX_MEASURED	6N	48 - 53	1 to 999999	Number of individuals of the above sex measured in the sample
pechan	WEIGHT_OF_THE_SAMPLE_MEASURED	6N	41 - 46	0 to 999999	Weight of the sample really measured for length, sex and maturity stages (in grams)

### Legend

A: alphabetic field; N: numerical field; AN alpha-numeric field

Before the type of the field there is the number of digit allowed for the field (e.g. 2N: numeric field with length 2)

\* All numerical fields (N) are right justified; all alphanumeric fields (A) fields are left justified

\*\* The word "Fraction" means any sub-group of individual from the total catch of a species (males, females, large sized individuals, small individuals, juveniles, etc.) on which it could be proceed to a sub-sample. For example: total weight = 1000 g which is divided into 100g of big individuals and 900 g of small. The big individuals will be entirely measured (WEIGHT\_OF\_THE\_FRACTION = 100; WEIGHT\_OF\_THE\_SAMPLED\_MEASURED = 100). The small ones will be sub-sampled with a ratio of 1/10 (WEIGHT\_OF\_THE\_FRACTION + 900; WEIGHT\_OF\_THE\_SAMPLED\_MEASURED = 90)

\*\*\*Not Determined code (ND) was included in case length measures only were taken, as for the species coded MEDITS G2 in the Annex VI of this manual.

# the class of 1 cm is allowed until 2012 as in the past years some species could have been measured at 1 cm. ##this field should be specified even when stage is 1 or 2 (in this case the field is NA) it cannot be 0 or empty.

## Explanation and Specification of codes mainly taken directly from the MEDITS handbook ([MEDITS Instruction Manuals](#))

The variable 'name\_of\_survey' is linked to all files. The same applies to 'country'

### Coding for name\_of\_survey and associated explanation

"MEDITS"	"refers to the International bottom trawl survey in the Mediterranean"
"MEDIAS"	"refers to the International Mediterranean Acoustic Surveys"
"PELMED"	"refers to the France Pelagic surveys"
"ECOMED"	"refers to the old Spain Acoustic Surveys"
"SOLEMON"	"refers to the Beam trawl surveys on Common Sole in the Northern Adriatic Sea"
"pelagic"	"refers to the Pelagic surveys in the Black Sea"
"bottom"	"refers to the Demersal surveys in the Black Sea"
"BTSBS-SPR"	"refers to the Beam trawl surveys in the the Black Sea carried out in Spring"
"BTSBS-AUT"	"refers to the Beam trawl surveys in the the Black Sea carried out in Autumn"
"PTSBS-SPR"	"refers to the Pelagic trawl surveys in the the Black Sea carried out in Spring"
"PTSBS-AUT"	"refers to the Pelagic trawl surveys in the the Black Sea carried out in Autumn"
"autumn"	"refers to the Demersal trawl surveys in the the Black Sea carried out in Autumn"
"spring"	"refers to the Demersal trawl surveys in the the Black Sea carried out in Spring"

### Codes for countries (Position 3-5)

<i>Code</i>	<i>Country</i>
<i>ALB</i>	<i>Albania</i>
<i>CYP</i>	<i>Cyprus</i>
<i>ESP</i>	<i>Spain</i>
<i>FRA</i>	<i>France</i>
<i>GRC</i>	<i>Greece</i>
<i>HRV</i>	<i>Croatia</i>
<i>ITA</i>	<i>Italy</i>
<i>MLT</i>	<i>Malta</i>
<i>MOR</i>	<i>Morocco</i>
<i>MON</i>	<i>Montenegro</i>
<i>SVN</i>	<i>Slovenia</i>

### Codes for areas

Area	Code
Northern Alboran Sea	GSA 1
Alboran Island	GSA 2
Southern Alboran Sea	GSA 3
Algeria	GSA 4
Balearic Island	GSA 5
Northern Spain	GSA 6
Gulf of Lion	GSA 7
Corsica Island	GSA 8
Ligurian and North Tyrrhenian Sea	GSA 9
South Tyrrhenian Sea	GSA 10
Sardinia (west)	GSA 11.1
Sardinia (east)	GSA 11.2

Sardinia	GSA 11
Northern Tunisia	GSA 12
Gulf of Hammamet	GSA 13
Gulf of Gabes	GSA 14
Malta Island	GSA 15
South of Sicily	GSA 16
Northern Adriatic	GSA 17
Southern Adriatic Sea	GSA 18
Western Ionian Sea	GSA 19
Eastern Ionian Sea	GSA 20
Southern Ionian Sea	GSA 21
Aegean Sea	GSA 22
Crete Island	GSA 23
North Levant	GSA 24
Cyprus Island	GSA 25
South Levant	GSA 26
Levant	GSA 27
Marmara Sea	GSA 28
Black Sea	GSA 29
Azov Sea	GSA 30

#### Vessel codes and characteristics (Vessel code: Position 8-10 in the file MEDITS TA)

Vessel code	Vessel Name	Type	Length (m)	Tonnage (TJB)	Year	Material	Power (kW)	Warp diam (mm)	Warp length (m)
AND	Andrea	R	29.5	211	1998	aluminium	1300	14	2250
BIM	Bianca Maria	P	26.81	116	1988	wood	485	12	3000
BIO	BIOS DVA	R	36.3	336	2009	steel	895	14	1500
CHA	Charif Alidrissi	R	41	397	1986	steel	808	22	3000
COR	Cornide de Saavedra	R	66.7	1524	1970	steel	1651	29	2700
MOL	Miguel Oliver*	R	70	2495	2014	steel	2x1000	20	4000
DAP	Dalla Porta	R	35.3	285	2000	steel	809	14	2500
DEG	Degre	P	23.95	106.46	1996	steel	538	14	3100
DEM	Demetrios	P	27.77	78.24	1991	steel	537	12	3000
EGU	Elisa Guidotti	P	29	69	1991	bois	330	14	2500
EVA	Evagelistria	P	29.1	59.45	2000	steel	497	12	1800
FRP	Francesco Padre	P	25	88	1984	steel	660	14	3000
FUL	Fulmine	P	29	147.2	0	wood	736	14	2500
GAB	Gabriella	P	23	64	1970	wood	441	12	3500
GIS	Gisella	P	29.3	168	1999	iron	432	15	3000
IGO	Igor	P	22.5	102	1979	iron	345	14	2500
IRO	Ioannis Rossos	P	26.3	115.75	1986	iron	368	12	3000
LEU	L'Europe	R	29.6	259.69	1993	aluminium	690	16	2700
LIB	Libera	P	22.3	69	1987	wood	441	14	2500
MEG	Megalochari	P	33	150	2005	steel	367	12	2000
NAU	Nautilus	P	28.4	138	1991	iron	600	14	2500
NAV	Francisco Paula Navarro	R	30.5	178	1987	wood	750	18	2200
NUS	Nuovo Splendore	P	29.45	134.51	1967	wood	685	16	2450
PAR	Kapetan Paraschos	P	26.1	85.71	1989	wood	386	12	2000
PEC	Pasquale e Cristina	P	33.06	158.77	1996	wood	923	16	2500
PRI	Principessa I	P	32	165	1995	steel	403	14	2500
ROS	Roselys	R	0	0	0	wood	0	0	0
SAN	Sant'Anna	P	32.2	97.06	1981	steel	1357	14	3100
TAM	Takis-Mimis	P	28.97	161.70	2002	steel	367	12	2500

\*<http://www.magrama.gob.es/es/pesca/temas/buques-secretaria-general-pesca/buque-oceanografico-miguel-oliver/default.aspx>



Codes for species in acoustic files (t\_biomass, t\_abundance, t\_abund\_biom)

Species [three letter code]	Latin name
ANE	Engraulis encrasicolus
ANK	Lophius budegassa
ARA	Aristeus antennatus
ARS	Aristaeomorpha foliacea
BOG	Boops boops
BON	Sarda sarda
BPI	Spicara maena
BRF	Helicolenus dactylopterus
BSS	Dicentrarchus labrax
CIL	Citharus linguatula
COL	Corallium rubrum
CTC	Sepia officinalis
CTZ	Chelidonichthys lastoviza
DGS	Squalus acanthias
DOL	Coryphaena hippurus
DPS	Parapenaeus longirostris
EDT	Eledone moschata
ELE	Anguilla anguilla
EOI	Eledone cirrhosa
GFB	Phycis blennoides
GUG	Eutrigla gurnardus
GUR	Aspitrigla cuculus
GUU	Chelidonichthys lucerna
HKE	Merluccius merluccius
HMM	Trachurus mediterraneus
HOM	Trachurus trachurus
JAX	Trachurus spp
JOD	Zeus faber
JRS	Raja asterias
LDB	Lepidorhombus boscii
MAZ	Scomber spp
MON	Lophius piscatorius
MTS	Squilla mantis
MUL	Mugilidae
MUR	Mullus surmuletus
MUT	Mullus barbatus
NEP	Nephrops norvegicus
OCC	Octopus vulgaris
OCM	Eledone spp
PAC	Pagellus erythrinus
PIL	Sardina pilchardus
POD	Trisopterus minutus
RJC	Raja clavata

RPG	Pagrus pagrus
RPW	Rapana venosa
RSE	Scorpaena scrofa
SAA	Sardinella aurita
SBA	Pagellus acarne
SBG	Sparus aurata
SBR	Pagellus bogaraveo
SHO	Galeus melastomus
SOL	Solea solea
SPC	Spicara smaris
SPR	Sprattus sprattus
SQM	Illex coindetii
SQR	Loligo vulgaris
SRG	Diplodus spp
SVE	Chamelea gallina
SYC	Scyliorhinus canicula
TGS	Penaeus kerathurus
TUR	Psetta maxima
VMA	Scomber colias
WHB	Micromesistius poutassou
WHG	Merlangius merlangus

#### Codes for the gear (MEDITS code: Position 11-23 in the file MEDITS TA)

Nature	Gear	MEDITS code	Comments
Trawl	Large opening and 4 faces	GOC73	Standard for all vessels
Rigging	With legs	GC73	Standard for all vessels
Doors	Morgère WH S8	WHS8	Standard for all vessels

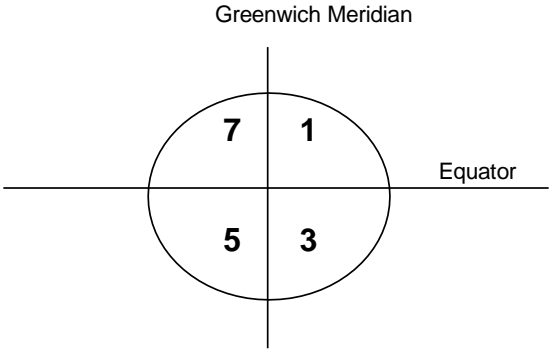
#### Codes of recorded species (Position 85 in the file MEDITS TA)

MEDITS code	Nature	Comments
0	No standard species recorded	
1	Only the species of the reference list are recorded	See Annex VI
2	The species of the reference list plus some others are recorded	
3	All the caught species are recorded	See Annex XV
4	Species from a national list	

#### Coding of the observations (Position 112 in the file MEDITS TA)

MEDITS code	Nature	Comments
0	No problem	
1	Slight plugging of the net	
2	Heavy plugging of the net	
3	High abundance of jellyfish	
4	High abundance of plants in the net	
5	Tears of the net	
6	High abundance of benthos	
7		
8		
9	Other	

Coding of the quadrants (Positions 41 and 63 in the file MEDITS TA)



## Codes of Taxonomic categories. Form to introduce new species codes

Codes of taxonomic categories (Position 24 in the file MEDITS TB)

MEDITS code	Nature	Years of use/introduction
A	Fish	1994-2011
Aa	Fish Agnatha	2014÷
Ae	Fish Chondrichthyes	2012÷
Ao	Fish Osteichthyes	2012÷
B	Crustaceans (Decapoda)	1994-2014
Bam	Amphipoda	2012÷
Bci	Cirripeda	2012÷
Beu	Euphausiacea	2012÷
Bis	Isopoda	2012÷
Bst	Stomatopoda	2012÷
C	Cephalopods	1994-2012÷
D	Other commercial (edible) species	1994-2011
Dec	Echinodermata	2012÷
Dmb	Mollusca Bivalvia	2012÷
Dmg	Mollusca Gastropoda	2012÷
Dmo	Mollusca Opisthobranchia	2012÷2014
Dtu	Tunicata (Ascidiacea)	2012÷
E	Other animal species but not commercial (not edible)	1994-2011
Ean	Annelida	2014÷
Eba	Brachiopoda	2012÷
Ebr	Bryozoa	2012÷
Ech	Echiura	2014÷
Ecn	Cnidaria	2012÷
Ect	Ctenophora	2012÷
Eec	Echinodermata	2012÷
Ehi	Hirudinea	2012÷
Emb	Mollusca Bivalvia	2012÷
Emg	Mollusca Gastropoda	2012÷
Emo	Mollusca Opisthobranchia	2012÷
Emp	Mollusca Polyplacophora	2014÷
Ene	Nemertea	2014÷
Epo	Polychaeta	2012÷
Epr	Priapulida	2014÷
Esi	Sipuncula	2012÷
Esc	Scaphopoda	2012÷
Esp	Porifera (Sponges)	2012÷
Etu	Tunicata (Ascidiacea)	2012÷
G	portions or products of animal species (shell debris, eggs of gastropods, selachians, etc.)	2012÷
H	portions or products of vegetal species (e.g. leaves of sea grasses, of terrestrial plants, etc.)	2012÷
M	Mammalia (mammals)	2014÷
O	Aves (birds)	2014÷
R	Reptilia (Turtles)	2014÷
V	Plantae (vegetals)	2012÷

## List of the reference species

The MEDITS reference list (since 2012) includes 82 species, of which 32 are Elasmobranchs. The list also includes all species of the *Epinepheus* and *Scomber* genera.

For all the 82 species and all species of the *Epinepheus* and *Scomber* genera, the total number of individuals, the total weight and the individual length should be collected.

This list is further split in two groups:

- MEDITS G1 includes 41 species with 9 demersal (3 fish, 4 crustaceans and 2 cephalopods) and 32 Selachians. For these species the total number of individuals, the total weight, the individual length, and also biological parameters including sex, maturity, individual weight and age (age has been proposed only for the teleosteans of the Group 1) should be collected;
- MEDITS G2 includes 42 species for which only total number of individuals, total weight and individual length and should be collected.

***The new list of reference species (Tot. No=total number of individuals in the haul; Tot. W= total weight of the individuals in the haul; the number 1 in the column MEDITS G1 and MEDITS G2 indicates that the species has been selected for some measurements; the column date indicates when the species has been introduced in the list of target species, the symbol > followed by the year indicates that the species was excluded by the list in that year)***

No	Medit LIST proposal 2011	Species group DCF	MEDITS G1	MEDITS G2	Group	Old MEDITS list	Tot. No	Tot. W	Ind. Length	Sex	Mat. stage	Age	Ind. weight	Date	CODE	English common name
<b>Teleosteans</b>																
1	<i>Aspitrigla cuculus</i>	G3		1	Fish	1	x	x	x					1998	ASPI CUC	Red gurnard
2	<i>Boops boops</i>	G2		1	Fish	1	x	x	x					2006	BOOPBOO	Bogue
3	<i>Citharus linguatula</i>	G3		1	Fish	1	x	x	x					1994	CITH MAC	Spotted flounder
4	<i>Diplodus annularis</i>	G3		1	Fish		x	x	x					2012	DIPLANN	Annular seabream
5	<i>Diplodus puntazzo</i>	G3		1	Fish		x	x	x					2012	DIPLPUN	Sharpsnout seabream
6	<i>Diplodus sargus</i>	G3		1	Fish		x	x	x					2012	DIPLSAR	White sea bream
7	<i>Diplodus vulgaris</i>	G3		1	Fish		x	x	x					2012	DIPLVUL	Common two- banded seabream

8	<i>Engraulis encrasicolus</i>	G1		1	Fish		x	x	x						2012	ENGRENC	Anchovy
9	<i>Epinephelus spp.*</i>	G3		1	Fish		x	x	x						2012	EPINSPP	Grouper
10	<i>Eutrigla gurnardus</i>	G2		1	Fish	1	x	x	x						1994	EUTR GUR	Grey gurnard
11	<i>Helicolenus dactylopterus</i>	G3		1	Fish	1	x	x	x						1994	HELI DAC	Rockfish
12	<i>Lepidorhombus boscii</i>	G3		1	Fish	1	x	x	x						1994	LEPM BOS	Four-spotted megrim
13	<i>Lithognathus mormyrus</i>	G3		1	Fish		x	x	x						2012	LITH MOR	Striped seabream
14	<i>Lophius budegassa</i>	G2		1	Fish	1	x	x	x						1994	LOPH BUD	Black-bellied angler
15	<i>Lophius piscatorius</i>	G2		1	Fish	1	x	x	x						1994	LOPH PIS	Angler
16	<b><i>Merluccius merluccius</i></b>	<b>G1</b>	<b>1</b>		<b>Fish</b>	<b>1</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>		<b>1994</b>	<b>MERL MER</b>	<b>European hake</b>
17	<i>Micromesistius poutassou</i>	G2		1	Fish	1	x	x	x						1994	MICM POU	Blue whiting
18	<b><i>Mullus barbatus</i></b>	<b>G1</b>	<b>1</b>		<b>Fish</b>	<b>1</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>		<b>1994</b>	<b>MULL BAR</b>	<b>Red mullet</b>
19	<b><i>Mullus surmuletus</i></b>	<b>G1</b>	<b>1</b>		<b>Fish</b>	<b>1</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>		<b>1994</b>	<b>MULL SUR</b>	<b>Striped red mullet</b>
20	<i>Pagellus acarne</i>	G3		1	Fish	1	x	x	x						1994	PAGE ACA	Axillary seabream
21	<i>Pagellus bogaraveo</i>	G3		1	Fish	1	x	x	x						1994	PAGE BOG	Blackspot seabream
22	<i>Pagellus erythrinus</i>	G2		1	Fish	1	x	x	x						1994	PAGE ERY	Common pandora
23	<i>Pagrus pagrus</i>	G3		1	Fish		x	x	x						> 1996	SPAR PAG	Common seabream
24	<i>Phycis blennoides</i>	G3		1	Fish	1	x	x	x						1994	PHYI BLE	Greater forkbeard
25	<i>Polyprion americanus</i>	G3		1	Fish		x	x	x						2012	POLY AME	Wreckfish
26	<i>Psetta maxima</i>	G2		1	Fish		x	x	x						2012	PSET MAX	Turbot
27	<i>Sardina pilchardus</i>	G1		1	Fish		x	x	x						2012	SARD PIL	Sardine
28	<i>Scomber spp.*</i>	G2		1	Fish		x	x	x						2012	SCOM SPP	mackerel
29	<i>Solea vulgaris</i>	G1		1	Fish	1	x	x	x						1994	SOLE VUL	Common sole
30	<i>Spicara flexuosa</i>	G3		1	Fish	1	x	x	x						1994	SPIC FLE	Picarel
31	<i>Spicara maena</i>	G3		1	Fish		x	x	x						2012	SPIC MAE	Blotched picarel
32	<i>Spicara smaris</i>	G2		1	Fish	1	x	x	x						1998	SPIC SMA	Picarel
33	<i>Trachurus mediterraneus</i>	G2		1	Fish	1	x	x	x						1994	TRAC MED	Mediterranean horse mackerel
34	<i>Trachurus trachurus</i>	G2		1	Fish	1	x	x	x						1994	TRAC TRA	Atlantic horse mackerel
35	<i>Trigla lucerna</i>	G2		1	Fish	1	x	x	x						2006	TRIGLUC	Tub gurnard

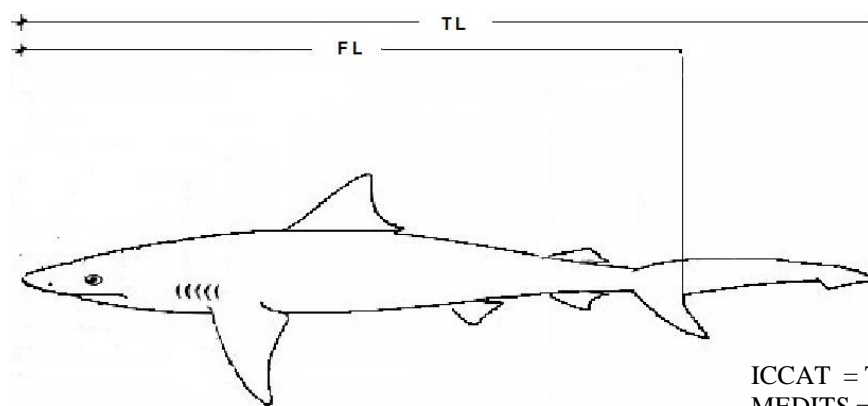
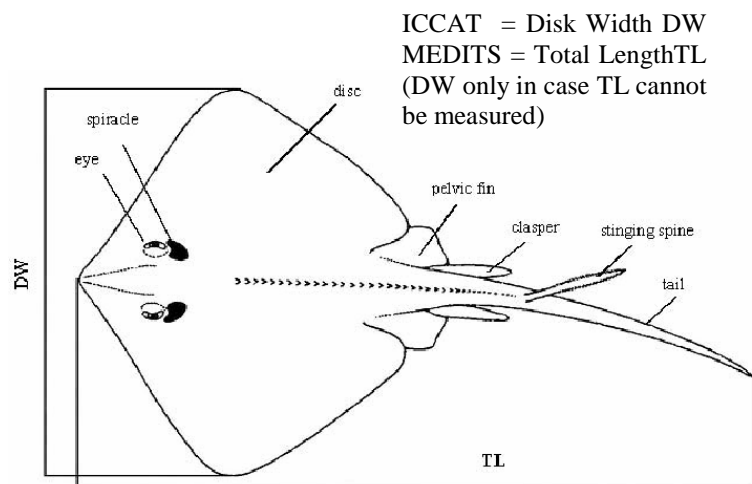
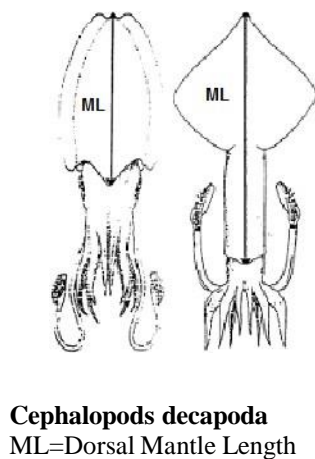
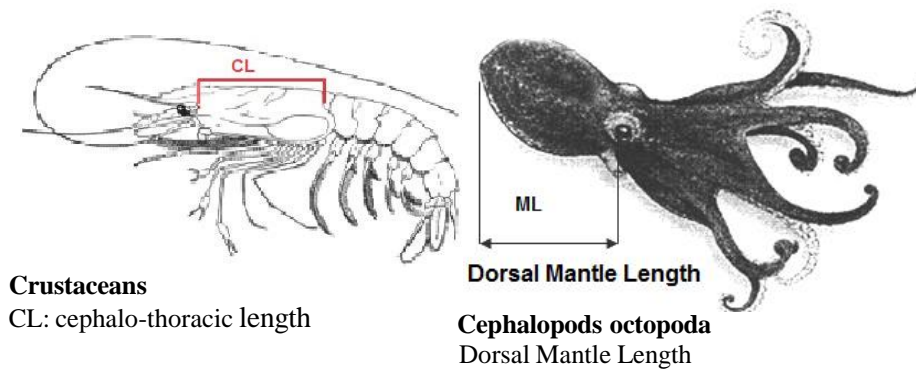
36	<i>Trigloporus lastoviza</i>	G3	1	Fish	1	x	x	x			1998	TRIP LAS	Streaked gurnard
37	<i>Trisopterus minutus capellanus</i>	G3	1	Fish	1	x	x	x			1994	TRIS CAP	Poor-cod
38	<i>Zeus faber</i>	G3	1	Fish	1	x	x	x			1994	ZEUS FAB	John dory
<b>Elasmobranches</b>													
39	<i>Centrophorus granulosus</i>	G1	1	Elasmob		x	x	x	x	x	2012	CENT GRA	Gulper shark
40	<i>Dalatias licha</i>	G1	1	Elasmob		x	x	x	x	x	2012	SCYM LIC	Kitefin shark
41	<i>Dipturus batis</i>	G1	1	Elasmob		x	x	x	x	x	2012	RAJA BAT	Skate
42	<i>Dipturus oxyrinchus</i>	G1	1	Elasmob		x	x	x	x	x	2012	RAJA OXY	Longnosed skate
43	<i>Etmopterus spinax</i>	G1	1	Elasmob		x	x	x	x	x	2012	ETMO SPI	Velvet belly
44	<i>Galeorhinus galeus</i>	G1	1	Elasmob		x	x	x	x	x	2012	GALE GAL	Tope shark
45	<i>Galeus melastomus</i>	G1	1	Elasmob	1	x	x	x	x	x	1999	GALU MEL	Blackmouth catshark
46	<i>Heptranchias perlo</i>	G1	1	Elasmob		x	x	x	x	x	2012	HEPT PER	Sharpnose sevengill shark
47	<i>Hexanchus griseus</i>	G1	1	Elasmob		x	x	x	x	x	2012	HEXA GRI	Bluntnose sixgill shark
48	<i>Leucoraja circularis</i>	G1	1	Elasmob		x	x	x	x	x	2012	RAJA CIR	Sandy ray
49	<i>Leucoraja melitensis</i>	G1	1	Elasmob		x	x	x	x	x	2012	RAJA MEL	Maltese ray
50	<i>Mustelus asterias</i>	G1	1	Elasmob		x	x	x	x	x	2012	MUST AST	Starry smoothhound
51	<i>Mustelus mustelus</i>	G1	1	Elasmob		x	x	x	x	x	2012	MUST MUS	Smoothhound
52	<i>Mustelus punctulatus</i>	G1	1	Elasmob		x	x	x	x	x	2012	MUST MED	Blackspotted smoothhound
53	<i>Myliobatis aquila</i>	G1	1	Elasmob		x	x	x	x	x	2012	MYLI AQU	Common eagle ray
54	<i>Oxynotus centrina</i>	G1	1	Elasmob		x	x	x	x	x	2012	OXYN CEN	Angular rough shark
55	<i>Raja asterias</i>	G1	1	Elasmob		x	x	x	x	x	2012	RAJA AST	Starry ray
56	<i>Raja clavata</i>	G1	1	Elasmob	1	x	x	x	x	x	1999	RAJA CLA	Thornback ray
57	<i>Raja miraletus</i>	G1	1	Elasmob		x	x	x	x	x	2012	RAJA MIR	Brown ray
58	<i>Raja polistigma</i>	G1	1	Elasmob		x	x	x	x	x	2012	RAJA POL	Speckled ray
59	<i>Raja undulata</i>	G1	1	Elasmob		x	x	x	x	x	2012	RAJA UND	Undulate ray
60	<i>Rhinobatos cemiculus</i>	G1	1	Elasmob		x	x	x	x	x	2012	RHIN CEM	Blackchin guitarfish
61	<i>Rhinobatos rhinobatos</i>	G1	1	Elasmob		x	x	x	x	x	2012	RHIN RHI	Common guitarfish
62	<i>Rostroraja alba</i>	G1	1	Elasmob		x	x	x	x	x	2012	RAJA ALB	White skate
63	<i>Scyliorhinus canicula</i>	G1	1	Elasmob	1	x	x	x	x	x	1999	SCYO CAN	Smallspotted

64	<i>Scyliorhinus stellaris</i>	G1	1	Elasmob		x	x	x	x	x	x	2012	SCYO STE	catshark
65	<i>Squalus acanthias</i>	G1	1	Elasmob		x	x	x	x	x	x	2012	SQUA ACA	Nursehound
66	<i>Squalus blainvillei</i>	G1	1	Elasmob		x	x	x	x	x	x	2012	SQUA BLA	Piked dogfish
67	<i>Squatina aculeata</i>	G1	1	Elasmob		x	x	x	x	x	x	2012	SQUT ACU	Longnose spurdog
68	<i>Squatina oculata</i>	G1	1	Elasmob		x	x	x	x	x	x	2012	SQUT OCL	Sawback angelshark
69	<i>Squatina squatina</i>	G1	1	Elasmob		x	x	x	x	x	x	2012	SQUT SQU	Smoothback angelshark
70	<i>Torpedo marmorata</i>	G1	1	Elasmob		x	x	x	x	x	x	2012	TORP MAR	Angelshark
<b>Crustaceans</b>														
71	<i>Aristaeomorpha foliacea</i>	G1	1	Cru	1	x	x	x	x	x	x	1994	ARIS FOL	Marbled electric ray
72	<i>Aristeus antennatus</i>	G1	1	Cru	1	x	x	x	x	x	x	1994	ARIT ANT	Giant red shrimp
73	<i>Nephrops norvegicus</i>	G1	1	Cru	1	x	x	x	x	x	x	1994	NEPR NOR	Blue and red shrimp
74	<i>Parapenaeus longirostris</i>	G1	1	Cru	1	x	x	x	x	x	x	1994	PAPE LON	Norway lobster
75	<i>Palinurus elephas</i>	G3	1	Cru		x	x	x				2012	PALI ELE	Deep-water pink shrimp
76	<i>Melicerus kerathurus</i>	G2	1	Cru		x	x	x				2012	PENA KER	Spiny lobster
77	<i>Squilla mantis</i>	G2	1	Cru		x	x	x				2012	SQUI MAN	Caramote prawn
<b>Cephalopods</b>														
78	<i>Eledone cirrhosa</i>	G2	1	Cef	1	x	x	x				1994	ELED CIR	Spottail mantis squillids
79	<i>Eledone moschata</i>	G2	1	Cef	1	x	x	x				1997	ELED MOS	Horned octopus
80	<i>Illex coindettii</i>	G2	1	Cef	1	x	x	x	x	x	x	1994	ILLE COI	Musky octopus
81	<i>Loligo vulgaris</i>	G2	1	Cef	1	x	x	x	x	x	x	1994	LOLI VUL	Broadtail squid
82	<i>Octopus vulgaris</i>	G2	1	Cef	1	x	x	x				1994	OCTO VUL	European squid
83	<i>Sepia officinalis</i>	G2	1	Cef	1	x	x	x				1994	SEPI OFF	Common octopus
84	<i>Todarodes sagittatus</i>	G2	1	Cef		x	x	x				2012	TODA SAG	Common cuttlefish

\*not all *Epinephelus* and *Scomber* species are listed but the single species should be considered as target



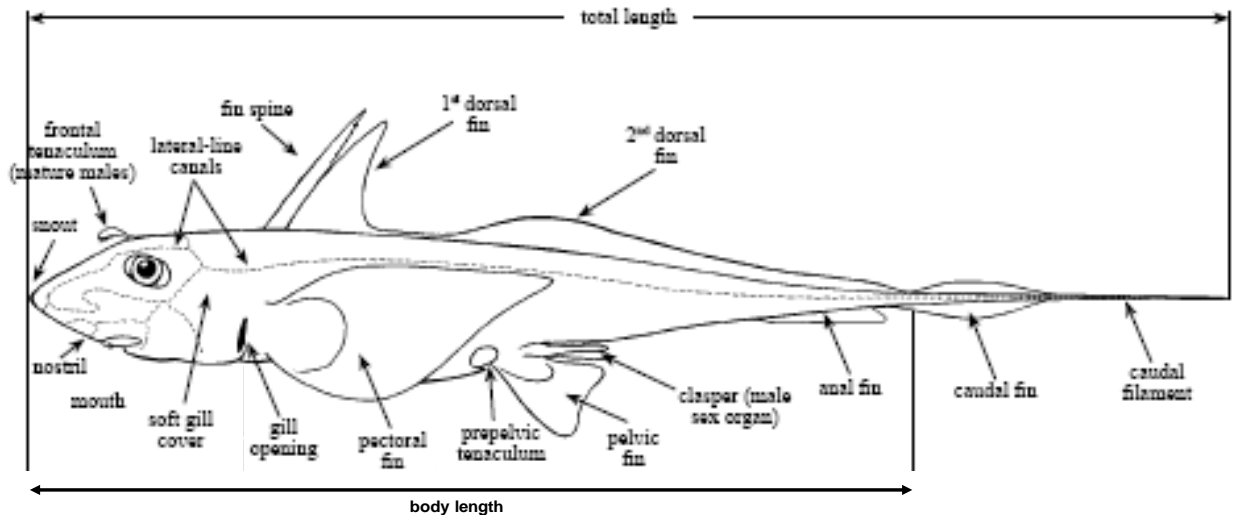
Definition of length measurements used in length  
\_class dependent on taxonomic affinity MEDITS Tc



ICCAT = Total Length TL  
MEDITS = Total Length TL  
(Fork length FL in case TL cannot be taken; e.g. damaged fins)

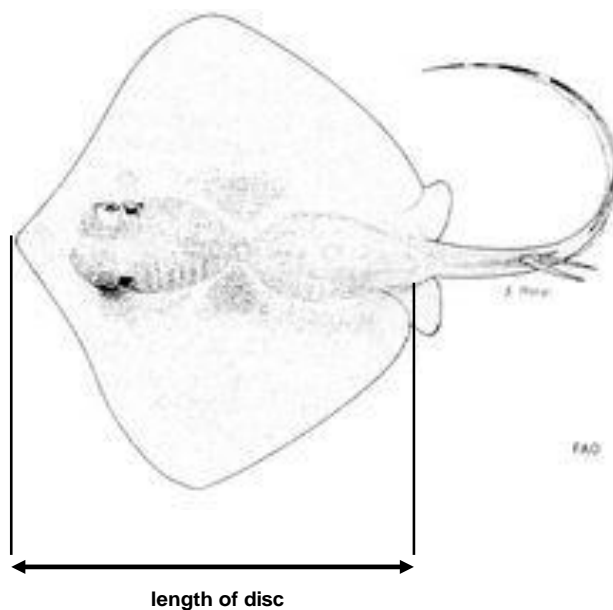
Note: rule to take TL of Elasmobranchs holds also for bony fish

- For *chimaeroids* species the total length often is difficult to measure, because the caudal filament can easily be cut. The body length (snout to posterior end of supracaudal fin) is then a preferred measurement. Taking both measures on not damaged specimens can allow to confront both measures fitting a linear model to the data.



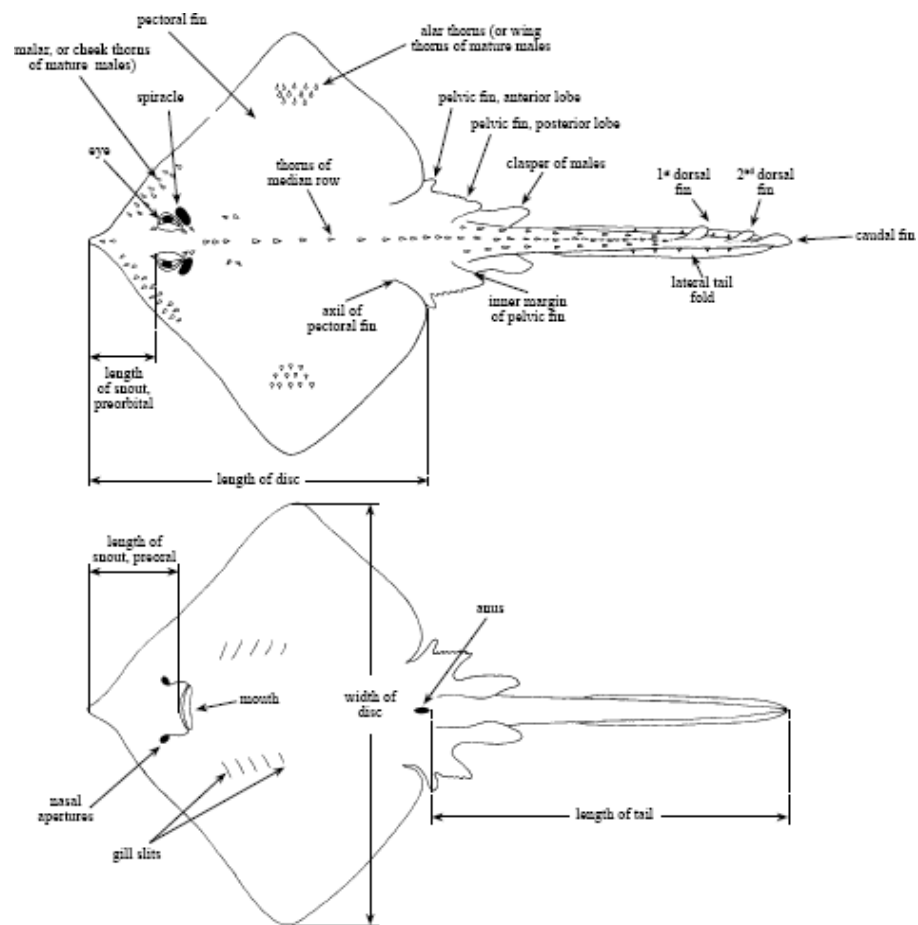
The body length in *chimaeroids* species

- For the same reason in Myliobatidae, Dasyatidae and Rhinopteridae the length of disc can be taken.



Length of disc in the Myliobatidae, Dasyatidae and Rhinopteridae species

- For Rajidae and Torpenidae it is recommended to take other measurements as length and width of the disc.



Length and width of the disc for the Rajidae and Torpenidae species

# Maturity coding as per the MEDITS manual for Bony Fish, Elasmobranchs, Crustaceans and Cephalopods

## VIII.A BONY FISH

SEX	GONAD ASPECT	MATURATION STATE	STAGE	MEDITITS
I	Sex not distinguished by naked eye. Gonads very small and translucent, almost transparent. Sex undetermined.	UNDETERMINED	0	0
F	Small pinkish and translucent ovary shorter than 1/3 of the body cavity. Eggs not visible by naked eye.	IMMATURE=VIRGIN	1	1
M	Thin and withish testis shorter than 1/3 of the body cavity.			
F	Small pinkish/reddish ovary shorter than ½ of e body cavity. Eggs not visible by naked eye.	VIRGIN-DEVELOPING*	2a	2
M	Thin withish testis shorter than 1/2 of the body cavity.			
F	Pinkish-reddish/ reddish-orange and translucent ovary long about ½ of the body cavity. Blood vessels visible. Eggs not visible by naked eye.	RECOVERING*	2b	
M	Withish/pinkish testis, more or less symmetrical, long about ½ of the body cavity			
F	Ovary pinkish-yellow in colour with granular appearance, long about 2/3 of the body cavity. Eggs are visible by naked eye trough the ovaric tunica, which is not yet translucent. Under light pressure eggs are not expelled.	MATURING	2c	
M	Withish to creamy testis long about 2/3 of the body cavity. Under light pressure sperm is not expelled.			
F	Ovary orange-pink in colour, with conspicuous superficial blood vessels, long from 2/3 to full length of the body cavity. Large transparent, ripe eggs are cleary visible and could be expelled under light pressure. In more advanced conditions, eggs escape freely.	MATURE/SPAWNER	3	3
M	Whitish-creamy soft testis long from 2/3 to full length of the body cavity. Under light pressure, sperm could be expelled. In more advanced conditions, sperm escapes freely.			
F	Reddish ovary shrunked to about 1/2 length of the body cavity. Flaccid ovaric walls; ovary may contain remanants of disintegrating opaque and/or translucent eggs.	SPENT	4a	4
M	Bloodshot and flabby testis shrunked to about 1/2 length of the body cavity			
F	Pinkish and translucent ovary long about 1/3 of the body cavity. Eggs not visible by naked eye.	RESTING*	4b	
M	Whitish/pinkish testis, more or less simmetrical, long about 1/3 of the body cavity.			

*\*be careful, these stages can be easily confused*

## Adult specimens

## VIII.B

## Elasmobranchs oviparous

SEX	GONAD ASPECT	MATURATION STATE	STAGE	MEDITS
I	Sex not distinguished by naked eye.	UNDETERMINED	0	0
F	Ovary is barely discernible with small isodiametric eggs. Distal part of oviducts is thick-walled and whitish. The nidamental glands are less evident.	IMMATURE/VIRGIN	1	1
M	Claspers are small and flaccid and do not reach the posterior edge of the pelvic fins. Spermducts not differentiated. Testis small and narrow .			
F	Whitish and/or few yellow maturing eggs are visible in the ovary. The distal part of oviducts (uterus) is well developed but empty. The nidamental glands are small.	MATURIN*G	2	2
M	Claspers are larger, but skeleton still flexible. They extend to the posterior edge of the pelvic fins. Spermducts well developed eventually beginning to meander.			
F	Ovaries contain yellow eggs (large yolk eggs). The nidamental glands are enlarged and oviducts are distended.	MATURE	3a	3
M	Claspers extends well beyond the posterior edge of the pelvic fin and their internal structure is generally hard and ossified. Testis greatly enlarged. Spermducts meandering over almost their entire length.			
F	Ovary walls transparent. Oocytes of different sizes, white or yellow. Nidamental glands large. Egg-cases more or less formed in the oviducts (Extruding Stage).	MATURE/EXTRUDING-ACTIVE	3b	
M	Clasper longer than tips of posterior pelvic fin lobes, skeleton hardened with axial cartilages hardened and pointed. Spermducts largely. Sperm flowing on pressure from cloaca (Active Stage).			
F	Ovary walls transparent. Oocytes of different sizes, white or yellow. Oviducts appear much enlarged, collapsed and empty. The nidamental glands diameter are reducing.	RESTING	4a	4
M	Clasper longer than tips of posterior pelvic fin lobes, skeleton hardened with axial cartilages still hardened. Spermducts empty and flaccid.			
F	Ovaries full of small follicles similar to stage 2, enlarged oviducal glands and uterus	REGENERATING*	4b	

*\*be careful, these stages can be easily confused*

## Adult specimens

## VIII.C Elasmobranchs viviparous

VIVIPAROUS ELASMOBRANCHES (RAYS AND SHARKS)				
Sex	GONAD ASPECT	MATURATION STATE	MATURITY	STAGE
<b>I</b>	<b>Sex not distinguished by naked eye.</b>	<b>UNDETERMINED</b>	<b>IMMATURE</b>	<b>0</b>
<b>M</b>	Claspers flexible and shorter than pelvic fins. Testes small (in rays, sometimes with visible lobules). Sperm ducts straight and thread-like.	<b>IMMATURE</b>	<b>IMMATURE</b>	<b>1</b>
<b>F</b>	Ovaries barely visible or small, whitish; undistinguishable ovarian follicles. Oviducal (nidamental) gland may be slightly visible. Uterus is thread-like and narrow.			
<b>M</b>	Claspers slightly more robust but still flexible. Claspers as long as or longer than pelvic fins. Testes enlarged; in sharks testes start to segment; in rays lobules clearly visible but do not occupy the whole surface. Sperm ducts developing and beginning to coil (meander).	<b>DEVELOPING</b>	<b>IMMATURE *</b>	<b>2</b>
<b>F</b>	Ovaries enlarged with small follicles (oocytes) of different size. Some relatively larger yellow follicles may be present. Ovaries lack atretic follicles. Developing oviducal gland and uterus.			
<b>M</b>	Claspers fully formed, skeleton hardened, rigid and generally longer than pelvic fins. Testes greatly enlarged; in sharks testes are fully segmented; in rays filled with developed lobules. Sperm ducts tightly coiled and filled with sperm.	<b>SPAWNING CAPABLE</b>	<b>MATURE</b>	<b>3a</b>
<b>F</b>	Large ovaries with enlarged yolk follicles all of about the same size so that they can be easily distinguished. Oviducal gland and uterus developed without yolk matter, embryos and not dilated.	<b>CAPABLE to RE-PRODUCE</b>		
<b>M</b>	Description similar to stage 3a, however with clasper glands dilated, often swollen and reddish (occasionally open). Sperm often present in clasper groove or glans. On pressure sperm is observed flowing out of the cloaca or in the sperm ducts.	<b>ACTIVELY SPAWNING</b>	<b>MATURE</b>	<b>3b</b>
<b>F</b>	Uteri well filled and rounded with yolk content (usually candle shape). In general segments cannot be distinguished and embryos cannot be observed.	<b>EARLY PREGNANCY</b>	<b>MATERNAL</b>	
<b>F</b>	Uteri well filled and rounded, often with visible segments. Embryos are always visible, small and with a relatively large yolk sac.	<b>MID PREGNANCY</b>	<b>MATERNAL</b>	<b>3c</b>
<b>F</b>	Embryos fully formed, yolk sacs reduced or absent. Embryos can be easily measured and sexed.	<b>LATE PREGNANCY</b>	<b>MATERNAL</b>	<b>3d</b>
<b>M</b>	Claspers fully formed, similar to stage 3. Testes and spermducts shrunken and flaccid.	<b>REGRESSING</b>	<b>MATURE</b>	<b>4</b>
<b>F</b>	Ovaries shrunken without follicle development and with atretic (degenerating) follicles. The oviducal glands diameter may be reducing. Uterus appears much enlarged, collapsed, empty and reddish.	<b>REGRESSING</b>	<b>MATURE</b>	<b>4a</b>
<b>F</b>	Ovary with small follicles in different stages of development with the presence of atretic ones. Uterus enlarged with flaccid walls. Oviducal gland distinguishable.	<b>REGENERATING (mature)</b>	<b>MATURE *</b>	<b>4b</b>

*\*be careful, these stages can be easily confused*

## Adult specimens

## VIII.D Crustaceans

SEX	REPRODUCTIVE APPARATUS ASPECT	COLOURING OF FRESH OVARY	MATURATION STATE	STAGE	MEDITS
I	Sex not distinguished by naked eye. Sex undetermined	translucid	UNDETERMINED	0	0
F	Ovary hardly visible in transparence. After dissection of the tegument ovary is small and lobes are flaccid, stringy and poorly developed. <i>A. foliacea</i> and <i>A. antennatus</i> no spermatophores on thelycum.	Whitish or traslucid	IMMATURE = VIRGIN +	1	1 FEMALE
M	Petasma is not much visible, and there are not spermatic masses (emi-spermatophores) on the seminal ammpullae, located on side of the V pair of pereiopods. <i>A. foliacea</i> and <i>A. antennatus</i> : long rostrum.				
F	Ovary status to develop. Cephalic and lateral lobes are small but distinguishable by naked eye. Abdominal extension are thin and just visible.	<i>A. foliacea</i> : flesh coloured; <i>A. antennatus</i> : Ivory coloured with orange pink-violet dotting. <i>N. norvegicus</i> : cream. <i>P. longirostris</i> : cream orange.	VIRGIN DEVELOPING **	2a	2 FEMALE
M	Petasma appears visible and nearly or completely joined, but there are no spermatic masses in the seminar ammpullae. <i>A. foliacea</i> & <i>A. antennatus</i> : long or intermediate rostrum.				
F	Ovary status to re-develop. Cephalic and lateral lobes are small but distinguishable by naked eye. Abdominal extension are thin and just visible. Occasionally presence of spermatophores in <i>A. foliacea</i> and <i>A. antennatus</i> .	<i>A. foliacea</i> : flesh coloured; <i>A. antennatus</i> : Ivory coloured with orange pink-violet dotting. <i>N. norvegicus</i> : cream. <i>P. longirostris</i> : cream orange.	RECOVERING**	2b	
M	Petasma appears completely joined, but there are no spermatic masses in the seminar ammpullae. <i>A. foliacea</i> & <i>A. antennatus</i> : short rostrum.				
F	Ovary developed and occupies almost entirely the dorsal portion. The cephalic and lateral lobes are much developed and have a turgid consistence.	<i>A. foliacea</i> : light and dark grey; <i>A. antennatus</i> : lilla; <i>N. norvegicus</i> : light green; <i>P. longirostris</i> : light green or grey green.	MATURING OR ALMOST MATURE	2c	
M					
F	Turgid ovary extends to the whole dorsal portion, covery the organs below. Lobes and extensions well developed, in particular the abdominal extention are much evident. Oocytes well visible.	<i>A. foliacea</i> : black; <i>A. antennatus</i> : violet; <i>N. norvegicus</i> : dark grey; <i>P. longirostris</i> : brigh green or olive green.	MATURE	2d	
M	Petasma is perfectly visible and completely joined. Spermatic masses in seminar ammpullae. <i>A. foliacea</i> & <i>A. antennatus</i> : small rostrum.				
F	Resting ovary. Presence of spermatophores in <i>A. foliacea</i> and <i>A. antennatus</i> .	Uncoloured.	RESTING ADULT+	2e	
F ( <i>N. norvegicus</i> )	Eggs on pleiopods		BERRIED	3	3 <i>N. norvegicus</i> , FEMALE

Adult specimens

\*, \*\*: WARNING ! Be careful. These stages could be confused each other.



## VIII.E Cephalopods

SEX	REPRODUCTIVE APPARATUS ASPECT	EGGS SIZE ( mm)	SPERMATOPHORES DEVELOPMENT	MATURATION STATE	STAGE	MEDITS
I	Sex not distinguished by naked eye. Sex undetermined.	Total absence of eggs.	Total absence of spermatophores.	UNDETERMINED	0	0
F	Small and translucent Nidamental Glands (NG) / Oviducal Glands (OG). Ovary is semi-transparent, stringy and lacking granular structure. Small semi-transparent NG / OG. Oviduct meander not visible.	<i>L. vulgaris</i> & <i>I. coindetii</i> : no eggs <i>S. officinalis</i> : $\phi < 2\text{mm}$ <i>E. moschata</i> : $\phi < 4\text{mm}$ <i>E. cirrhosa</i> $\phi < 2\text{mm}$ <i>O. vulgaris</i> $\phi < 1\text{mm}$	Total absence of spermatophores	IMMATURE = VIRGIN	1	1
M	Testis small. Spermatophoric complex (SC) semi-transparent with not visible Vas deferens. Penis appears as a small prominence of SC.					
F	NG / OVG enlarged. NG covering some internal organs. Whitish ovary with granular structure clearly visible, not reaching the posterior half of the mantle cavity. Oviduct meander clearly visible.	Very small eggs	Absence of spermatophores	DEVELOPING	2a	2
M	Enlarged testis with structure not clearly visible. The Vas deferens whitish or white and the spermatophoric organ with white streak.					
F	Large NG covering the viscera below. Ovary occupies the whole posterior half of mantle cavity, containing reticulated oocytes of all sizes tightly packed and probably a few ripe ova at its proximal part. Oviducts fully developed but empty.	<i>L. vulgaris</i> & <i>I. coindetii</i> : maturing eggs visible by naked eye. <i>S. officinalis</i> : 2,1mm < $\phi$ < 4mm <i>E. moschata</i> : 4mm < $\phi$ < 11mm <i>E. cirrhosa</i> : 2mm < $\phi$ < 5mm <i>O. vulgaris</i> : 1mm < $\phi$ < 2mm	<i>L. vulgaris</i> , <i>I. coindetii</i> and <i>S. officinalis</i> : few immature spermatophores in Needham's sac. <i>E. moschata</i> , <i>E. cirrhosa</i> , <i>O. vulgaris</i> : few spermatophores, barely developed and not functional	MATURING	2b	3
M	The Vas deferens white, meandering, enlarged. The Needham's sac (SS) with structureless whitish particles inside. Normally the Needham's sac is without functional spermatophores but sometimes some immature/abortive ones could occur. The testis tight, crispy, with visible structure.					
F	Large NG as previously. Ovary containing higher percentage of large reticulated eggs and some large ripe ova with smooth surface. In Teuthoidea ripe ova in oviducts.	<i>L. vulgaris</i> & <i>I. coindetii</i> : amber- colored and isodiametric eggs in oviducts and in part of the ovary ( $\phi = 2\text{mm}$ in <i>Loligo</i> and $\phi = 1\text{mm}$ in <i>Illex</i> ). <i>S. officinalis</i> : medium eggs (4,1mm < $\phi$ < 6,0mm) and big eggs (6,1mm < $\phi$ < 8mm) <i>E. moschata</i> : $\phi > 11\text{mm}$ (striped eggs). <i>E. cirrhosa</i> : $\phi > 5\text{mm}$ <i>O. vulgaris</i> : $\phi > 2\text{mm}$	Well developed spermatophores	MATURE	3a	3b
M	Testis as before. Spermatophores packed in the Needham's sac.					
F	NG/OG large but soft and running. Ovary shrinked and flaccid, with only immature oocytes attached to the central tissue and a few loose large ova in the coelom. In Teuthoidea oviduct may contain some mature ova but is no longer packed.	Few large ova	Disintegrating spermatophores	SPENT	3b	
M	Disintegrating spermatophores in the Needham's sac and the penis.					



Adult specimens



## Protocol for Conversion of maturity scales from the scales proposed at the Workshops on Maturity stages and the MEDITS scales

*Adopted during the MEDITS meeting, Nantes (France), 15-17/03/2011 and amended during the MEDITS meeting in Heraklion (12-14/03/2013)*

*The protocol for conversion of maturity scales adopted during the MEDITS Coordination meeting, Nantes (France), 15-17/03/2011 is here reported with some editorial changes .*

### Conversion of maturity scale for *Merluccius merluccius*

MEDITS SCALE		WKMAT SCALE	
0	INDETERMINED		
1	IMMATURE /VIRGIN	1	IM - VIRGIN
2A	VIRGIN DEVELOPING	1	IM - VIRGIN
2B	RECOVERING	4	SP/RE - SPENT RECOVERY
2C	MATURING	2	MI - MATURING
3	MATURE/SPAWNER	3	MA - SPAWNING
4A	SPENT	4	SP/RE - SPENT RECOVERY
4B	RESTING	4	SP/RE - SPENT RECOVERY
5		5	OS - OMITTED SPAWNING (shrunk and greyer gonads sexually mature, not contributing to the SSB)

*Notes:*

- The WKMAT scale has a unique stage for “Spent/recovery” while in the MEDITS scale these stages are divided in 2B (Recovering), 4A (Spent) and 4B (Resting).
- During the MEDITS meeting in Nantes, it was suggested to include stage 5 (omitted spawning) in the MEDITS scale. However, a better understanding and a feedback from experts using the WKMAT scale to better apply the classification of this stage and to recognize how it can be macroscopically recognized, is necessary.

### Conversion of maturity scale for *Lophius spp.*

MEDITS SCALE		WKMAT SCALE	
0	INDETERMINED		
1	IMMATURE /VIRGIN	1	IMMATURE
2A	VIRGIN DEVELOPING	2	DEVELOPING RESTING
2B	RECOVERING	2	DEVELOPING RESTING
2C	MATURING	3	MATURING/PRE SPAWNING
3	MATURE/SPAWNER	4	SPAWNING
4A	SPENT	5	POST-SPAWNING
4B	RESTING	2	DEVELOPING RESTING

*Notes:*

- The WKMAT scale has a unique stage for “Developing Resting” while in the MEDITS scale these stages are divided in 2A (Virgin developing), 2B (Recovering) and 4B (Resting).

### Crustacean maturity scale key

MEDITS SCALE		WKMSC SCALE	
0	INDETERMINED	0	UNDETERMINED
1	IMMATURE VIRGIN	1	IMMATURE
2a	VIRGIN DEVELOPING	2	DEVELOPING/RECOVERING
2b	RECOVERING		
2c	MATURING OR ALMOST	3	MATURING

2d	MATURE	4	MATURE
2e	RESTING ADULT	5	SPENT
3	BERRIED (only for <i>Nephrops</i> )		

Notes:

- A lot of similarities have been found between the WKMSC and MEDITS scales. Only the stages 2a (Virgin developing) and 2b (Recovering) of the MEDITS scale have been joined into a unique stage 2 (developing/recovering) in the WKMSC one, since differences cannot be found by a macro and micro point of view.
- In the MEDITS scale, for *Nephrops norvegicus* females, there is also a stage 3 (Berried). However, in the WS only ovary stages were analyzed and it was suggested to always consider the stage of the ovaries even for females with the eggs in the pleiopods. However the problem remains for the old data: the stage 3 could in fact be either 2B and 2E stages. During the meeting in Nantes it was decided that in case of comparing MEDITS data of *N. norvegicus* with maturity data from the WKMSC scale, the 3 (Berried) stage (MEDITS scale) will be considered as the 5 (Spent) of the WKMSC scale.

#### Elasmobranchs maturity scale key

MEDITS SCALE		WKMSSEL SCALE	
0	INDETERMINED	0	UNDETERMINED
1	IMMATURE VIRGIN	1	IMMATURE
2	MATURING	2	DEVELOPING
3a	MATURE	3a	SPAWNING CAPABLE
3b	MATURE/EXTRUDING-ACTIVE	3b	ACTIVELY SPAWNING
4a	REGRESSING	4a	REGRESSING
4b	REGENERATING*	4b	REGENERATING*

Notes: \*Only for females

- For the Elasmobranchs, the first 5 stages present many common points between the two scales (WKMSSEL and MEDITS). In the WKMSSEL, another stage, 4b (regenerating) for females, has been added. It is similar to stage 2 but with enlarged oviductal glands and uterus. It should be added also in the MEDITS scale.
- The WKMSSEL scale regards only the oviparous species. During the WS, a new scale for the viviparous species has been created and is being adopted as part of this manual.

#### Cephalopods maturity scale key

MEDITS SCALE		WKMCEPH SCALE	
0	INDETERMINED	0	UNDETERMINED
1	IMMATURE VIRGIN	1	IMMATURE VIRGIN
2a	DEVELOPING	2a	DEVELOPING
2b	MATURING	2b	MATURING
3a	MATURE	3a	MATURE/SPAWNING
3b	SPENT	3b	SPENT

Notes:

No particular differences have been identified between the WKMCEPH scale and the MEDITS one for the cephalopods.