

## 2 Description of commercial fisheries and research surveys

### 2.1 Fisheries description

This section describes the fishery units relevant to the stocks assessed by WGBIE. Additionally, to facilitate the use of InterCatch (IC), it presents the fleets that the working group proposes to use for data submission in InterCatch.

#### 2.1.1 Celtic-Biscay Shelf (Subarea 7 and divisions 8.a, 8.b, and 8.d)

The fleets operating in the ICES Subarea 7 and divisions 8.a, 8.b, and 8.d are used by WGBIE following the Fishery Units (FUs) defined by the ICES Working Group on Fisheries Units in sub-areas 7 and 8 (Table 2.1) (ICES, 1991).

**Table 2.1. ICES Fishery Units definition in Subarea 7 and Division 8.**

Fishery Unit	Description	Subarea
FU1	Longline in medium to deep water	7
FU2	Longline in shallow water	7
FU3	Gillnets	7
FU4	Non- <i>Nephrops</i> trawling in medium to deep water	7
FU5	Non- <i>Nephrops</i> trawling in shallow water	7
FU6	Beam trawling in shallow water	7
FU8	<i>Nephrops</i> trawling in medium to deep water	7
FU9	<i>Nephrops</i> trawling in shallow to medium water	8
FU10	Trawling in shallow to medium water	8
FU12	Longline in medium to deep water	8
FU13	Gillnets in shallow to medium water	8
FU14	Trawling in medium to deep water	8
FU15	Miscellaneous	7 and 8
FU16	Outsiders	3.a, 4, 5, and 6
FU00		French unknown

Under the implementation of the mixed-fisheries approach to ICES Working Group reporting, updating some of the national fleet segmentations were presented in WGHMM reports from general overviews (ICES, 2004; ICES, 2005) to detailed national descriptions: French fleets (ICES, 2006), Irish fleets (ICES, 2007), and Spanish fleets (ICES, 2008). This information in relation to the

*métiers* definition has not changed the FUs used in the single-stock assessments. However, the hierarchical disaggregation of FUs into *métiers* is essential not only for carrying out mixed-fisheries assessments but also for a deeper understanding of fisheries behaviour.

The EU Data Collection Framework (DCF; Council Regulation (EC) 199/2008; EC Regulation 665/2008; Decision 2008/949/EC) establishes a framework for the collection of economic, biological and transversal data by the Member States. One of the most relevant changes of this more recent period with respect to the previous Data Collection Regulation (DCR; Reg. (EC) No 1639/2001) has been the inclusion of the ecosystem approach by means of moving from stock-based to *métier*-based sampling. The DCF defines the *métier* as “a group of fishing operations targeting the same species or a similar assemblage of species, using similar gear, during the same period of the year and/or within the same area, and which are characterized by a similar exploitation pattern”. Due to the sampling design, established in 2009, which can affect the fishery data supplied to this working group, it had been agreed to detail the *métiers* related to the stocks assessed by this working group trying to find the correspondence with the FUs.

Data for stock assessment are provided to InterCatch according to the DCF *métiers*. In the case of discards and/or biological data, although sampling may be done at the DCF *métier* Level 6, estimates are often re-aggregated to Level 5 due to low sampling levels reached by countries. Thus, this working group agreed to use DCF Level 5 (without mesh size) as the fleet level to introduce data in InterCatch. Table 2.2 shows the fleets to be used for InterCatch and their correspondence with the old FUs and the DCF *métiers* at Level 6.

Table 2.2. InterCatch fleets' correspondence with the old Fishery Units and DCF *métiers* (Level 6).

FU	Fleet for InterCatch	DCF <i>métier</i> (Level 6)	Description	FR	IR	SP	UK
FU1	LLS_DEF	LLS_DEF_0_0_0	Set longline directed to demersal fish			X	X
FU2							
FU3	GNS_DEF	GNS_DEF_100-219_0_0	Set gillnet directed to demersal fish (100–219 mm)	X	X	X	
FU4	OTB_DEF	OTB_DEF_70-99_0_0	Bottom otter trawl directed to demersal fish (70–99 mm)		X	X	X
	OTB_DEF	OTB_DEF_100-119_0_0	Bottom otter trawl directed to demersal fish (100–119 mm)		X	X	X
FU5	OTB_DEF		Otter trawl directed to demersal fish in shallow water				X
FU6	TBB_DEF		Beam trawl		X		X
FU8	OTB_CRU						
FU9	OTB_CRU	OTB_CRU_70-99_0_0	Bottom otter trawl directed to crustaceans (70–99 mm)	X	X		X
FU10	OTB_DEF						
FU12	LLS_DEF	LLS_DEF_0_0_0	Set longline directed to demersal fish	X		X	
FU13	GNS_DEF	GNS_DEF_45-59_0_0	Set gillnet directed to demersal fish (45–59 mm)	X			
	GNS_DEF	GNS_DEF_>=100_0_0	Set gillnet directed to demersal fish (at least 100 mm)	X	X	X	
FU14	OTB_DEF	OTB_DEF_>=70_0_0	Bottom otter trawl directed to demersal fish (at least 70 mm)	X	X	X	
	OTB_MCF	OTB_MCF_>=70_0_0	Bottom otter trawl directed to mixed cephalopods and demersal fish (at least 70 mm)			X	
	OTT_DEF	OTT_DEF_>=70_0_0	Multi-rig otter trawl directed to demersal fish (at least 70 mm)	X	X		
	OTB_CRU	OTB_CRU_>=70_0_0	Bottom otter trawl directed to crustaceans (at least 70 mm)	X	X		

FU	Fleet for InterCatch	DCF <i>métier</i> (Level 6)	Description	FR	IR	SP	UK
	OTT_CRU	OTT_CRU _>=70_0_0	Multi-rig otter trawl directed to crustaceans (at least 70 mm)	X	X		
	OTB_MPD	OTB_MPD _>=70_0_0	Bottom otter trawl directed to mixed pelagic and demersal fish (at least 70 mm)			X	
	PTB_DEF	PTB_DEF _>=70_0_0	Bottom pair trawl directed to demersal fish (at least 70 mm)			X	
FU15	SSC_DEF		Fly shooting seine directed to demersal fish		X		
	OTB_DEF	OTB_DEF _100-119_0_0	Bottom otter trawl directed to demersal fish (100–119 mm)	X	X	X	X
FU16	LLS_DEF	LLS_DEF _0_0_0	Set longline directed to demersal fish			X	
	SSC_DEF		Fly shooting seine directed to demersal fish		X		
FU00	PTM_DEF		Midwater pair trawl directed to demersal fish				

### 2.1.2 Atlantic Iberian Peninsula Shelf (divisions 8.c and 9.a)

The FUs operating in the Atlantic Iberian Peninsula waters were described originally in the re-port of the “southern hake task force” meeting (STECF, 1994), and have been used in this working group as summarized in the following table.

Country	Fishery Unit	Description
Spain	Small gillnet	Gillnet fleet using “beta” gear (60 mm mesh size) for targeting hake in divisions 8.c and 9.a North
	Gillnet	Gillnet fleet using “volanta” gear (90 mm mesh size) for targeting hake in Division 8.c
		Gillnet fleet using “rasco” gear (280 mm mesh size) for targeting anglerfish in Division 8.c
	Longline	Longline fleet targeting a variety of species (hake, great fork beard, conger) in Division 8.c
	Northern artisanal	Miscellaneous fleet exploiting a variety of species in divisions 8.c and 9.a North

Country	Fishery Unit	Description
	Southern artisanal	Miscellaneous fleet exploiting a variety of species in Division 9.a South (Gulf of Cádiz)
	Northern Trawl	Miscellaneous fleet operating in divisions 8.c and 9.a North composed of bottom pairtrawlers targeting blue whiting and hake (55 mm mesh size, and 25 m of vertical opening); and two types of bottom otter trawlers (70 mm mesh size): trawlers using the “baca” gear (1.5 of vertical opening) targeting hake, anglerfish, megrim and <i>Nephrops</i> , and trawlers using “jurelera” (often referred to as “HVO”, high vertical opening, in the present report) gear (>5 m of vertical opening) targeting mackerel and horse mackerel.
	Southern Trawl	Bottom otter trawlers operating in Division 9.a South (Gulf of Cádiz) exploiting a variety of species (sparids, cephalopods, sole, hake, horse mackerel, blue whiting, shrimp, Norway lobster).
Portugal	Artisanal	Miscellaneous fleet with two components (inshore and offshore) operating in Portuguese waters of Division 9.a involving gillnet (80 mm mesh size), trammel (>100 mm mesh size), longline and other gears. Species caught: hake, octopus, pout, horse mackerel and others
	Trawl	Trawl fleet operating in Portuguese waters of Division 9.a compounded by bottom otter trawlers targeting crustaceans (55 mesh size), and bottom otter trawlers targeting different species of fish (65 mm mesh size).

The Spanish and Portuguese fleets operating in the Atlantic Iberian Peninsula Shelf were segmented into *métiers* under the EU project IBERMIX (DG FISH/2004/03-33), and the results were described in section 2 of the 2007 WGHMM report (ICES, 2007). The correspondence between FUs and DCF *métiers* has also been compiled for the southern stock fleets and is presented in the following table.

Country	FU (STECF, 1994)	<i>Métiers</i> (Level 5)	<i>Métiers</i> (Level 6)	Description (mesh size in brackets)	SP	PT
Spain	Gillnet	GNS_DEF	GNS_DEF_80-99_0_0	Set gillnet directed to demersal species (80–99 mm)	X	
		GNS_DEF	GNS_DEF_280_0_0	Set gillnet directed to demersal species (at least 280 mm)	X	
	Small gillnet	GNS_DEF	GNS_DEF_60-79_0_0	Set gillnet directed to demersal fish (60–79 mm)	X	
	Longline	LLS_DEF	LLS_DEF_0_0_0	Set longline directed to demersal fish	X	
	Southern artisanal	LLS_DWS	LLS_DWS_0_0_0	Set longline directed to deep-water species	X	
	Northern trawl	PTB_MPD	PTB_MPD_>=55_0_0	Pair bottom trawl directed to mixed pelagic and demersal fish (at least 55 mm)	X	
		OTB_DEF	OTB_DEF_>=55_0_0	Otter bottom trawl directed to demersal fish (at least 55 mm)	X	
		OTB_MPD	OTB_MPD_>=55_0_0	Otter bottom trawl directed to mixed pelagic and demersal fish (at least 55 mm)	X	
	Southern trawl	OTB_MCD	OTB_MCD_>=55_0_0	Otter bottom trawl directed to mixed crustacean and demersal fish (at least 55 mm)	X	
Portugal	Artisanal	GTR_DEF	GTR_DEF_>=100_0_0	Trammel nets directed to demersal fish (at least 100 mm)		X
		GNS_DEF	GNS_DEF_80-99_0_0	Set gillnet directed to demersal fish (80–99 mm)		X
		LLS_DEF	LLS_DEF_0_0_0	Set longline directed to demersal fish		X
		LLS_DWS	LLS_DWS_0_0_0	Set longline directed to deep-water species		X
	Trawl	OTB_CRU	OTB_CRU_>=55_0_0	Otter bottom trawl directed to crustaceans (at least 55 mm)		X
		OTB_DEF	OTB_DEF_60-69_0_0	Otter bottom trawl directed to demersal fish (60–69 mm)		X

**2.2 Description of surveys**

This section gives a brief description of the surveys referred to in this working group report. The surveys are summarized in the following table, including the acronym used by WGBIE currently and those used previously by WGHMM before 2010 (ICES, 2010). The DCF acronym and newer ICES survey acronyms are used throughout this report and in the stock annexes. The newer survey acronyms used are provided by ICES in order to foster consistency across ICES expert groups. When an ICES survey is not included in the list for which acronyms have been provided, the WGHMM (ICES, 2010) acronym will remain in use.

Survey	WGHMM 2010 acronym	DCF acronym	ICES survey acronym (as of 2011)
Spanish groundfish survey – quarter 4	G2784 = SP-NSGFS	IBTS-EA-4Q	SpGFS-WIBTS-Q4
Spanish Porcupine groundfish survey	SP-PGFS	IBTS-EA	SpPGFS-WIBTS-Q4
Spanish Cádiz groundfish survey – Autumn	SP-GFS-caut		SPGFS-caut-WIBTS-Q4
Spanish Cádiz groundfish survey – Spring	SP-GFS-cspr		SPGFS-cspr-WIBTS-Q1
Spanish Cádiz ISUNEPCA <i>Nephrops</i> UWTV survey		UWTV/FU30	
Spanish experimental <i>Nephrops</i> FU 26 bottom trawl survey			GALNEP26
Portuguese groundfish survey – October	P-GFS-oct	IBTS-EA-4Q	PtGFS-WIBTS-Q4
Portuguese groundfish survey – July (ended in 2001)	P-GFS-jul		----
Portuguese crustacean trawl survey/ <i>Nephrops</i> Survey Offshore Portugal NepS	P-CTS	NepS (FU 2829)	PT-CTS (UWTV (FU 2829))
Portuguese winter groundfish survey/Western IBTS 1st quarter (2005–2008)	PESCADA-BD		PtGFS-WIBTS-Q1
French EVHOE groundfish survey	EVHOE	IBTS-EA-4Q	EVHOE-WIBTS-Q4
French RESSGASC groundfish survey (ended in 2002)	RESSGASC		----
French Bay of Biscay sole beam trawl survey	ORHAGO		ORHAGO
French <i>Nephrops</i> survey in Bay of Biscay	LANGOLF		LANGOLF
French <i>Nephrops</i> UWTV survey in Bay of Biscay		UWTV 2324	
UK west coast groundfish survey (ended in 2004)	UK-WCGFS		-----
UK Western English Channel beam trawl survey			UK-WECBTS
UK bottom trawl survey			EN-Cefas-A, B

Survey	WGHMM 2010 acronym	DCF acronym	ICES survey acronym (as of 2011)
English fisheries science partnership survey	EW-FSP		FSP-Eng-Monk
Irish groundfish survey	IGFS	IBTS-EA-4Q	IGFS-WIBTS-Q4
Combined IGFS/EVHOE WIBTS survey	-	-	FR_IE_IBTS
Irish monkfish survey		SIAMISS/IAMS	IE_Monksurvey; IE_IAMS

A brief description of each survey follows. General maps identifying survey areas can be found in the ICES IBTS WG report (ICES, 2018a) and WGNPS report (ICES, 2019).

### **2.2.1 Spanish groundfish survey (SpGFS-WIBTS-Q4, G2784)**

The SpGFS-WIBTS-Q4 covers the northern Spanish shelf comprised in ICES Division 8.c and the northern part of 9.a, including the Cantabrian Sea and off Galicia waters. It is a bottom trawl survey that aims to collect data on the distribution, relative abundance and biology of commercial fish species such as hake, monkfish and white anglerfish, megrim, four-spot megrim, blue whiting and horse mackerel. Abundance indices are estimated by length and in some cases by age, with indices also estimated for *Nephrops*, and data collected for other demersal fish and invertebrates. The survey is ca. 120 hauls and is from 30–800 m depths, usually starting at the end of the 3<sup>rd</sup> quarter (September) and finishing in the 4<sup>th</sup> quarter.

### **2.2.2 Spanish porcupine groundfish survey (SpPGFS-WIBTS-Q4, G5768)**

The SpPGFS-WIBTS-Q4 occurs at the end of the 3<sup>rd</sup> quarter (September) and the start of the 4<sup>th</sup> quarter (October). It is a bottom trawl survey that aims to collect data on the distribution, relative abundance and biology of commercial fish in ICES divisions 7.b–k, which corresponds to the Porcupine Bank and the adjacent area in western Irish waters between 180–800 m. The survey area covers 45 880 km<sup>2</sup> and approximately 80 hauls per year are carried out.

### **2.2.3 Cádiz groundfish surveys-spring (SPGFS-cspr-WIBTS-Q1, G7511) and autumn (SPGFS-caut-WIBTS-Q4, G4309)**

The bottom trawl surveys SPGFS-cspr-WIBTS-Q1 and SPGFS-caut-WIBTS-Q4 occur in the southern part of ICES Division 9.a, the Gulf of Cádiz. It collects data on the distribution, relative abundance, and biology of commercial fish species. The area covered is 7224 km<sup>2</sup> and extends from 15–800 m. The primary species of interest are hake, horse mackerel, wedge sole, sea breams, mackerel and Spanish mackerel. Data and abundance indices are also collected and estimated for other demersal fish species and invertebrates such as rose and red shrimps, *Nephrops* and cephalopod molluscs.

### **2.2.4 Spanish FU30 UWTv surveys in the Gulf of Cádiz (ISUNEPCA, U9111)**

The ISUNEPCA UnderWater TeleVision (UWTv) survey was launched in 2015 although an exploratory UWTv survey was conducted previously in 2014. ISUNEPCA is a multidisciplinary survey in nature but the main objective is to estimate the *Nephrops* burrows density using underwater videos and to confirm the boundaries of the *Nephrops* area distribution in FU 30. As result, geostatistical *Nephrops* abundance is estimated. Other ecosystem data are also collected (temperature, salinity, sediment samples, trawl marks and seabed morphological and backscatter data). The survey design follows a randomly isometric grid with stations at 4 nm spacing. The survey area covers 3000 km<sup>2</sup> between 90 and 700 m of depth and about 65–70 stations are planned every year.

### **2.2.5 Spanish Experimental *Nephrops* FU26 bottom trawl survey (GALNEP26)**

The fishing industry promoted the GALNEP26 survey onboard a commercial vessel in order to estimate a *Nephrops* biomass index in FU 26 with an observer onboard and under the supervision of IEO since 2019. The survey design follows a systematic sampling scheme over a 5 x 5 nm grid. A total of 43 hauls are planned yearly covering the historical *Nephrops* distribution area in FU 26 (West Galicia). The survey area was established on the base of the VMS analysis linked to the bottom trawl logbooks in the 2009–2017 period. The main objectives of the GALNEP26 survey are to estimate a *Nephrops* abundance index, the discard rate and the size composition for both sexes in this FU.

### **2.2.6 Portuguese groundfish survey October (PtGFS-WIBTS-Q4, G8899)**

PtGFS-WIBTS-Q4 extends from latitude 41°20' N to 36°30' N (ICES Division 9.a) and from 20–500 m depth. The survey takes place in autumn. The main objective of the survey is to estimate the abundance and study the distribution of the most important commercial species in the Portuguese trawl fishery (hake, horse mackerel, blue whiting, sea bream and *Nephrops*), and most importantly to monitor the abundance and distribution of hake and horse mackerel recruitment. The surveys aim to carry out ca. 90 stations per year.

### **2.2.7 Portuguese crustacean trawl survey/*Nephrops* survey offshore Portugal NepS (PT-CTS (UWTV (FU 28–29, G2913)))**

The *Nephrops* Survey Offshore Portugal, NepS (FU 28–29), is carried out in May–July and covers the southwest coast (Alentejo or FU 28) and the south coast (Algarve or FU 29). The main objectives are to estimate the abundance, to study the distribution and the biological characteristics of the main crustacean species, namely *Nephrops norvegicus* (Norway lobster), *Parapenaeus longirostris* (rose shrimp) and *Aristeus antennatus* (red shrimp). The average number of trawl stations in the period 1997–2004 was 60. Sediment samples have been collected since 2005 with the aim to study the characteristics of the *Nephrops* fishing grounds. In 2008 and 2009, the crustacean trawl survey conducted in FUs 28 and 29 were combined with an experimental video sampling.

### **2.2.8 Portuguese winter groundfish survey/Western IBTS 1st quarter (PTGFS-WIBTS-Q1)**

The PtGFS-WIBTS-Q1 survey has been carried out along the Portuguese continental waters from latitude 41°20' N to 36°30' N (ICES Division 9.a) and from 20–500 m depth. The winter groundfish survey plan comprised 75 fishing stations, 66 at fixed positions and 9 at random. The main aim of the survey was to estimate the spawning biomass of hake. This survey ended in 2008.

### **2.2.9 French EVHOE groundfish survey (EVHOE-WIBTS-Q4, G9527)**

The EVHOE-WIBTS-Q4 survey covers the Celtic Sea with ICES divisions 6.a, 7.b, 7.c, 7.g, and 7.j, and the French part of the Bay of Biscay in divisions 8.a and 8.b. This annual survey is conducted from 15 to 600 m depths, usually in the fourth quarter, starting at the end of October. The primary species of interest are hake, monkfish, anglerfish, megrim, cod, haddock and whiting, with data also collected for all other demersal and pelagic fish. The sampling strategy is stratified random

allocation, the number of sets per stratum based on the 4 most important commercial species (hake, monkfish and megrim) leaving at least two stations per stratum and 140 valid tows are planned every year although this number depends on available sea time.

#### **2.2.10 French RESSGASC groundfish survey (FR-RESSGASC, G2537)**

The RESSGASC survey was conducted in the Bay of Biscay from 1978–2002. Over the years 1978–1997, the survey was conducted with quarterly periodicity. It was conducted twice a year, in spring and autumn, after that. Survey data prior to 1987 are normally excluded from the time-series since there was a change of vessel at that time.

#### **2.2.11 French Bay of Biscay sole beam trawl survey (ORHAGO, B1706)**

The ORHAGO survey was launched in 2007, with the aim of producing an abundance index and biological parameters such as length distribution for the Bay of Biscay sole (Léauté *et al.*, 2018a; b). It is usually carried out in November, with approximately 23 days of duration and sampling 70–80 stations. It uses beam trawl gear and is coordinated by the ICES WGBEAM (ICES, 2018b).

#### **2.2.12 French Nephrops survey in the Bay of Biscay (LANGOLF)**

This survey commenced in 2006 specifically for providing abundance indices of *Nephrops* in the Bay of Biscay. It is carried out on the area of the Central Mud Bank of the Bay of Biscay (ca. 11 680 km<sup>2</sup>), in the second quarter (May apart from the 1<sup>st</sup> year when the survey occurred in April), using twin trawl, with hours of trawling around dawn and dusk. The whole mud bank is divided into five sedimentary strata and the sampling allocation combines the surface by stratum and the fishing effort concentration. 70–80 experimental hauls are carried out annually. Since the IBP *Nephrops* 2012 (ICES, 2012), this survey is included as tuning series in the stock assessment.

#### **2.2.13 French *Nephrops* UWTV survey in Bay of Biscay**

A new experimental UWTV survey for burrow counting has been undertaken since 2014 covering the five sedimentary muddy strata of the former trawl survey on the FU23–24 *Nephrops* stock. The survey is carried out by the Irish scientific vessel “Celtic Voyager” with a French scientific team on the basis of a systematic onboard sampling plan. A longer survey in the period 2016–2019 allowed covering the area contained in the outline of the Central Mud Bank not belonging to any sedimentary stratum. This area, known as not trawled due to the rough seabed, is crossed by muddy channels and concentrates a moderate fishing effort targeting *Nephrops*. Investigations on the basis of stratified statistical estimators as well as geostatistics were carried out and examined by WKNEP 2016 (ICES, 2017), which validated the UWTV approach.

#### **2.2.14 UK west coast groundfish survey (UK-WCGFS)**

This survey, which ended in 2004, was conducted every March in the Celtic sea with ca. 62 hauls. It does not include the 0-age group, therefore, primarily aims at the investigation of age groups 1 and 2. Numbers-at-age for this abundance index is estimated from length compositions using a mixed distribution by statistical method.

### **2.2.15 English fisheries science partnership survey (FSP-Eng-Monk)**

The FSP-Eng-Monk survey, part of the English fisheries science partnership programme, has been carried out on an annual basis since 2003, reaching a total of 208 valid hauls in 2010, but was discontinued in 2012. The aims of the survey were to investigate abundance and size composition of anglerfish on the main UK anglerfish fishing grounds off the southwest coast of England within ICES subdivisions 7.e–h.

### **2.2.16 English Western English Channel beam trawl survey**

Since 1989, the survey has remained relatively unchanged, apart from small adjustments to the position of individual hauls to provide an improved spacing. In 1995, two inshore tows in shallow water (8–15 m) were introduced. The survey now consists of 58 tows of 30 minutes duration, with a towing speed of 4 knots in an area within 35 miles radius of Start Point. The objective is to provide indices of abundance, which are independent of commercial fisheries, of all age groups of sole and plaice on the western Channel grounds, and an index of recruitment of juvenile (1–3-year-old) soles before full recruitment to the fishery.

### **2.2.17 English bottom trawl survey**

This bottom trawl survey covered the Irish, Celtic Sea and Western English Channel but was discontinued in 2004.

### **2.2.18 Irish groundfish survey (IGFS-WIBTS-Q4, G7212)**

The IGFS-WIBTS-Q4 is carried out during the fourth quarter in divisions 6.a, 7.b, 7.c, 7.g, and 7.j, in depths of 30–600 m. The annual target is 170 valid tows of 30-minute duration which are carried out in daylight hours at a fishing speed of 4 knots. Data are collected on the distribution, relative abundance and biological parameters of a large range of commercial fish such as haddock, whiting, plaice and sole with survey data provided also for cod, white and black anglerfish, megrim, lemon sole, hake, saithe, ling, blue whiting and several elasmobranchs as well as several pelagics (herring, horse mackerel and mackerel).

### **2.2.19 Combined EVHOE IGFS survey (FR\_IE\_IBTS)**

The Irish IBTS Q4 groundfish survey (IGFS-WIBTS-Q4, G7212) covers areas 27.7bgjk. The French EVHOE-WIBTS-Q4 (G9527) survey covers areas 27.7j8ab. Both surveys are coordinated and largely standardized under WGIBTS and both use a GOV trawl. Together the two surveys cover the majority of the ank.27.78abd and mon.27.78abd stock areas up to depths of 200–300 m. This is where most of the young fish occur. Older fish migrate to deeper waters and are not fully available for these surveys.

Data for Irish and French IBTS Q4 groundfish surveys (IGFS and EVHOE) were obtained from DATRAS, quality checked and cleaned. The two surveys were combined into a single index (with the survey code FR\_IE\_IBTS) by weighting their average catches by the area covered by each survey series (IGFS gets a weight of approximately 45% and EVHOE 55%).

Indices of catch weight per hour and catch numbers-at-length per hour fished are calculated for the years 2003 onwards for black and white anglerfish and megrim.

### 2.2.20 Irish monkfish survey (IE\_Monksurvey; IE-IAMS, G3098)

Irish anglerfish survey data in Area 27.7 are available for the years 2007 and 2008 under the acronym SIAMISS then IAMS from 2016 onwards. These surveys were designed to estimate the biomass of anglerfish and they cover a significant part of the stock in all depths up to 1000 m.

The survey index consists of biomass and catch numbers-at-length per swept-area.

The midpoint of the survey period is in January or February. However, because the survey data are available for the current year at the time of the WG assessment, it is beneficial to include the current year's survey in the assessment. The only way to do that in the current assessment framework is to offset the survey by a small amount so the survey is nominally taking place on the 31 December of the previous year.

## 2.3 References

- 2008/949/EC: Commission Decision of 6 November 2008 adopting a multiannual Community programme pursuant to Council Regulation (EC) 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.
- 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 (EC) 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 (EC) No. 1639/2001 establishing the minimum and extended Community programmes for the collection of data in the fisheries sector and laying down detailed rules for the application of Council Regulation (EC) No. 1543/2000.
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