

### 3 Horse Mackerel

#### 3.1 Fisheries in 2013

The total international catches of horse mackerel in the North East Atlantic are shown in Table 3.1.1 and Figure 3.3.1. The southern horse mackerel stock is now assessed by ICES WGHANSA). The total catch from all areas in 2013 for the Western and North Sea stock was 183782 tons which is 10783 tons less than in 2012 (6% lower than in 2012 and 20% lower than 2011). Ireland, Denmark, Scotland, France, Germany and the Netherlands have a directed trawl fishery and Norway a directed purse seine fishery for horse mackerel. Spain has directed and mixed trawl and purse seine fisheries. In earlier years most of the catches were used for meal and oil while in later years most of the catches have been used for human consumption.

The quarterly catches of North Sea and western horse mackerel by Division and Sub-division in 2013 are given in Table 3.1.2 and the distribution of the fisheries are given in Figure 3.1.1.a–d. The figures are based on data provided by Denmark, Germany, Ireland, Netherlands, Norway, Northern Ireland, Scotland, Sweden, England + Wales and Spain representing 95% of the total catches. The distribution of the fishery is similar to the later years.

The Dutch and German fleets operated mainly west of the Channel, in the Channel area, north and west of Ireland and in the southern North Sea. Ireland fished mainly north and west of Ireland and Norway in the north eastern part of the North Sea. The Spanish fleet operated mainly in their respective waters. **First quarter:** This is the fishing season with most of the catches 74,978 tons. As usual the fishery was mainly carried out west of Scotland and west and south of Ireland, in the Channel and along the Spanish coast (Figure 3.1.1.a).

**Second quarter:** 20037 tons. As usual, catches were significantly lower than in the first quarter as the second quarter is the main spawning period. Most of the catches were taken south of Ireland, along the Spanish coast, in the south eastern part of the North Sea and in the Channel (Figure 3.1.1.b).

**Third quarter:** 12996 tons. Most of the catches were taken in Spanish waters, west and in the Channel. Also some smaller catches were reported from the Shetland area and from the North Sea (Figure 3.1.1.c).

**Fourth quarter:** (71370 tons). The catches were distributed in four main areas (Figure 3.1.1.d):

- Spanish waters,
- Northern Irish waters and West and north of Scotland
- northern-central part of the North Sea
- the Channel

#### 3.2 Stock Units

For many years the Working Group has considered the horse mackerel in the north east Atlantic as separated into three stocks: the North Sea, the Southern and the Western stocks (ICES 1990/Assess: 24, ICES 1991/Assess: 22). For further information see Stock Annex Western Horse Mackerel. The boundaries for the different stocks are given in Figure 3.2.1.

### 3.3 Allocation of Catches to Stocks

The distribution areas for the three stocks are given in the Stock Annex Western Horse Mackerel. The catches in 2013 were allocated to the three stocks as follows:

**Western stock:** 3 and 4 quarter: Divisions IIIa and IVa. 1—4 quarter: IIa, Vb, VIa, VIIa–c,e–k and VIIIa–e.

**North Sea stock:** 1–2 quarter: Divisions IIIa and IVa. 1—4 quarter: IVb,c and VIId.

**Southern stock:** Division IXa. All catches from these areas were allocated to the southern stock. This stock is now dealt with by another working group (ICES WGHANSA).

The catches by stock are given in Table 3.1.1 and Figure 3.3.1. The catches by stock and countries for the period 1997–2013 are given in Table 3.3.2–3.3.4.

In 2013 some small catches were reported from Divisions VIb (31 tons) and IIIc (183 tons) which were not allocated in any stock.

### 3.4 Estimates of discards

Over the years only Netherlands has provided data on discards and in some few years also Germany has provided such data. For 2013 the Netherlands, Germany, Ireland and Spain provided such data. Their catches represented about 85% of the total catch of western horse mackerel. Based on the limited data available and that discards rates show an extreme fluctuations (0–100% discards) it is extremely difficult to estimate the amount of discard in the horse mackerel fisheries (see section 1.3.3). Moreover the provided discard rates were to be below of 1% in weight with exception in subarea VII that presented a bigger discard rate. Therefore the amounts of discards given in Table 3.1.2 are not representative for the total fishery.

### 3.5 *Trachurus* Species Mixing

Three species of genus *Trachurus*: *T. trachurus*, *T. mediterraneus* and *T. picturatus* are found together and are commercially exploited in NE Atlantic waters. Following the Working Group recommendation (ICES 2002/ACFM: 06) special care was taken to ensure that catch and length distributions and numbers at age of *T. trachurus* supplied to the Working Group did not include *T. mediterraneus* and/or *T. picturatus*.

*T. mediterraneus* fishery takes mainly place in the eastern part of ICES Division VIIIc. There is not a clear trend in *T. mediterraneus* catches in this area but in the last years show a low level (Table 3.5.1). Information of *T. picturatus* fishery is available in the WGHANSA Report (Working Group on Horse Mackerel, Anchovy and Sardine).

Taking into account that the assessment is only made for *T. trachurus*, the Working Group recommends that the TACs and any other management regulations which might be established in the future should be related only to *T. trachurus* and not to *Trachurus* spp. More information is needed about the *Trachurus* spp. before the fishery and the stock can be evaluated.

### 3.6 Length Distribution by Fleet and by Country:

Ireland, Germany, Netherlands, Norway, and Spain provided length distribution for their catches in 2013. The length distributions given by Ireland, Germany, the Netherlands, Norway and Spain covered app. 82% of the total landings of the Western and North Sea horse mackerel catches and are shown in Table 3.6.1.

**Table 3.1.1 HORSE MACKEREL general. Catches (t) by Sub-area. Data as submitted by Working Group members. Data of limited discard information are only available for some years.**

Subarea	1979	1980	1981	1982	1983	1984	1985
II	2	-	+	-	412	23	79
IV + IIIa	1412	2151	7245	2788	4420	25987	24238
VI	7791	8724	11134	6283	24881	31716	33025
VII	43525	45697	34749	33478	40526	42952	39034
VIII	47155	37495	40073	22683	28223	25629	27740
IX	37619	36903	35873	39726	48733	23178	20237
Total	137504	130970	129074	104958	147195	149485	144353
Subarea	1986	1987	1988	1989	1990	1991	1992
II	214	3311	6818	4809	11414	4487	13457
IV + IIIa	20746	20895	62892	112047	145062	77994	113141
VI	20455	35157	45842	34870	20904	34455	40921
VII	77628	100734	90253	138890	192196	201326	188135
VIII	43405	37703	34177	38686	46302	49426	54186
IX	31159	24540	29763	29231	24023	34992	27858
Total	193607	222340	269745	358533	439901	402680	437698
Subarea	1993	1994	1995	1996	1997	1998	1999
II	3168	759	13133	3366	2617	2538	2557
IV + IIIa	140383	112580	98745	27782	81198	31295	58746
VI	53822	69616	83595	81259	40145	35073	40381
VII	221120	200256	330705	279109	326415	250656	186604
VIII	53753	35500	28709	48269	40806	38562	47012
IX	31521	28442	25147	20400	29491	41574	27733
Total	503767	447153	580034	460185	520672	399698	363033
Subarea	2000	2001	2002	2003	2004	2005	2006
II	1169	60	1324	24	47	176	30
IV + IIIa	31583	19839	49691	34226	30540	40564	38911
VI	20657	24636	14190	23254	21929	22055	15751
VII	137716	138790	97906	123046	116139	107475	101912
VIII	54211	75120	54560	41711	24125	41495	34122
IX	26160	24912	23665	19570	23581	23111	24557
Total	272496	283357	241335	241831	216361	234876	215283
Subarea	2007	2008	2009	2010	2011	2012	2013
II	366	572	1847	1656	648	66	30
IV + IIIa	16407	15377	78591	13670	25183	5265	6722
VI	26279	25902	17776	22612	39528	44975	43266
VII	93132	98746	89563	145320	127903	123579	83684
VIII	28387	33892	33355	43227	35675	17402	26983
IX	23423	23596	26496	27217	22575	25316	29382
Total	187994	198085	247628	253702	251512	216603	190068

<sup>1</sup>Preliminary. \* Southern Horse Mackerel (ICES Division IX) is assessed by ICES WGHANSA since 2011

**Table 3.1.2 HORSE MACKEREL Western and North Sea Stock combined.**  
**Quarterly catches (1000 t) by Division and Subdivision in 2013.**

<b>Division</b>	<b>1Q</b>	<b>2Q</b>	<b>3Q</b>	<b>4Q</b>	<b>TOTAL</b>
IIa+Vb	0	0	+	+	+
III	0	0	+	+	+
IVa	0	+	767	5936	6720
IVbc	544	344	359	231	1478
VIIId	7025	946	458	8773	17202
VIa,b	18586	56	239	24383	43264
VIIa-c,e-k	44766	13119	2782	23016	83683
VIIIa,b,d,e	2370	1870	997	3975	9212
VIIIc	1687	3685	7390	5011	17773
Sum	74978	20037	12996	71370	179381

+ less than 50 t

**Table 3.3.1 HORSE MACKEREL general. Landings and discards (t) by year and Division, for the North Sea, Western, and Southern horse mackerel stocks.**  
(Data submitted by Working Group members.)

Year	IIIa	IVa	IVbc	Discards	VIIId	North Sea Stock	IIa Vb	IIIa	IVa	Vlab	VIIa-c e-k	VIIIabde	VIIIc	Disc	Western Stock	Western + NS Stock	Southern Stock (IXa)x	All stocks
1982	27881		-		1247	4035	-		-	6283	32231	3073	19610	-	61197	65232	39726	104958
1983	44201		-		3600	8020	412		-	24881	36926	2643	25580	-	90442	98462	48733	147195
1984	258931		-		3585	29478	23		94	31716	38782	2510	23119	500	96744	126222	23178	149400
1985	-		22897		2715	26750	79		203	33025	35296	4448	23292	7500	103843	130593	20237	150830
1986	-		19496		4756	24648	214		776	20343	72761	3071	40334	8500	145999	170647	31159	201806
1987	1138		9477		1721	11634	3311		11185	35197	99942	7605	30098	-	187338	198972	24540	223512
1988	396		18290		3120	23671	6818		42174	45842	81978	7548	26629	3740	214729	238400	29763	268163
1989	436		25830		6522	33265	4809		853042	34870	131218	11516	27170	1150	296037	329302	29231	358533
1990	2261		17437		1325	18762	11414	14878	1127532	20794	182580	21120	25182	9930	398645	417407	24023	441430
1991	913		11400		600	12000	4487	2725	638692	34415	196926	25693	23733	5440	357288	369288	34992	404280
1992			13955	400	688	15043	13457	2374	101752	40881	180937	29329	24243	1820	394793	409836	27858	437694
1993			3895	930	8792	13617	3168	850	134908	53782	204318	27519	25483	8600	458628	472245	31521	503766
1994			2496	630	2503	5689	759	2492	106911	69546	194188	11044	24147	3935	413022	418711	28442	447153
1995	112		7948	30	8666	16756	13133	128	90527	83486	320102	1175	27534	2046	538131	554887	25147	580034
1996	1657		7558	212	9416	18843	3366		18356	81259	252823	23978	24290	16870	420942	439785	20400	460185
1997			14078	10	5452	19540	2617	2037	650733	40145	318101	11677	29129	2921	471700	491240	29491	520731
1998	3693		10530	83	16194	30500	25404		17011	35043	232451	15662	22906	830	326443	356943	41574	398517
1999			9335		27889	37224	25575	2095	47316	40381	158715	22824	24188		298076	335300	27733	363033
2000			25954		22471	48425	11696	1105	4524	20657	115245	32227	21984		196911	245336	26160	271496
2001	85	69	8157		38114	46356	60	72	11456	24636	100676	54293	20828		212090	258446	24912	283357
2002			12636	20	10723	23379	1324	179	36855	14190	86878	32450	22110	305	194292	217671	23665	241336
2003	48	623	10309		21098	32078	24	1974	21272	23254	101948	21732	19979		190183	222261	19570	241831
2004	351		18348		16455	35154	47		11841	21929	98984	8353	15772	701	157627	192781	23581	216361
2005	357		13892	62	15460	29711	176		26315	22054	91431	26483	14775	760	181994	211705	23111	234816

2006	1099	2661	7998	78	23790	35626	30		27152	15722	77970	20651	13470	99	155094	190720	24557	215277	
2007	63	2056	9118	139	29788	41164	366	110	4940	26279	63223	14428	13960	102	123408	164572	23423	187994	
2008	27	1003	2330		31389	34749	5727	3	12014	25902	67325	14537	19345	43	139741	174490	23596	198085	
2009	38	72	18711	1036	24366	44223	1847	-	58738	17775	65122	12452	20903	81	176918	221141	26496	247637	
2010	+	100	1965	2	20188	22255	1627	88	11516	22641	114483	2042	37505	15366	205268	227004	27217	254221	
2011	0.2		10458		18886	29344	648	1	14724	39298	103156	2303	32943	6522	199593	228937	22575	251512	
2012	0.2	355	1588		19480	21423	66	9	3312	44975	104098	5051	12351	3280	173142	194565	25316	219881	
2013	0	17	1478		0	17202	18697	30	19	6703	43264	83683	9212	17773	4401	165085	183782	29382	213164
					18697697														

<sup>1</sup>Divisions IIIa and IVb,c combined.

<sup>2</sup>Norwegian catches in IVb included in Western horse mackerel.

<sup>3</sup> Includes Norwegian catches in IVb (1,426 t).

<sup>4</sup>Includes 1,937 t from Vb.

<sup>5</sup>Includes 132 t from Vb

<sup>6</sup>Includes 250 t from Vb.

<sup>7</sup> all fom Vb

<sup>x</sup> Southern Horse Mackerel is assessed by ICES WGHANSA since 2011

**Table 3.3.2 National catches of the Western Horse mackerel stock.**

<b>Country</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
Belgium	18	-	-	-	19	-	-	+	+
Denmark	62897	29542	22663	13084	6108	10152	11739	11480	1021
Estonia	78	22	-	-	-	-	-	-	-
Faroe Islands	1095	216	905	824	-	699	59	3847	3695
France	39188	24267	25141	20457	15145	18951	10383	8060	10690
Germany Fed.Rep.	28533	27872	17629	13348	11493	12614	15826	17830	16734
Ireland	74250	70811	57956	55300	51874	36483	35855	26431	35361
Lithuania	-	-	-	-	-	-	-	-	-
Netherlands	82885	92535	75333	57971	73439	42019	47327	40987	43445
Norway	45058	13363	46410	2087	7956	36689	20315	10751	25113
Russia	554	345	121	80	16	3	-	5	-
Spain	31087	14882	25123	22669	23053	23214	24588	16272	16636
Sweden	1761	10	1952	1101	68	575	1074	568	148
UK (Engl. + Wales)	19778	12162	9257	1555	7096	5971	4440	4617	3560
UK (N. Ireland)	-	1158	-	-	-	-	-	-	426
UK (Scotland)	32865	18283	11197	7230	8029	2907	672	1523	142
Unallocated	48732	20145	4389	823	7794	3710	17905	15256	24263
Discard	2921	830	-	382	-	305	-	701	760
<b>Total</b>	<b>471700</b>	<b>326443</b>	<b>298076</b>	<b>196911</b>	<b>212090</b>	<b>194292</b>	<b>190183</b>	<b>158328</b>	<b>181994</b>
<b>Country</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
Belgium	-	-	-	-	19	2	0.2	14	
Denmark	8353	7617	5261	6009	5941	6109	4002	6829	
Estonia	-	-	-	-	-	-			
Faroe Islands	1205	478	841	-	374	349	-		
France	11034	12748	12626	-	260	8271	1795	3593	
Germany Fed.Rep.	10863	5784	11708	15121	17688	21114	17063	24835	
Ireland	26779	30091	35612	40754	44488	38464	45242	35791	
Lithuania	6829	5467	5548	-	-	-	-		
Netherlands	37130	29083	43648	39451	61504	55692	66396	53697	
Norway	27114	4182	1223	59764	11978	13755	3251	6596	
Russia	-	-	-	-	-	-			
Spain	13878	14257	19851	21077	38744	34581	13560	22541	
Sweden	-	76	9	258	2	90	-	1	
UK (Engl. + Wales)	3583	5482	3365	6482	12714	11716	12122	3959	
UK (N. Ireland)	224	-	-	-	-	-	-	2325	
UK (Scotland)	469	778	1077	1413	2348	2928	1335	504	
Unallocated	7534	7263	2294	-7010	7237	-	5095	--	
Discard	99	102	43	81	14846	6522	3280	4401	
<b>Total</b>	<b>155094</b>	<b>123408</b>	<b>143106</b>	<b>183400</b>	<b>218143</b>	<b>199593</b>	<b>173141</b>	<b>165087</b>	

<sup>1</sup>Preliminary

Table 3.3.3. National catches of the North Sea Horse mackerel stock.

Country	1997	1998	1999	2000	2001	2002	2003	2004	2005
Belgium	-	19	21	19	19	30	5	4	6
Denmark	180	1481	3377	7855	17316	2310	2902	8738	3987
Faroe Islands	-	-	135	-	-	-	-	-	-
France	3246	2399	-	-	1696	1246	2326	2530	5236
Germany Fed.Rep.	7847	5844	5920	3728	968	3267	2936	4912	2248
Ireland	-	2861	27	130	338	-	-	1	-
Lithuania	-	10711	-	-	-	-	-	-	-
Netherlands	36855	-	8117	7987	13867	15187	24118	26302	25579
Norway	-	-	238	-	36	-	-	-	-
Sweden	-	3401	5	40	46	14	-	97	91
UK (Engl. + Wales)	269	907	11	1585	3333	2323	1965	1552	3859
UK (Scotland)	29	-	-	421	-	-	-	-	-
Unallocated	-28896	2794	19373	26660	8737	-1018	-2174	-8982	-11358
Discard	10	83	-	-	-	20	-	-	62
Total	19540	30500	37224	48425	46356	23379	32078	35154	29711

Country	2006	2007	2008	2009	2010	2011	2012	2013 <sup>1</sup>
Belgium	4	6	3	5	17	26	46	51
Denmark	1341	255	57	89	15	142	1514	1020
Faroe Islands	-	-	-	-	-	-	0	
France	4380	5349	2246	-	813	273	1047	1010
Germany Fed.Rep.	1691	87	1176	1299	3794	3642	5356	2941
Ireland	2077	1	897	-	-	-	0	
Lithuania	2377	296	-	-	-	-	0	
Netherlands	27284	31154	19439	22546	17094	16289	12157	8725
Norway	113	1243	21	12855	526	7359	129	377
Sweden	491	53	35	402	-	-	0	
UK (Engl. + Wales)	596	-	1060	1235	1809	1699	935	4401
UK (Scotland)	300	625	6	4	111	93	240	172
Unallocated	-5106	1956	10869	5988	-116	0	0	0
Discard	78	139	-	1036	2	0	0	0
Total	35626	41164	35809	45659	24146	29523	21424	18696

<sup>1</sup>Preliminary



**Table 3.5.1. Catches (t) of *Trachurus mediterraneus* in Divisions VIIIab VIIIc and Sub-Area VII**

	<b>VII</b>	<b>VIIIab</b>	<b>VIIIc East</b>	<b>VIIIc West</b>	<b>TOTAL</b>
1989	0	23	3903		3926
1990	0	298	2943		3241
1991	0	2122	5020		7142
1992	0	1123	4804		5927
1993	0	649	5576		6225
1994	0	1573	3344		4917
1995	0	2271	4585		6856
1996	0	1175	3443		4618
1997	0	557	3264		3821
1998	0	740	3755		4495
1999	0	1100	1592		2692
2000	59	988	808		1854
2001	1	525	1293		1820
2002	1	525	1198		1724
2003	0	340	1699		2039
2004	0	53	841		894
2005	1	155	1005		1162
2006	1	168	794		963
2007	0	126	326		452
2008	0	82	405		487
2009	0	42	1082		1124
2010	0	97	370		467
2011	0	119	1096		1225
2012	0	186	667	116	969
2013	0	52	238	0	290

**Table 3.6.1 Horse mackerel general. Length distributions (%) Catches by fleet and country in 2013.**  
(0.0= <0.05%)

Netherlands		Ireland	Norway	Germany						Spain			
Pel. trawl		All_fleet	P.seine	All_fleet						P.seine	Trawl	Artisanal	
cm	All	All	All	VIIh	VIIa	VIIb	VIIc	VIIId	VIIj	VIIIbc	VIIIb	VIIIbc	
5													
6													
7													
8													
9													
10										0.0			
11										0.0	0.0		
12	0.0									0.3	0.0		
13										1.3	0.0		
14										6.5	0.5		
15	0.4									15.4	1.6		
16	4.6									17.3	1.8	0.3	
17	4.0									13.0	1.9	0.3	
18	4.9			4.7				0.4		8.9	1.2	0.5	
19	3.5			3.4				4.0		4.9	1.7	1.9	
20	1.8	0.0		2.4				7.1		5.2	2.2	3.3	
21	1.7	0.1		2.4				14.3	0.0	5.3	2.0	2.1	
22	3.4	0.3		5.2				17.4	0.1	3.2	2.5	1.1	
23	3.6	0.9		9.2	0.0			8.9	0.5	3.6	3.3	2.1	
24	3.7	2.0	0.1	10.9	0.2	0.5		7.1	2.4	2.5	3.5	2.7	
25	8.8	3.7	0.1	15.7	1.0	3.0		5.8	7.3	1.1	3.0	4.9	
26	14.4	6.6	0.7	23.2	5.4	9.4		9.4	12.9	0.7	4.1	6.6	
27	13.6	11.6	2.7	12.9	17.3	9	15.6	1.3	7.1	13.7	0.5	3.6	4.5
28	8.6	13.4	8.3	17.6	4.6	6	12.5	0.4	9.8	10.4	0.6	3.3	6.0
29	4.3	11.7	13.9	11.6	0.8	6	10.9	1.7	3.1	9.6	0.8	5.3	4.9
30	3.2	9.0	12.0	8.4		11.6	8.1	4.5	14.6	1.1	6.1	4.6	
31	3.2	10.7	15.5	8.1		10.0	19.6	0.9	12.4	1.2	5.1	3.3	
32	3.1	8.8	13.5	0.2	6.0	7.6	24.3		8.3	1.4	5.0	4.6	
33	2.7	5.7	13.6		4.6	5.6	14.0		3.9	1.3	5.2	4.1	
34	1.8	3.9	9.7		4.6	4.3	14.5		1.8	1.2	5.1	4.0	
35	1.5	3.4	4.1		4.4	3.7	4.3		0.8	1.0	4.1	3.4	
36	1.0	2.3	2.6		4.4	2.6	5.5		0.6	0.8	5.6	2.1	
37	1.1	2.2	1.3		4.8	1.6	2.1		0.4	0.5	4.4	3.9	
38	0.6	1.7	1.0		3.0	0.6	1.7		0.2	0.3	5.8	4.5	
39		1.3	1.0		1.6	0.3	1.3		0.1	0.2	3.6	6.6	
40		0.4			0.8	0.2	1.3		0.0	0.1	2.8	8.0	

41	0.5	0.2	0.4	0.1	0.0	0.0	1.8	5.8
42								
+		0.0	0.2		0.0	0.0	3.8	4.0



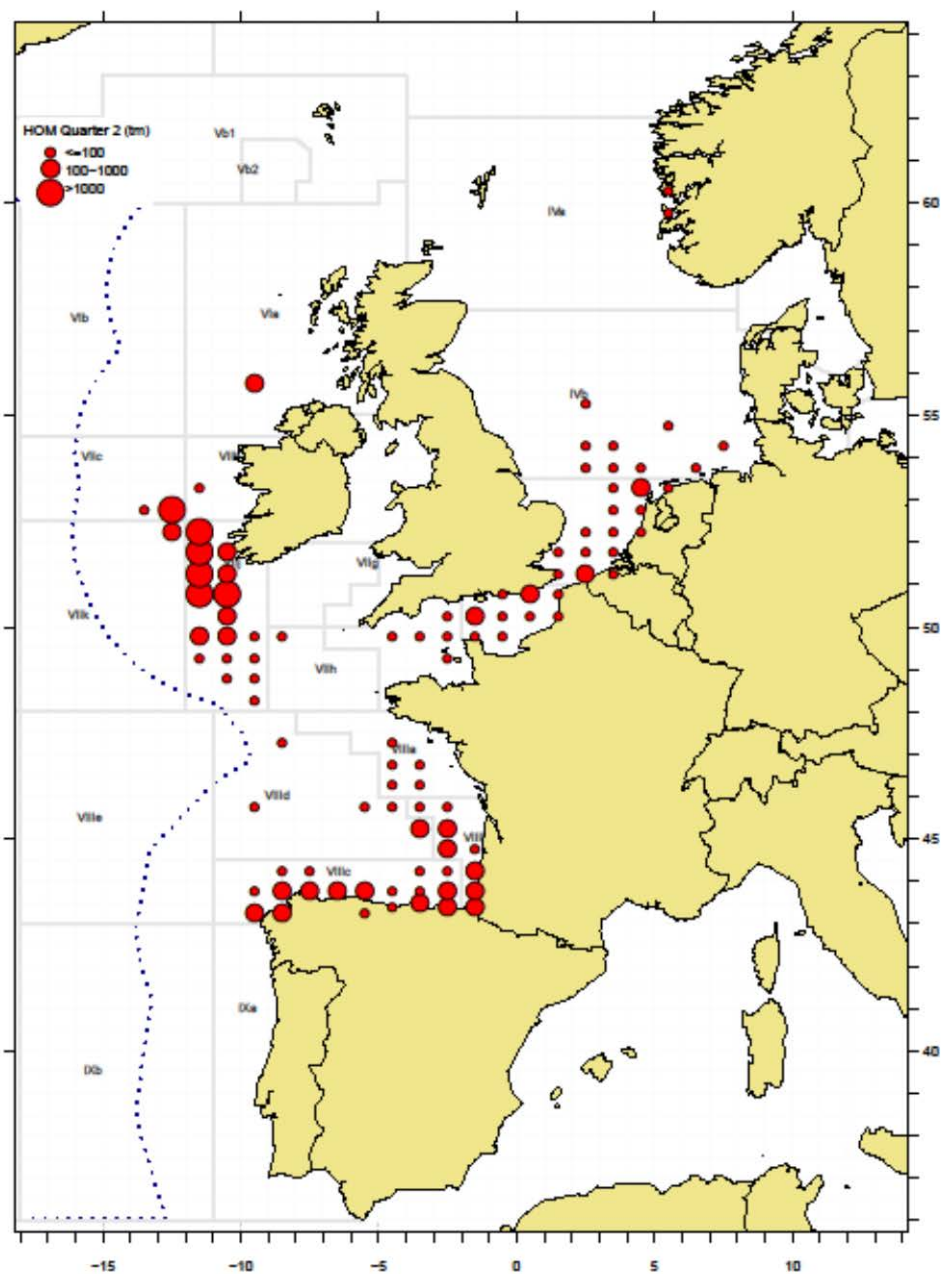
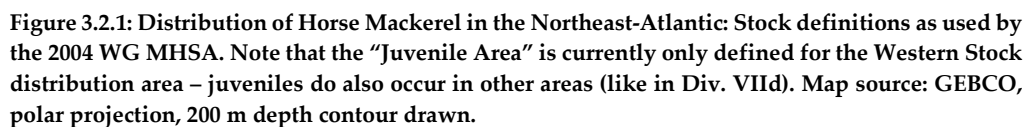


Figure 3.1.1b. Horse mackerel catches 2<sup>nd</sup> quarter 2013









**Figure 3.2.1: Distribution of Horse Mackerel in the Northeast-Atlantic: Stock definitions as used by the 2004 WG MHSA. Note that the “Juvenile Area” is currently only defined for the Western Stock distribution area – juveniles do also occur in other areas (like in Div. VIIId). Map source: GEBCO, polar projection, 200 m depth contour drawn.**



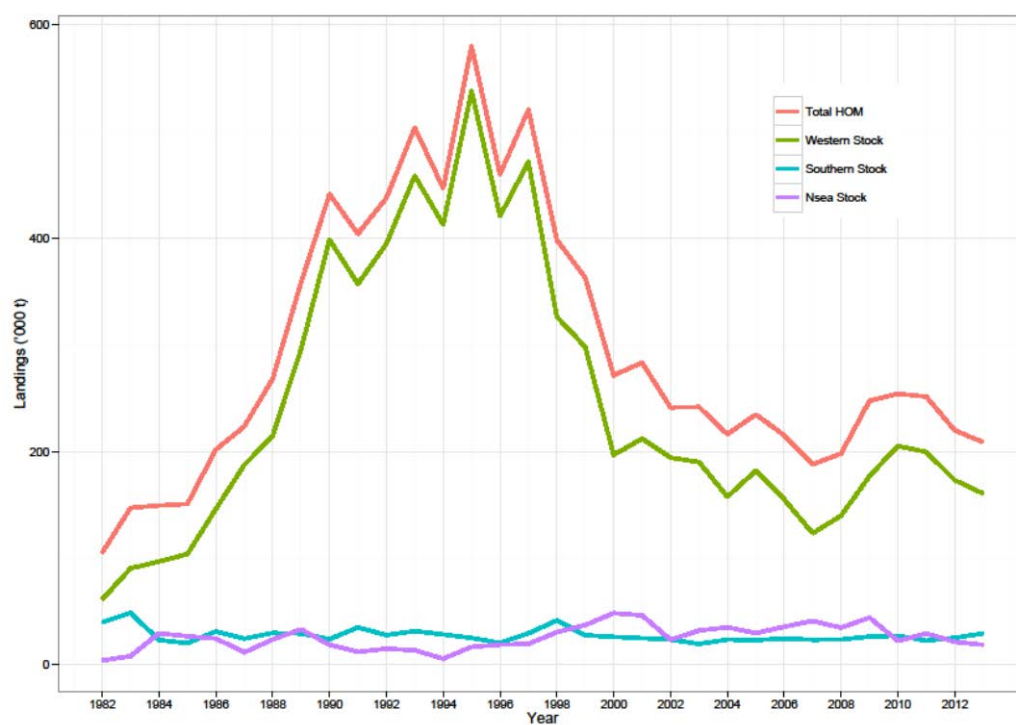


Figure 3.3.1 Horse mackerel general. Total catches in the northeast Atlantic during the period 1982-2013. The catches taken from the southern, western and North Sea horse mackerel stocks are shown in relation to the total catches in the northeast Atlantic. Catches from Div. VIIIc are transferred from southern stock to western stock from 1982 onwards. Southern horse mackerel is assessed by ICES WGHANSA since 2011.