4 Supplies, overseas trade and marketing

Introduction

In 2012, the UK imported 754 thousand tonnes of fish (excluding fish products), with a value of £2,569 million. It exported 466 thousand tonnes, leaving a trade gap of 288 thousand tonnes. Landed prices of fish fell by an average of 6.0 per cent on 2011, with the fish component of the retail price index rising by 4.2 per cent. Fishing accounted for 5.3 per cent of gross value added for agriculture, hunting, forestry and fishing.

This chapter brings together information on:

- Imports and exports of fish and fish products
- Household expenditure on fish and inflation of fish prices
- The contribution of fishing to GDP

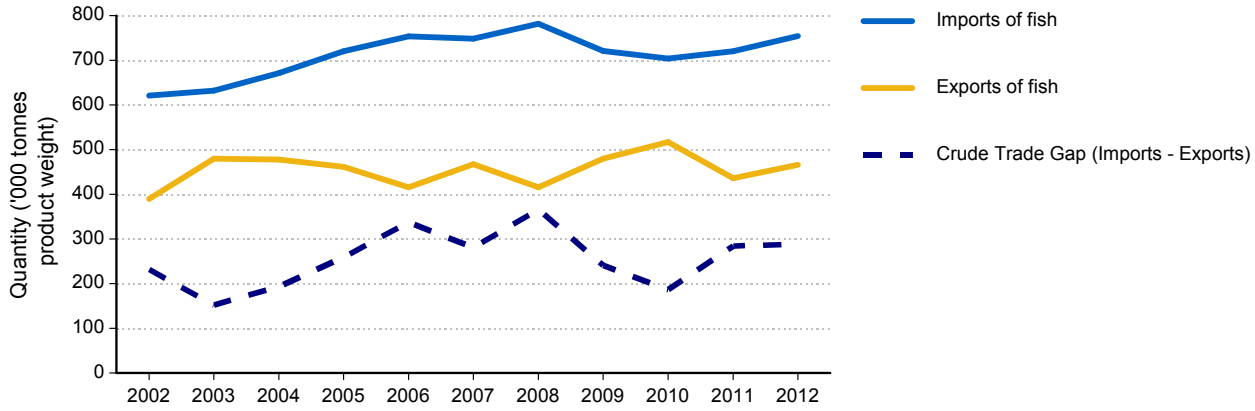
The data on imports, exports, household consumption and GDP include information on fish from freshwater fisheries and aquaculture, as well as from sea fisheries. This differs from the rest of the publication, which focuses exclusively on sea fisheries. Note that in this chapter, landings data are given in terms of landed weight for comparison with the trade data, which are shown in terms of actual product weight.

All tables presented here are available to download as spreadsheets from the MMO website. Supplementary tables showing more detail can also be found on the website.

Summary

The UK is a net importer of fish, with imports exceeding exports. Both imports and exports increased in 2012 and the crude trade gap (imports minus exports) rose by 4 thousand tonnes to 288 thousand tonnes.

Chart 4.1: International trade of fish: 2002 to 2012



In addition to imports from abroad, supplies of fish to the UK include aquaculture, catches from inland fisheries, and landings by UK vessels from sea fisheries. Data on aquaculture and catches from freshwater fisheries are not included in this publication and hence total UK supplies of fish are not estimated.

Landings by UK vessels into the UK (based on landed weight) fell by 5 thousand tonnes compared with 2011 (see Table 4.1). Combining this with the 4 thousand tonne increase in the crude trade gap, and excluding aquaculture and catches from inland fisheries, means there has been little change in the fish available for use in the UK.

TABLE 4.1 Fish trade flows for the UK: 2002 to 2012

		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Imports [(a)]	('000 tonnes)	621	632	671	720	753	748	782	721	704	720	754
	(£ million)	1,439	1,439	1,474	1,696	1,921	1,994	2,210	2,177	2,255	2,559	2,569
Exports [(a)]	('000 tonnes)	389	480	478	461	416	467	416	480	517	436 [R]	466
	(£ million)	762	891	886	939	942	982	1,009	1,166	1,346	1,464 [R]	1,344
Crude trade gap	('000 tonnes)	**232**	**152**	**193**	**259**	**338**	**281**	**366**	**241**	**187**	**284** [R]	**288**
Landings by UK vessels into the UK [(b) (c)]												
	('000 tonnes)	439	427	436	473	386	407	375 [R]	360 [R]	379 [R]	370 [R]	365
	(£ million)	418	397	404	458	492	532	517 [R]	520	548	620 [R]	567

(a) Excludes fish products
(b) Landings are given in terms of landed weight equivalent (i.e. head on, gutted for most species).
(c) Landings include transhipments of mackerel.

More detailed landings data (based on live weight) are in Chapter 3.

Tables 4.2 and 4.3 present information on imports and exports by species. Note that while imports typically include landings into the UK by foreign-registered vessels, there may be cases where imports are less than landings shown in Table 3.3; see Appendix 4 (UK fisheries statistics methodology) for further details.

There were 754 thousand tonnes of fish (excluding fish products) imported into the UK in 2012. This is up by 5 per cent on the 720 thousand tonnes imported in 2011. This rises to 856 thousand tonnes if fish products are included. 2012 exports of fish stood at 466 thousand tonnes or 491 thousand tonnes if fish products are included. Exports in 2012 (excluding fish products) are up 7 per cent on the 436 thousand tonnes exported in 2011.

TABLE 4.2 Imports of fish, fish preparations, meals, flours and oils into the UK: 2008 to 2012 [a]

	Quantity ('000 tonnes)					Value (£ million)				
	2008	**2009**	**2010**	**2011**	**2012**	**2008**	**2009**	**2010**	**2011**	**2012**
Fish (excluding Shellfish)										
Bass	5.8	5.2	6.7	7.6	8.3	27.5	24.3	30.9	36.2	34.3
Blue Whiting	6.8	6.6	5.3	0.1	22.5	1.0	1.3	1.2	0.1	6.4
Cod	108.6	105.6	101.4	103.1	101.5	441.4	349.3	372.0	409.2	395.3
Haddock	68.2	66.9	60.3	59.2	60.7	173.9	162.7	156.2	159.1	160.9
Hake	6.1	5.2	3.1	3.5	3.1	8.0	10.5	7.1	8.5	8.1
Halibut	3.4	3.1	2.1	1.7	1.6	12.4	10.7	9.6	8.7	8.3
Herring	11.1	8.7	9.0	12.9	20.0	11.1	12.3	11.8	17.9	24.2
Ling	2.2	2.7	2.7	2.0	1.3	3.2	3.8	3.9	2.9	2.1
Mackerel	27.1	32.0	45.5	33.5	49.0	38.7	44.6	60.5	64.0	77.9
Megrim	..	..	0.1	..	..	0.1	..	0.1	0.1	0.1
Monks or Anglerfish	2.7	2.6	3.1	2.5	2.6	8.4	9.0	11.0	8.8	9.3
Plaice	7.2	6.3	4.9	4.5	5.3	24.0	22.1	15.3	15.2	16.6
Pollack	55.8	22.7	20.0	28.9	31.6	58.0	47.2	40.8	55.7	59.7
Saithe	1.9	2.9	0.9	1.1	3.3	1.1	1.7	1.0	1.6	10.0
Salmon [b]	63.6	60.4	57.2	62.5	69.9	207.5	230.2	254.1	275.8	292.8
Sardines	14.8	12.5	14.8	11.9	14.4	30.6	30.8	34.7	33.9	35.7
Sole	0.4	0.2	0.4	0.6	0.3	1.6	1.0	1.5	2.1	1.3
Trout [b]	7.2	8.4	9.0	9.2	6.9	24.1	36.6	42.9	51.9	38.6
Tuna	111.2	97.8	91.5	98.0	89.7	256.4	239.2	225.9	268.0	290.9
Whiting	1.9	1.3	1.6	1.2	0.6	1.8	1.9	2.2	1.7	0.7
Other Fish [c]	165.2	154.5	148.5	153.1	145.9	443.0	435.8	433.4	480.9 [R]	473.4
Total	**671.3**	**605.7**	**588.3**	**596.9**	**638.4**	**1,773.7**	**1,675.1**	**1,716.1**	**1,902.4** [R]	**1,946.5**
Shellfish (Crustaceans and Molluscs)										
Crabs	2.7	2.3	2.2	2.7	2.6	14.2	14.6	13.5	15.9	15.2
Lobsters	1.5	1.9	1.3	1.3	2.6	14.5	14.8	11.6	13.2	19.8
Mussels	5.8	5.9	6.8	7.1	6.1	12.1	14.5	14.9	17.2	14.8
Nephrops	4.5	3.2	3.0	3.2	2.0	10.0	6.9	5.6	9.0	5.5
Scallops	2.5	3.8	2.2	2.2	1.5	16.9	26.8	19.6	23.4	15.9
Shrimps and Prawns	80.2	84.9	86.0	90.4	85.7	335.0	390.0	432.6	526.4 [R]	503.5
Squid	5.8	5.8	7.3	8.3	8.0	9.2	9.9	16.8	21.5	19.3
Other Crustaceans	2.5	2.4	2.2	2.0	1.9	12.4	10.5	9.4	10.7	10.5
Other Molluscs	5.1	4.8	4.4	6.2	5.4	12.0	14.1	14.7	18.9	17.9
Total	**110.4**	**114.9**	**115.6**	**123.3**	**115.9**	**436.3**	**502.1**	**538.6**	**656.2** [R]	**622.4**
Total Imports of Fish	**781.7**	**720.6**	**703.8**	**720.2**	**754.3**	**2,210.1**	**2,177.2**	**2,254.7**	**2,558.6**	**2,568.8**
Fish Products										
Meals and Flours	93.4	114.5	101.4	84.1	74.3	47.0	76.6	96.2	84.6	72.8
Oils	27.0	47.6	33.8	22.6	26.9	41.5	43.0	38.6	31.5	38.8
Total	**120.4**	**162.1**	**135.3**	**106.7**	**101.2**	**88.4**	**119.5**	**134.9**	**116.0**	**111.6**
Total Imports (inc. fish products)	**902.1**	**882.8**	**839.1**	**826.9**	**855.5**	**2,298.5**	**2,296.7**	**2,389.6**	**2,674.6**	**2,680.4**

Source: H.M. Revenue and Customs

(a) 2011 data are provisional.

(b) Freshwater species.

(c) Includes other freshwater species.

Note: Additional data on UK imports by exporting country are available from the MMO website as supplementary Table 4.2a.

TABLE 4.3 Exports of fish, fish preparations, meals, flours and oils from the UK: 2008 to 2012 [a]

	Quantity ('000 tonnes)					Value (£ million)				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Fish (excluding Shellfish)										
Bass	0.2	0.2	0.3	0.5	0.5	0.9	1.3	2.0	2.8	2.4
Blue Whiting	21.4	23.1	36.7	3.2	26.7	6.3	8.2	16.0	2.1	11.9
Cod	24.1	32.5	31.0	34.8	20.3	67.3	73.6	81.0	99.6	55.7
Haddock	4.8	3.1	3.6	3.1	1.7	11.7	7.2	7.6	8.4	3.8
Hake	2.1	2.6	2.9	2.2	2.4	6.4	8.0	8.5	6.8	6.5
Halibut	2.0	1.7	1.3	1.0	0.9	6.0	4.7	4.7	4.1	3.2
Herring	37.1	34.3	36.8	33.0	60.0	18.0	18.5	20.3	23.0	46.0
Ling	1.9	2.2	3.1	2.8	2.3	4.0	4.0	6.1	5.7	4.6
Mackerel	78.7	103.1	112.6	77.8	75.0	83.1	121.1	127.8	107.2	96.2
Megrim	3.7	4.0	3.2	3.0	3.0	14.2	14.8	12.3	13.3	11.1
Monks or Anglerfish	3.8	3.7	3.9	3.3	2.0	27.6	30.0	29.3	24.6	12.5
Plaice	0.9	0.8	0.6	0.5	0.3	1.3	0.9	0.7	0.6	0.6
Pollack	2.4	3.5	2.9	2.8	3.0	4.9	7.8	6.9	8.1	9.5
Saithe	6.4	7.7	5.8	4.5	4.5	5.4	7.7	7.8	6.8	9.1
Salmon [b]	57.8	71.5	82.3	95.3	100.9	217.6	299.7	393.8	485.1	448.9
Sardines	11.2	13.7	23.0	7.8	8.6	11.0	9.2	12.3	8.2	10.0
Sole	1.3	1.3	1.2	1.2	1.1	8.5	8.9	9.2	10.7	8.4
Trout [b]	1.5	2.1	2.7	4.0	2.4	3.6	5.8	10.6	15.5	10.2
Tuna	4.4	6.7	4.6	3.2	6.5	11.8	19.2	10.9	11.9	18.7
Whiting	1.5	2.5	1.3	0.7	0.7	2.0	2.1	1.7	0.9	1.1
Other Fish [c]	56.6	63.3	58.5	55.4	48.7	130.5	123.0	134.8	153.8	134.2
Total	**323.6**	**383.8**	**418.3**	**340.0**	**371.5**	**641.9**	**775.9**	**904.4**	**999.2**	**904.6**
Shellfish (Crustaceans and Molluscs)										
Crabs	13.2	14.0	15.2	14.8	14.0	37.0	38.8	46.2	47.3	46.4
Lobsters	1.8	2.2	2.3	2.7	7.0	24.6	28.4	29.8	35.0	69.0
Mussels	13.8	15.6	11.6	12.5	13.9	10.1	10.3	8.7	9.6	11.8
Nephrops	21.3	20.4	21.0	17.9	11.1	123.7	111.4	121.3	125.8	70.6
Scallops	10.4	12.6	14.5	16.7 [R]	13.6	57.3	81.0	89.7	95.5 [R]	90.0
Shrimps and Prawns	16.4	17.2	16.5	14.7	13.8	67.2	73.4	82.9	80.9	73.6
Squid	1.5	1.8	3.1	3.0	2.3	4.3	4.9	11.2	11.8	7.1
Other Crustaceans	0.5	0.8	0.6	0.7	1.9	2.4	2.9	3.5	3.9	10.3
Other Molluscs	13.1	11.4	13.6	13.1	17.3	41.0	39.2	48.0	54.9	60.9
Total	**92.2**	**95.9**	**98.4**	**96.2** [R]	**94.9**	**367.5**	**390.3**	**441.4**	**464.7** [R]	**439.8**
Total Exports of Fish	**415.8**	**479.7**	**516.7**	**436.1** [R]	**466.3**	**1,009.4**	**1,166.1**	**1,345.7**	**1,463.9** [R]	**1,344.4**
Fish Products										
Meals and Flours	12.3	11.3	10.6	24.4	15.9	10.8	11.0	8.6	26.9	18.7
Oils	2.9	5.0	7.5	8.2	8.5	12.5	16.1	14.2	15.8	13.9
Total	**15.3**	**16.3**	**18.1**	**32.7**	**24.5**	**23.2**	**27.2**	**22.8**	**42.8**	**32.6**
Total Exports (inc. fish products)	**431.1**	**495.9**	**534.8**	**468.8** [R]	**490.8**	**1,032.7**	**1,193.3**	**1,368.5**	**1,506.7** [R]	**1,377.0**

Source: H.M. Revenue and Customs

(a) 2011 data are provisional.

(b) Freshwater species.

(c) Includes other freshwater species.

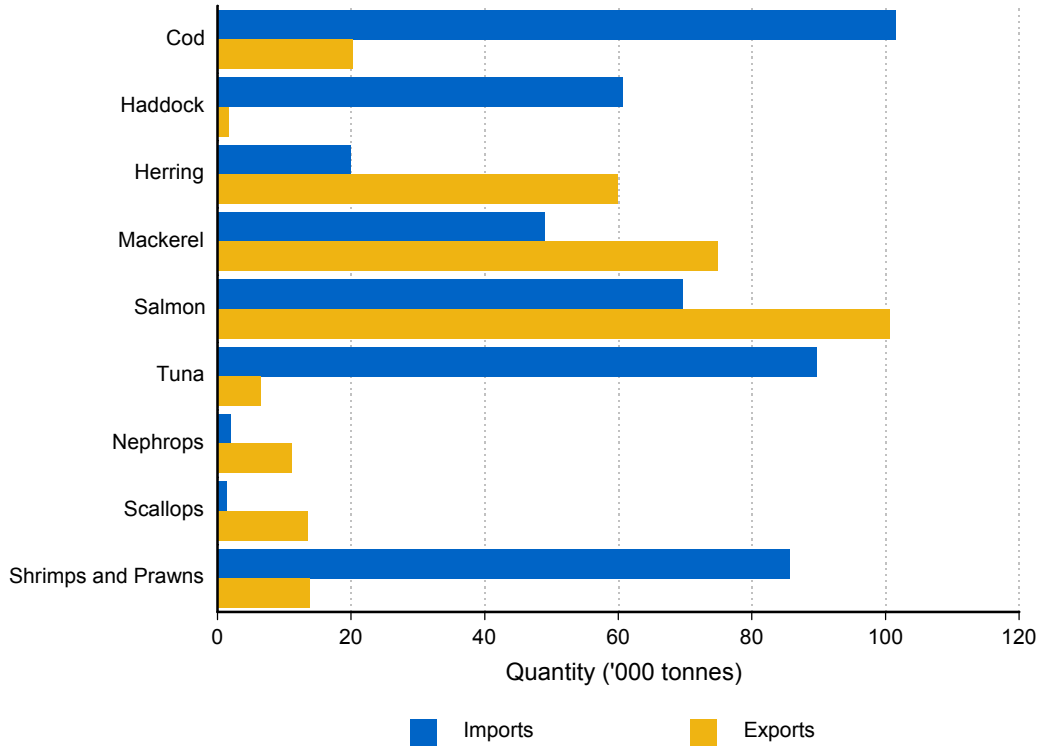
Note: Additional data on UK exports by importing country are available from the MMO website as supplementary Table 4.3a.

Imports and exports by species

Fish (excluding shellfish) accounted for 75 per cent of fish imports (including fish products) by weight in 2012, a total of 638 thousand tonnes. Shellfish (molluscs and crustaceans) accounted for 14 per cent of imports by weight but 23 per cent by value. Fish products such as meals and flours formed 12 per cent of the quantity of imports but only 4 per cent of the value.

The UK exported 371 thousand tonnes of fish (excluding shellfish) in 2012, an increase of 9 per cent on 2011. 95 thousand tonnes of shellfish were exported too. Only 5 per cent of the quantity of UK exports of fish comprised fish products, a total of 24 thousand tonnes.

Chart 4.2: UK imports and exports by key species: 2012



In 2012, imports into the UK were highest for cod (102 thousand tonnes), tuna (90 thousand tonnes), shrimps and prawns (86 thousand tonnes), salmon (70 thousand tonnes) and haddock (61 thousand tonnes). Exports were highest for salmon (101 thousand tonnes), mackerel (75 thousand tonnes) and herring (60 thousand tonnes).

Cod

The UK is a net importer of cod. Imports of cod in 2012 stood at 102 thousand tonnes (13 per cent of total fish imports), while exports were 20 thousand tonnes. Landings of cod by UK vessels into the UK are relatively small and remained at 11 thousand tonnes in 2012. The amount available for domestic use has increased from 79 thousand tonnes in 2011 to 92 thousand tonnes in 2012. Excluded from these figures is a small but growing amount of cod sourced from UK aquaculture.

TABLE 4.4a Balance sheet for cod for the UK: 2008 to 2012

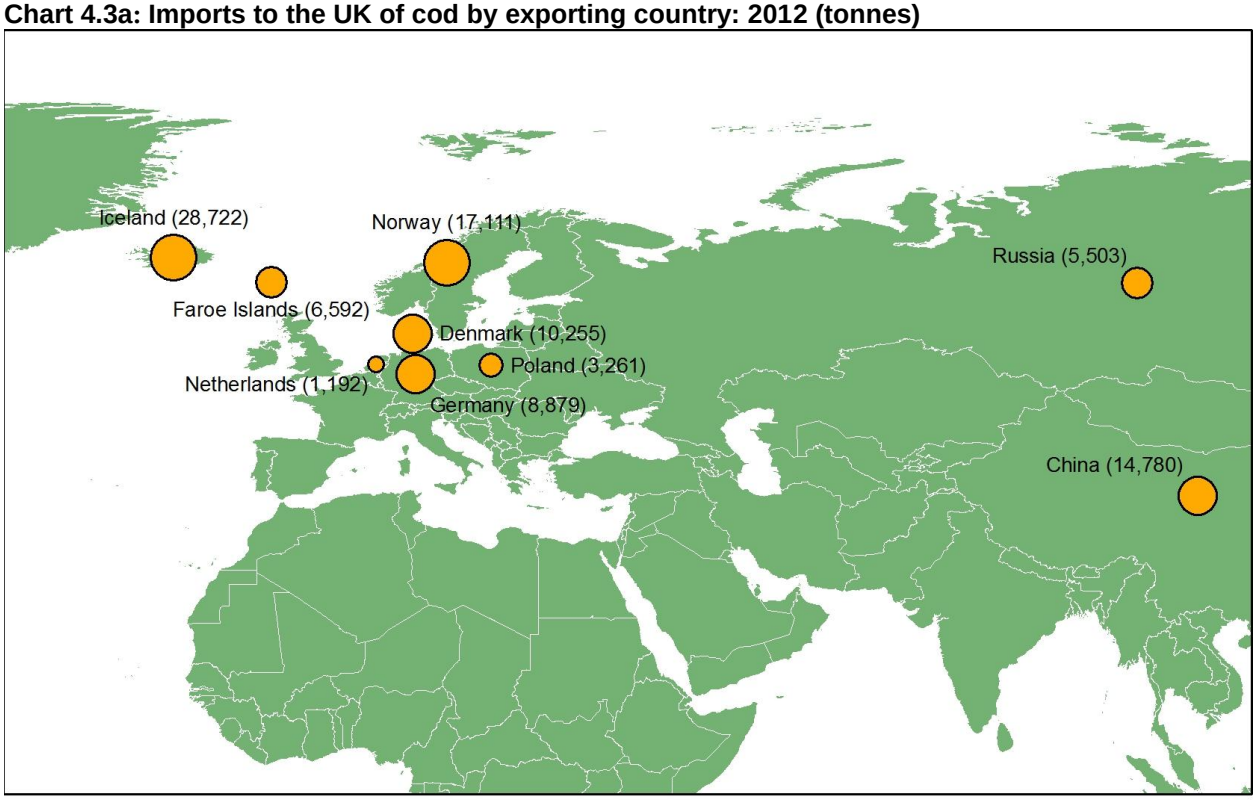
	Quantity ('000 tonnes)					Value (£ million)				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Landings by UK vessels into the UK [a]	8.4	10.0 R	12.5	10.9	10.9	20.3	20.7	28.6	27.5	24.9
Imports [b]	108.6	105.6	101.4	103.1	101.5	441.4	349.3	372.0	409.2	395.3
Total supplies [c]	**117.0**	**115.6**	**114.0**	**114.0**	**112.4**	**461.6**	**370.0**	**400.6**	**436.6**	**420.2**
Exports [b]	24.1	32.5	31.0	34.8	20.3	67.3	73.6	81.0	99.6	55.7
Total available for domestic use [c]	**92.9**	**83.1**	**83.0**	**79.2**	**92.1**	**394.3**	**296.5**	**319.6 R**	**337.1 R**	**364.6**

Source: H.M. Revenue and Customs and Fisheries Administrations in the UK

(a) Landings are given in terms of landed weight.
(b) Excludes fish products.
(c) Excludes sources of fish other than imports and landings into the UK by UK vessels from sea fisheries.

Just over a quarter of all imports of cod in 2012 came from Iceland (29 thousand tonnes). The second largest exporter of cod to the UK was Norway (17 thousand tonnes). Imports from EU member states accounted for 26 per cent of all cod imports into the UK in 2012.

Chart 4.3a: Imports to the UK of cod by exporting country: 2012 (tonnes)



Note: Only countries from which the UK imported more than 1,000 tonnes of cod are shown.

Haddock

As with cod, the UK is heavily reliant on imports of haddock to meet consumer demand. Imports accounted for 67 per cent of the total supply; very little is exported. In 2012 supplies went up and exports went down so the amount available for domestic use was 10 per cent higher than in 2011.

TABLE 4.4b Balance sheet for haddock for the UK: 2008 to 2012

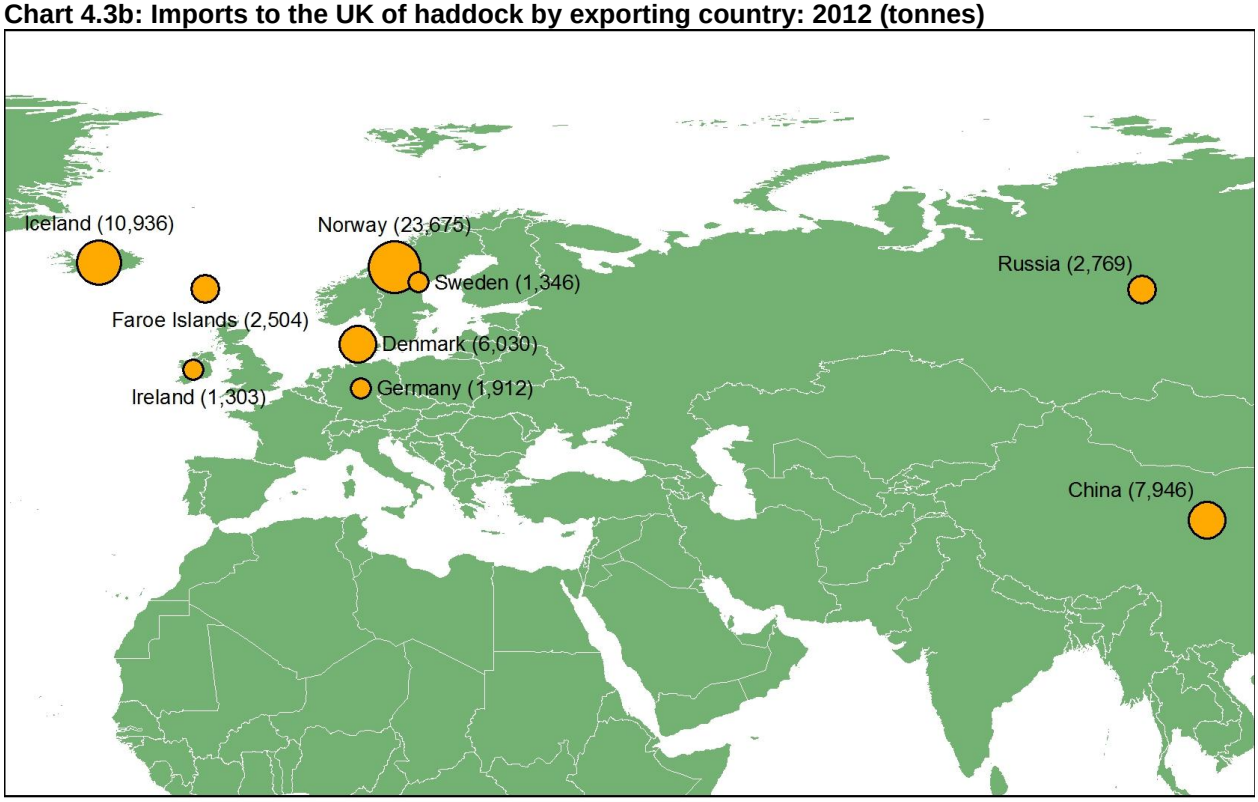
	Quantity ('000 tonnes)					Value (£ million)				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Landings by UK vessels into the UK [a]	29.0	31.7	28.6	25.4	30.5	35.0	34.2	36.2	34.6	35.7
Imports [b]	68.2	66.9	60.3	59.2	60.7	173.9	162.7	156.2	159.1	160.9
Total supplies [c]	**97.2**	**98.6**	**88.9**	**84.6**	**91.2**	**208.8**	**197.0**	**192.3**	**193.7**	**196.6**
Exports [b]	4.8	3.1	3.6	3.1	1.7	11.7	7.2	7.6	8.4	3.8
Total available for domestic use [c]	**92.4**	**95.5**	**85.4**	**81.5**	**89.5**	**197.1**	**189.8**	**184.7**	**185.4**	**192.8**

Source: H.M. Revenue and Customs and Fisheries Administrations in the UK

(a) Landings are given in terms of landed weight.
(b) Excludes fish products.
(c) Excludes sources of fish other than imports and landings into the UK by UK vessels from sea fisheries.

Over half of all haddock imported into the UK in 2012 came from Norway (24 thousand tonnes) and Iceland (11 thousand tonnes). The next largest was China, which exported 8 thousand tonnes of haddock to the UK in 2012.

Chart 4.3b: Imports to the UK of haddock by exporting country: 2012 (tonnes)



Note: Only countries from which the UK imported more than 1,000 tonnes of haddock are shown.

Shrimps and prawns

UK vessels land only small amounts of shrimps and prawns into the UK: 1 thousand tonnes in 2012. The vast majority of shrimps and prawns available for domestic use are imported. In 2012, 86 thousand tonnes of shrimps and prawns were imported into the UK. Some of these are then exported; 14 thousand tonnes of shrimps and prawns were exported in 2012, with a total value of £74 million.

TABLE 4.4c Balance sheet for shrimps and prawns for the UK: 2008 to 2012

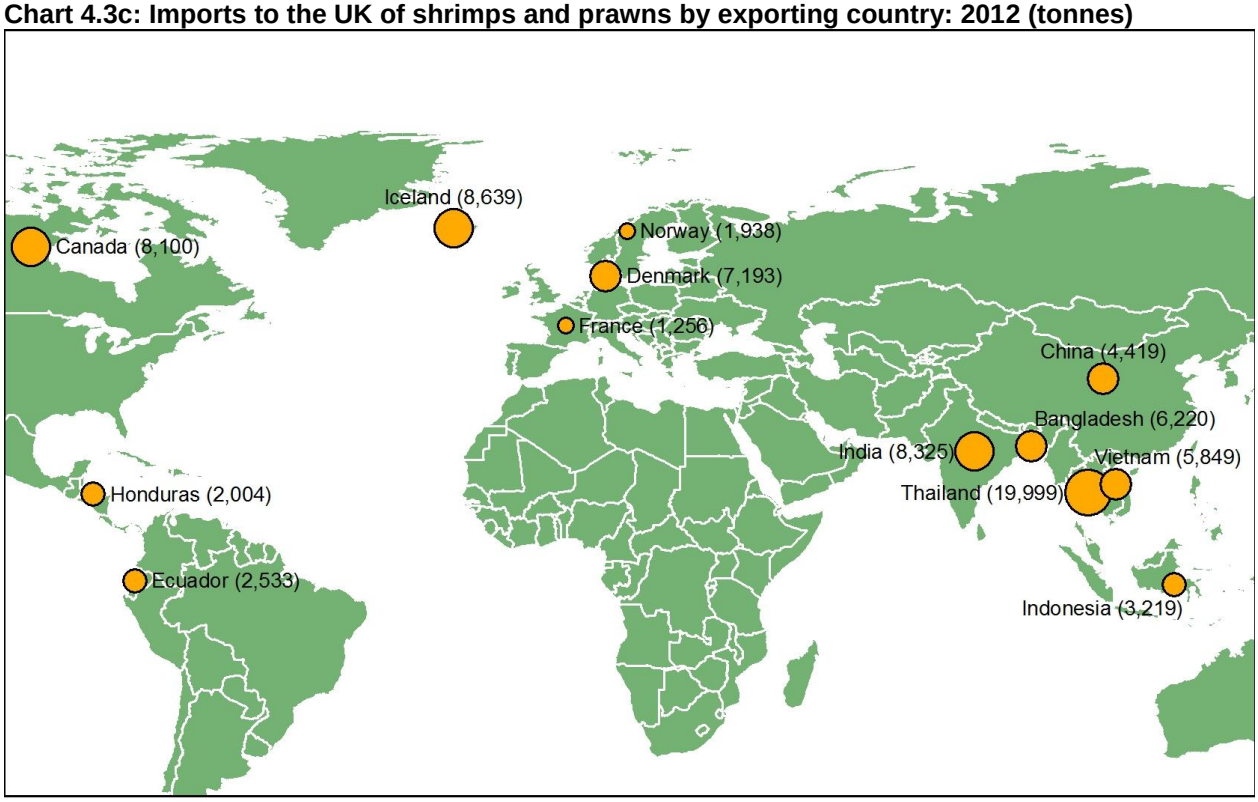
	Quantity ('000 tonnes)					Value (£ million)				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Landings by UK vessels into the UK [a]	0.9	1.1	0.9	0.4	1.0	2.8	2.2	2.1 R	0.7	2.4
Imports [b]	80.2	84.9	86.0	90.4	85.7	335.0	390.0	432.6	526.4 R	503.5
Total supplies [c]	**81.1**	**86.0**	**86.9**	**90.8**	**86.7**	**337.8**	**392.2**	**434.7**	**527.2**	**505.8**
Exports [b]	16.4	17.2	16.5	14.7	13.8	67.2	73.4	82.9	80.9	73.6
Total available for domestic use [c]	**64.7**	**68.8**	**70.4**	**76.1**	**72.9**	**270.6**	**318.9 R**	**351.8**	**446.3**	**432.3**

Source: H.M. Revenue and Customs and Fisheries Administrations in the UK

(a) Landings are given in terms of landed weight.
(b) Excludes fish products.
(c) Excludes sources of fish other than imports and landings into the UK by UK vessels from sea fisheries.

Over half the shrimps and prawns imported into the UK were from Asia. In 2012, the largest exporters of shrimps and prawns to the UK were Thailand (20 thousand tonnes) and Iceland (9 thousand tonnes).

Chart 4.3c: Imports to the UK of shrimps and prawns by exporting country: 2012 (tonnes)



Note: Only countries from which the UK imported more than 1,000 tonnes of shrimps and prawns are shown.

Tuna

Virtually all tuna available for use in the UK is from abroad. In 2012, the UK imported 90 thousand tonnes of tuna, of which 6 thousand tonnes were re-exported, leaving 83 thousand tonnes available for domestic use, a 12 per cent decrease from 2011.

TABLE 4.4d Balance sheet for tuna for the UK: 2008 to 2012

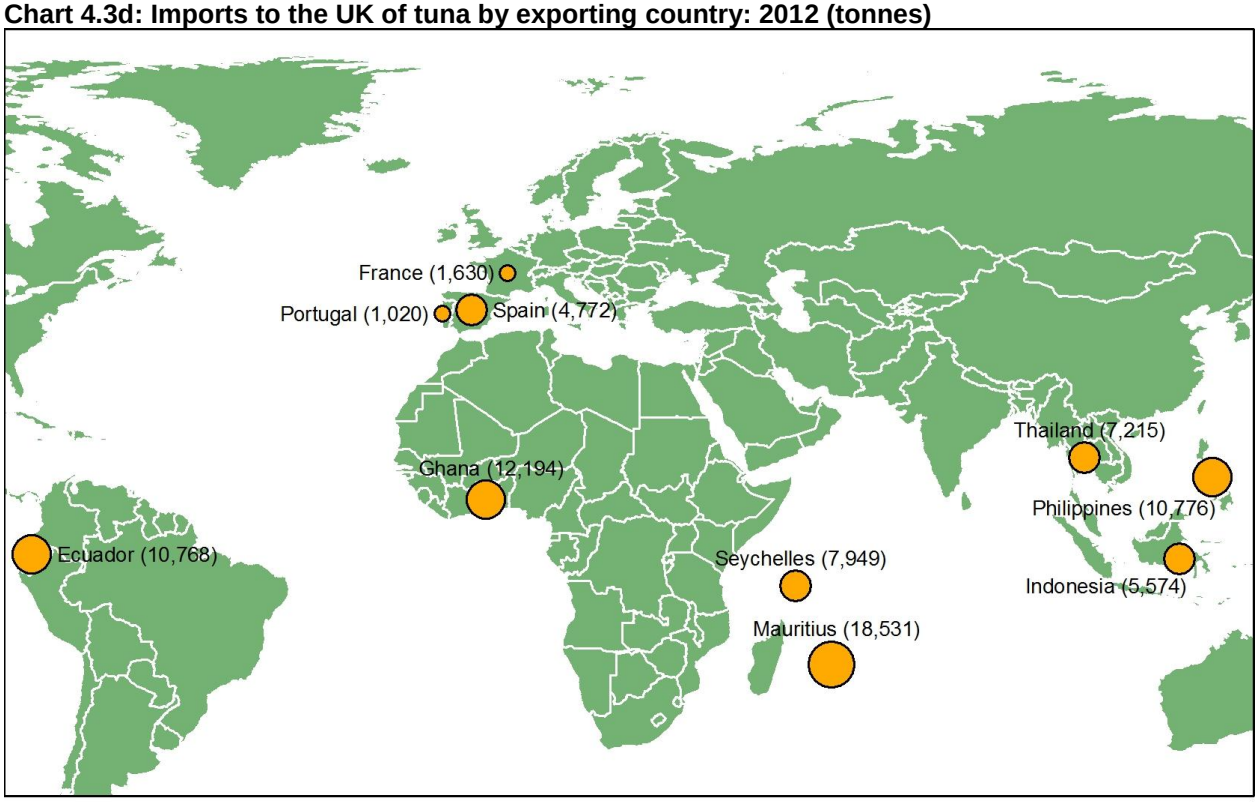
	Quantity ('000 tonnes)					Value (£ million)				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Landings by UK vessels into the UK [a]	..	..	..	..	..	0.2	0.1	0.1	..	..
Imports [b]	111.2	97.8	91.5	98.0	89.7	256.4	239.2	225.9	268.0	290.9
Total supplies [c]	**111.3**	**97.8**	**91.5**	**98.0**	**89.7**	**256.6**	**239.3**	**226.0** [R]	**268.0**	**290.9**
Exports [b]	4.4	6.7	4.6	3.2	6.5	11.8	19.2	10.9	11.9	18.7
Total available for domestic use [c]	**106.8**	**91.0**	**86.9**	**94.8**	**83.2**	**244.7**	**220.1**	**215.0**	**256.1**	**272.2**

Source: H.M. Revenue and Customs and Fisheries Administrations in the UK

(a) Landings are given in terms of landed weight.
(b) Excludes fish products.
(c) Excludes sources of fish other than imports and landings into the UK by UK vessels from sea fisheries.

In 2012, 21 per cent of all tuna imported by the UK came from Mauritius, and a further 14 per cent came from Ghana. The Philippines and Ecuador exported a further 11 thousand tonnes to the UK, followed by the Seychelles (8 thousand tonnes), Thailand (7 thousand tonnes) and Indonesia (6 thousand tonnes). Only 10 per cent of tuna was imported from EU member states.

Chart 4.3d: Imports to the UK of tuna by exporting country: 2012 (tonnes)



Note: Only countries from which the UK imported more than 1,000 tonnes of tuna are shown.

Mackerel

The UK is a net exporter of mackerel. UK vessels landed 68 thousand tonnes of mackerel into the UK in 2012. Combined with 49 thousand tonnes imported from abroad, this gave a total supply of 117 thousand tonnes. 75 thousand tonnes were exported to leave 42 thousand tonnes in the UK for domestic use.

TABLE 4.4e Balance sheet for mackerel for the UK: 2008 to 2012

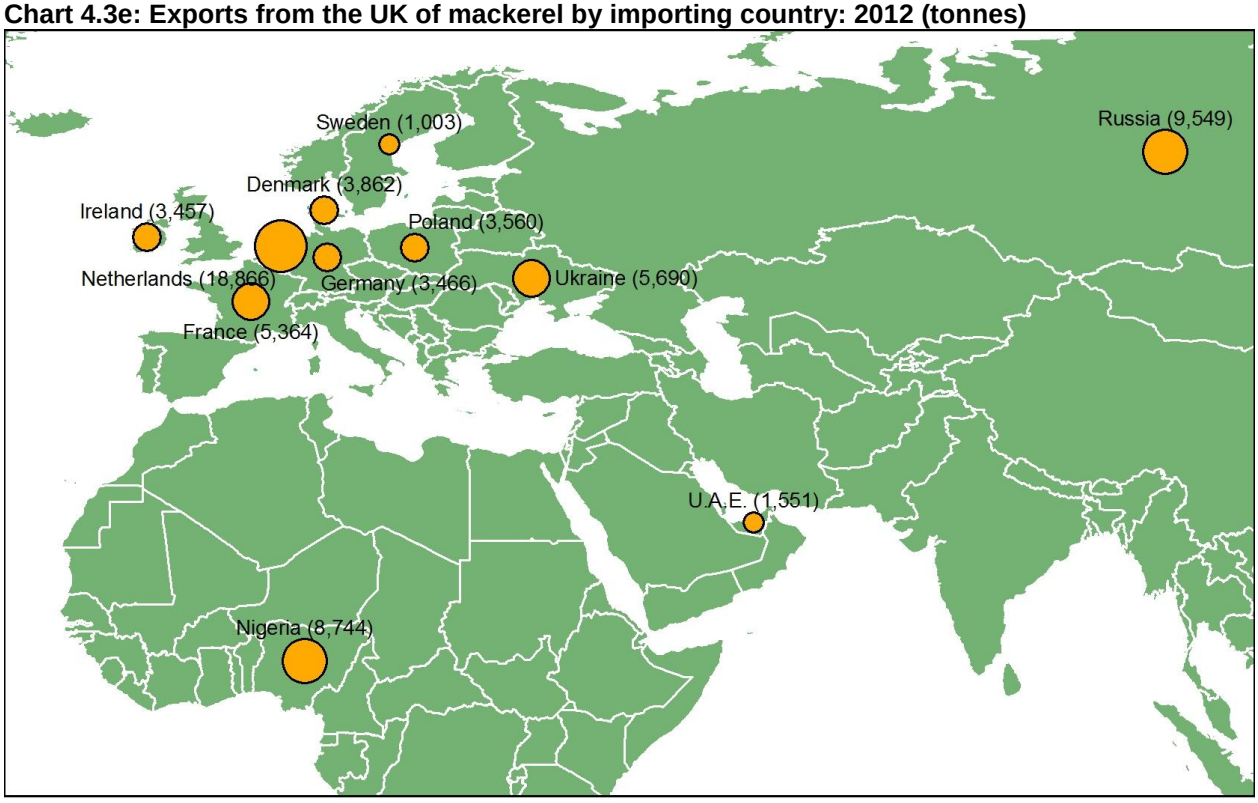
	Quantity ('000 tonnes)					Value (£ million)				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Landings by UK vessels into the UK [a]	90.7	100.3	99.9	94.4	67.8	67.8	84.5	82.0	106.8	63.8
Imports [b]	27.1	32.0	45.5	33.5	49.0	38.7	44.6	60.5	64.0	77.9
Total supplies [c]	**117.8**	**132.3**	**145.4**	**127.9**	**116.8**	**106.5**	**129.1**	**142.4**	**170.7**	**141.7**
Exports [b]	78.7	103.1	112.6	77.8	75.0	83.1	121.1	127.8	107.2	96.2
Total available for domestic use [c]	**39.1**	**29.2**	**32.7**	**50.1**	**41.8**	**23.4**	**8.0**	**14.6**	**63.5**	**45.5**

Source: H.M. Revenue and Customs and Fisheries Administrations in the UK

(a) Landings are given in terms of landed weight.
(b) Excludes fish products.
(c) Excludes sources of fish other than imports and landings into the UK by UK vessels from sea fisheries.

A quarter of all UK mackerel exports in 2012 were to the Netherlands (19 thousand tonnes), closely followed by Russia (10 thousand tonnes). Nearly two thirds of all mackerel exports were to EU member states.

Chart 4.3e: Exports from the UK of mackerel by importing country: 2012 (tonnes)



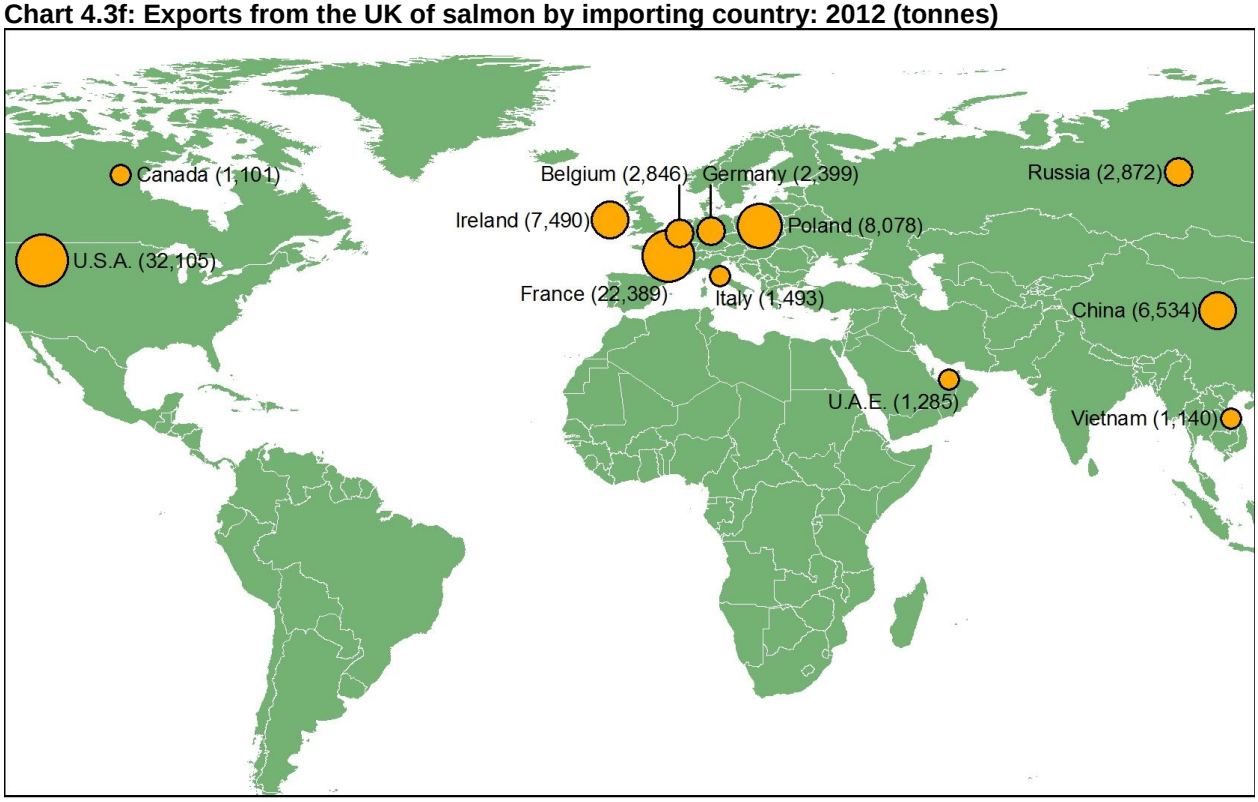
Note: Only countries to which the UK exported more than 1,000 tonnes of mackerel are shown.

Salmon

In 2012, the UK exported 101 thousand tonnes of salmon. This freshwater species is sourced from UK aquaculture and inland fisheries, as well as from imports. The UK imported 70 thousand tonnes of salmon from abroad in 2012, making the UK a net exporter.

The USA was the largest importer of UK salmon, accounting for 32 per cent of salmon exports in 2012 (32 thousand tonnes). In 2012, 47 per cent of salmon exports went to EU member states, in particular France, which imported 22 thousand tonnes.

Chart 4.3f: Exports from the UK of salmon by importing country: 2012 (tonnes)



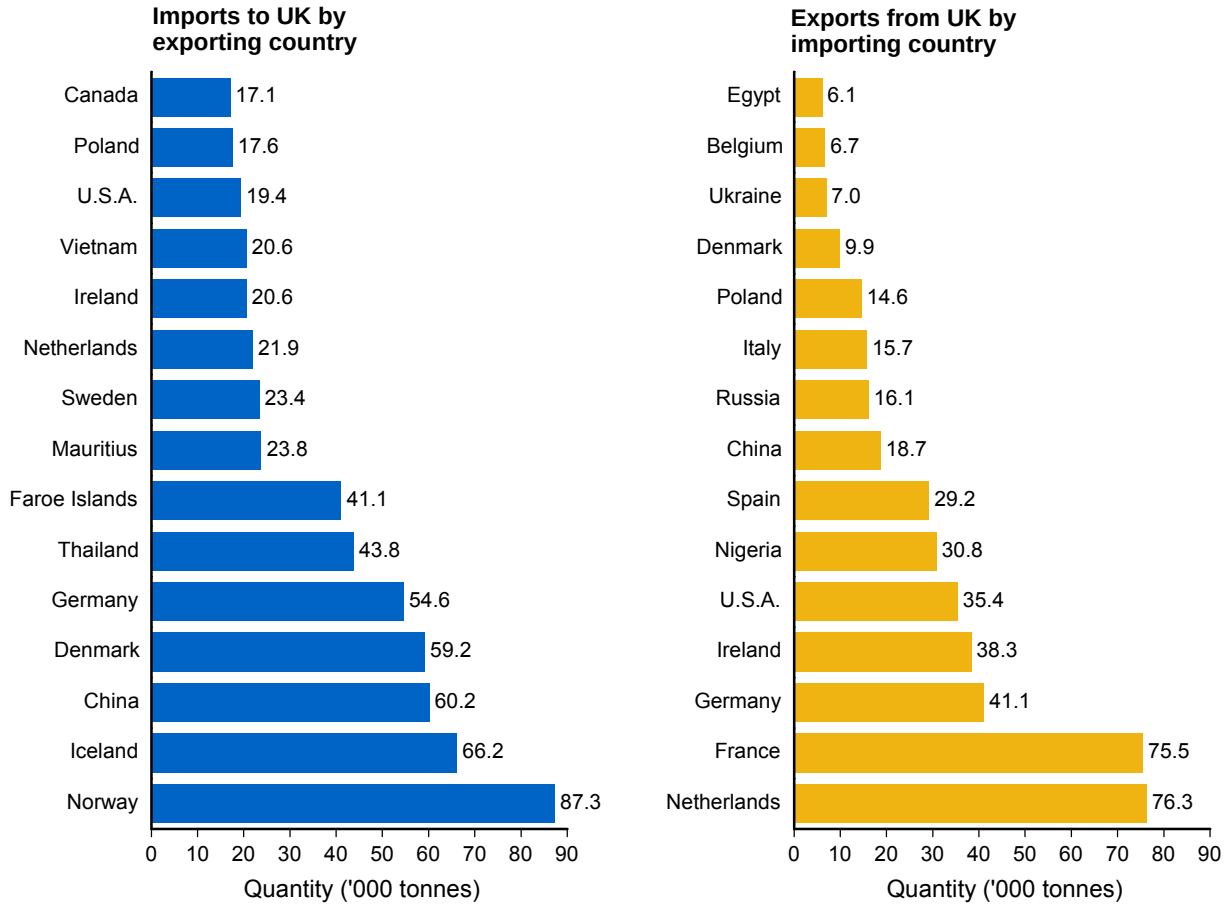
Note: Only countries to which the UK exported more than 1,000 tonnes of salmon are shown.

Imports and exports by country

The largest exporter to the UK in 2012 was Norway (87 thousand tonnes). They were ranked seventh last year but exports more than doubled in 2012. Norway was followed by Iceland (66 thousand tonnes), China (60 thousand tonnes) and Denmark (59 thousand tonnes).

The UK exported the largest amounts to the Netherlands (76 thousand tonnes), France (75 thousand tonnes) and Germany (41 thousand tonnes).

Chart 4.4: Imports and exports by country: 2012



Household consumption and inflation

Household consumption of fish fell in 2011, continuing a slow decrease since 2006. Consumer expenditure on fish rose in 2011 to £3,866 million compared with £3,742 million in 2010. Household expenditure on fish as a proportion of overall expenditure on food remained at 5.2 per cent in 2011.

TABLE 4.5 Household consumption and inflation: 2002 to 2012

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Household consumption											
('000 tonnes) [a]	468 R	473 R	480 R	509 R	519 R	515 R	510 R	501 R	483 R	472	nd
Population ('000 persons) [b]	57,990 R	58,142 R	58,313 R	58,473 R	58,603 R	59,737 R	60,816 R	60,907 R	61,464 R	61,528 R	nd
Consumers expenditure											
on fish (£ million)	2,806 R	2,848 R	3,011 R	3,179 R	3,410 R	3,599 R	3,650 R	3,711 R	3,742 R	3,866	nd
on food (£ million) [c]	66,433 R	68,728 R	70,085 R	71,833 R	74,193 R	77,716 R	67,635 R	70,143 R	72,587 R	73,744	nd
Fish as a % of food [c]	*4.2%*	*4.1%*	*4.3%*	*4.4%*	*4.6%*	*4.6%*	*5.4%*	*5.3%*	*5.2%*	*5.2%*	nd
Landed Price Index [d]	103.1	105.7	109.3	123.8	134.4	136.2	141.1	141.7	152.2	163.7	153.9
Retail Price Index [e]	104.6	103.5	101.7	102.3	108.5	115.7	124.0	130.3	138.3	151.0	157.4
Consumer Price Index [f]	104.7	103.3	101.5	103.2	111.4	120.7	126.7	131.4	140.0	152.9	158.4

Source: Fisheries Administrations in the UK, Expenditure and Food Survey, Office for National Statistics

(a) Figures for 2002 to 2005 are based on financial year data.

(b) The population estimates have been updated to be consistent with the Living Costs and Food Survey figures, which provide the basis for the household consumption and consumers expenditure figures given in this table

(c) Including non-alcoholic beverages.

(d) The landed price index has been calculated on an annual basis with 2000 = 100.

(e) The fish component of the RPI which includes canned and processed fish. The index has been re-based such that 2000 = 100.

(f) The fish component of the CPI which includes canned and processed fish. The index has been re-based such that 2000 = 100.

Note: Additional data on household purchases are available from the MMO website as supplementary Tables 4.5a and 4.5b.

The landed price index (LPI) measures the average change in the prices of fish landed by UK vessels into the UK at first sale. It provides a measure of domestic inflation in the price of fish landed by UK vessels into the UK.

The consumer price index (CPI) measures the average change in the prices of goods and services bought for the purpose of consumption in the UK. It includes a component for prices of fish, based on a 'basket' of six items: fresh white fish fillets, fresh salmon fillets, frozen prawns, canned tuna, fish fingers, and frozen breaded/battered white fish. The retail price index (RPI) is a similar inflation measure, calculated according to a different formula (see Appendix 4, UK fisheries statistics methodology). The RPI uses the same 'basket' of items for fish.

The fish components of the CPI and RPI rose by 3.6 per cent and 4.2 per cent respectively, from 2011 to 2012. Prices of first sale fish landed by UK vessels into the UK fell by an average of 6 per cent in 2012.

GDP for fishing

The gross value added (GVA) for fishing has fluctuated in recent years. GVA for fishing now stands at £479 million, an increase of 31 per cent in ten years. There has also been fluctuation in the GVA in the wider agriculture, forestry and fishing sector over the past decade, with fishing now forming 5.3 per cent of GVA in this sector in 2012 compared with 4.6 per cent in 2002. UK gross domestic product increased steadily from 2002 to 2008, falling in 2009 during the height of the UK recession before increasing again to £1,381 billion in 2012.

TABLE 4.6 GDP for fishing: 2002 to 2012

£ million (unless otherwise specified)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
GDP for Fishing [(a)]											
Current price gross value added at basic prices (KK37)	367	368	377	407	435	491	506	493	523	404	479
Output index (chain volume measures) (L2KO) (2010=100)	126.0	108.7	100.9	100.5	92.7	99.4	94.6	96.8	100.0	100.5	100.4
GDP for Agriculture, Forestry and Fishing											
Current price gross value added at basic prices (KKD5)	7,999	8,841	9,588	7,174	7,156	8,005	9,093	7,392	9,054	9,438	9,040
Output index (chain volume measures) (L2KL) (2010=100)	104.7	101.0	100.1	106.0	102.5	98.6	108.2	100.7	100.0	110.6	106.9
GDP at Market Prices											
Current price GDP at market prices (KKP5) (£ billion)	963	1,024	1,081	1,139	1,205	1,275	1,312	1,280	1,328	1,361	1,381
Chain volume measures index (YBEZ) (2010=100)	88.8	92.3	95.3	98.4	101.1	104.5	103.7	98.4	100.0	101.1	101.3
Percentage contribution of GVA from fishing to GVA for agriculture, hunting, forestry and fishing											
Current prices (%)	4.6%	4.2%	3.9%	5.7%	6.1%	6.1%	5.6%	6.7%	5.8%	4.3%	5.3%

Source: Office for National Statistics

(a) GDP for fishing includes landings abroad, according to the KK37 index.

5 Main stocks and their level of exploitation

Commentary provided by Dr Carl M. O'Brien, Defra Chief Fisheries Science Adviser

The management of stocks

Fisheries are managed using a Total Allowable Catch or TAC (corresponding to a particular harvesting rate), and technical measures (mainly mesh sizes and minimum landing sizes, but sometimes closed areas, which determine the smallest fish that can be caught and landed) based on scientific advice.

In the EU, the TAC is set each year by the Council of Ministers following negotiations on catch options that are provided by the Advisory Committee (ACOM) of the International Council for the Exploration of the Sea (ICES), an independent scientific body. For the main North Sea stocks these options take into account the terms of a management agreement between the EU and Norway. Once a TAC is agreed for each stock and fishing area it is allocated as quotas to Member States in accordance with fixed percentages based on historic fishing rights.

In recent years, some seriously depleted stocks have become the subject of emergency measures and recovery plan proposals. Since 2003, the TAC and fishing mortality for these stocks have been linked to effort control measures that restrict the number of fishing days at sea per annum permitted for fleets capturing recovery species.

Scientific assessment and advice

ICES advice is based on stock assessments carried out at international working groups, where fishery scientists from the UK and the other nations compile fisheries data, biological data and survey data for use in fisheries science models. The age structure of a stock (the relative proportion of the different age groups) is largely determined by the fishing rate and by the numbers of young fish that enter the stock each year. When information on age structure is combined with data on landings, fishing effort, and the results of standardised stock surveys carried out by research vessels, the models are able to estimate the historical trend in fishing rate and stock abundance, up to the last full year of data. The assessment is then used to forecast the expected catch in an upcoming TAC year for a range of fishing rate options, taking into account the number of young fish that are expected to enter the stock, based either on survey data, or a recent historic average.

This chapter summarises the present state of the main stocks based on advice from ACOM released during 2012, which evaluated stock assessments using fisheries data for years up to and including 2011, and survey data up to and including 2012. The 2012 ACOM advice formed the basis for the EU proposals that led to the TACs and other measures agreed for 2013 by the EU Council of Ministers.

Details are contained within two regulations - Council Regulation (EU) No 39/2013 of 21 January 2013 fixing for 2013 the fishing opportunities available to EU vessels for certain fish stocks and groups of fish stocks which are not subject to international negotiations or agreements; and Council Regulation (EU) No 40/2013 of 21 January 2013 fixing for 2013 the fishing opportunities available in EU waters and, to EU vessels, in certain non-EU waters for certain fish stocks and groups of fish stocks which are subject to international negotiations or agreements. Subsequently, further details are contained within Council Regulation (EU) No 297/2013 of 27 March 2013

amending Regulations (EU) No 44/2012, (EU) No 39/2013 and (EU) No 40/2013 as regards certain fishing opportunities. Additional changes may be made during 2013.

The fisheries zones used to base ICES stock assessments on are sometimes different from those used to allocate TACs. Table 5.1 below shows the generic title of each fishing zone and the specific areas included for ICES stock assessments and EU TAC allocations.

TABLE 5.1 Fishing areas used for ICES stock assessments and EU TAC allocations

		Fishing areas included in:	
Species	**Title**	**ICES Stock Assessments**	**EU TAC/Quota allocations**
Cod	North Sea	IV, VIId, IIIa	IIa (EC), IV [(a)]
	West of Scotland	VIa	Vb (EC), VIa
	Irish Sea	VIIa	VIIa
	Celtic Sea	VIIe-k	VII (ex VIIa, VIId), VIII, IX, X; CECAF 34.1.1 (EC)
Haddock	North Sea	IV, IIIa	IIa (EC), IV
	West of Scotland	VIa	Vb (EC), VIa
Plaice	North Sea	IV	IIa (EC), IV
	Irish Sea	VIIa	VIIa
Sole	North Sea	IV	II, IV
	Irish Sea	VIIa	VIIa
	Eastern Channel	VIId	VIId
	Western Channel	VIIe	VIIe
Herring	North Sea	IV, VIId, IIIa	IV (EC and Norway North of 53º 30'N) [(a)]
Mackerel	North East Atlantic	All ICES sub-areas	II (ex EC), Vb (EC), VI, VII, VIIIabde, XII, XIV [(a)]

Source: ICES and the European Commission

(a) Only largest stock shown. TACs have been set for other fishing areas covered by the stock assessment.

Summary stock presentation

For the main fish stocks, a summary of ICES data and assessments, where available, has been provided. These comprise four charts (a to d) showing total removals or landings, fishing mortality rates (F), recruitment and spawning stock biomass (SSB) since 1991 and exceptionally, since 1990 when current stock status is unknown with respect to precautionary values. In the latter cases, charts have not been updated since the last year for which stock status was assessed; as is the case for two stocks - Irish Sea plaice and Western Channel sole. The data are official statistics and not subject to National Statistics accreditation. ICES stock assessments since 2002 for each of these fisheries are also shown. The location of the relevant areas for each stock is shown in Appendix 3.

It is important to note that the figures shown are, for each stock, the time-series of estimates of abundance and fishing mortality provided by ICES in 2012 based on fishery and survey data collected up to the most recent year.

Total removals or landings - Chart a

Total removals equals total reported fish landings plus an estimate for discards and may include estimates of non-attributive losses. Landings are used where total removal figures are not available and charts are headed accordingly.

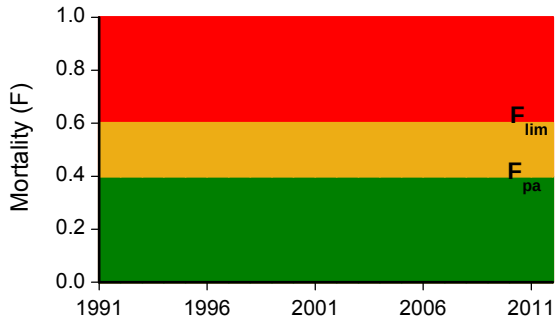
Fishing Mortality (F) - Chart b

Fishing mortality rate (F) is a measure of the proportion of fish taken from a stock each year by fishing activity. Fishing mortality rates are calculated from mathematical models used to assess fish stocks. An F value of 1 indicates that approximately 60 per cent of a stock is removed by fishing activity.

ICES provides fisheries advice that is consistent with the broad international policy norms of the precautionary approach, maximum sustainable yield (MSY), and an ecosystem approach while at the same time responding to the specific needs of the management bodies requesting advice.

Since 1999 the ICES advice has identified which catch options meet precautionary criteria. These criteria aim to ensure sustainability by keeping the fishing rate below a **maximum precautionary** level, F_{pa} (set low enough to allow a margin of error sufficient to keep F below an **upper limit** level, F_{lim}). The nature of ICES fisheries advice is evolving and that evolution includes options for a transition process to attain full implementation of the MSY approach by 2015. Ecosystem limitations on fisheries have typically not yet been identified in management policies in the ICES area. However, as the EU Marine Strategy Framework Directive (MSFD) is implemented, such limits will be recognized to achieve environmental objectives, especially regarding biodiversity, sea floor integrity, and food webs. In advance of this, ICES continues to strive towards providing advice that includes a greater range of information on fisheries and the marine ecosystem. For the first time in 2012, ICES presented options that incorporate technical interactions for mixed demersal fisheries in the North Sea – options are given as scenarios based on single-stock assessments combined with knowledge on the species composition of catches in North Sea fisheries. In this way, for example, harvests may be further limited in consideration of potential fishery impacts on marine ecosystems beyond the impact on target fish stocks.

For each of the main stocks a time series of F will be plotted against a colour coded background highlighting the precautionary levels set by ICES as shown below.



Green: Harvested sustainably - where F is below F_{pa} the stock is deemed to be fished in a sustainable way and fishing pressure is below the level recommended by ICES.

Amber: At risk of being harvested unsustainably - where F is above F_{pa} and below F_{lim} then fishing pressure is higher than the maximum level recommended by ICES. If it is not reduced it could lead to depletion of the stock in the future.

Red: Harvested unsustainably - where F is above F_{lim} fishing pressure is much higher than the maximum level recommended by ICES and if continued is likely to deplete the stock, if it has not done so already.

For some stocks ICES has only given a level for F_{pa}. In these cases, no amber region will appear on the chart. Additionally, in exceptional stock cases in 2012, ICES may review the data and modelling approaches for which the previously adopted precautionary fishing rates (F_{pa} and F_{lim}) are no longer appropriate. In such cases, no coloured regions will appear on the chart; as is the case for one stock – Celtic Sea cod.

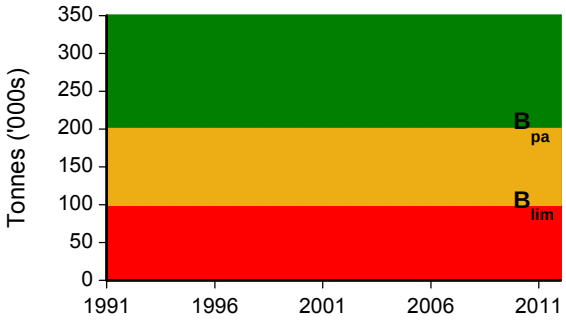
Recruitment - Chart c

Recruitment is the number of fish becoming available to a fishery stock in a year.

Spawning Stock Biomass (SSB) - Chart d

Spawning Stock Biomass (SSB) is the total estimated weight of all sexually mature fish in a stock. Since 1999 the ICES advice has identified which catch options meet precautionary criteria. These criteria aim to ensure sustainability by keeping SSB above a **minimum precautionary** level, B_{pa} (set high enough to allow a margin of error sufficient to keep SSB above a **lower limit** level, B_{lim}).

For each of the main stocks a time series of SSB will be plotted against a colour coded background highlighting the precautionary levels set by ICES as shown below.



Green: Full reproductive capacity - where SSB is above B_{pa} the fish stock is deemed to be in a healthy state and above the minimum level recommended by ICES.

Amber: At risk of suffering reduced reproductive capacity - where SSB is below B_{pa} but above B_{lim} the stock has been classified as not being so low that it could be classed as being depleted. However, the amount of adult fish has fallen to a level where there is a risk that production is likely to be reduced.

Red: Reduced reproductive capacity - where SSB is below B_{lim} the stock has been classified as depleted and the stock is unlikely to be as productive as it could be. This indicates that fishing pressure needs to be reduced in order to give the stock a chance to rebuild.

For some stocks ICES has only supplied a level for B_{pa}. In these cases no amber region will appear on the chart.

Further information

More information on ICES precautionary levels can be found on the ICES web site www.ices.dk.

ICES stock assessments

The fish stock assessments presented here are derived from annual ACOM reports, and are categorized according to the ICES definition of the state of the stock. The ICES advice on the state of stocks is based on assessments carried out using the most up to date data available in that year. **It is important to note that assessments for previous years have not been updated using more recent data**. The comparison of SSB with B_{pa} is done using the value of SSB at the beginning of the year in which the assessment was carried out. Where no B_{pa} value exists, the stock is treated as unknown.

Code	Assessment description
	Indicates stocks which are suffering reduced reproductive capacity
	Indicates stocks which are at risk of suffering reduced reproductive capacity
	Indicates stocks which are at full reproductive capacity but are either at risk of being harvested unsustainably or are being harvested unsustainably
	Indicates stocks which are at full reproductive capacity and are being harvested sustainably
	Indicates stocks where the current stock status is unknown

North Sea Cod – in ICES sub-area IV (North Sea), ICES division VIId (Eastern Channel) and ICES division IIIa (Skagerrak)

The cod stock remains seriously depleted. The international fishing rate has been high since the 1980s, and has shown a decline since 2000. The number of young cod (recruitment) has been low since 1987, and even lower since 1998, causing serious concern. Since 2000, ICES advised that the TAC should be very low, or zero, and the EU reduced the TAC from 81,000 tonnes in 2000 to 48,600 tonnes in 2001, 49,300 tonnes in 2002, and 27,300 tonnes in 2003, 2004 and 2005. The minimum mesh size in the directed fisheries for cod was also increased to 120mm in 2003. The 2012 ICES assessment indicates that the 2005 year-class is estimated to be one of the most abundant amongst the recent poor year-classes. Agreement was reached in 2004 within the EU on a formal recovery plan that was operational during the TAC and management decision processes of 2004, effectively rendering the plan operational in 2005. Subsequently, this was repealed and replaced by Council Regulation (EC) No 1342/2008 to establish a long-term plan for cod stocks. The TAC for 2013 is 26,475 tonnes, the same as in 2012, compared with 26,842 tonnes in 2011.

Chart 5.1a: Total removals

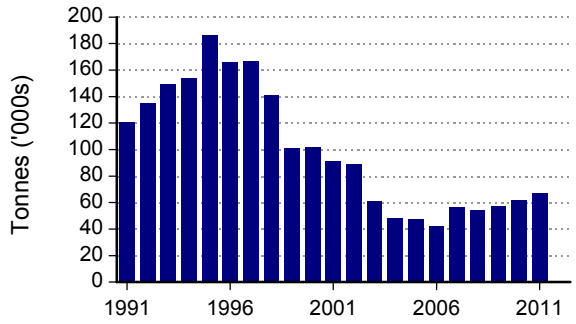


Chart 5.1b: Fishing mortality (F) – ages 2 - 4

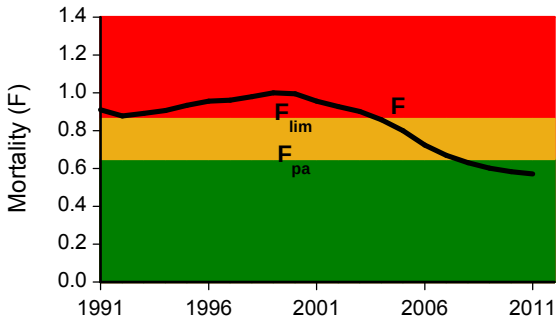


Chart 5.1c: Recruitment - age 1

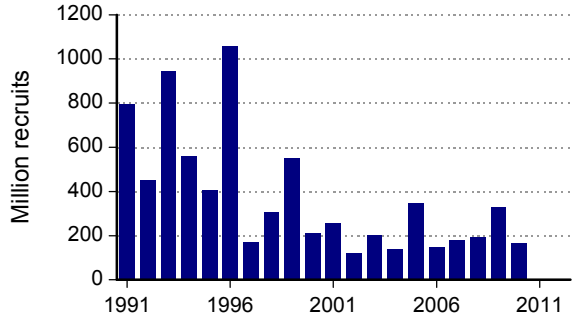
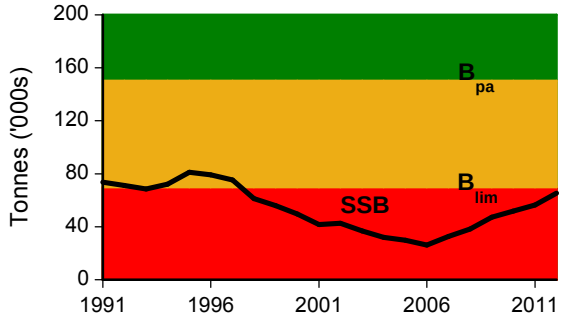


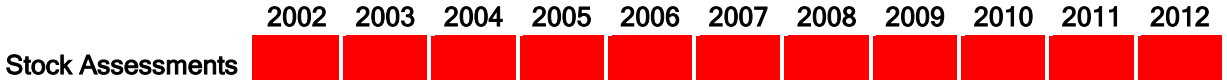
Chart 5.1d: Spawning stock biomass (SSB)



Note: The data in these charts are official statistics and not subject to National Statistics accreditation.

ICES stock assessment: North Sea Cod

The cod stock in the North Sea has been assessed as suffering reduced reproductive capacity by ICES since 2002.



West of Scotland Cod – in ICES division VIa

Previously, the cod stocks west of Scotland have been assessed as heavily over-exploited with respect to the rate that would lead to high long-term yields. SSB has increased from an all time low in 2006 but remains well below B_{lim}. ICES called for a recovery plan in 2000, with low or zero catches, and the EU has since cut the cod TACs significantly, implemented two small closed areas, and in 2003 increased the main whitefish mesh size to 120 mm in line with the North Sea. Subsequently, the European Commission enacted Council Regulation (EC) No 423/2004 that established measures for the recovery of cod stocks; this was repealed and replaced by Council Regulation (EC) No 1342/2008 to establish a long-term plan for cod stocks which includes a west of Scotland management line that follows the 200 m depth contour. The TAC for 2013 is a by-catch provision only, the same as in 2012 (compared with 182 tonnes in 2011).

Chart 5.2a: Total removals

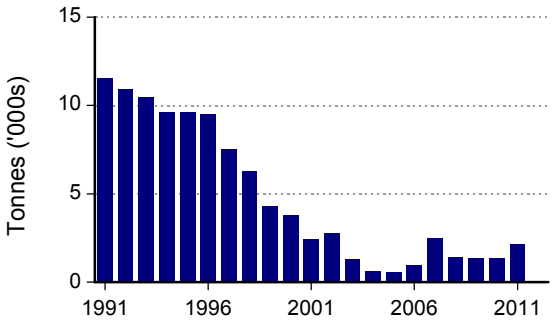


Chart 5.2b: Total mortality – ages 2 - 5

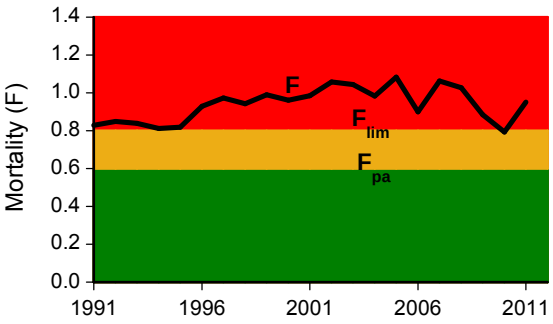


Chart 5.2c: Recruitment - age 1

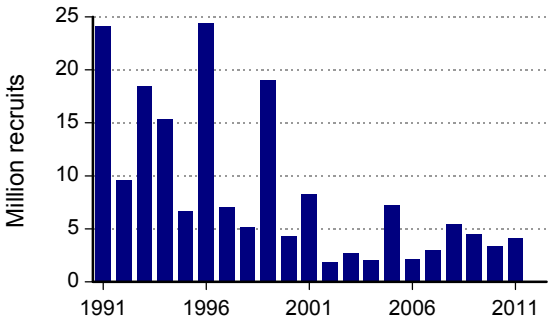
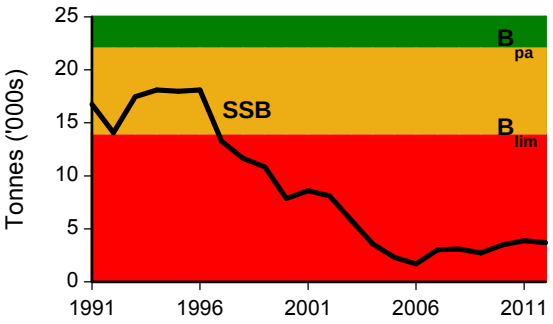


Chart 5.2d: Spawning stock biomass (SSB)



Note: The data in these charts are official statistics and not subject to National Statistics accreditation.

ICES stock assessment: West of Scotland Cod

Cod stocks in the West of Scotland have been assessed as suffering reduced reproductive capacity from 2001 to 2012.

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Stock Assessments						(a,b)	(a,b)	(a,b)	(a,b)	(a,b)	

(a) Total mortality cannot be accurately partitioned into F and M.

(b) Status uncertain in terms of F relative to F_{pa}, but suffering reduced reproductive capacity.

Irish Sea Cod - in ICES division VIIa (Irish Sea)

The cod stocks in the Irish Sea are seriously depleted, and landings fell rapidly during the 1980s and 1990s. The fishing rate has been very high, spawning stocks have fallen below both the precautionary and the lower limit level, and the abundance of young cod has been in decline since 1990. After 2000, the EU significantly reduced the cod TAC, closed the cod spawning area in the western Irish Sea during the spawning season, and increased the main whitefish mesh size to 100 mm. The 2012 cod assessment suggests that the stock is still over-exploited although the time series estimates of fishing rate have been substantially revised, following a review of data and modelling approaches. The European Commission enacted a Council Regulation (EC) No 423/2004 that established measures for the recovery of cod stocks which was repealed and replaced by Council Regulation (EC) No 1342/2008 to establish a long-term plan for cod stocks. The cod TAC agreed for 2013 is 285 tonnes, compared with 380 tonnes in 2012 and 506 tonnes in 2011.

Chart 5.3a: Total landings

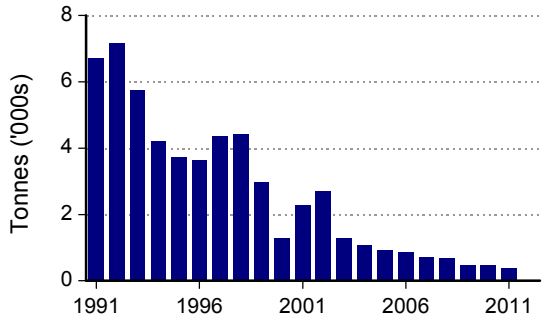


Chart 5.3b: Fishing mortality (F) – ages 2 - 4

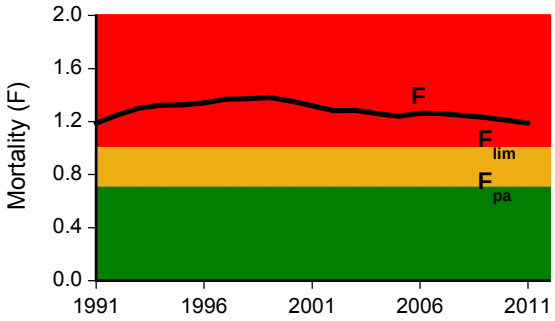


Chart 5.3c: Recruitment - age 0

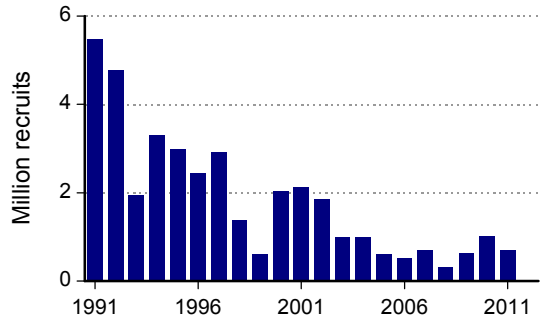
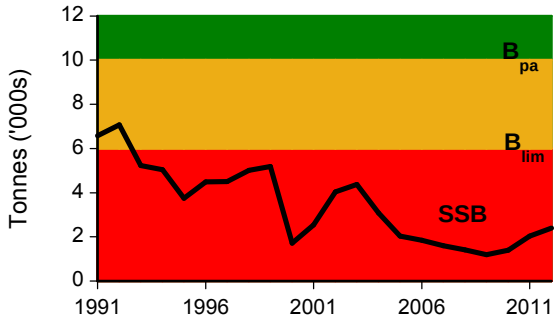


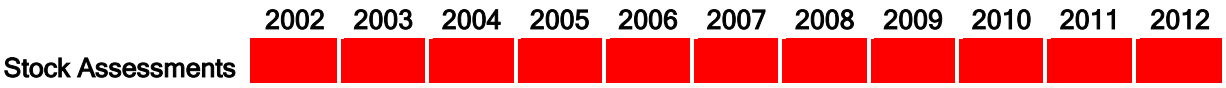
Chart 5.3d: Spawning stock biomass (SSB)



Note: The data in these charts are official statistics and not subject to National Statistics accreditation.

ICES stock assessment: Irish Sea Cod

Irish Sea cod has been assessed to be suffering reduced reproductive capacity since 2002.



Celtic Sea Cod – in ICES divisions VIIe-k

Internationally, cod in ICES divisions VIIe-k is caught in a range of fisheries including gadoid trawlers, *Nephrops* trawlers, otter trawlers, beam trawlers and gill-netters. This species is managed within a wider area; namely, ICES divisions VIIb-k (excluding ICES division VIId from 2009), ICES sub-areas VIII, IX, X and CECAF 34.1.1, but ICES advice applies only to ICES divisions VIIe-k. The Celtic Sea cod stock was excluded from the EU's 2004 cod recovery plan but a management plan is under development. The 2012 cod assessment has revised the time series estimates of fishing rate, spawning stock and recruitment, following a review of data and modelling approaches for which the previously adopted precautionary fishing rates (F_{pa} and F_{lim}) are no longer appropriate.

Chart 5.4a: Total landings

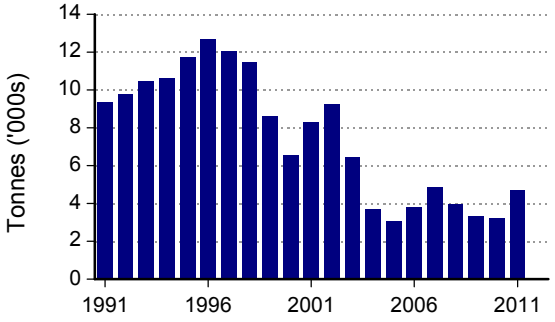


Chart 5.4b: Fishing mortality (F) – ages 2 - 5

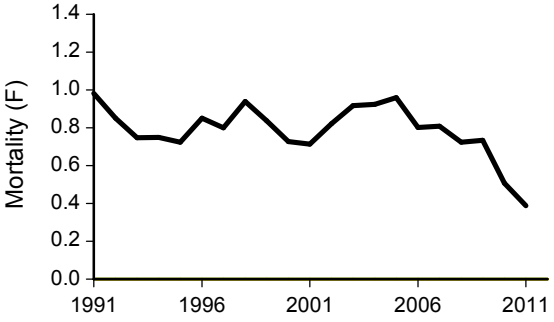


Chart 5.4c: Recruitment - age 1

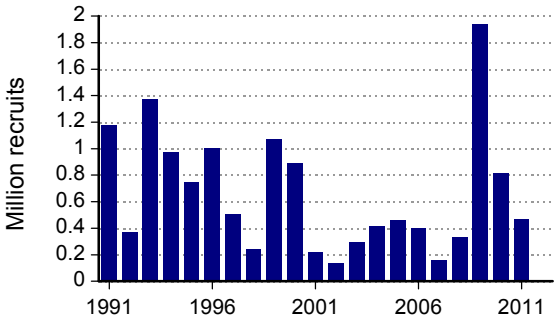
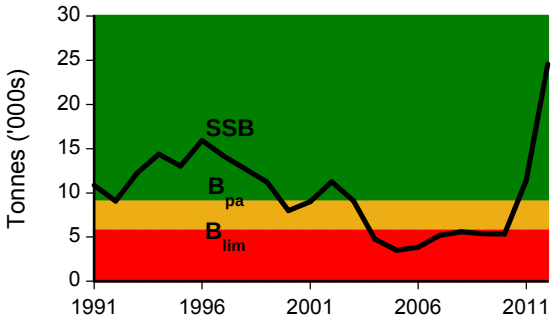


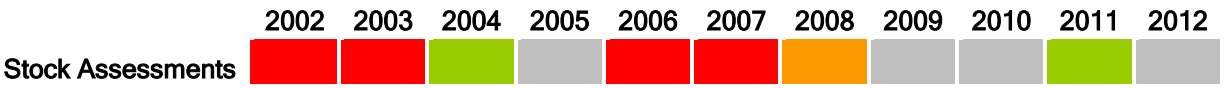
Chart 5.4d: Spawning stock biomass (SSB)



Note: The data in these charts are official statistics and not subject to National Statistics accreditation.

ICES stock assessment: Celtic Sea Cod

Between 2002 and 2007 cod in the Celtic Sea has been assessed as suffering reduced reproductive capacity; exceptions to this were found in 2004 and 2005. In 2008, cod in the Celtic Sea was assessed as at risk of suffering reduced reproductive capacity and in 2009 and 2010 an assessment was unable to be made. Subsequently in 2011, cod in the Celtic Sea was assessed as being at full reproductive capacity and being harvested sustainably, and in 2012 it was assessed as remaining at full reproductive capacity but with fishing rate unknown with respect to precautionary values F_{pa} and F_{lim}.



North Sea Haddock – in ICES sub-area IV (North Sea) and ICES division IIIa (Skagerrak – Kattegat)

The haddock stock is managed under an EU-Norway long-term management plan which is intended to constrain harvesting within safe biological limits and to provide for sustainable fisheries. Recruitment is characterized by occasional large year-classes, the last of which was the strong 1999 year-class. The 2012 assessment shows that the fishing mortality rate has been below F_{pa} since 2001 and is estimated to be below the target of 0.3 specified in the EU-Norway management plan; and that SSB has increased only slightly due to the relatively strong 2005 and 2009 year-classes. The haddock TAC was set at 34,057 tonnes for 2011, 39,166 tonnes for 2012 and 45,040 tonnes for 2013.

Chart 5.5a: Total removals

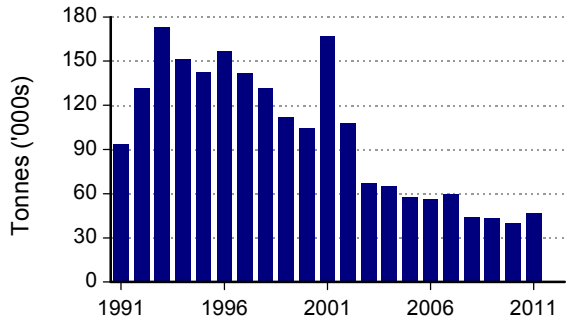


Chart 5.5b: Fishing mortality (F) – ages 2 - 4

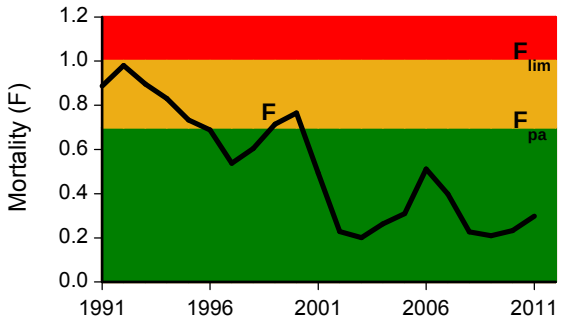


Chart 5.5c: Recruitment - age 0

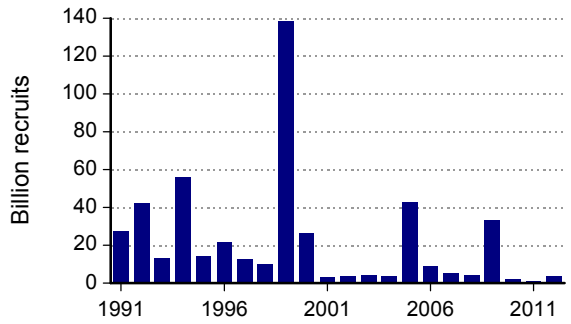
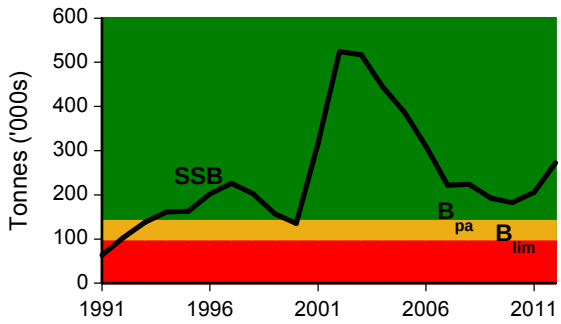


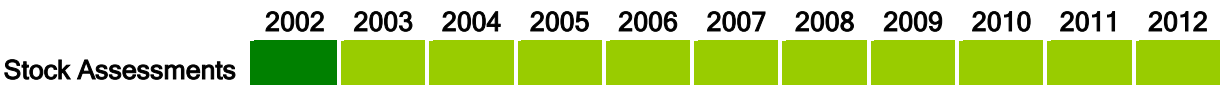
Chart 5.5d: Spawning stock biomass (SSB)



Note: The data in these charts are official statistics and not subject to National Statistics accreditation.

ICES stock assessment: North Sea Haddock

Haddock in the North Sea was assessed as at full reproductive capacity but being harvested unsustainably in 2002. Since then ICES has assessed the North Sea haddock stock as being at full reproductive capacity and being harvested sustainably.



West of Scotland Haddock – in ICES division VIa (West of Scotland)

The haddock stock west of Scotland continues to be exploited with respect to the rate that would lead to high long-term yields. The very strong 1999 year-class caused SSB to increase from a level near the historic low in 2000 to a peak in 2003, although SSB has exhibited a generally declining trend since. The TAC for 2013 is 4,211 tonnes compared with 6,015 tonnes in 2012 and 2,005 tonnes in 2011.

Chart 5.6a: Total removals

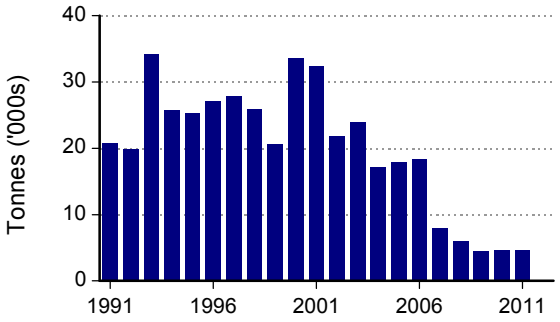


Chart 5.6b: Fishing mortality (F) – ages 2 - 6

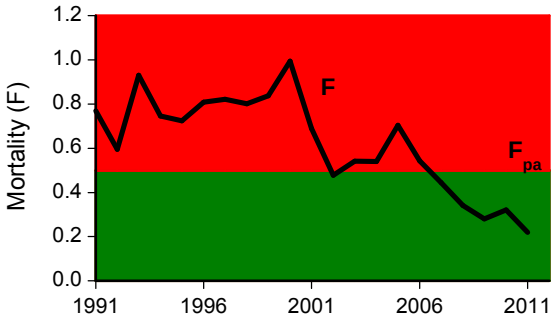


Chart 5.6c: Recruitment - age 1

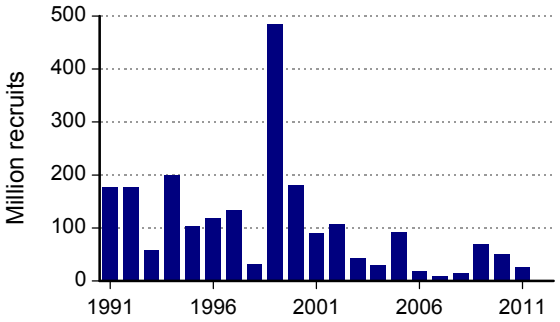
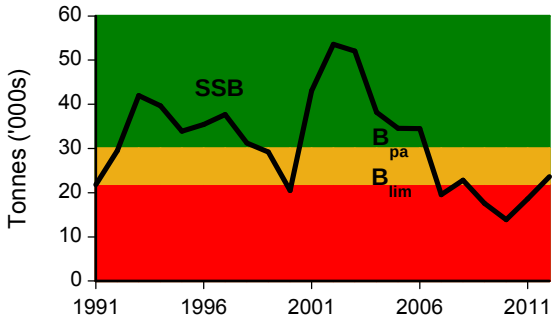


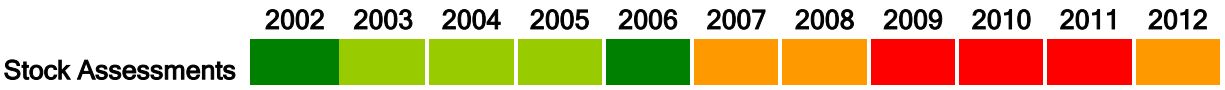
Chart 5.6d: Spawning stock biomass (SSB)



Note: The data in these charts are official statistics and not subject to National Statistics accreditation.

ICES stock assessment: West of Scotland Haddock

From 2002 to 2006 haddock in the West of Scotland has been assessed as being at full reproductive capacity, although in some years (2002 and 2006) the stock has been harvested unsustainably. In 2007 and 2008, haddock in the West of Scotland was assessed to be at risk of suffering reduced reproductive capacity. In 2009, 2010 and 2011 the stock was assessed as suffering reduced reproductive capacity. In 2012, the stock was assessed to be at risk of suffering reduced reproductive capacity.



North Sea Plaice – in ICES sub-area IV (North Sea)

Since 2004, the plaice assessments have included estimates of discards. This has changed the perception of the plaice stock relative to precautionary levels. It shows landings and SSB falling steeply after 1990 as the fishing rate increased to a peak in 1997, with SSB currently above B_{pa}, and with the fishing rate estimated to have decreased to below F_{pa} and consistent with high long-term yields. Discarding of small plaice continues to be a problem. A long-term management plan for North Sea plaice and sole has been under development within the European Commission – final details are contained within Council Regulation (EC) No 676/2007 of 11 June 2007. The TAC for 2013 is 97,070 tonnes, compared with 84,410 tonnes in 2012 and 73,400 tonnes in 2011.

Chart 5.7a: Total removals

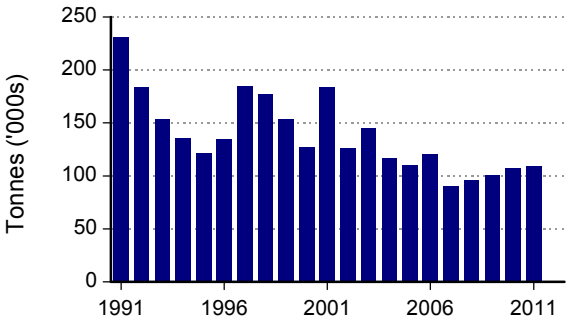


Chart 5.7b: Fishing mortality (F) – ages 2 - 6

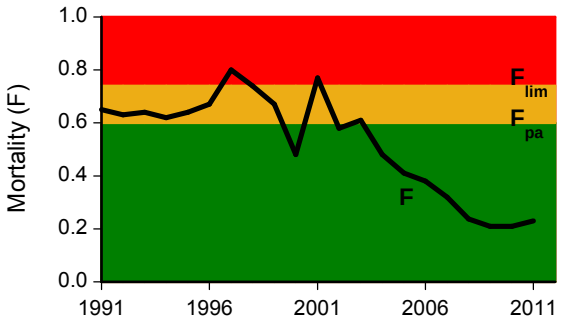


Chart 5.7c: Recruitment - age 1

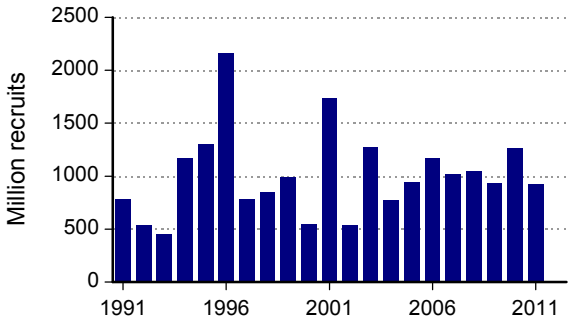
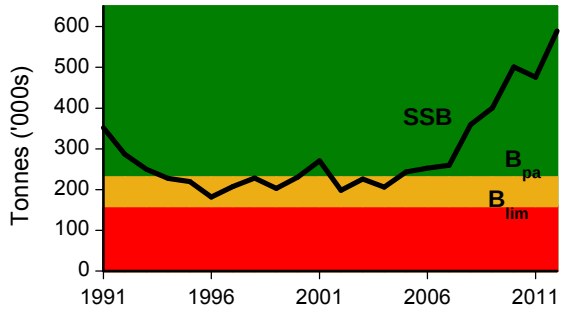


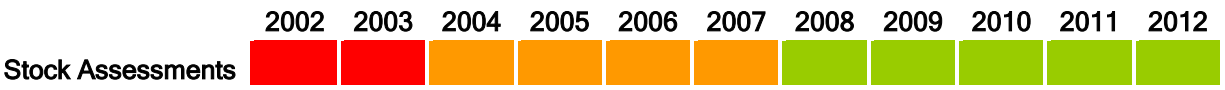
Chart 5.7d: Spawning stock biomass (SSB)



Note: The data in these charts are official statistics and not subject to National Statistics accreditation.

ICES stock assessment: North Sea Plaice

North Sea plaice assessments in 2002 and 2003 were that the stock was suffering reduced reproductive capacity. Since 2004 assessments have improved and now the stock is assessed to be at full reproductive capacity and being harvested sustainably.



Irish Sea Plaice - in ICES division VIIa (Irish Sea)

The fishing rate on Irish Sea plaice has shown a declining trend since the early 1990s and the SSB trends show an increase in stock size since the mid-1990s to a stable level. Discards are now included in the ICES assessment and discard sampling studies have indicated that discarding may be as high as 80 per cent by number. Hence, the assessment in 2012 uses survey data to show SSB and mortality trends only. The available information is inadequate to evaluate SSB and F relative to precautionary boundaries. The plaice TAC agreed for 2013 is 1,627 tonnes, the same as in the two previous years 2012 and 2011.

Chart 5.8a: Total landings

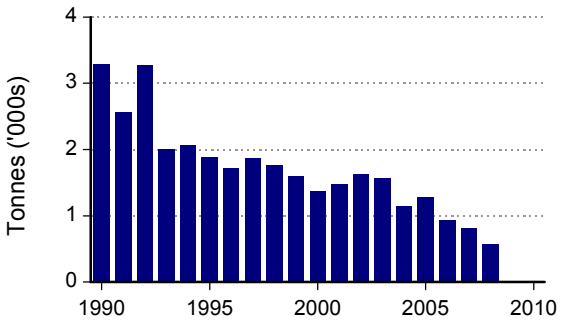


Chart 5.8b: Fishing mortality (F) – ages 3 - 6

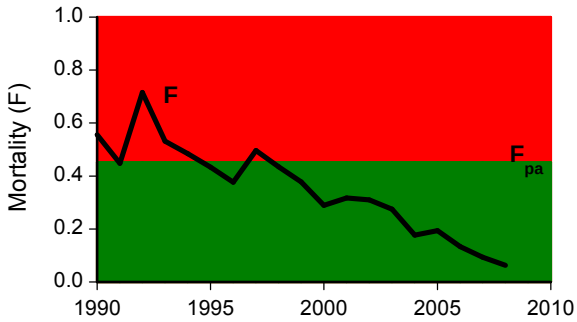


Chart 5.8c: Recruitment - age 2

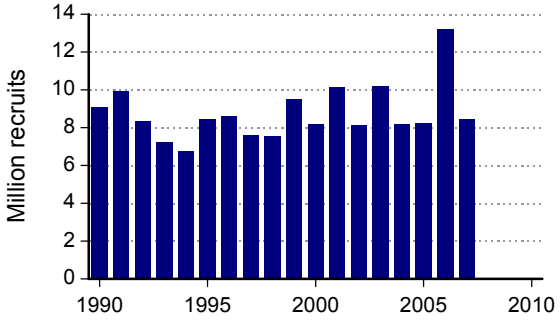
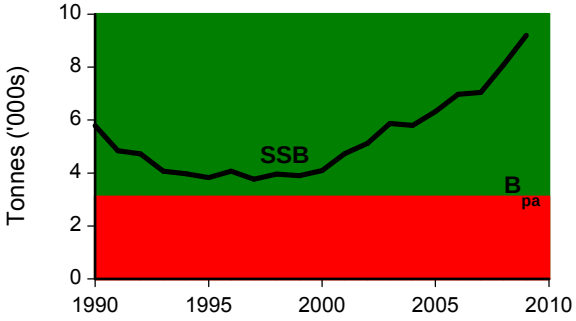


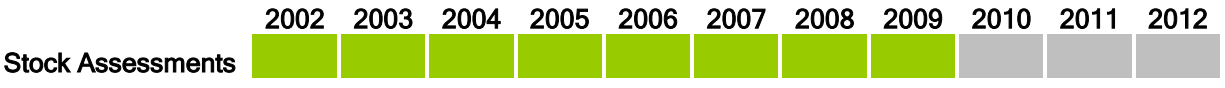
Chart 5.8d: Spawning stock biomass (SSB)



Note: The data in these charts are official statistics and not subject to National Statistics accreditation.

ICES stock assessment: Irish Sea Plaice

Between 2002 and 2009 Irish Sea plaice has been assessed as being at full reproductive capacity and being harvested sustainably. In 2010, 2011 and 2012 the available information has been inadequate to determine stock status relative to precautionary boundaries.



North Sea Sole – in ICES sub-area IV (North Sea)

The fishing rate for North Sea sole has fluctuated above the precautionary level, falling below this since 2008. Periodic good year-classes have raised SSB above the precautionary level from time to time. SSB has fluctuated around the precautionary reference points for the last decade, and the fishing rate is declining but is above the rate that would lead to high long-term yields. The TAC agreed for 2013 is 14,000 tonnes (compared with 16,200 tonnes in 2012 and 14,100 tonnes in 2011).

Chart 5.9a: Total landings

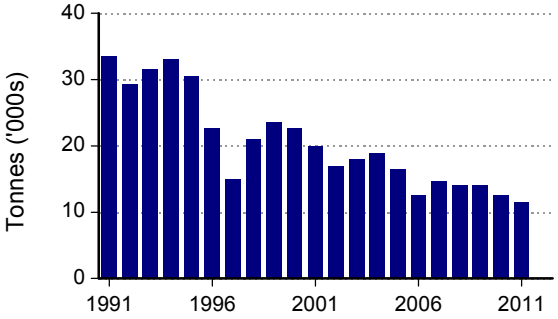


Chart 5.9b: Fishing mortality (F) – ages 2 - 6

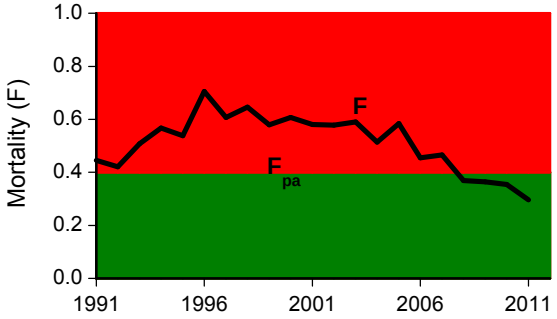


Chart 5.9c: Recruitment - age 1

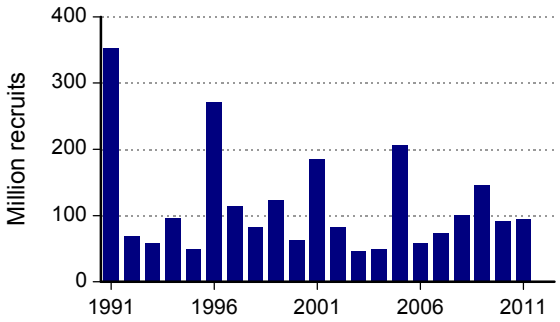
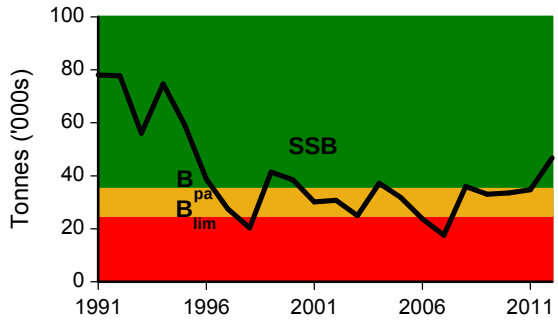


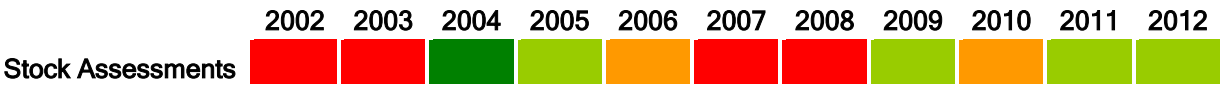
Chart 5.9d: Spawning stock biomass (SSB)



Note: The data in these charts are official statistics and not subject to National Statistics accreditation.

ICES stock assessment: North Sea Sole

North Sea sole assessments have varied widely since 2002. In 2011 and 2012 North Sea sole was assessed as being at full reproductive capacity and being harvested sustainably.



Irish Sea Sole - in ICES division VIIa (Irish Sea)

The Irish Sea sole fishing rate is above the rate that would lead to high long-term yields. SSB has declined since 2001 to low levels and reached the lowest level in 2012. The sole TAC agreed for 2013 is 140 tonnes, compared with 300 tonnes in 2012 and 390 tonnes in 2011.

Chart 5.10a: Total landings

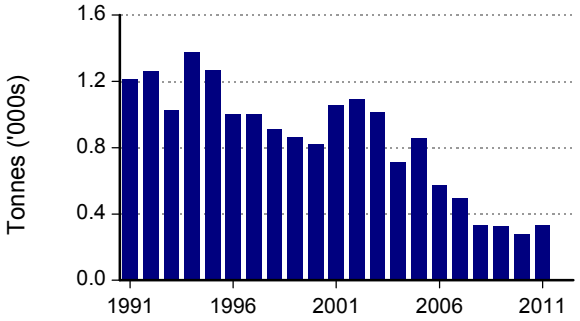


Chart 5.10b: Fishing mortality (F) – ages 4 - 7

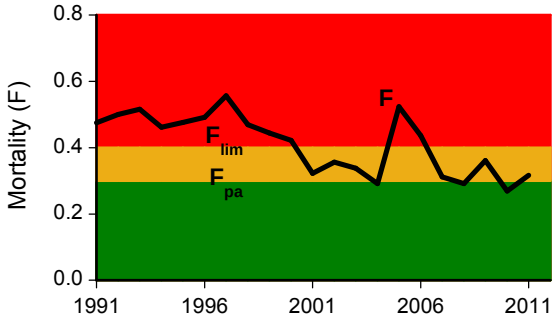


Chart 5.10c: Recruitment - age 2

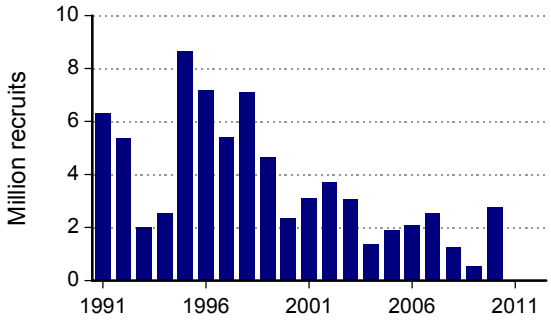
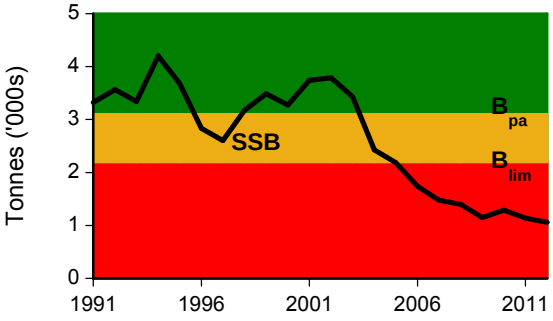


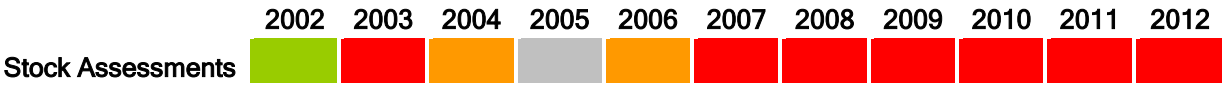
Chart 5.10d: Spawning stock biomass (SSB)



Note: The data in these charts are official statistics and not subject to National Statistics accreditation.

ICES stock assessment: Irish Sea Sole

Assessments for Irish Sea sole have been mixed since 2002. From 2003 the stock has either been assessed as suffering or at risk of suffering reduced reproductive capacity, except in 2005 when an assessment was unable to be made.



Eastern Channel Sole – in ICES division VIId (Eastern Channel)

Sole stocks in the Eastern and Western Channel are biologically discrete stocks that are assessed and managed separately. In the larger, Eastern Channel stock, the assessed fishing rate has recently increased and fluctuated between F_{pa} and F_{lim} over the past six years, and SSB has increased above the precautionary level. The TAC for 2013 is 5,900 tonnes, compared with 5,580 tonnes in 2012 and 4,852 tonnes in 2011.

Chart 5.11a: Total landings

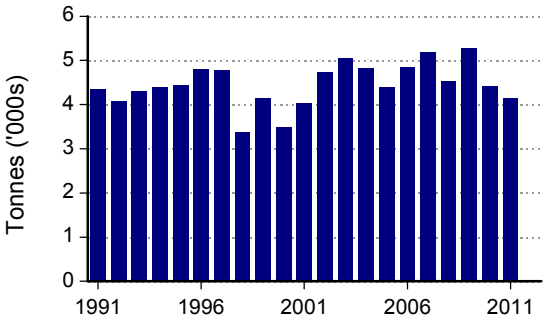


Chart 5.11b: Fishing mortality (F) – ages 3 - 8

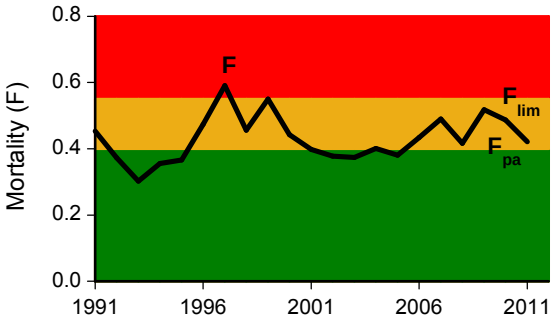


Chart 5.11c: Recruitment - age 1

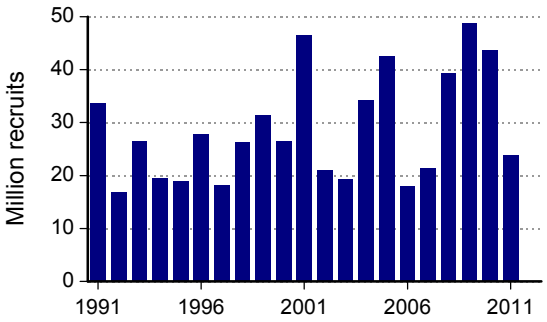
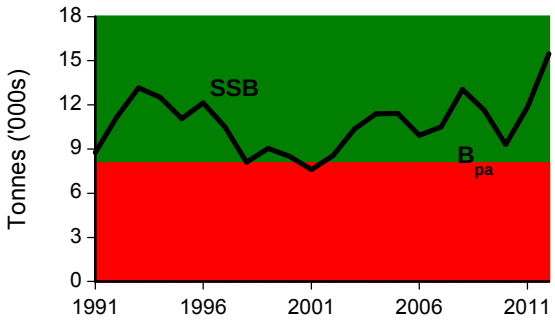


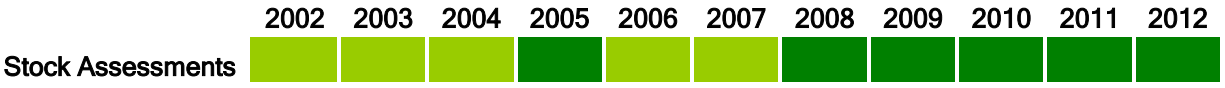
Chart 5.11d: Spawning stock biomass (SSB)



Note: The data in these charts are official statistics and not subject to National Statistics accreditation.

ICES stock assessment: Eastern Channel Sole

The Eastern Channel sole stock has consistently been assessed at full reproductive capacity since 2002. However, in 2005 and from 2008 to 2012 the stock was judged to be at risk of being harvested unsustainably.



Western Channel Sole – in ICES division VIIe (Western Channel)

Sole stocks in the Eastern and Western Channel are biologically discrete stocks that are assessed and managed separately. In the smaller, Western Channel stock, the last accepted assessment in 2008 indicated that the assessed fishing rate has been above F_{pa} since 1979, and that SSB has declined since 1980 to an historic low. The assessment in 2009 was merely indicative of trends, whilst in 2010 an analytical assessment was provided but one for which it was not possible to determine current stock status relative to precautionary boundaries. In 2012 an analytical assessment was provided but one for which it is not possible to determine current stock status relative to precautionary boundaries as these have been withdrawn by ICES for this stock. The TAC for 2013 is 894 tonnes compared with 777 tonnes in 2012 and 710 tonnes in 2011.

Chart 5.12a: Total landings

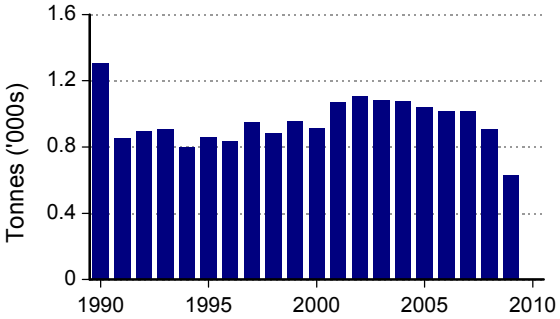


Chart 5.12b: Fishing mortality (F) – ages 3 - 7

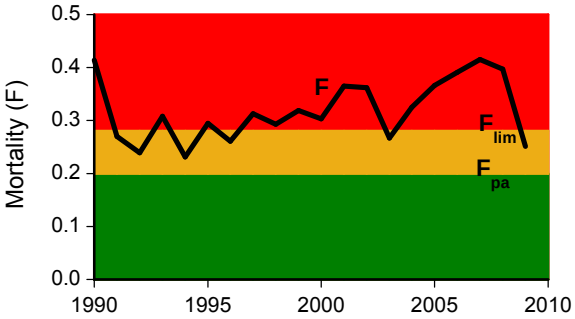


Chart 5.12c: Recruitment - age 1

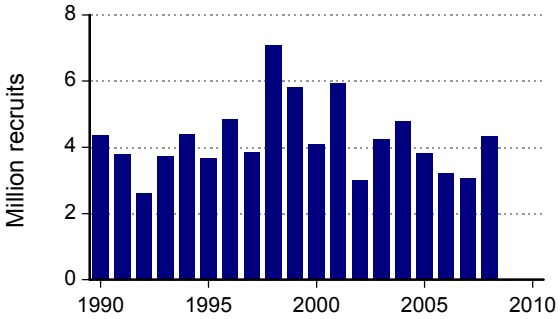
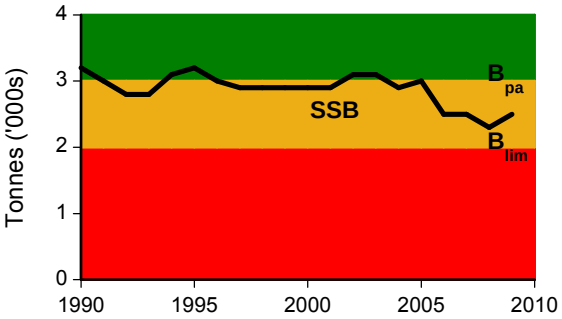


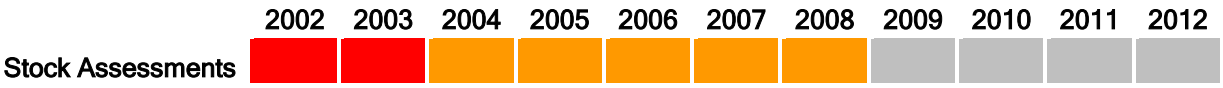
Chart 5.12d: Spawning stock biomass (SSB)



Note: The data in these charts are official statistics and not subject to National Statistics accreditation.

ICES stock assessment: Western Channel Sole

Since 2004 VIIe sole has been assessed as a stock at risk of suffering reduced reproductive capacity. Assessments were unable to be made in 2009 and 2010 whilst in 2011 an assessment was undertaken but the precautionary reference points were withdrawn by ICES. The same situation is the case in 2012, too.



North Sea Herring – in ICES sub-area IV (North Sea), ICES division VIId (Eastern Channel) and ICES division IIIa (Skagerrak – Kattegat)

The North Sea herring stock, which collapsed in the 1970s and was closed to fishing for several years, subsequently recovered, and although it fell back in the mid-1990s, it has again been rehabilitated. In 2012, SSB was above the precautionary level with a moderate fishing rate on both juvenile and adult herring, coupled with two strong year-classes in 1998 and 2000. However, all year-classes since 2002 are among the weakest since the late 1970s. The TAC in 2013 is 478,000 tonnes, compared with 405,000 tonnes in 2012 and 200,000 tonnes in 2011.

Chart 5.13a: Total landings

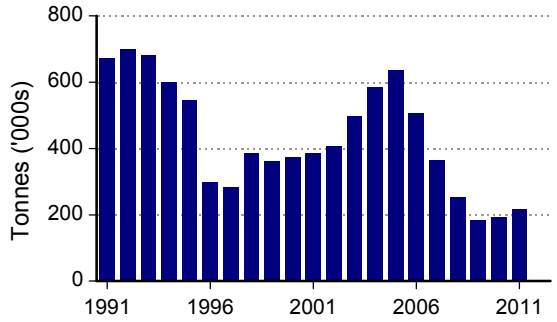


Chart 5.13b: Fishing mortality (F) – ages 2 - 6

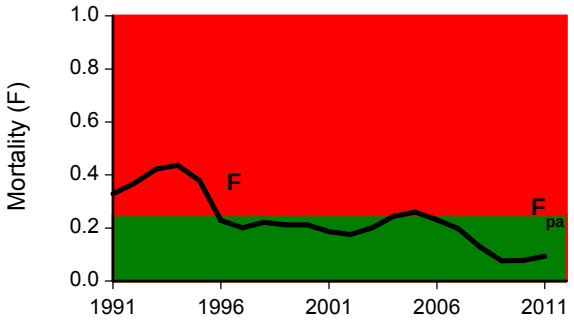


Chart 5.13c: Recruitment - age 0

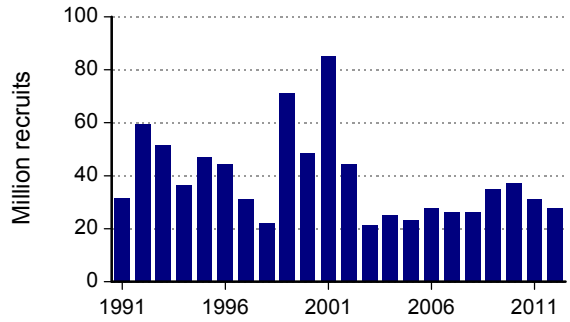
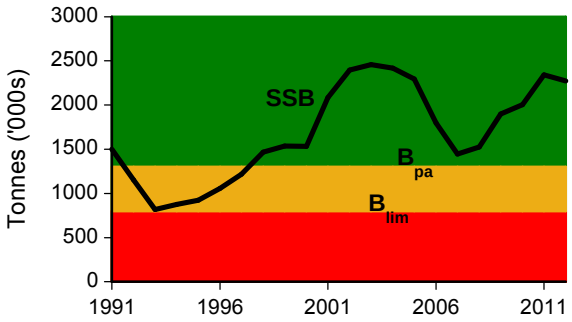


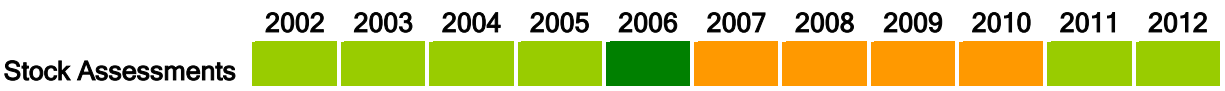
Chart 5.13d: Spawning stock biomass (SSB)



Note: The data in these charts are official statistics and not subject to National Statistics accreditation.

ICES stock assessment: North Sea Herring

North Sea herring was assessed as a stock at full reproductive capacity being sustainably harvested from 2002 to 2005. This assessment weakened to a stock at risk of being harvested unsustainably in 2006 and a stock at risk of suffering reduced reproductive capacity since 2007. In 2011 and 2012, North Sea herring was assessed as being at full reproductive capacity and being harvested sustainably.



North East Atlantic Mackerel – combined Southern, Western and North Sea spawning components

Mackerel is assessed as the single North East Atlantic (NEA) stock which combines the Southern, Western and North Sea spawning components. SSB has increased considerably since 2002 and remains high above B_{pa}. The stock is classified at risk of being harvested unsustainably and the 2005 and 2006 year-classes are the highest on record. The 2007, 2008 and 2010 year-classes are estimated to be about average. New management measures adopted from 2009 led to an increase of almost 33 per cent in the 2009 TAC in the NEA for mackerel, whilst maintaining measures to protect the North Sea spawning component. At the time of writing, the TAC has not been set for 2013 and, given the difficult state of the negotiations and the claims for increased shares in the fishery by some of the fishing states, it appears very unlikely that a TAC will be set. For reference, the TAC was not agreed in 2012 and 2011 similar reasons.

Chart 5.14a: Total removals

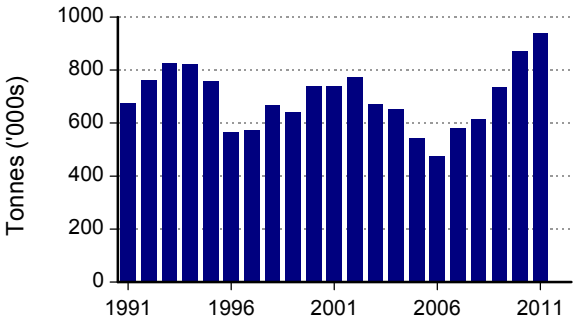


Chart 5.14b: Fishing mortality (F) – ages 4 - 8

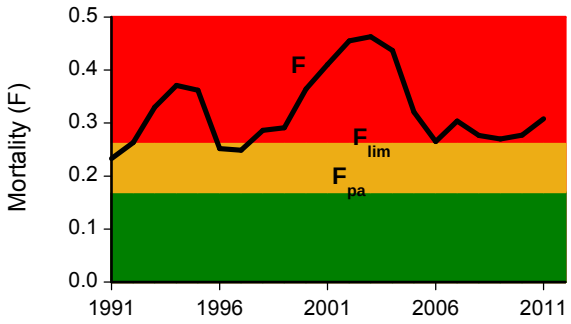


Chart 5.14c: Recruitment - age 0

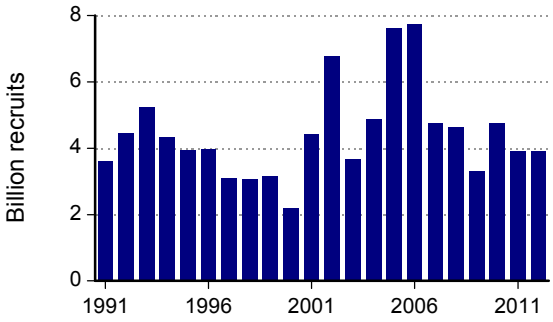
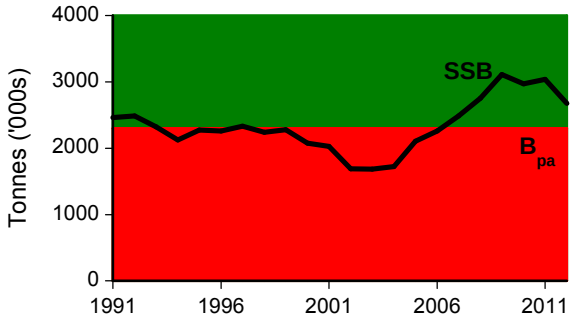


Chart 5.14d: Spawning stock biomass (SSB)



Note: The data in these charts are official statistics and not subject to National Statistics accreditation.

ICES stock assessment: North East Atlantic Mackerel

In 2002 and 2003 and from 2005 to 2012 North East Atlantic mackerel has been assessed as being at full reproductive capacity but either at risk of or being harvested unsustainably. In 2004 North East Atlantic mackerel was assessed as at risk of suffering reduced reproductive capacity.

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Stock Assessments				(a)	(a)	(a)					(a)

(a) Status uncertain in terms of SSB relative to B_{pa}; but harvested unsustainably

6 Overview of the world fishing industry

Introduction

The world catch data presented in this chapter have been extracted from the most recently available data from the Food and Agricultural Organisation (FAO) of the United Nations. These tables present annual statistics from 2001 to 2011, on a world-wide basis, of nominal catches (see Appendix 2, Glossary of terms). The data are official statistics and are not subject to National Statistics accreditation. The FAO updates historic data frequently. Revisions have not been highlighted in the following tables.

World catch

In 2011, the world catch figure from marine fishing was 82.4 million tonnes, up 6 per cent compared with 2010. Table 6.1 shows vessels from Asia and the Middle East catching 50 per cent of the world total. Central and South America vessels caught 19 per cent, while European vessels accounted for 16 per cent of world total.

TABLE 6.1 World catch by continent: 2001 to 2011

Figures refer to Marine Fishing Areas unless otherwise specified (Million tonnes)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Europe	15.7	15.0	14.3	13.7	13.6	13.1	13.1	12.7	13.0	13.5	13.0
Africa	4.8	4.7	4.9	5.0	5.0	4.5	4.5	4.7	4.7	4.9	4.7
North America	6.1	6.1	6.2	6.3	6.2	6.1	6.0	5.5	5.3	5.5	6.2
Central & S. America[(a)]	16.5	17.6	14.1	18.9	18.2	15.9	15.8	15.9	15.2	11.5	15.8
Asia[(b)]	37.8	37.8	38.7	38.6	38.6	39.3	39.9	39.8	40.1	41.1	41.5
Oceania	1.1	1.2	1.3	1.4	1.5	1.4	1.4	1.2	1.2	1.2	1.2
Other nei[(c)]	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Marine Areas	**82.2**	**82.6**	**79.7**	**84.1**	**83.1**	**80.4**	**80.7**	**79.9**	**79.6**	**77.7**	**82.4**

Source: FAO

(a) Central & S.America includes the Caribbean.

(b) Asia includes the Middle East.

(c) Not elsewhere included.

Note: The data in this table are official statistics and are not subject to National Statistics accreditation.

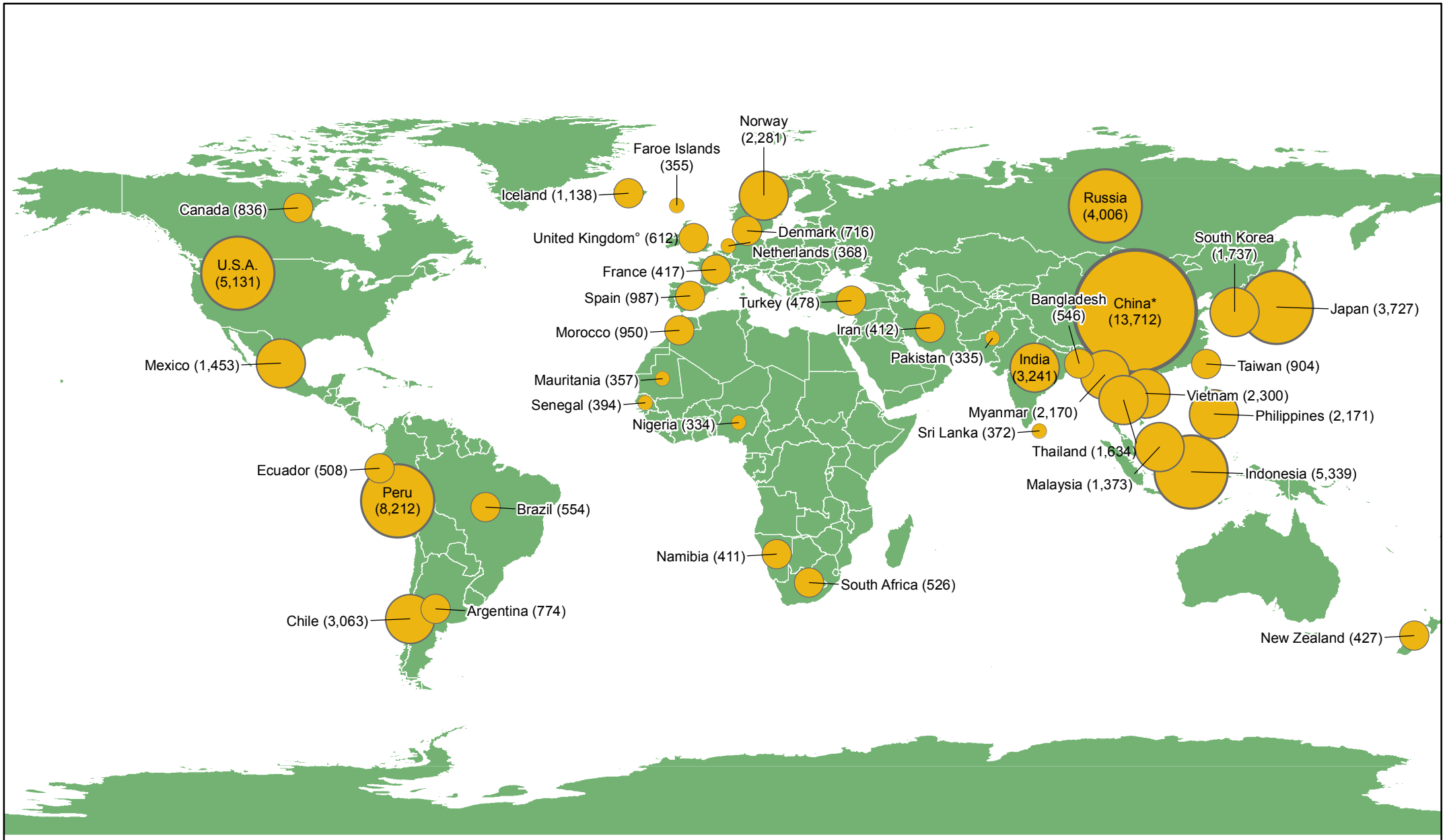
Note: Additional data on world catch by nationality of vessel are available from the MMO website as supplementary Table 6.1a.

Chart 6.1 shows the total catch by major fishing nations in terms of quantity caught in 2011.

In 2011, China (including Hong Kong and Macao SAR) caught the largest amount of fish, 13.7 million tonnes. Peru had the second largest catch at 8.2 million tonnes. Indonesia, the United States of America and the Russian Federation each caught between 4.0 and 5.4 million tonnes.

In 2011, Spain caught 987 thousand tonnes, the highest of any country in the European Union. Denmark caught 716 thousand tonnes. FAO figures show a UK catch in 2011 of 612 thousand tonnes (including 10 thousand tonnes by the Isle of Man and Channel Islands). Note this is different from the more recent figure of 595 thousand tonnes shown in Table 3.6 of Chapter 3.

Chart 6.1: World catch by nationality of vessel, major catchers of fish: 2011 ('000 tonnes)



* Catch for China includes Hong Kong SAR and Macao SAR.
° Catch for UK includes Channel Islands and Isle of Man.

FAO fishing areas are shown in Chart 6.2. Of the 82 million tonnes of fish caught in 2011, 61 per cent were caught in the Pacific Ocean, 25 per cent in the Atlantic Ocean and 14 per cent in the Indian Ocean (see Table 6.2).

In the Atlantic Ocean, the 2011 catch was 17 per cent lower than in 2001. However, over the same period the catch in the Pacific Ocean was 4 per cent higher, while in the Indian Ocean marine catches have increased by 28 per cent between 2001 and 2011. This is almost entirely due to the 48 per cent increase in catches from the Eastern Indian Ocean.

TABLE 6.2 World catch by sea area: 2001 to 2011

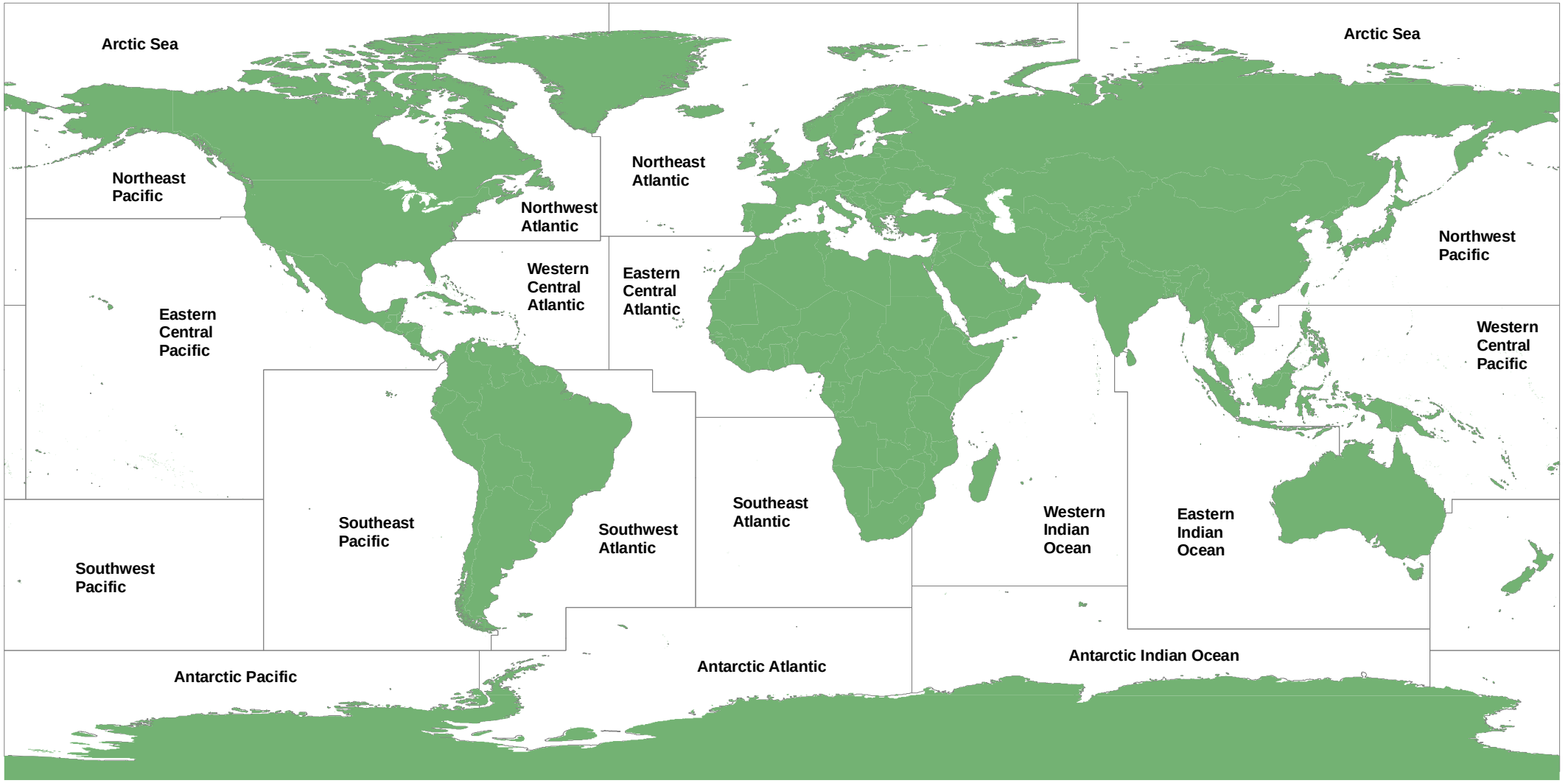
Figures refer to Marine Fishing Areas only (Million tonnes)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Atlantic Ocean											
Arctic Sea	-	-	-	-	-	-	..	..	-	..	..
Northwest Atlantic	2.2	2.2	2.3	2.4	2.2	2.2	2.2	2.1	2.0	2.1	2.0
Northeast Atlantic	11.1	11.1	10.3	10.0	9.6	9.1	8.9	8.5	8.4	8.7	8.0
Western Central Atlantic	1.7	1.8	1.8	1.7	1.4	1.4	1.4	1.3	1.4	1.3	1.5
Eastern Central Atlantic	3.9	3.6	3.5	3.7	3.8	3.6	3.6	3.9	4.1	4.4	4.2
Mediterranean and Black Sea	1.6	1.6	1.5	1.5	1.4	1.6	1.7	1.5	1.5	1.4	1.4
Southwest Atlantic	2.2	2.1	2.0	1.8	1.8	2.4	2.5	2.4	1.9	1.8	1.8
Southeast Atlantic	1.7	1.7	1.7	1.7	1.6	1.4	1.4	1.4	1.2	1.3	1.2
Antarctic Atlantic	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2
Total Atlantic Ocean	**24.6**	**24.2**	**23.2**	**23.0**	**22.1**	**21.7**	**21.8**	**21.2**	**20.7**	**21.2**	**20.4**
India Ocean											
Western Indian Ocean	4.0	4.3	4.4	4.4	4.4	4.5	4.2	4.1	4.2	4.3	4.2
Eastern Indian Ocean	4.9	5.2	5.3	5.6	5.5	5.9	6.1	6.3	6.8	6.9	7.2
Antarctic Indian Ocean	..	..	..	..	..	..	..	..	..	..	..
Total Indian Ocean	**8.9**	**9.5**	**9.8**	**10.0**	**9.9**	**10.4**	**10.2**	**10.5**	**10.9**	**11.1**	**11.4**
Pacific Ocean											
Northwest Pacific	20.5	19.2	19.9	19.3	19.7	19.6	19.9	20.1	20.4	21.0	21.4
Northeast Pacific	2.8	2.8	2.9	3.0	3.2	3.1	2.9	2.6	2.3	2.4	2.9
Western Central Pacific	10.1	10.5	10.8	10.9	11.1	11.1	11.4	10.9	11.2	11.8	11.5
Eastern Central Pacific	1.9	2.0	1.8	1.6	1.6	1.7	1.8	1.9	2.0	1.9	1.9
Southwest Pacific	0.7	0.8	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6
Southeast Pacific	12.7	13.7	10.6	15.6	14.7	12.2	12.1	12.1	11.4	7.8	12.3
Antarctic Pacific	..	..	..	..	..	..	..	..	..	..	..
Total Pacific Ocean	**48.7**	**49.0**	**46.7**	**51.2**	**51.0**	**48.3**	**48.6**	**48.2**	**48.0**	**45.4**	**50.6**
World Total	**82.2**	**82.6**	**79.7**	**84.1**	**83.1**	**80.4**	**80.7**	**79.9**	**79.6**	**77.7**	**82.4**

Source: FAO

Note: The data in this table are official statistics and are not subject to National Statistics accreditation.

Chart 6.2: FAO marine fishing areas



Source: FAO Fishery & Aquaculture Department

Appendix 1: Supplementary charts showing landings and effort by UK vessels by ICES rectangle: 2012

Chart A1.1: Cod landings by UK vessels by ICES rectangle: 2012

Chart A1.1a: Quantity of landings by ICES rectangle

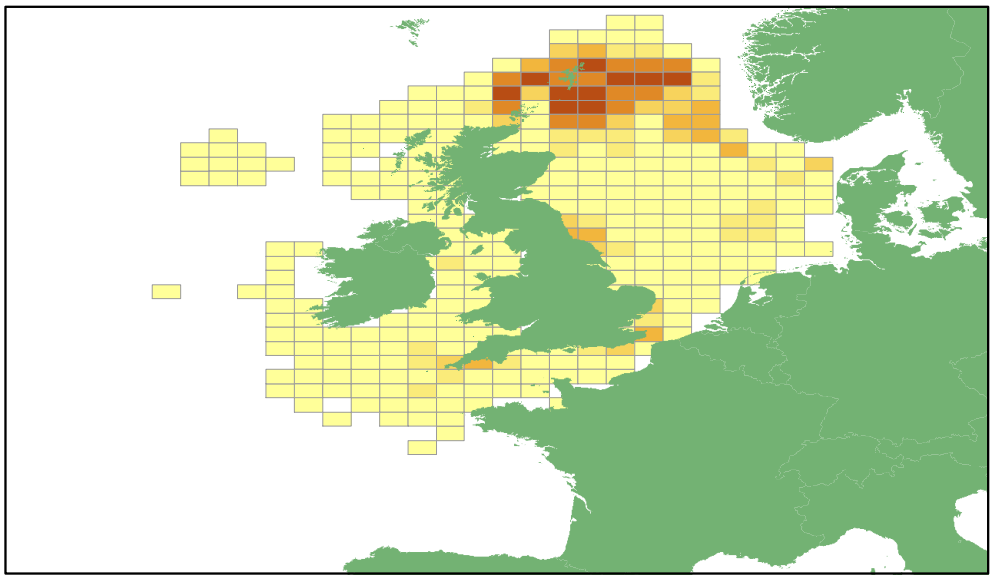


Chart A1.1b: Value of landings by ICES rectangle

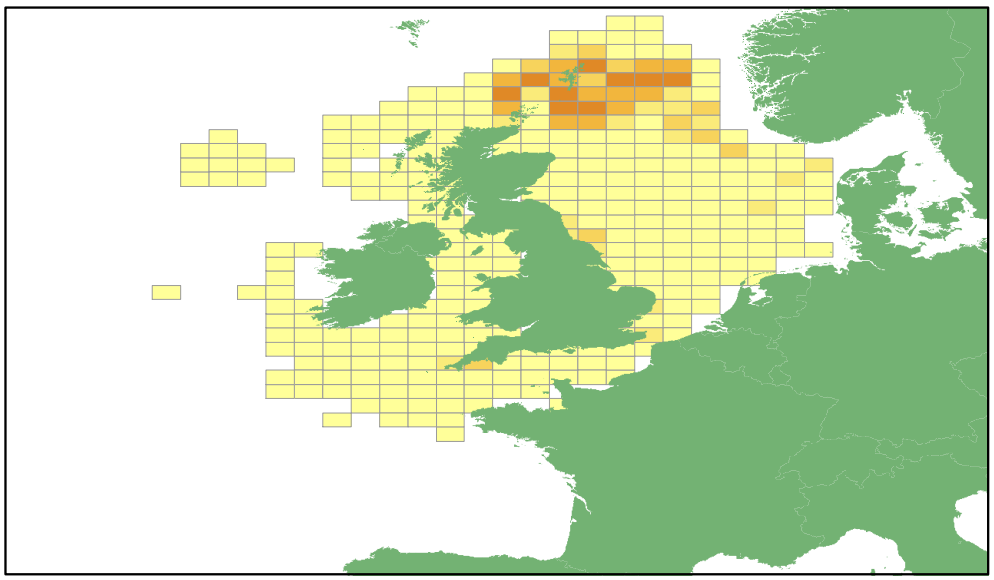


Chart A1.1c: Value of landings per tonne by ICES rectangle

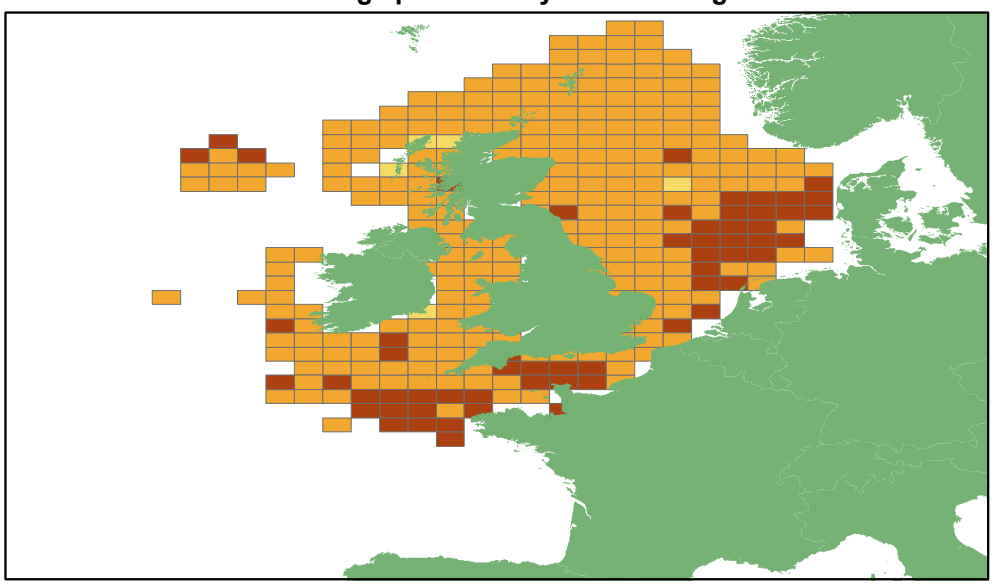


Chart A1.2: Haddock landings by UK vessels by ICES rectangle: 2012

Chart A1.2a: Quantity of landings by ICES rectangle

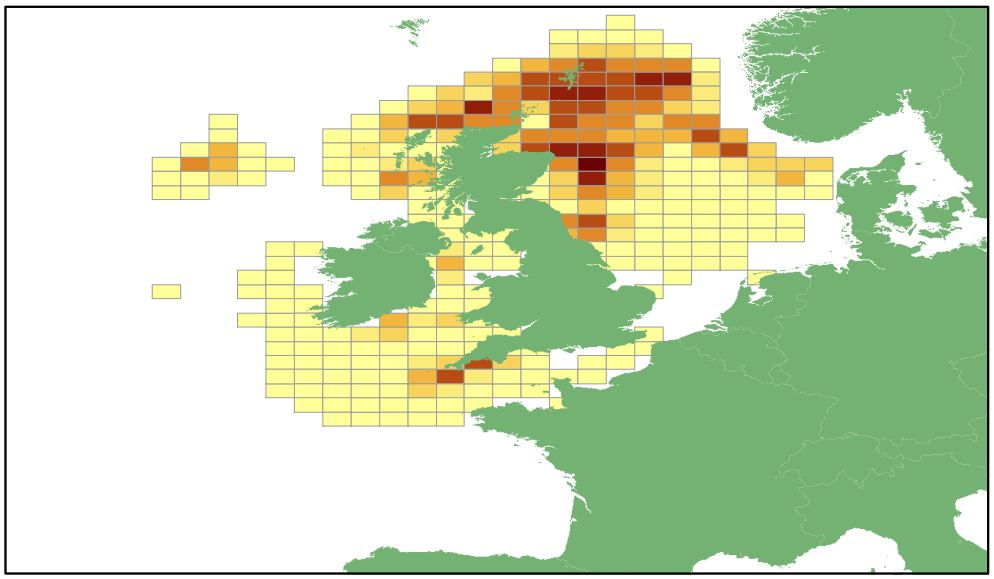


Chart A1.2b: Value of landings by ICES rectangle

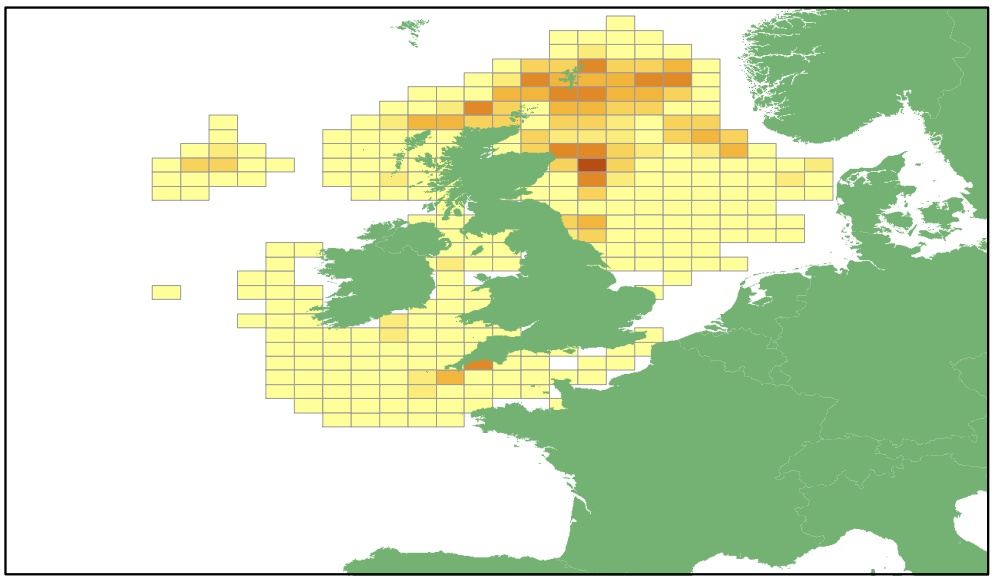


Chart A1.2c: Value of landings per tonne by ICES rectangle

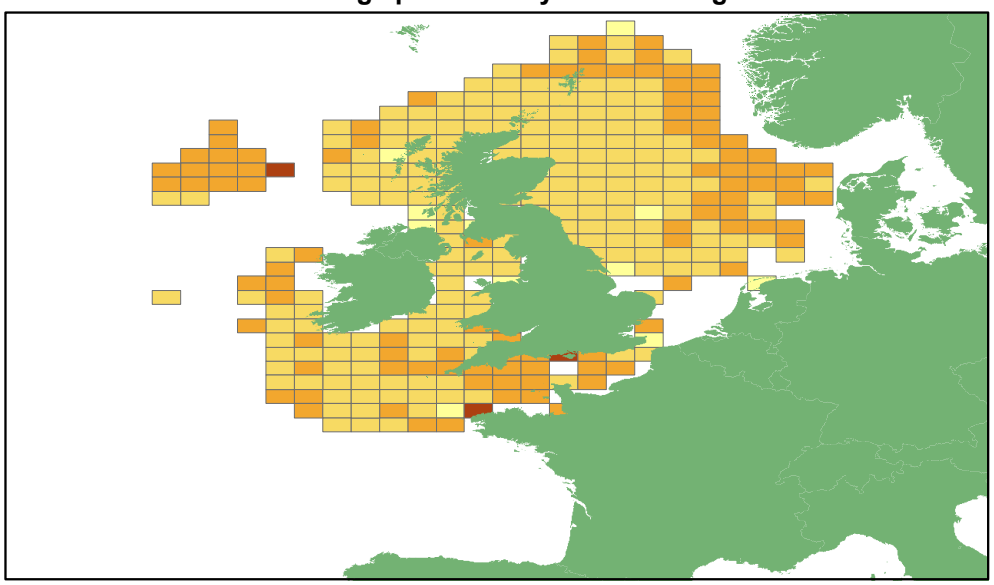


Chart A1.3: Monk or Angler landings by UK vessels by ICES rectangle: 2012

Chart A1.3a: Quantity of landings by ICES rectangle

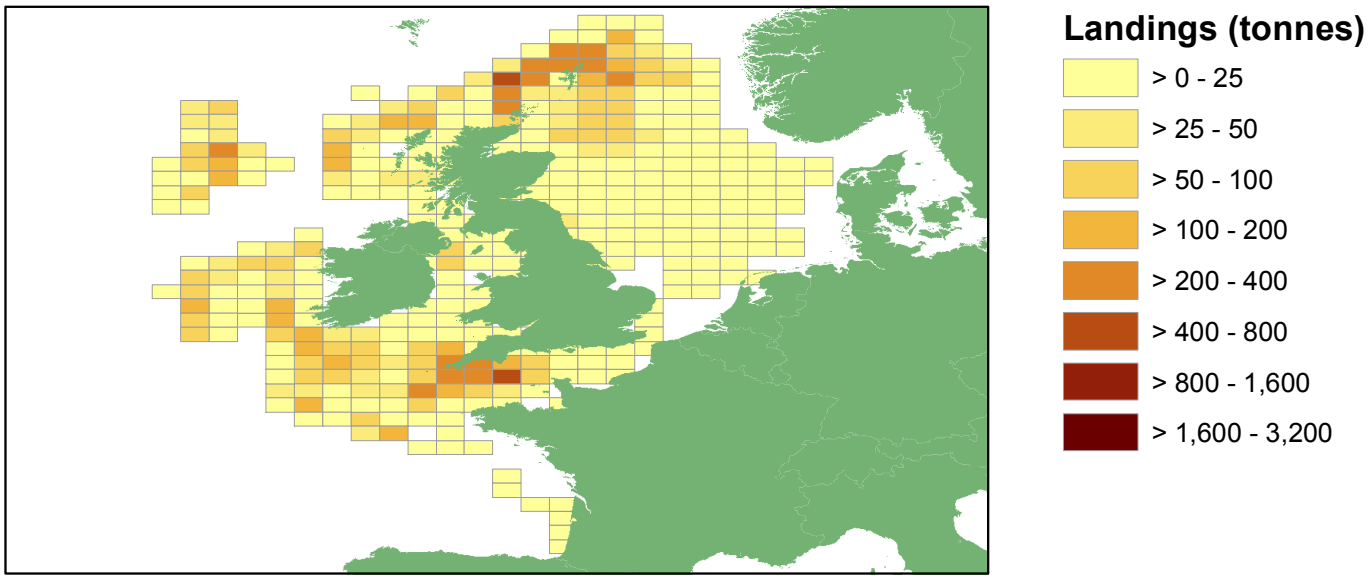


Chart A1.3b: Value of landings by ICES rectangle

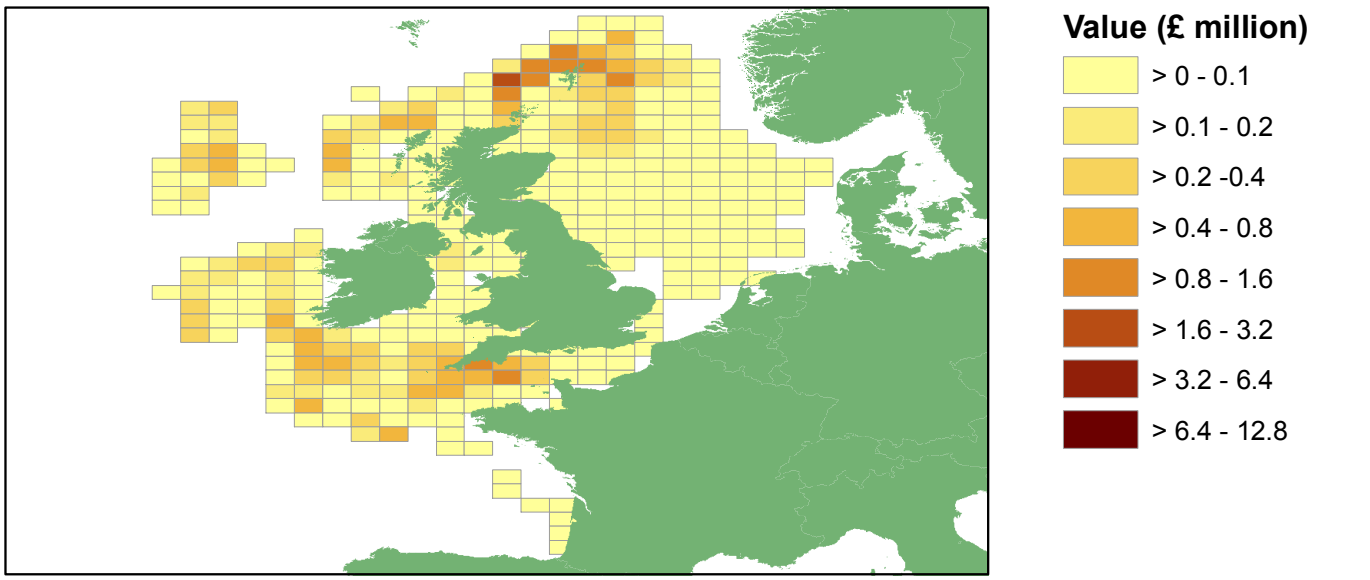


Chart A1.3c: Value of landings per tonne by ICES rectangle

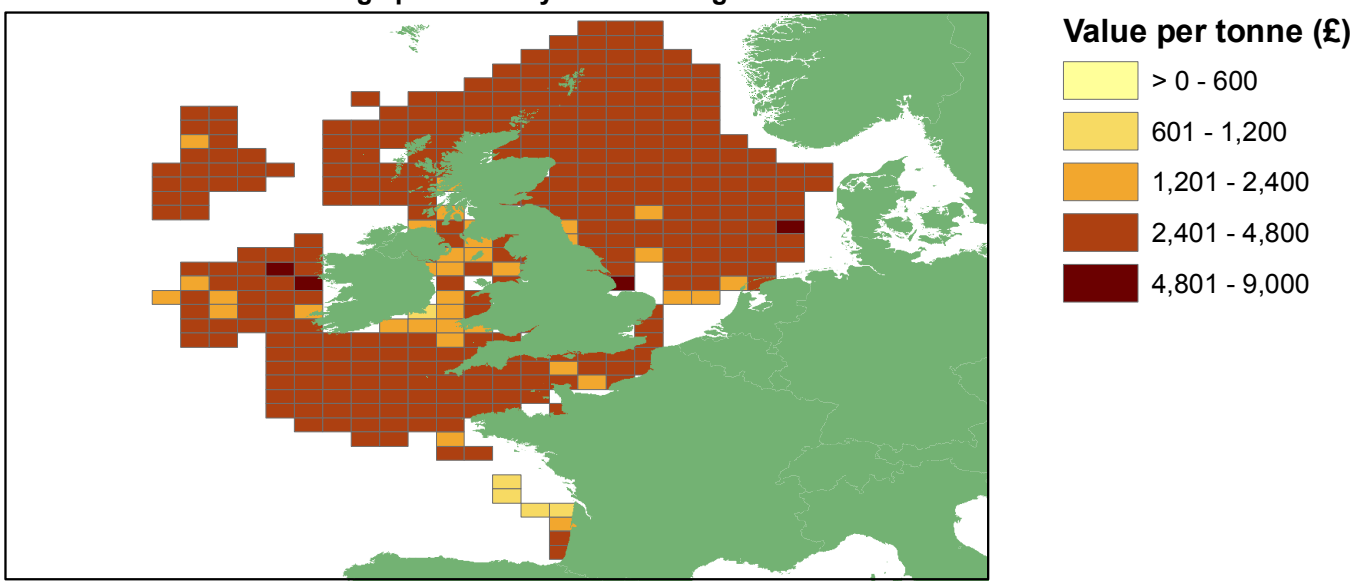


Chart A1.4: Plaice landings by UK vessels by ICES rectangle: 2012

Chart A1.4a: Quantity of landings by ICES rectangle

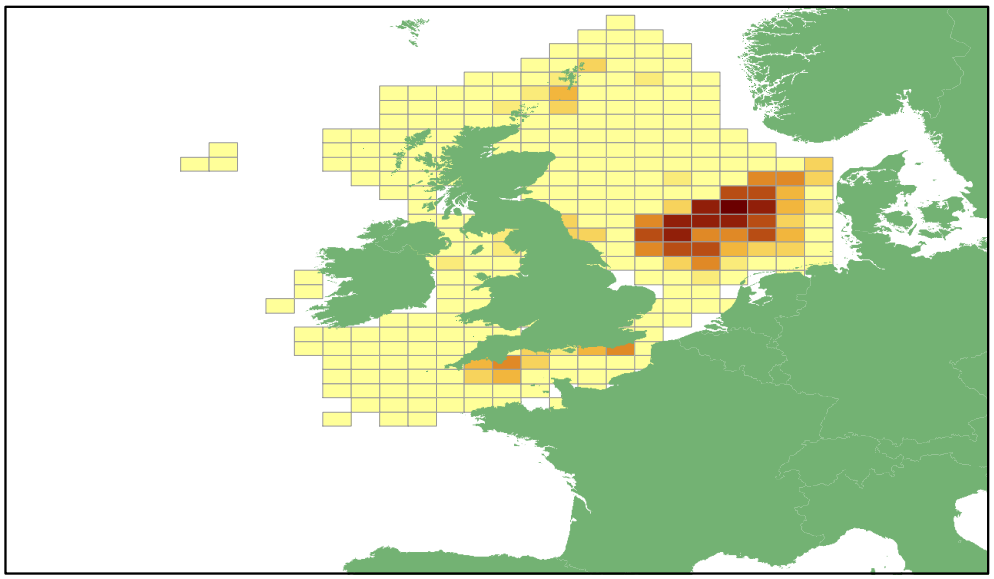


Chart A1.4b: Value of landings by ICES rectangle

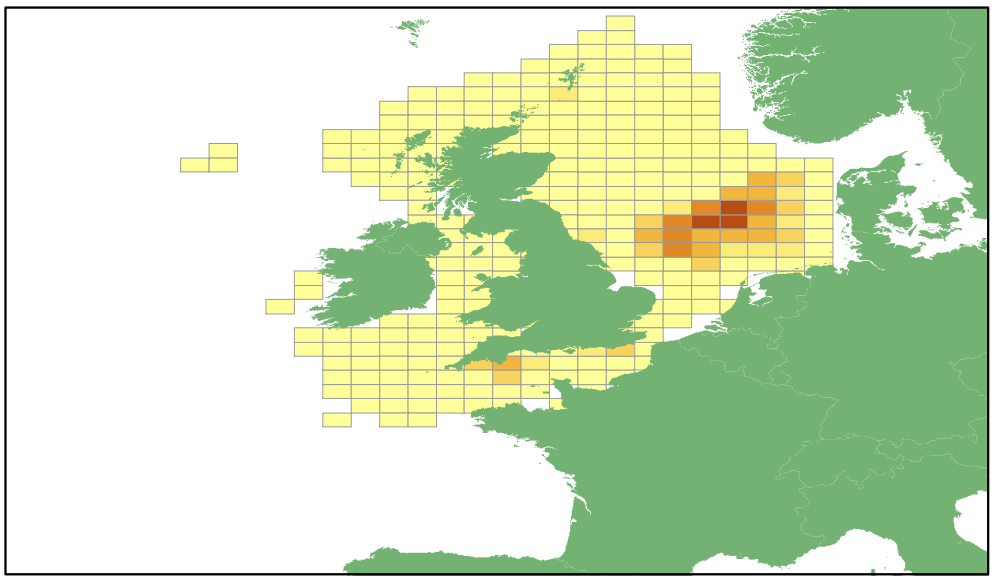


Chart A1.4c: Value of landings per tonne by ICES rectangle

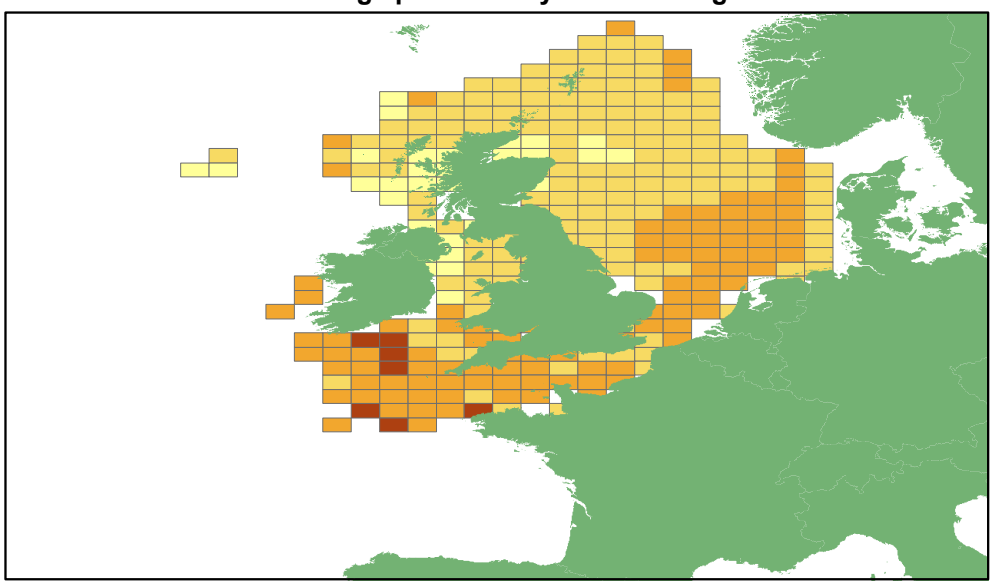


Chart A1.5: Sole landings by UK vessels by ICES rectangle: 2012

Chart A1.5a: Quantity of landings by ICES rectangle

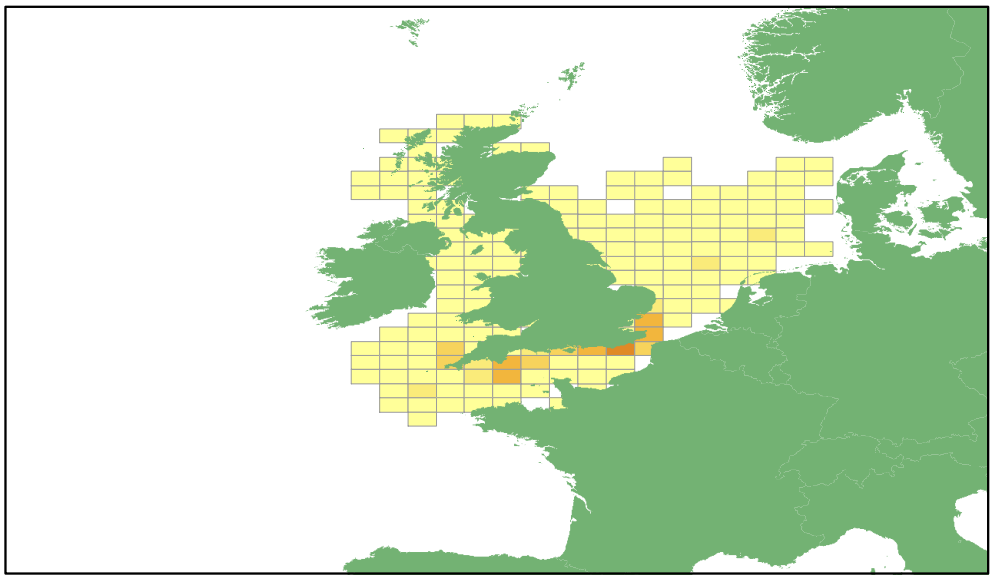


Chart A1.5b: Value of landings by ICES rectangle

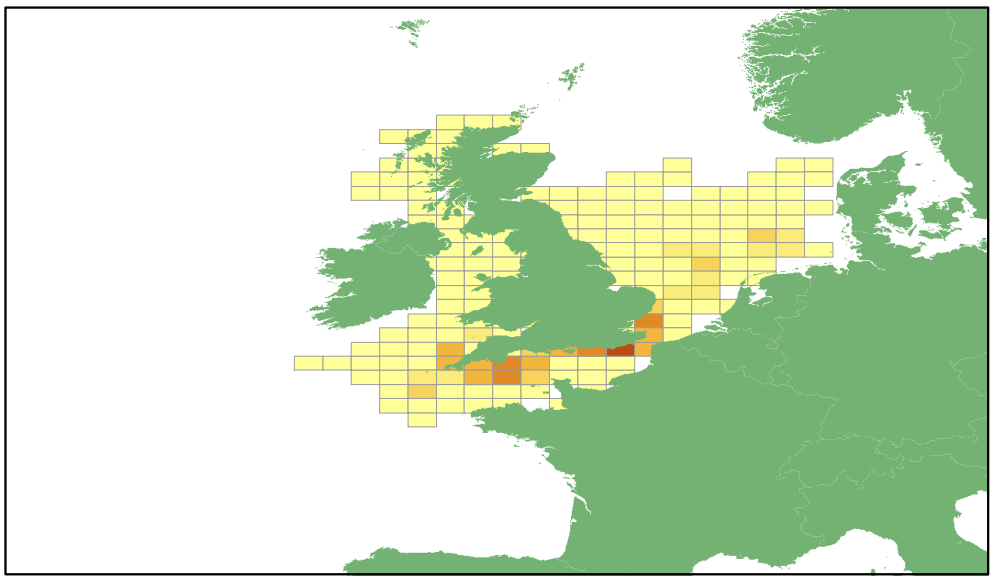


Chart A1.5c: Value of landings per tonne by ICES rectangle

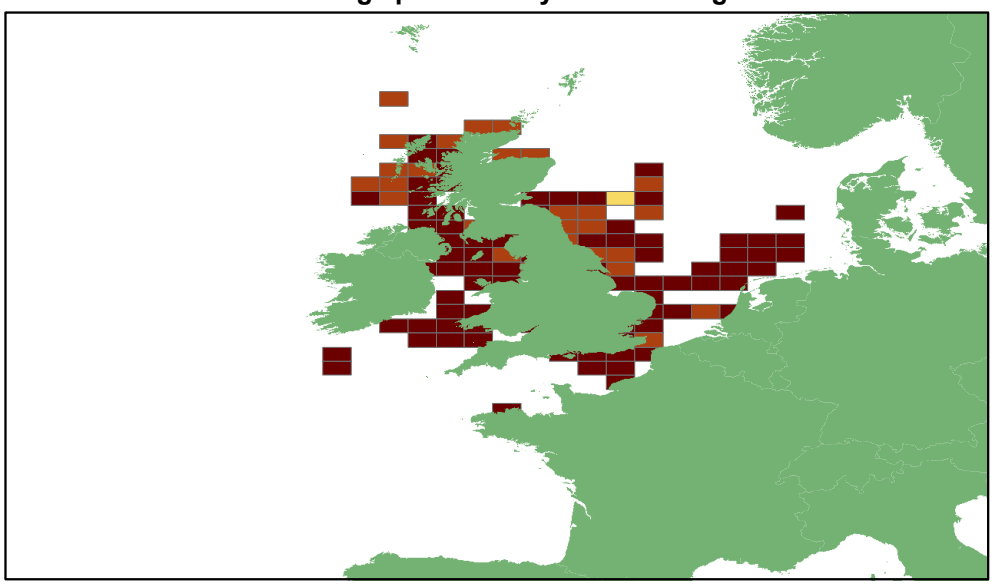


Chart A1.6: Herring landings by UK vessels by ICES rectangle: 2012

Chart A1.6a: Quantity of landings by ICES rectangle

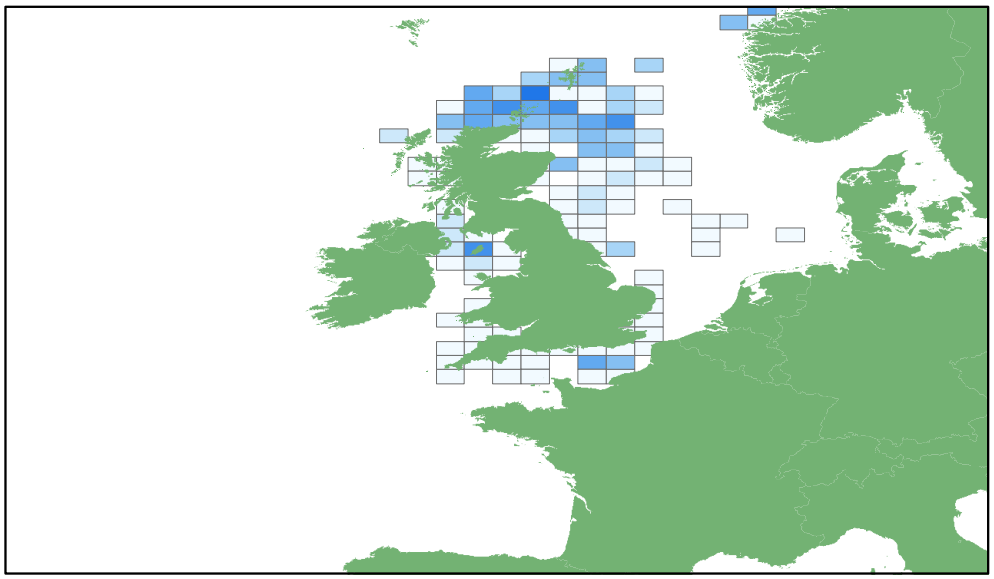


Chart A1.6b: Value of landings by ICES rectangle

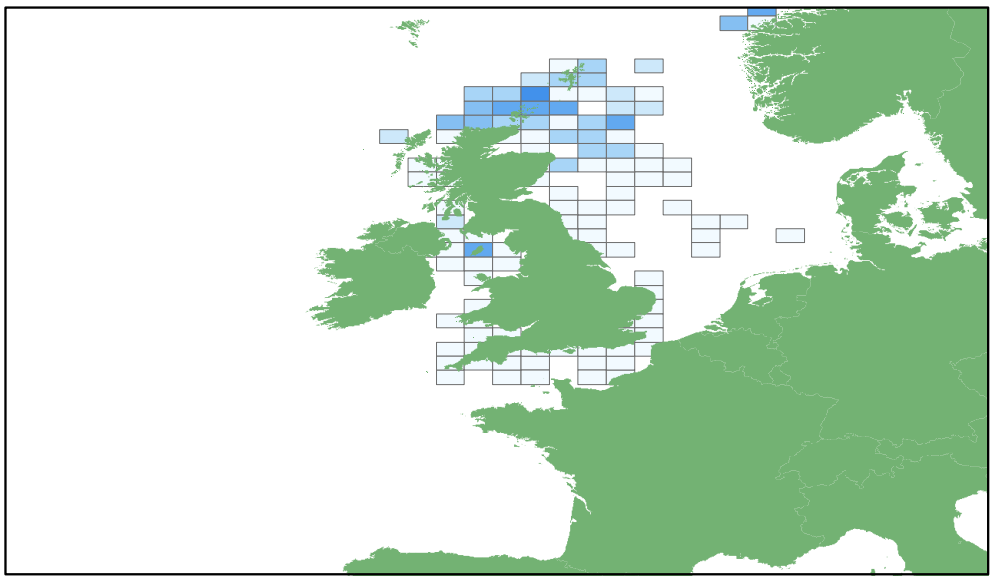


Chart A1.6c: Value of landings per tonne by ICES rectangle

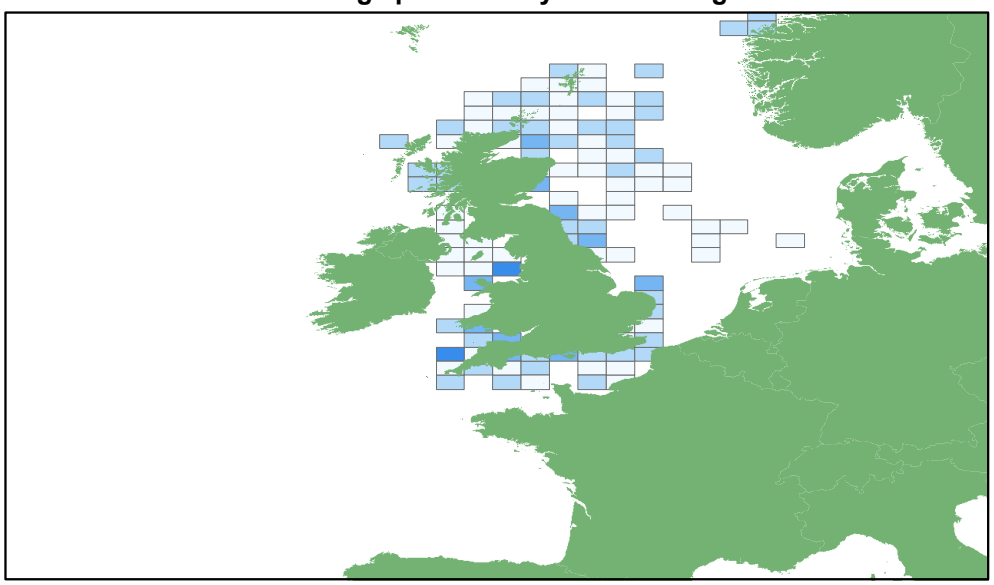


Chart A1.7: Mackerel landings by UK vessels by ICES rectangle: 2012

Chart A1.7a: Quantity of landings by ICES rectangle

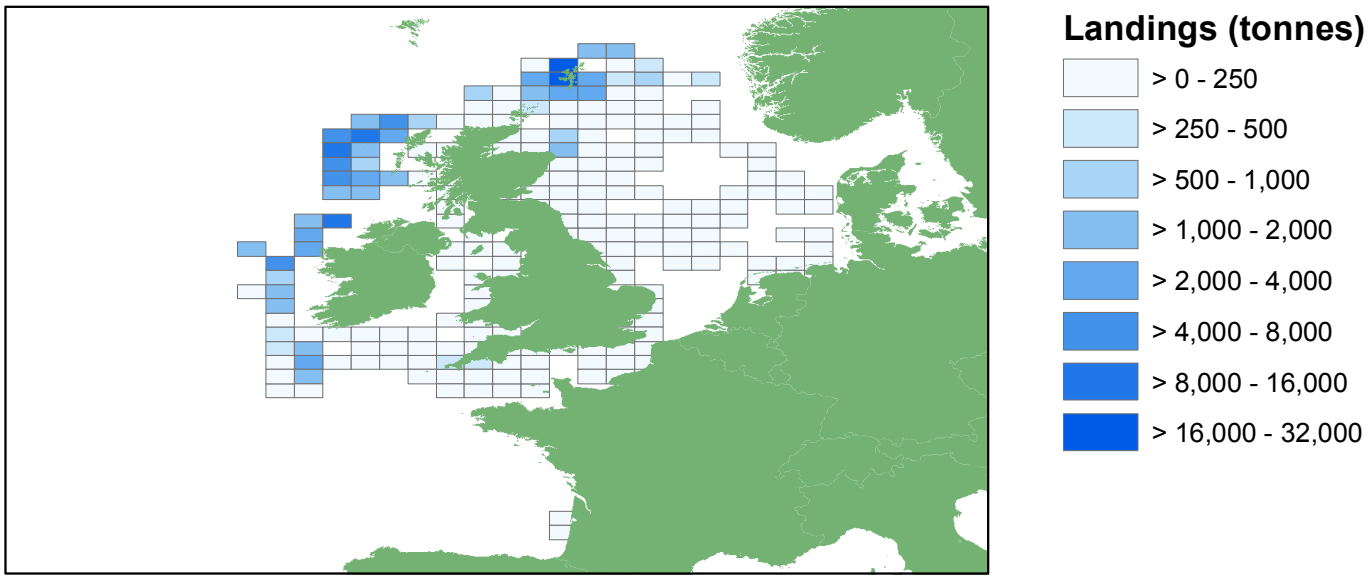


Chart A1.7b: Value of landings by ICES rectangle

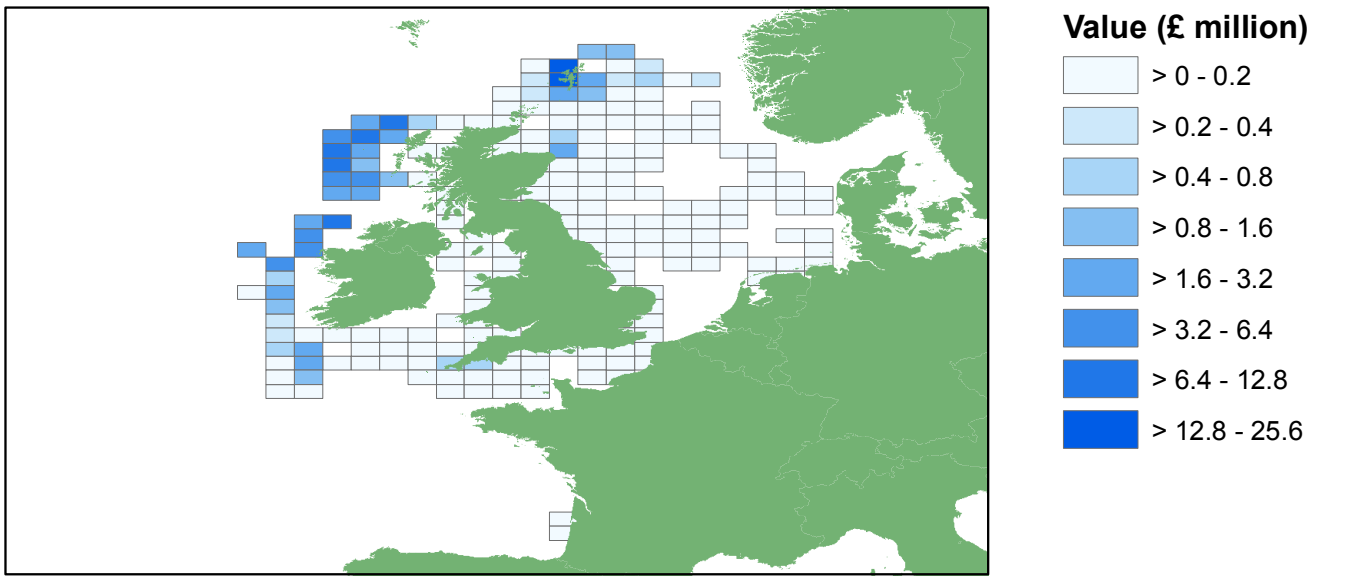


Chart A1.7c: Value of landings per tonne by ICES rectangle

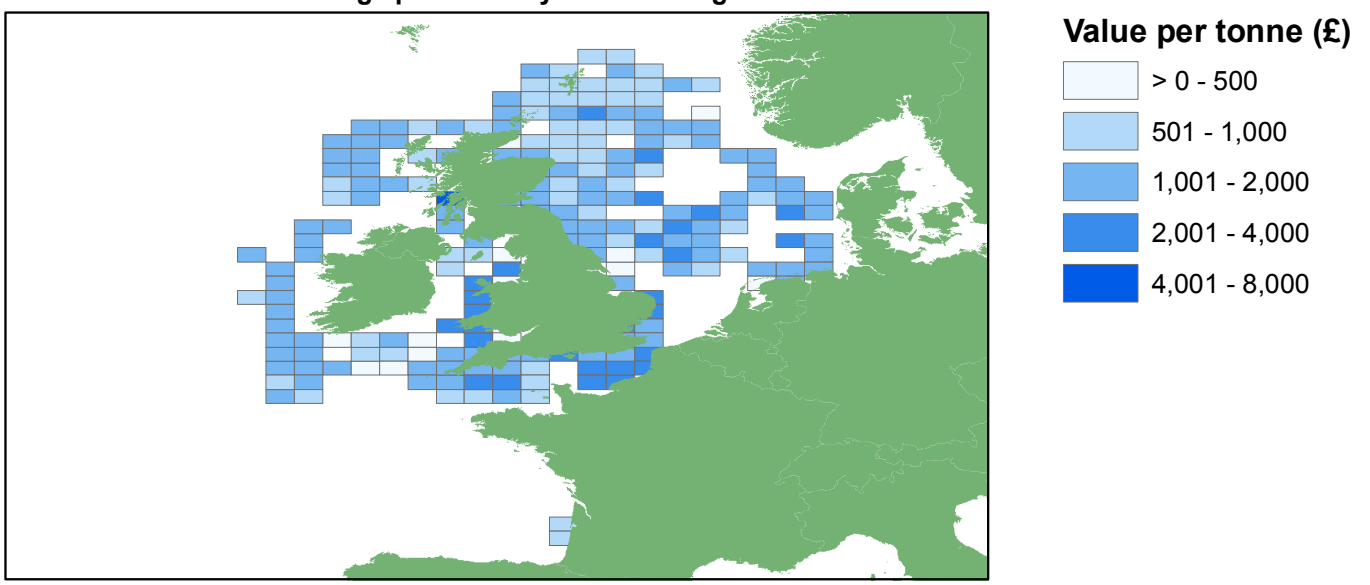


Chart A1.8: Crab landings by UK vessels by ICES rectangle: 2012

Chart A1.8a: Quantity of landings by ICES rectangle

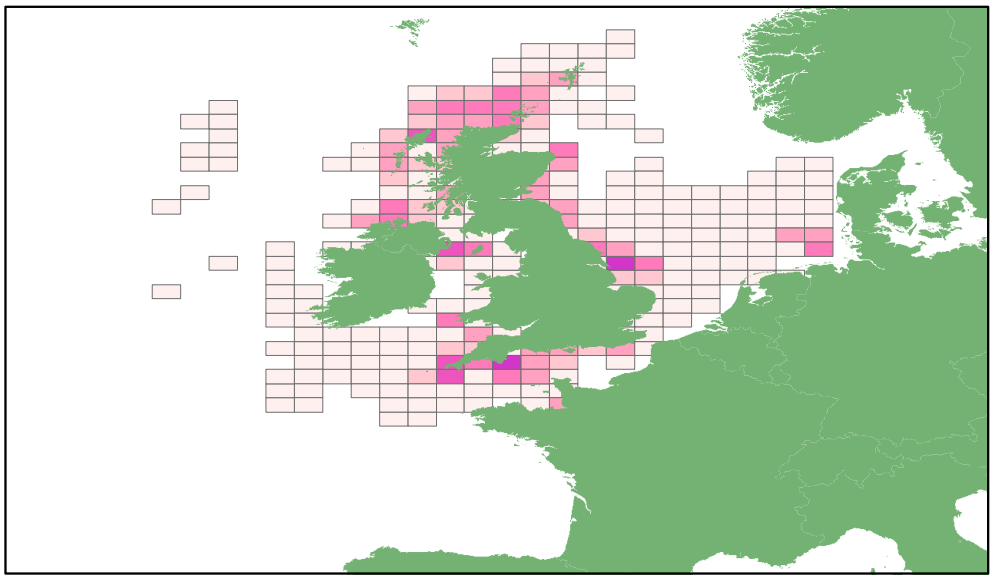


Chart A1.8b: Value of landings by ICES rectangle

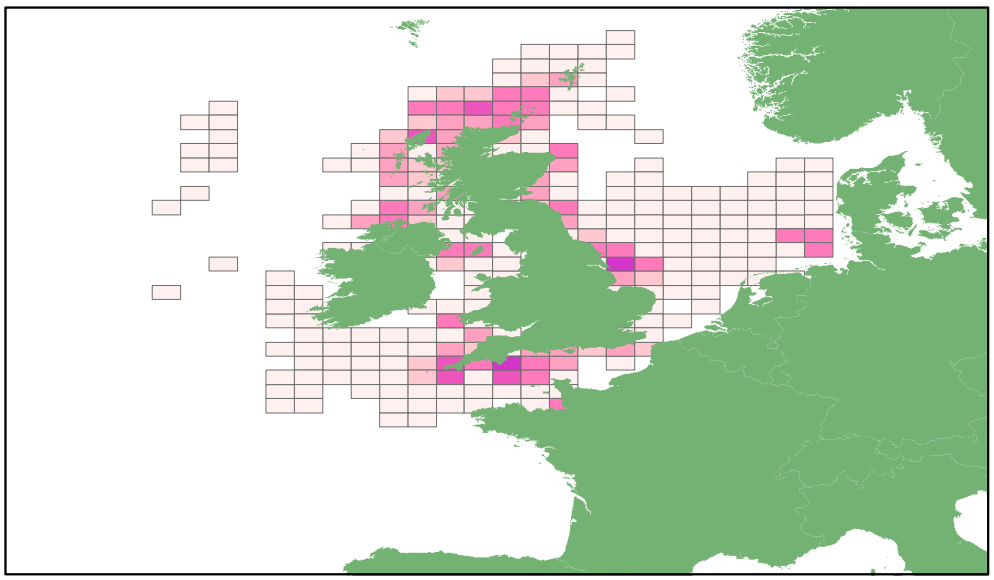


Chart A1.8c: Value of landings per tonne by ICES rectangle

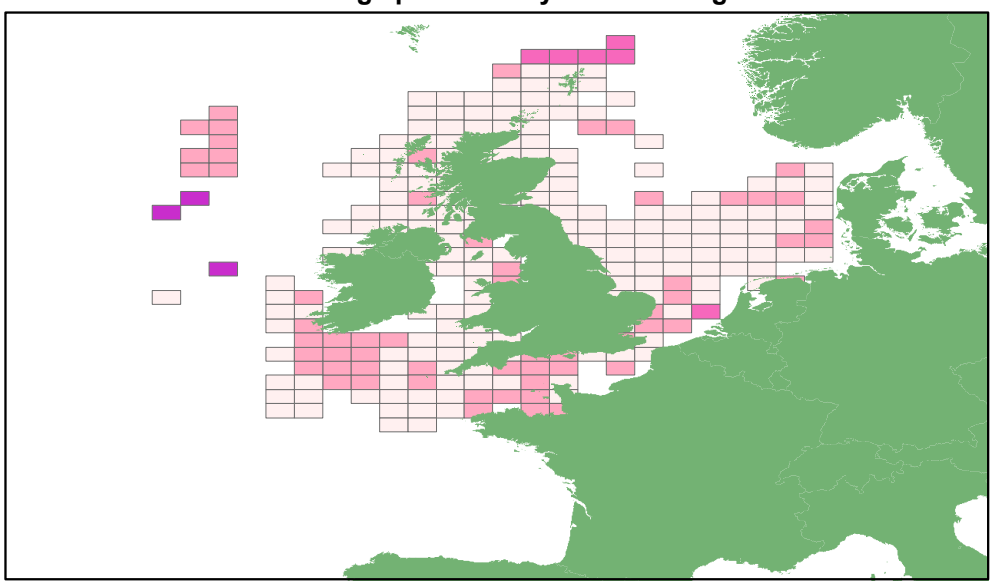
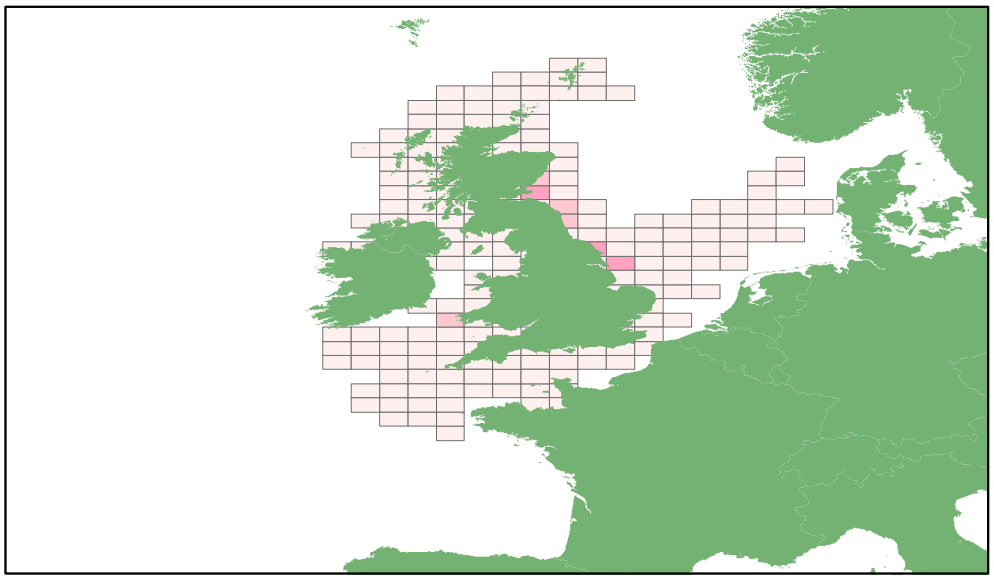


Chart A1.9: Lobster landings by UK vessels by ICES rectangle: 2012

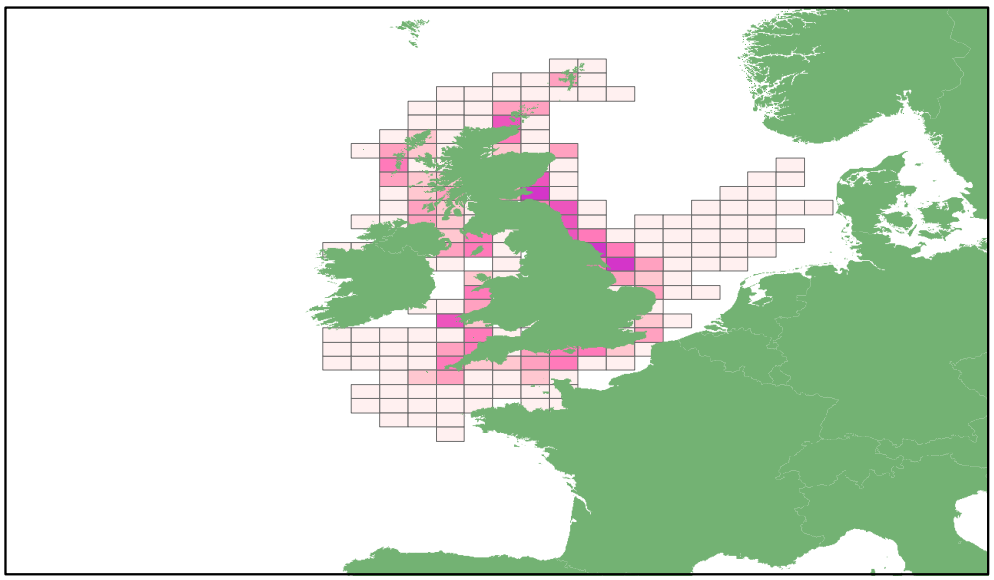
Chart A1.9a: Quantity of landings by ICES rectangle



Landings (tonnes)

- > 0 - 100
- > 100 - 200
- > 200 - 400
- > 400 - 800
- > 800 - 1,600
- > 1,600 - 3,200
- > 3,200 - 6,400
- > 6,400 - 12,800

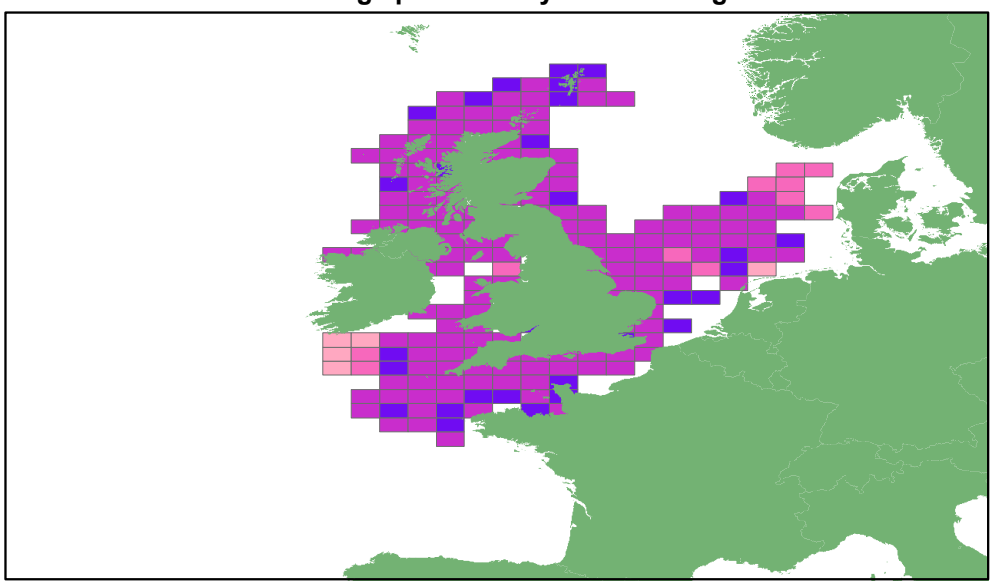
Chart A1.9b: Value of landings by ICES rectangle



Value (£ million)

- > 0 - 0.1
- > 0.1 - 0.2
- > 0.2 - 0.4
- > 0.4 - 0.8
- > 0.8 - 1.6
- > 1.6 - 3.2
- > 3.2 - 6.4
- > 6.4 - 12.8

Chart A1.9c: Value of landings per tonne by ICES rectangle



Value per tonne (£)

- > 0 - 1,500
- 1,501 - 3,000
- 3,001 - 6,000
- 6,001 - 12,000
- 12,001 - 24,000

Chart A1.10: Nephrops landings by UK vessels by ICES rectangle: 2012

Chart A1.10a: Quantity of landings by ICES rectangle

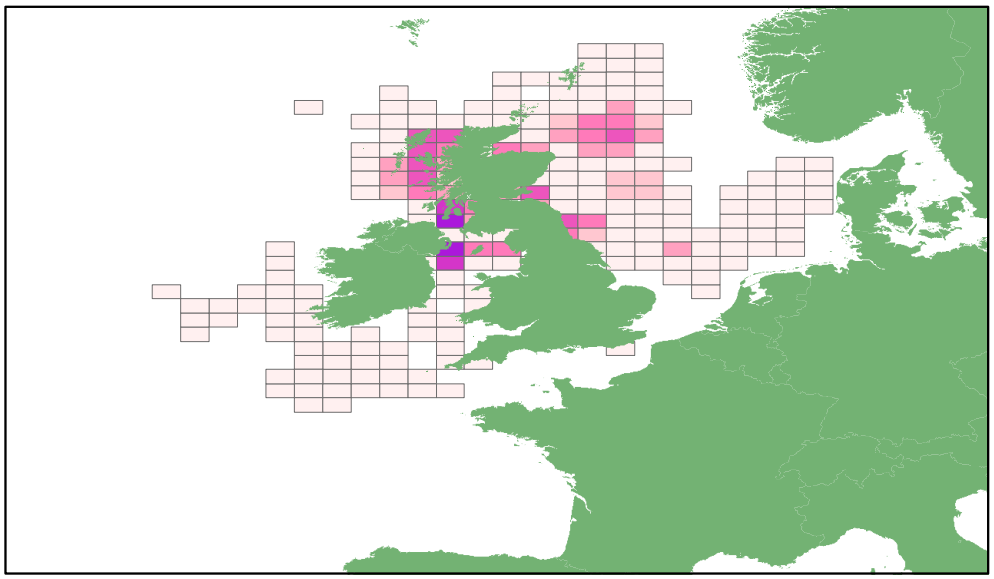


Chart A1.10b: Value of landings by ICES rectangle

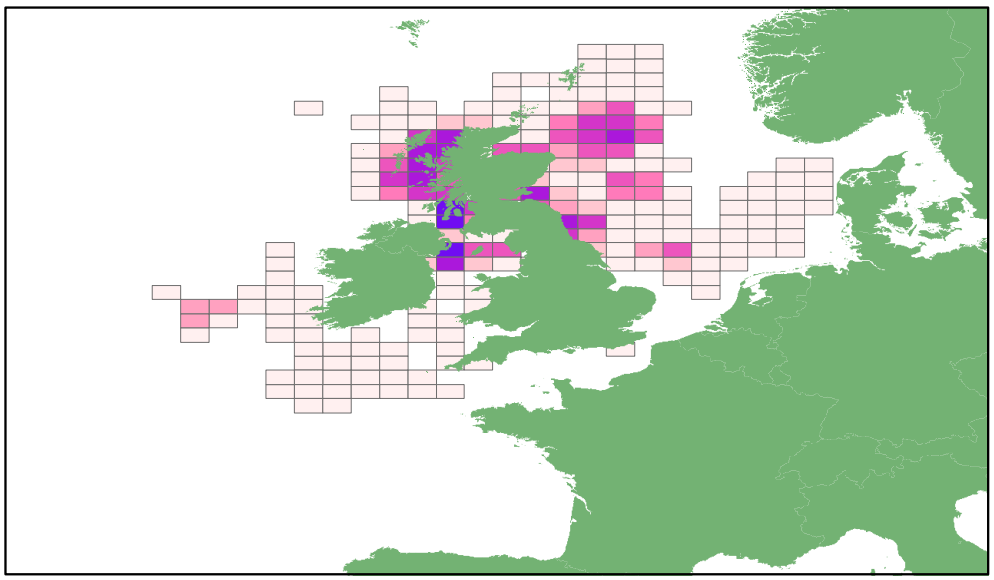


Chart A1.10c: Value of landings per tonne by ICES rectangle

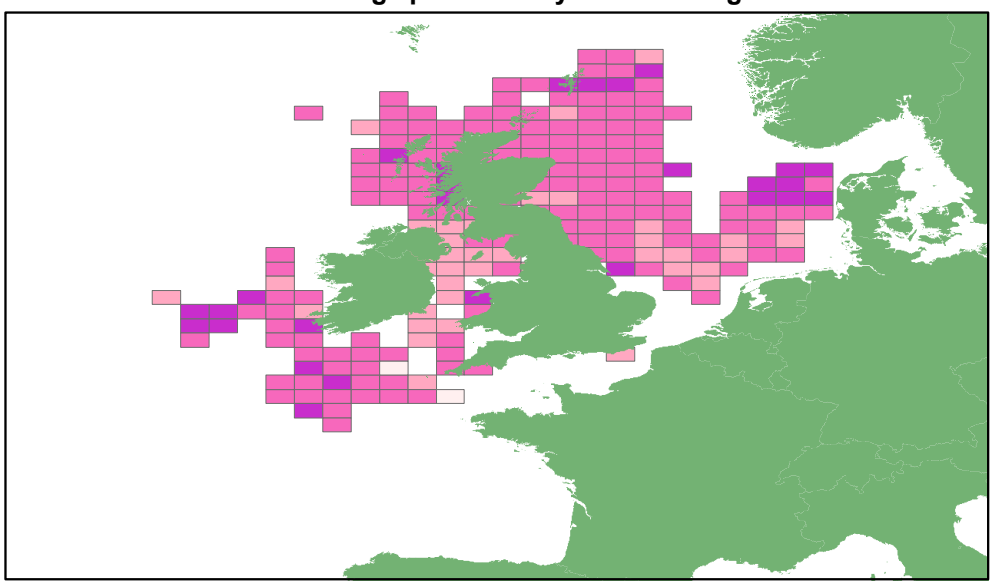


Chart A1.11: Scallop landings by UK vessels by ICES rectangle: 2012

Chart A1.11a: Quantity of landings by ICES rectangle

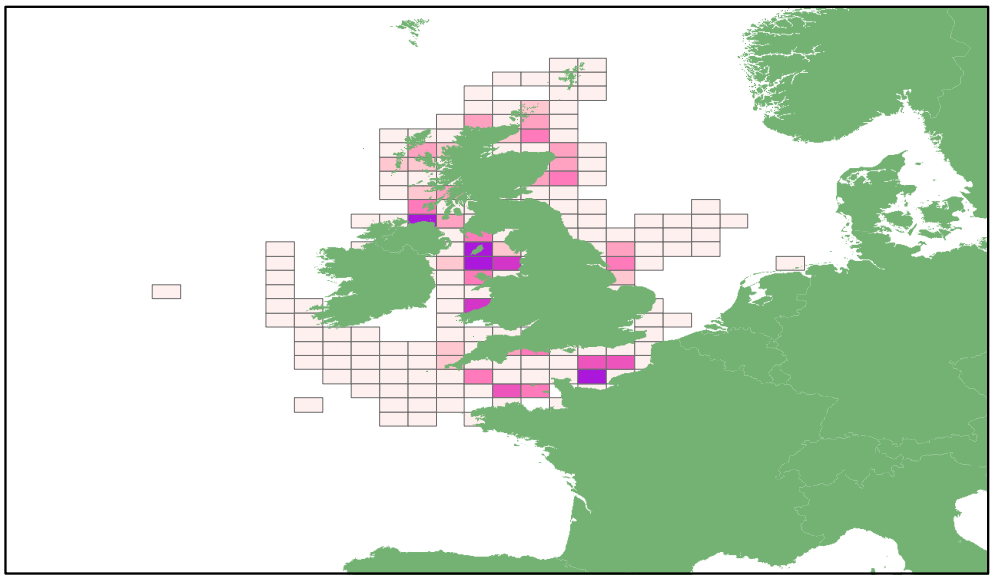


Chart A1.11b: Value of landings by ICES rectangle

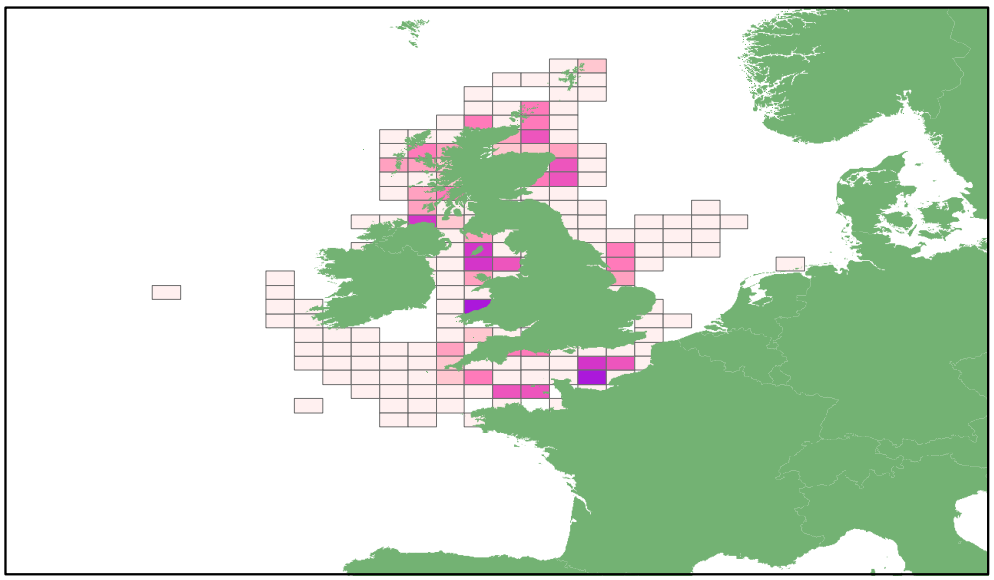


Chart A1.11c: Value of landings per tonne by ICES rectangle

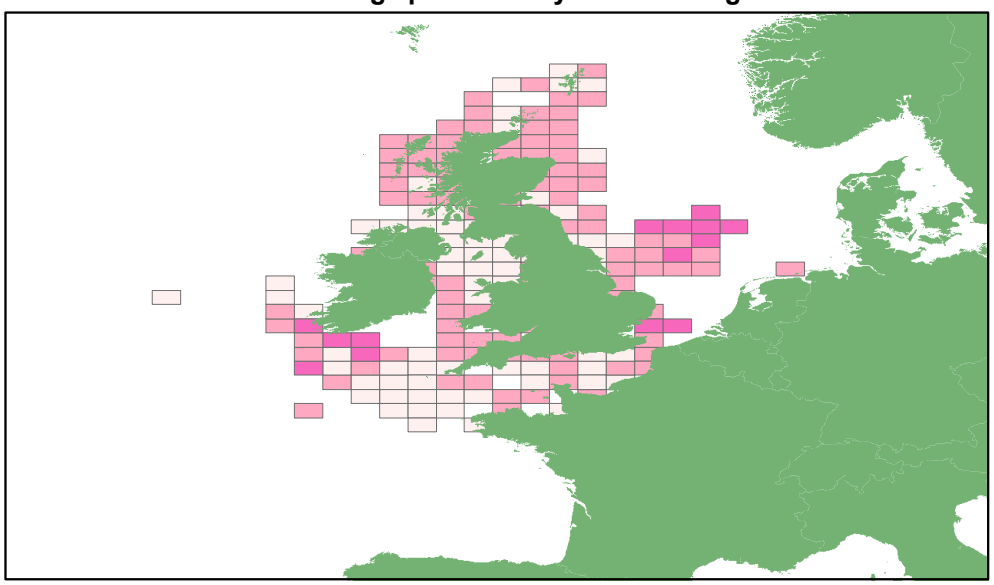


Chart A1.12: Beam trawl effort by UK 10m and over vessels by ICES rectangle: 2012

Chart A1.12a: Number of vessels by ICES rectangle

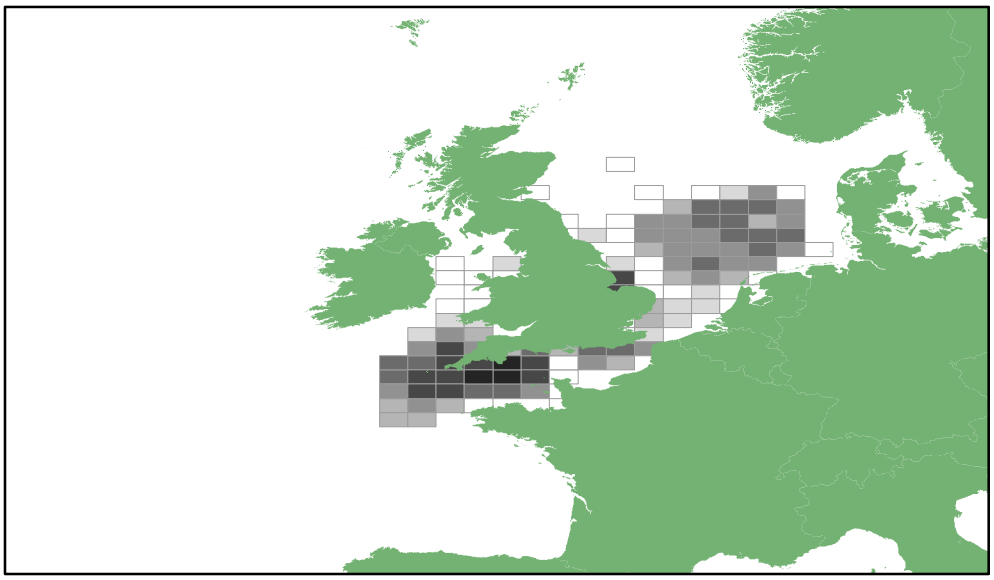


Chart A1.12b: Number of days at sea by ICES rectangle

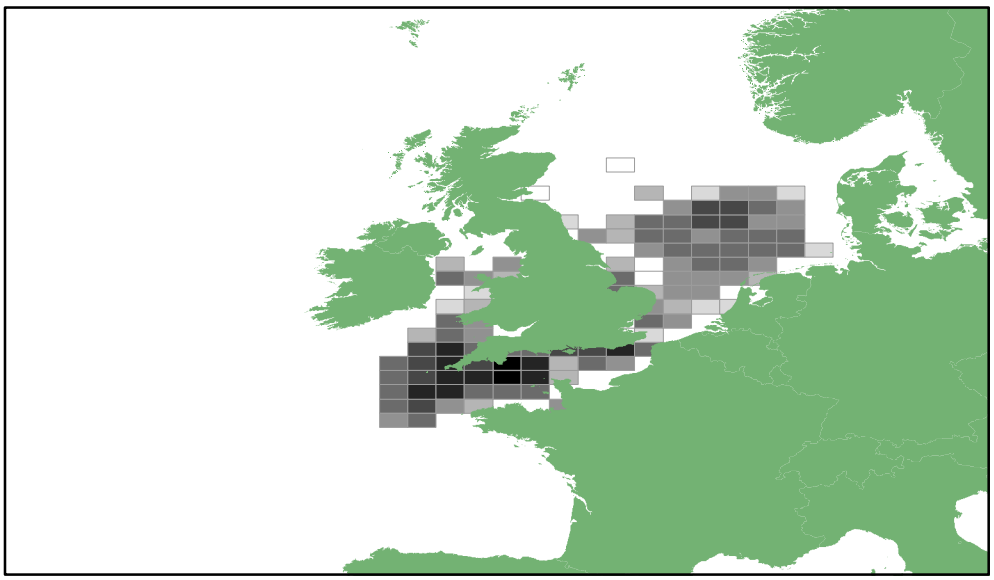


Chart A1.12c: kW day units by ICES rectangle

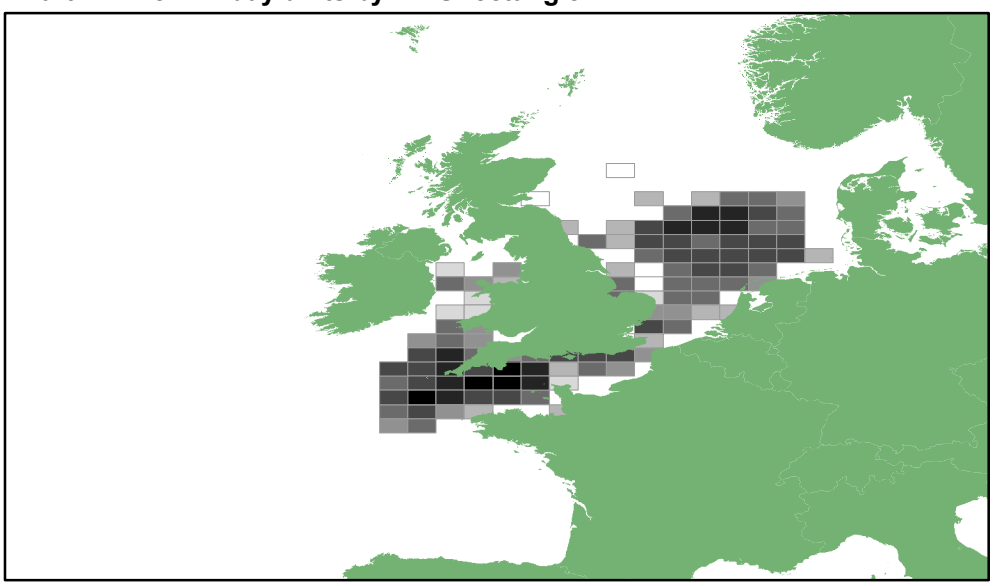
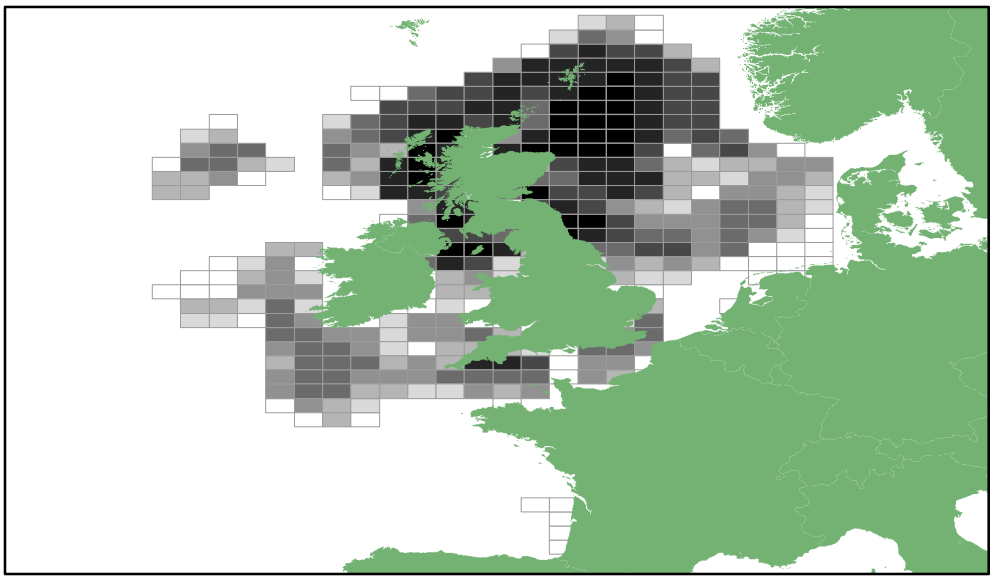


Chart A1.13: Demersal trawl and seine effort by UK 10m and over vessels by ICES rectangle: 2012

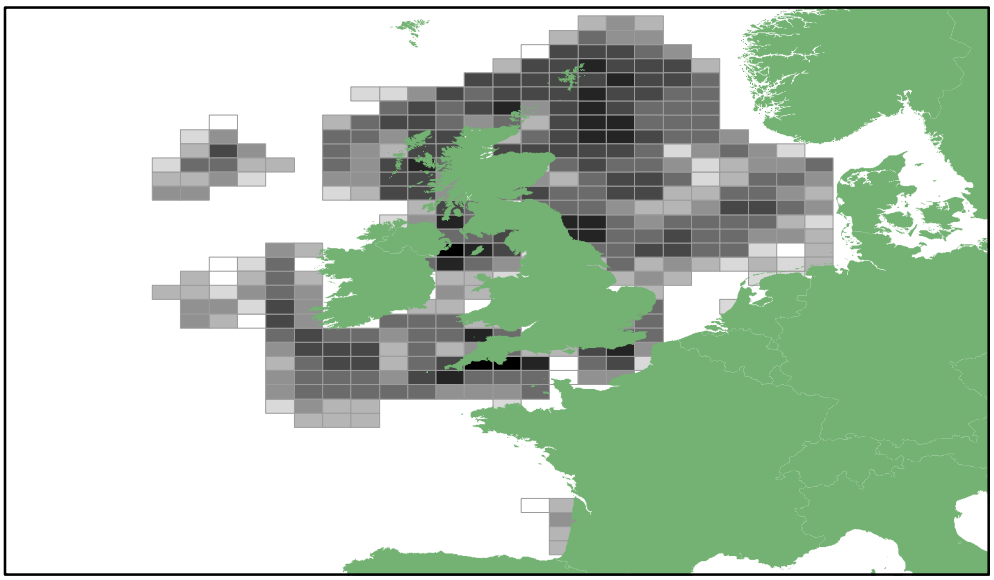
Chart A1.13a: Number of vessels by ICES rectangle



Number of Vessels

- 1
- 2
- 3 - 4
- 5 - 8
- 9 - 16
- 17 - 32
- 33 - 64
- 65 - 128

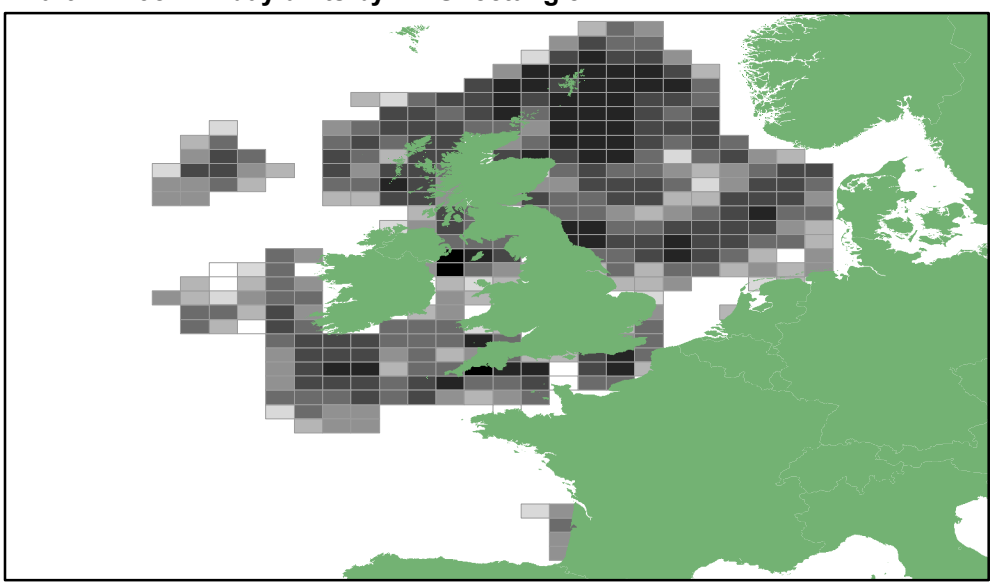
Chart A1.13b: Number of days at sea by ICES rectangle



Number of days at sea

- >0 - 5
- >5 - 20
- >20 - 80
- >80 - 320
- >320 - 1,280
- >1,280 - 5,120
- >5,120 - 20,480
- >20,480 - 81,920

Chart A1.13c: kW day units by ICES rectangle



kW Days

- 64 - 1,500
- 1,501 - 6,000
- 6,001 - 24,000
- 24,001 - 96,000
- 96,001 - 384,000
- 384,001 - 1,536,000
- 1,536,001 - 6,144,000
- 6,144,001 - 24,576,000

Chart A1.14: Dredges effort by UK 10m and over vessels by ICES rectangle: 2012

Chart A1.14a: Number of vessels by ICES rectangle

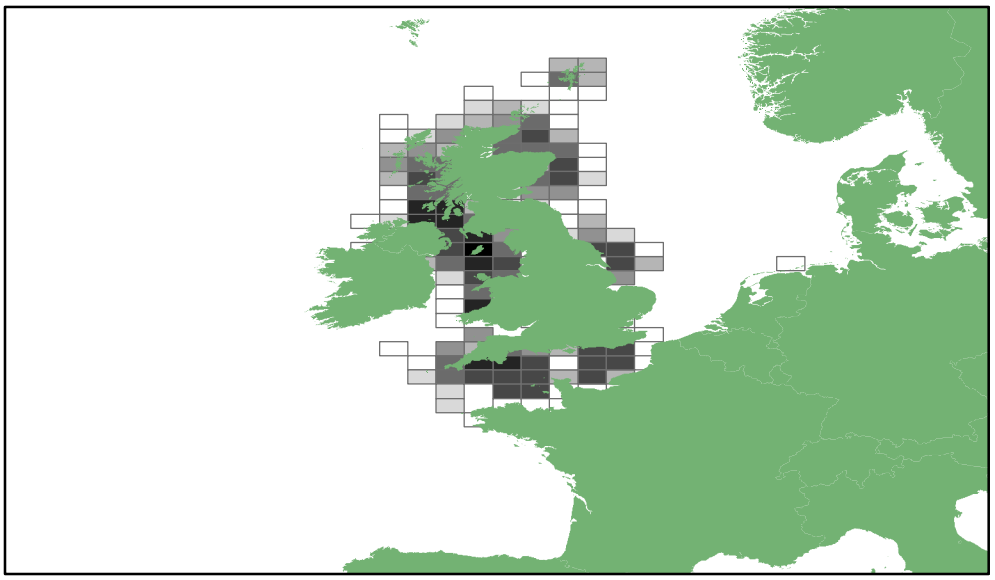


Chart A1.14b: Number of days at sea by ICES rectangle

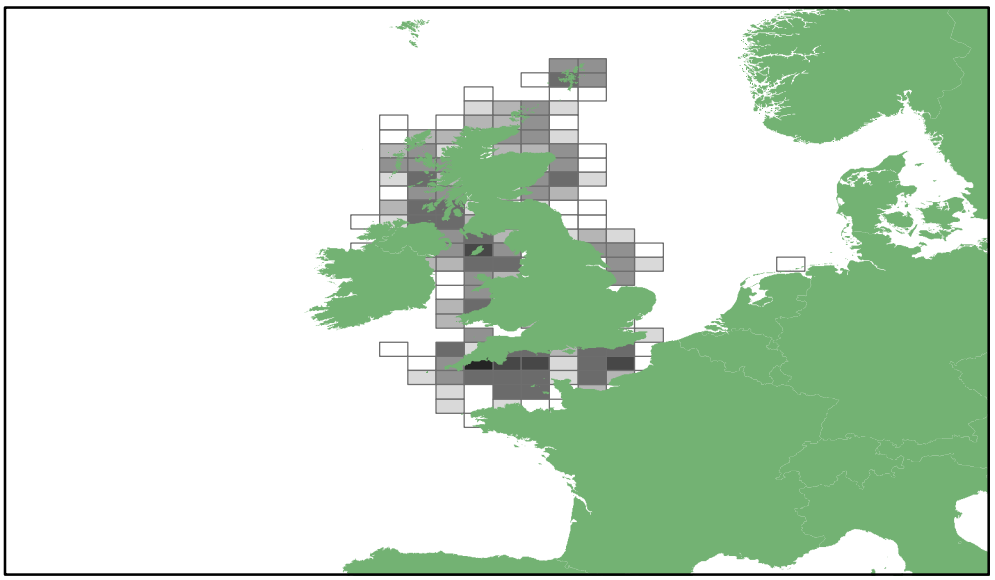


Chart A1.14c: kW day units by ICES rectangle

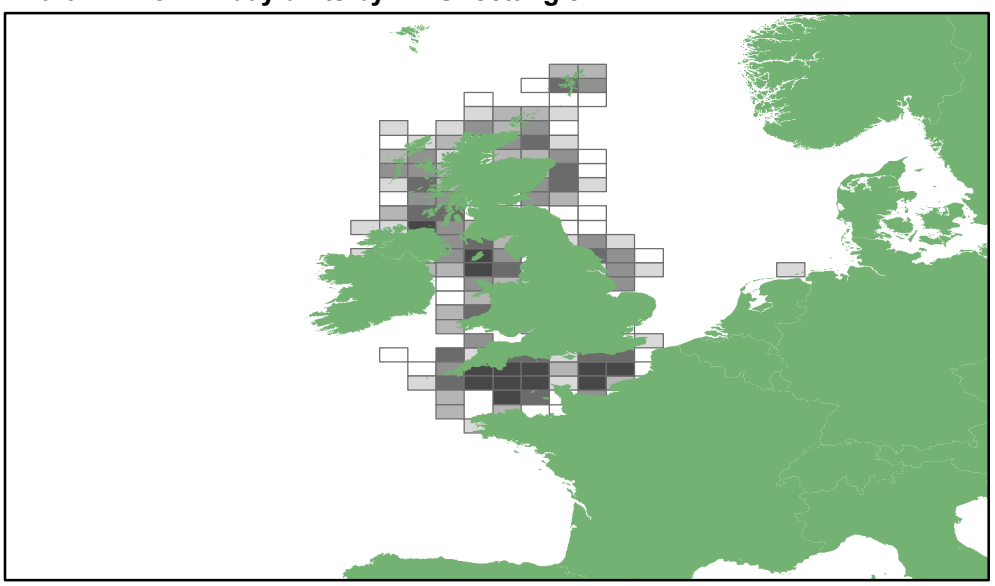


Chart A1.15: Drift and fixed nets effort by UK 10m and over vessels by ICES rectangle: 2012

Chart A1.15a: Number of vessels by ICES rectangle

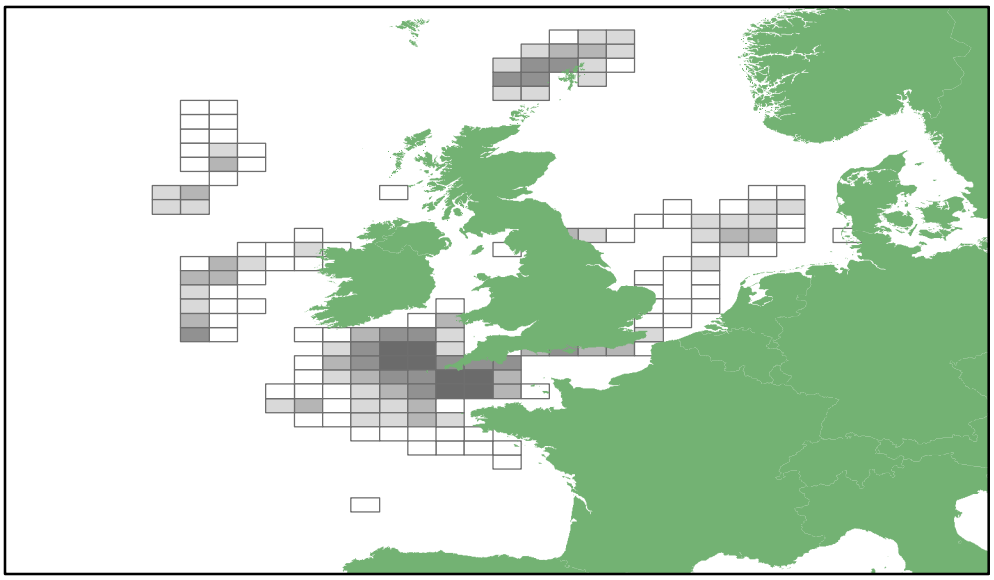


Chart A1.15b: Number of days at sea by ICES rectangle

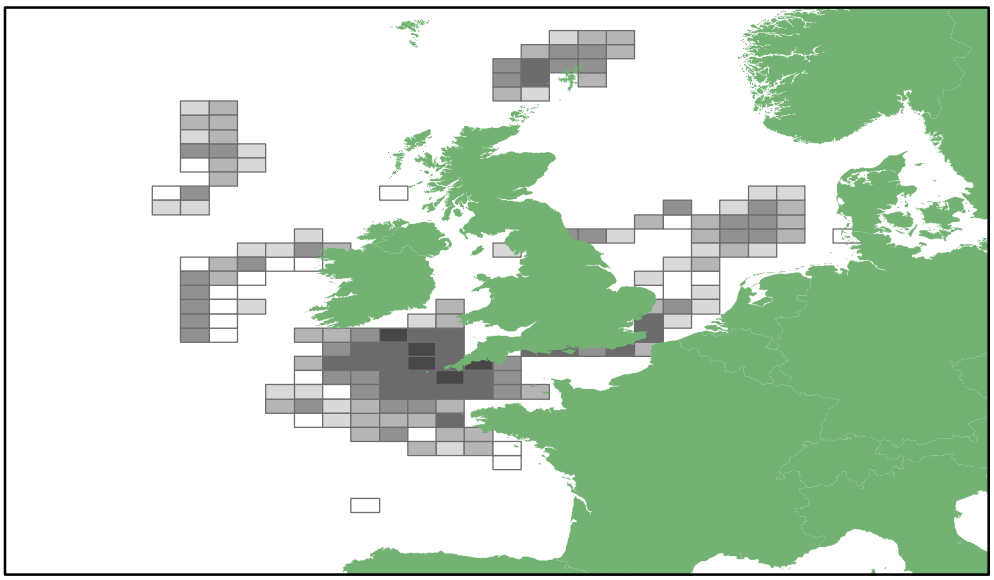


Chart A1.15c: kW day units by ICES rectangle

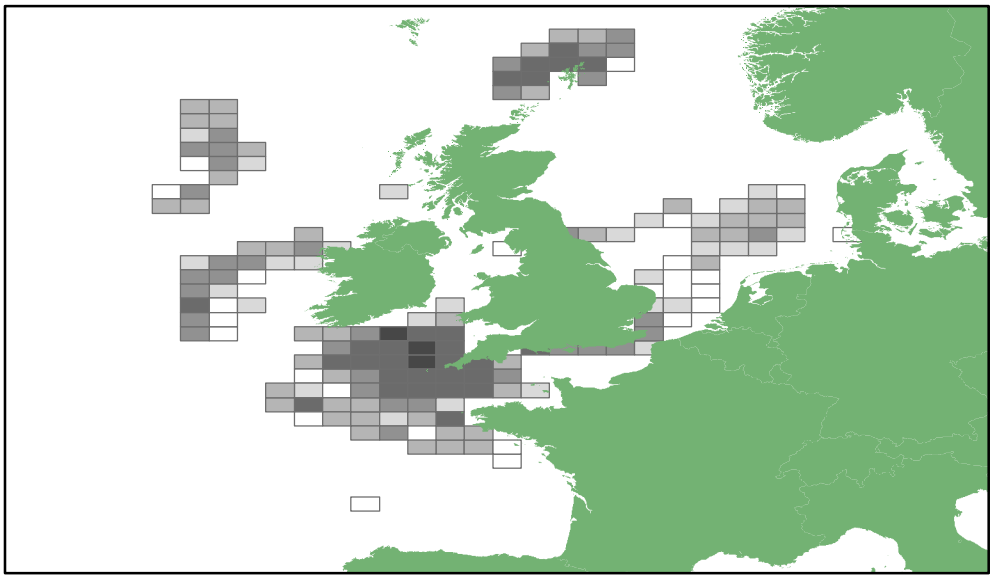


Chart A1.16: Gears using hooks effort by UK 10m and over vessels by ICES rectangle: 2012

Chart A1.16a: Number of vessels by ICES rectangle

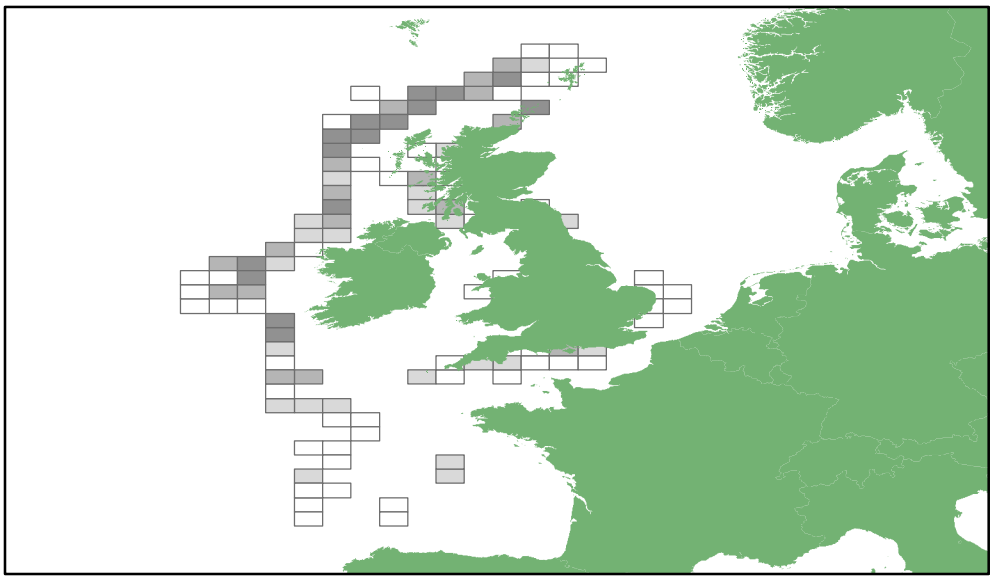


Chart A1.16b: Number of days at sea by ICES rectangle

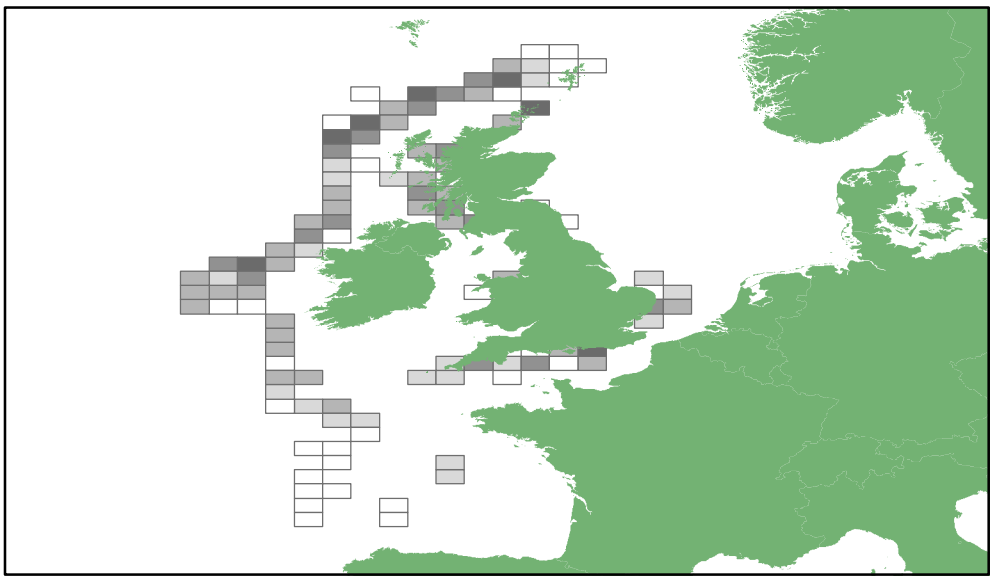


Chart A1.16c: kW day units by ICES rectangle

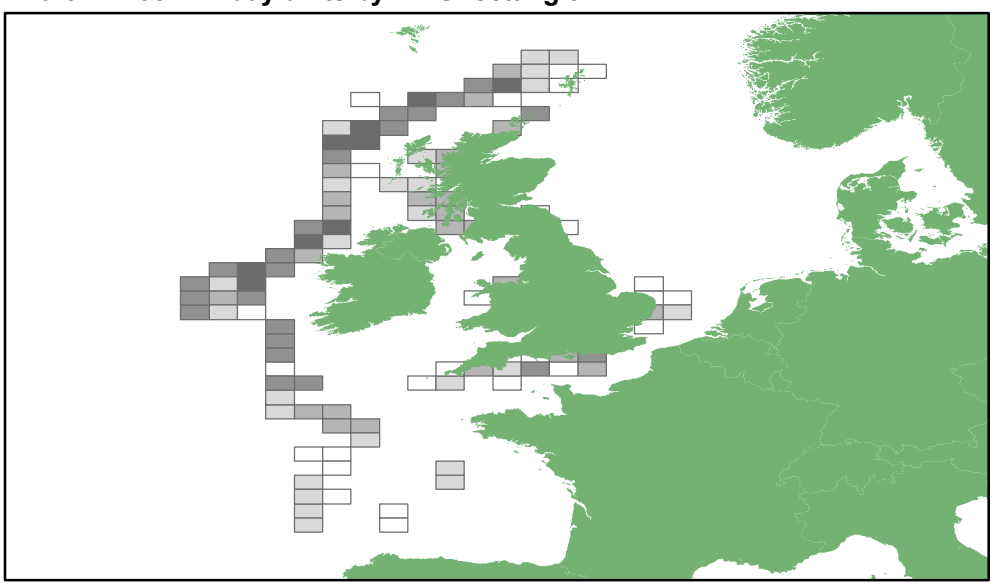


Chart A1.17: Pelagic purse seine & trawl effort by UK 10m and over vessels by ICES rectangle: 2012

Chart A1.17a: Number of vessels by ICES rectangle

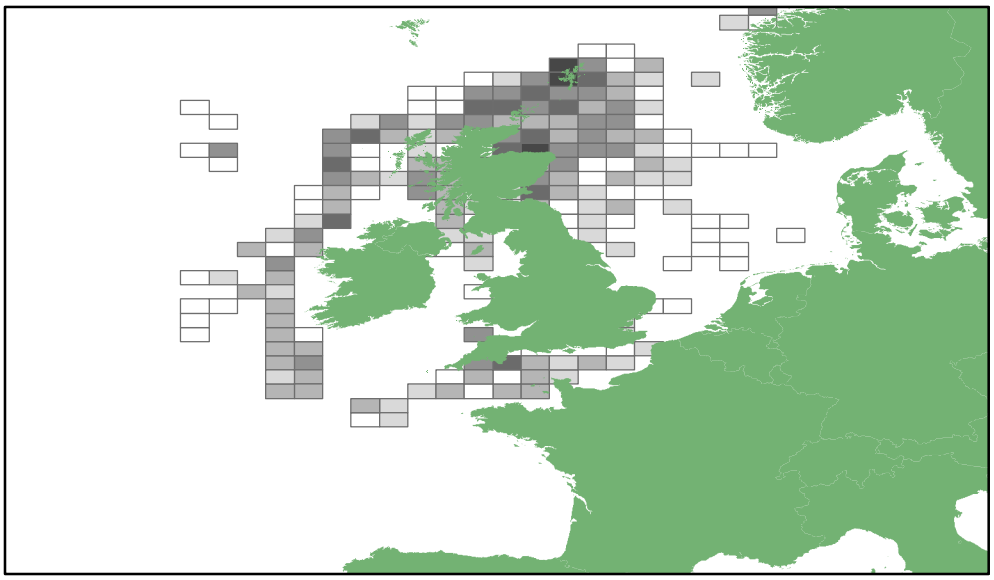


Chart A1.17b: Number of days at sea by ICES rectangle

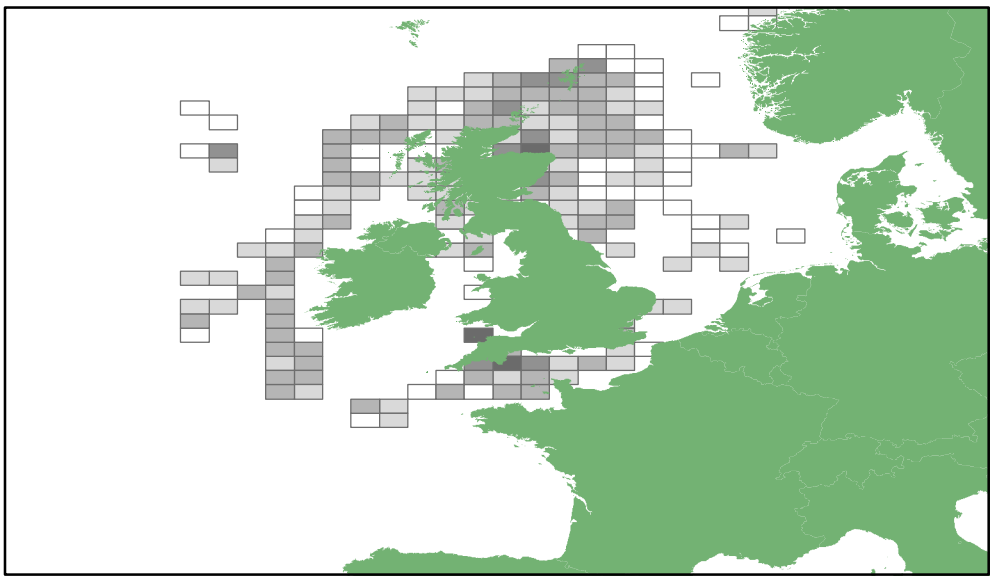


Chart A1.17c: kW day units by ICES rectangle

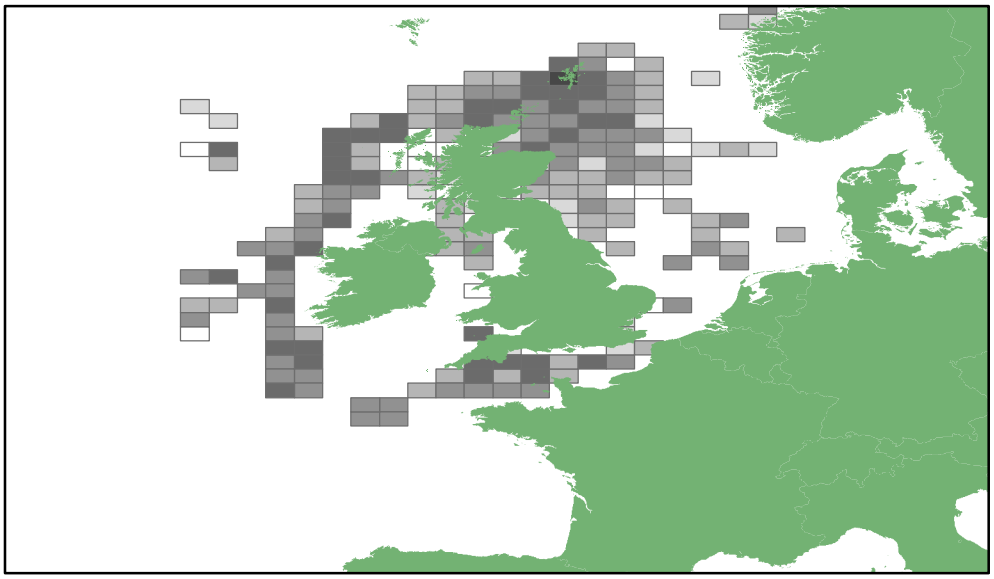


Chart A1.18: Pots and traps effort by UK 10m and over vessels by ICES rectangle: 2012

Chart A1.18a: Number of vessels by ICES rectangle

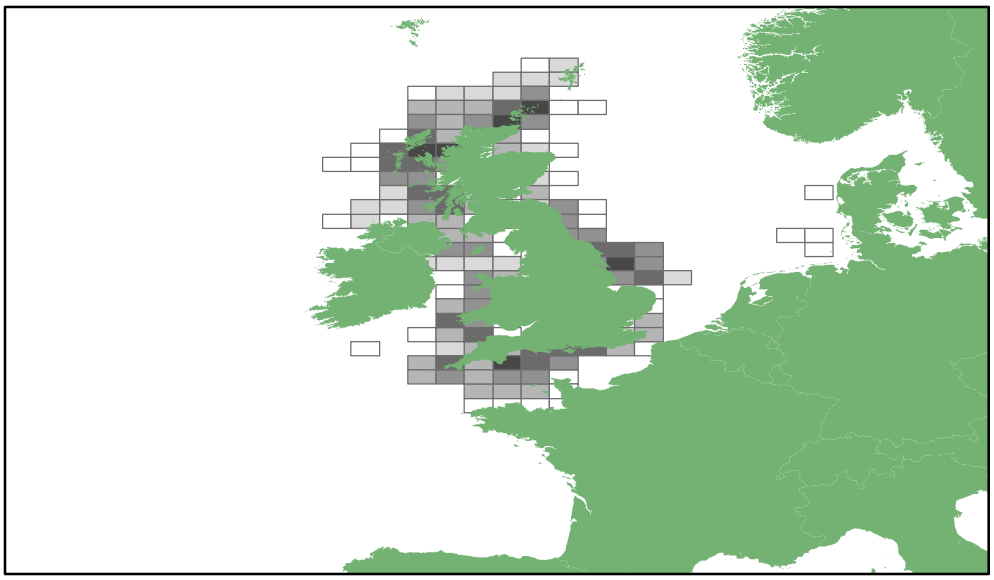


Chart A1.18b: Number of days at sea by ICES rectangle

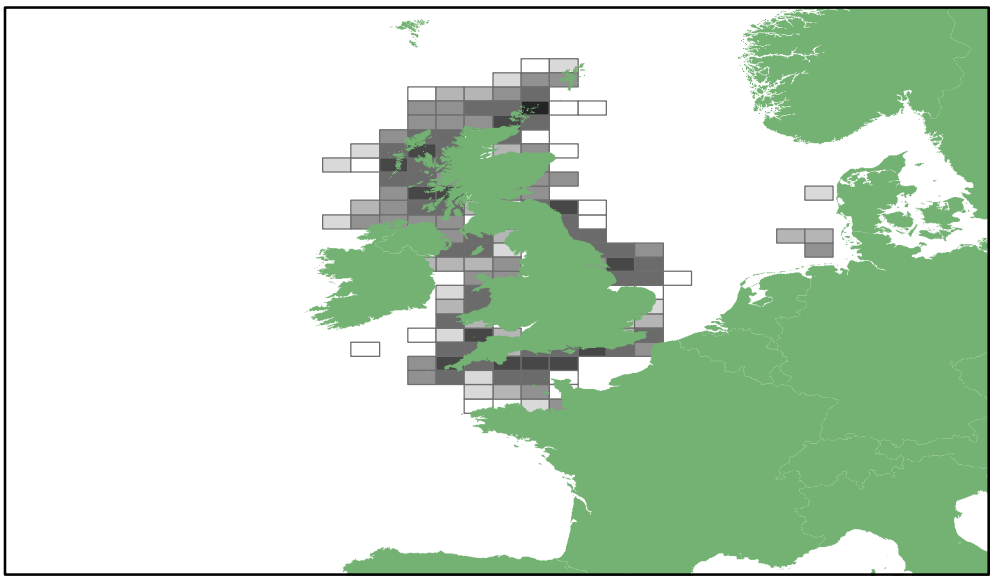
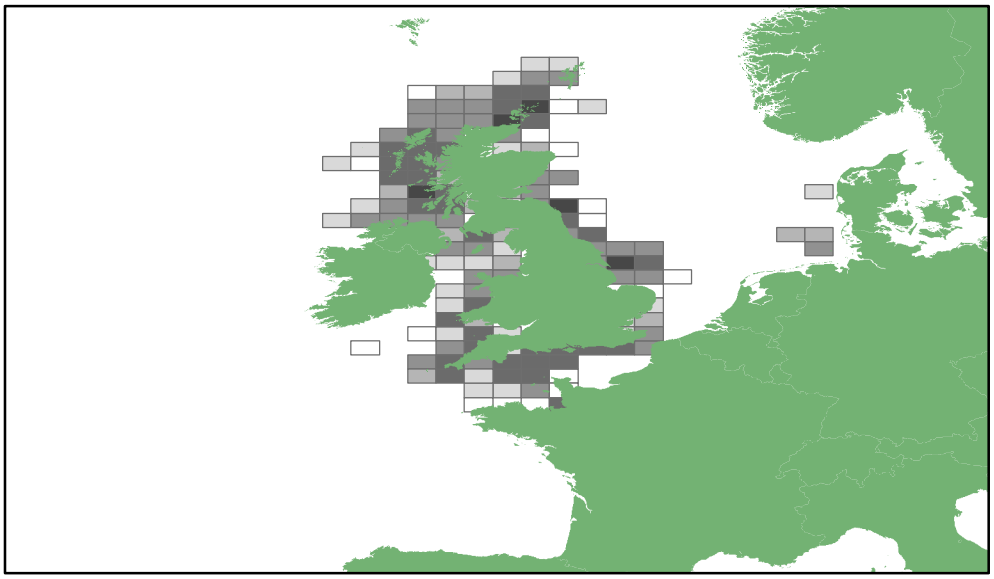


Chart A1.18c: kW day units by ICES rectangle



Appendix 2: Glossary of terms

Administration port

Administration ports are responsible for issuing fishing vessel licences. The coastal office designated as a vessel's administration port is typically the responsible office closest in proximity to a vessel's operational base. A vessel's administration port may differ from its registration port.

Biologically Sensitive Area (BSA)

The Biologically Sensitive Area is a sea area in which restrictions exist on fishing effort by vessels 10 metres or over targeting certain species. The region is defined in Article 6 of Council Regulation (EC) No 1954/2003. It lies within ICES sub-area VII and constitutes part of the Western Waters.

Chain volume measure

A chain volume measure is an index number from a chain index of quantity (a chain index is an index constructed by linking two or more index series of different base periods or different weights). The index number for the reference period of the index may be set equal to 100 or to the estimated monetary value of the item in the reference period.

Cod Recovery Zone (CRZ)

The Cod Recovery Zone (CRZ) is a group of sea areas in which restrictions exist on fishing effort by vessels 10 metres or over using certain regulated gears. The CRZ comprises four areas: Kattegat, Irish Sea (ICES division VIIa), North Sea (ICES division IIIa excluding Kattegat; ICES sub-area IV; EU waters of ICES division IIa; ICES division VIId) and West of Scotland (ICES division VIa and EU waters of ICES division Vb).

The regulated gears are:

- Beam trawls of mesh:
  - equal to or larger than 120 mm (BT1)
  - equal to or larger than 80 mm and less than 120 mm (BT2)
- Gill nets, entangling nets (GN1)
- Trammel nets (GT1)
- Longlines (LL1)
- Bottom trawls and seines of mesh:
  - equal to or larger than 100 mm (TR1)
  - equal to or larger than 70 mm and less than 100 mm (TR2)
  - equal to or larger than 16 mm and less than 32 mm (TR3)

Consumer Price Index (CPI)

The Consumer Price Index (CPI) measures the average change in the prices of goods and services bought for the purpose of consumption in the UK. It is calculated according to a different formula than the Retail Price Index (RPI), and has narrower commodity coverage. The RPI excludes very high and low income households and hence the CPI has wider population coverage than the RPI.

Demersal

The term demersal fish covers species living on or near the sea bed.

Engine power

Engine power refers to a measure of the power of a fishing vessel's engine (in kW). Where an engine has been permanently de-rated

	and this has been declared to the Register of Shipping and Seamen (RSS), this is the de-rated engine power; otherwise, it is the maximum continuous engine power (MCEP) declared to the RSS. Where neither of these are available the registered engine power is used.
Exports	Exports consist of the outward movement of goods produced by businesses in the UK, plus goods, which after importation, move outward from bonded warehouses or free zones without having been transformed i.e. both exports and re-exports. Export statistics exclude fish caught by domestic fishing craft, whether or not processed on board, landed in foreign ports. In UK export statistics, domestic fishing vessels are defined as vessels in UK economic ownership; these may differ from vessels registered in the UK.
Fishing areas	Fishing areas are defined by international convention. The immediate waters around the UK are subdivided into ICES sub-areas IV (North Sea), VI (West of Scotland) and VII and its divisions the Irish Sea, VIIa; Celtic Sea, VIIg,h; Bristol Channel, VIIf; and the English Channel, VIId,e. See Appendix 3.
Fishing capacity	Fishing capacity is the physical dimension of fishing vessels measured in gross tonnage (GT), or – in engine power terms – kilowatts (kW). See definitions in this glossary.
Fishing effort	Fishing effort is an aggregate measure of the activity of fishing vessels in a given sea area. It may be measured as the total time spent at sea (in hours or days), as the sum of the products of fishing capacity and time at sea for each vessel (in GT days) or as the sum of the products of engine power and time at sea for each vessel (in kW days).
Fishing mortality	Fishing mortality is the proportion of a stock killed/dying each year as a result of fishing activity.
Fish flour	Fish flour is powdered fish meal.
Fish meal	Fish meal is dried, ground fish (chiefly fish offal). It provides a dry, storable product that is frequently used in animal feeds.
Fish oil	Fish oils are oils extracted from fish, typically pelagic species such as herring and mackerel.
Fish preparations	Fish preparations refer to fish that have been prepared using one of the following techniques: fresh or chilled, frozen, salted, in brine, dried or smoked, prepared or preserved.
Fish producer organisation (FPO)	Fish producer organisations are institutions set up in accordance with EC regulations to improve the market for their members' catches. FPOs may also be granted responsibility by Fisheries Administrations for the management of fish quotas in addition to this function.
Fish products	Food products manufactured from fish such as fish meal, fish flour and fish oil.
Fixed gears	Fixed gears are mainly used for demersal species. They are normally vertically hung curtains of netting which enmesh or entangle the fish, fixed to the seabed with anchors or weights and held upright with floats.

Gross Domestic Product (GDP)

Gross Domestic Product (GDP) is a key indicator of the state of the whole economy. It is related to Gross Value Added (GVA) by adding the taxes on products and subtracting the subsidies from GVA. GDP is available at a whole economy level only, whereas GVA is available by industry sector.

Gross Registered Tonnage (GRT)

Gross Registered Tonnage (GRT) is a general term applied to a range of volumetric measures of vessel capacity.

Gross Tonnage (GT)

Gross Tonnage (GT) is a volumetric measurement of vessel capacity under the rules of the ITC69 (International Tonnage Convention). By the end of 2003 all UK fishing vessels over 15m overall length were required to have their tonnage measured on this basis.

Gross Value Added (GVA)

Gross Value Added (GVA) measures the contribution to the economy of each individual producer, industry or sector in the United Kingdom. GVA is used in the estimation of Gross Domestic Product (GDP), a key indicator of the state of the whole economy. Adding the taxes on products and subtracting the subsidies from GVA gives GDP. GDP is available at a whole economy level only, whereas GVA is available by industry sector.

The International Council for the Exploration of the Sea (ICES)

The International Council for the Exploration of the Sea (ICES) coordinates and promotes marine research on oceanography, the marine environment, the marine ecosystem, and on living marine resources in the North Atlantic. See also: Fishing areas.

Imports

Imports consist of all goods moving into a country, including goods for domestic consumption and goods into bonded warehouses or free zones. In accordance with the internationally recommended practice, import statistics include fish caught by foreign fishing craft, whether or not processed on board, landed in domestic ports. In UK import statistics, foreign fishing vessels are defined as vessels in foreign economic ownership; these may differ from vessels registered abroad. Only goods for which the final destination is the UK are included in import statistics.

Landed Price Index (LPI)

The Landed Price Index measures the average change in the prices at first sale of fish landed by UK vessels into the UK.

Landed weight

Mass (or weight) of a product at the time of landing, regardless of the state in which it has been landed. Landed fish may be whole, gutted and headed or filleted.

Live weight

The mass or weight of a product, when removed from the water.

National Statistics

'National Statistics' are a subset of official statistics which have been assessed and certified by the UK Statistics Authority as compliant with its Code of Practice for Official Statistics. The label currently comprise three basic types:

- legacy 'National Statistics' – those statistical products which obtained their designation as 'National Statistics' before April 2008, but which have not yet been formally re-assessed.
- re-assessed 'National Statistics' – those retaining their status after a formal re-assessment.
- new 'National Statistics' – any statistical product which has been proposed by ministers as a candidate 'National Statistics' and

assessed and granted accreditation.

UK Sea Fisheries Statistics and its associated data sets are designated as National Statistics. They retained this designation following an assessment by the UK Statistics Authority in 2011. For more information see the UK Statistics Authority website at www.statisticsauthority.gov.uk/national-statistician/types-of-official-statistics.

Nominal catches

Nominal catches refer to landings converted to a live weight basis. A nominal catch consists of fish, crustaceans, molluscs and other aquatic animals, taken for all purposes (commercial, industrial and subsistence) except recreational, operating in inshore, offshore and high seas fishing areas (marine fishing areas). Inland waters, both fresh and brackish, are excluded. The data on the landings of such species and products require conversion by accurate yield rates (conversion factors) to establish the live weight equivalents at their time of capture.

Official statistics

The Statistics and Registration Service Act 2007 defines 'official statistics' as all those statistical outputs produced by the Office for National Statistics, central Government departments and agencies, devolved administrations and other Crown and certain non-Crown Bodies.

For more information see the UK Statistics Authority website at www.statisticsauthority.gov.uk/national-statistician/types-of-official-statistics.

Pelagic

The term pelagic fish covers species found mainly in shoals in midwater or near the surface of the sea.

Quota

A share in a total allowable catch (TAC) held by an EU member state. EU TACs are divided on the basis of a number of factors, including the member state's past catch record. Shares are awarded according to a principle of 'relative stability', namely that each member state should enjoy a fixed percentage share of the fishing opportunities for commercial species across time. See also: Total allowable catch.

Recruits

Recruits are the young fish in the year class which is entering the fishery.

Registration port

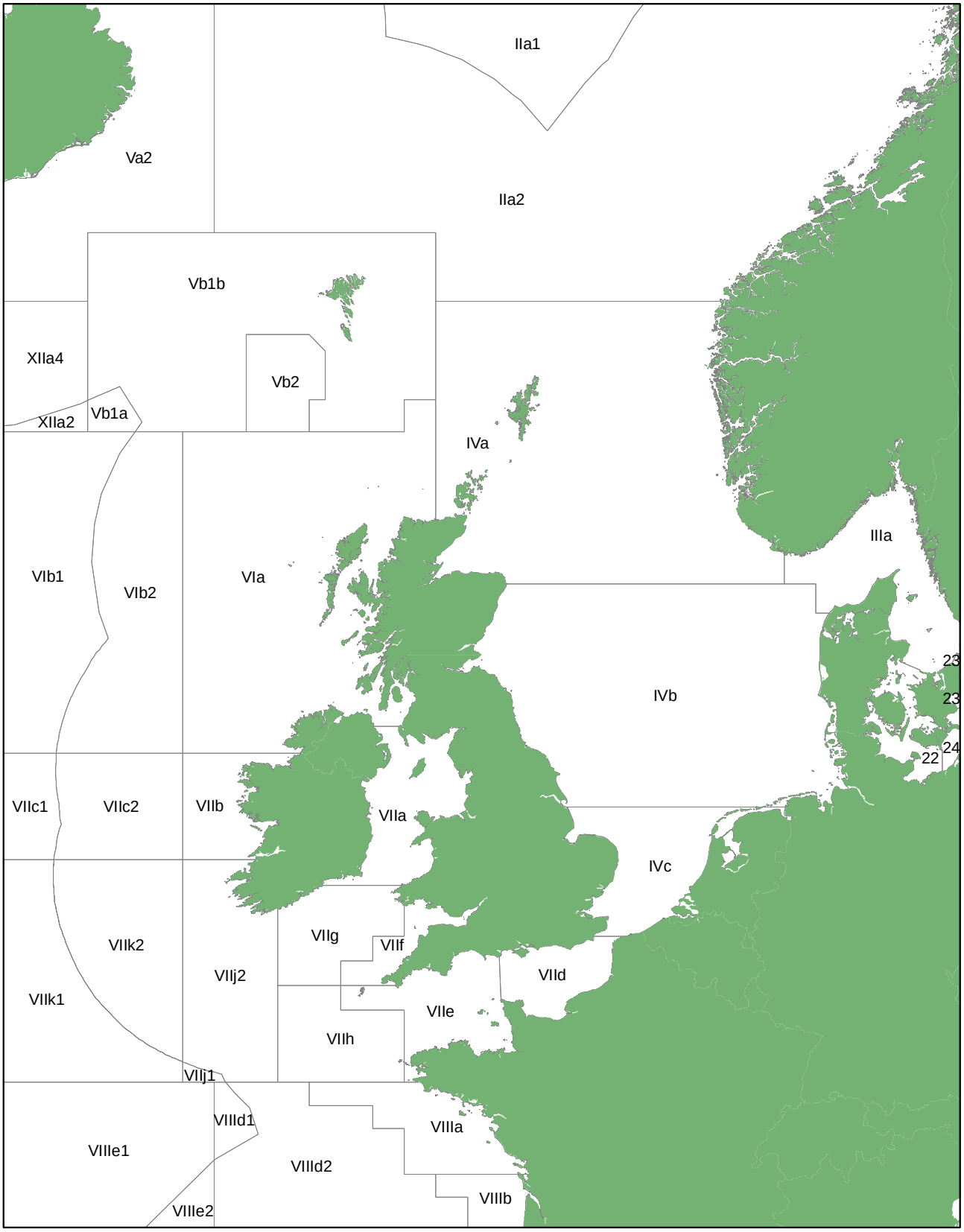
A registration port is a port chosen by the owner of a vessel as the port that forms part of the external markings of a fishing vessel – the Port Letters and Numbers painted on the bow of the vessel. The owner chooses this as part of the process of registering a commercial fishing vessel with the Register of Shipping and Seamen, part of the Maritime and Coastguard Agency. A fishing vessel's registration port defines its nationality but does not necessarily coincide with its administration port and may not be located close to the vessel's operational base.

Retail Price Index (RPI)

The Retail Price Index (RPI) is the most long standing general purpose domestic measure of inflation in the United Kingdom. It is calculated according to a different formula than the Consumer Price Index (CPI), and has wider commodity coverage. The RPI excludes very high and low income households and hence the CPI has wider population coverage than the RPI.

Seining	Seining is a method used exclusively for demersal fishing. The net, lighter than for trawling, is set on very long ropes designed to herd or contain the fish for capture in the net. After the fish have been surrounded by the ropes, the net is slowly hauled back to the vessel.
Shellfish	The term shellfish covers all crustaceans and molluscs.
Sole Recovery Zone (SRZ)	The Sole Recovery Zone (SRZ) corresponds to the Western Channel (ICES division VIIe), in which restrictions exist on fishing effort by vessels 10 metres or over using regulated gears. In the SRZ, regulated gears are beam trawls of mesh size equal to or greater than 80mm and static nets, including gill-nets, trammel-nets and tangle-nets, with mesh size less than 220mm.
Spawning stock biomass (SSB)	The spawning stock biomass (SSB) is the total weight of a species population capable of reproducing.
Stock	A stock is that part of a species population exploited in a defined fishing area.
Total allowable catch (TAC)	A total allowable catch (TAC) is a catch limit set by EU fisheries ministers for a particular stock. TACs are fixed on an annual basis on the basis of scientific research by national and international organisations, including ICES and the European Commission's Scientific, Technical and Economic Committee for Fisheries (STECF). TACs are usually expressed in tonnes live weight. See also: Quota.
Transhipment	The transfer from one conveyance to another for shipment. In this case, transhipments usually take place in coastal waters.
Trawling	Trawling may be used either for bottom-dwelling (demersal) or mid-water (pelagic) species, the net being of a basic funnel-shaped construction and towed behind a vessel or between two vessels (pair trawling).
Western Waters	The Western Waters are a group of sea areas in which restrictions exist on fishing effort by vessels 15 metres or over on trips with certain target species. The Western Waters comprise nine areas, of which UK registered vessels are permitted to deploy effort in four: ICES sub-areas V and VI, ICES sub-area VII, ICES sub-area VIII and the Biologically Sensitive Area. Target species are demersal species (excluding those covered by Council Regulation (EEC) No 2347/2002), scallops and edible crab and spider crab. In the Biologically Sensitive Area, restrictions exist on fishing effort by vessels 10 metres or over on trips with these target species.
Year class	A year class is the young of any one annual spawning.

Appendix 3: ICES divisions



Appendix 4: UK fisheries statistics methodology

Fleet size and composition

Statistics on the UK fishing fleet since 1990 have been based on the fleet of fishing vessels as registered with the Register of Shipping and Seamen, part of the Maritime and Coastguard Agency which is an executive agency of the Department for Transport. Information provided by the Register includes the length (overall and registered), breadth, gross tonnage, power, age and material of construction. Information on the fishing fleets of the Isle of Man, Guernsey and Jersey are supplied by the respective registering authorities. Prior to 1990, the statistics were based on fishing vessels known by Administrative Departments to be active.

Statistics on the size of the UK fishing fleet are complicated by the fact that the European Union (EU) has progressively revised the methodology used to determine vessel tonnage for the fishing fleet from various national and international standards, previously collectively called Gross Registered Tonnage (GRT), to a common standard based on the International Tonnage Convention 1969 (ITC69) and known as Gross Tonnage (GT). A phased programme of re-measurement was introduced in the UK in 1996 which was completed by the early part of 2004.

Licensing of vessels first applied in 1977 and covered only fishing vessels over 40 feet (12.14 metres) in certain fisheries. Following the adoption of the European Union's Common Fisheries Policy, the UK designated a number of fish stocks as pressure stocks and introduced a restrictive licensing scheme for vessels fishing those stocks. The licensing regime initially only covered vessels over 10 metres registered length, but its coverage has been progressively extended over the years.

- In February 1990 the licensing regime was extended to vessels of over 10 metres overall length fishing for quota stocks.
- Later in 1990 restrictive licensing was extended to cover all fishing by vessels over 10 metres overall length with the exception of those fishing for salmon and migratory trout which were covered by a separate regime.
- From May 1993 licensing was extended to vessels of 10 metres and under overall length.

Statistics on the UK fishing fleet in this publication are based on the fleet of fishing vessels as registered with the Register of Shipping and Seamen. To this is added details of fishing vessels as registered with the Crown Dependencies (Isle of Man and the Channel Islands) to form the full UK fleet, details of which are reported to the European Commission on a regular basis and recorded as part of the EU Community Fleet Register.

The UK fleet has been broken down for analysis by individual country based on the administration ports where vessels were licensed as at the end of 2012. Vessels which are registered but do not have an administration port at this time are not counted against any country.

Fish Producer Organisation membership

Fish producer organisations are institutions set up in accordance with EU regulations to improve the market for their members' catches. In the UK, FPOs are also granted responsibility by Fisheries Administrations for the management of fish quotas for vessels in their membership.

Vessel owners notify UK Fisheries Administrations when transferring between FPOs for the purposes of quota management. A comprehensive database of membership of FPOs is maintained which augments the vessel data provided by the Register of Shipping and Seamen.

Fishermen numbers

Data on fishermen numbers are collected separately by the Marine Management Organisation (MMO) for England, Marine Scotland, the Department of Agriculture and Rural Affairs for Northern Ireland (DARD) and the Welsh Assembly Government (WAG). The Departments in Jersey, Guernsey and the Isle of Man do not contribute data on fishermen numbers.

In Scotland and Northern Ireland, staff in coastal offices are issued with a census of all vessels in their responsibility and asked to provide data on the number of part-time and regular fishermen on each vessel. Marine Scotland and DARD process and compile these data to provide estimates of fishermen numbers on vessels at each port of administration.

In England and Wales, a census of fishing vessels over 10 metres in overall length is performed. For the large number of fishing vessels 10 metres and under in length, a stratified sample of vessels is taken, with strata defined by administration port, vessel length and gross tonnage. A 20 per cent sample is drawn from each stratum. As in Scotland and Northern Ireland, staff in coastal offices provide data on the number of part-time and regular fishermen on each vessel in their administration based on enquiries and local knowledge. All staff are provided with clear guidance on how to complete the survey.

From 2010, revised guidance was issued to staff on how to complete the survey. For the purposes of the survey, a fisherman is defined as a person working at sea on a commercial fishing vessel, such as skippers or crew members. The definition excludes persons not working at sea, such as administrators and land-based processing staff. Fishermen are classified as regular or part-time according to whether commercial fishing is their main occupation.

Data collected for England and Wales are processed by the MMO. Checks are made on the quality and reliability of data returned and every effort is made to minimise non-response. In the 2012 survey, fishermen numbers were collected for 1,154 of the 1,180 vessels surveyed, i.e. 97.8 per cent. Where no data were available on fishermen numbers for a vessel the value was assumed to be the average number of fishermen on vessels in the same stratum, such that no bias was caused by non-response. Estimates from the survey for England and Wales are combined with those supplied by Marine Scotland and DARD to provide overall UK estimates.

Activity and landings

Statistics on fishing effort and landings are calculated using data collected and processed by officials of the various Fisheries Administrations in the UK, namely the MMO, Marine Scotland, DARD, WAG and Departments in Jersey, Guernsey and the Isle of Man.

The main legislation used to collect these data is:

(i) the EU fisheries legislation on keeping and submitting logbooks and providing landing declarations and sales notes, primarily Council Regulation (EC) No. 1224/2009 (the 'Control Regulation').

(ii) general powers under the Sea Fisheries (Conservation) Act 1967 under which Ministers granting a licence can require the master, owner or charterer of the vessel named in the licence to provide such statistical information as required. These powers were widened in the Sea Fish (Conservation) Act 1992 to cover other types of information and the form in which it is to be supplied.

The method of data collection depends on the length of the vessel.

Data collection for vessels over 10 metres in overall length

Data collected on fishing effort by over 10 metre vessels come primarily from the fishing logbook. Two additional sources are used to collect data on landings by over 10 metre vessels: landing declarations and sales notes.

The fishing logbook captures data on fishing activity by individual vessels by trip, and for each day of activity within a trip. This includes details of the catch, by species, in terms of the presentation and quantity of fish retained on board. Information is also collected on the fishing gear used and the ICES division, rectangle and zone for the activity. Supply of logbook data is mandated by legislation for all vessels over 10 metres overall length in respect of catches of all species. Logbook data for UK vessels must be submitted within 48 hours of landing to UK authorities; this includes landings into foreign ports.

Landing declarations provide information on the weight and presentation of fish landed by species. As with logbooks, landing declarations must be submitted to authorities within 48 hours of completion of the landing.

Sales notes are required in respect of first sales of fish and fishery products. Sales notes for first sales of fish must be submitted to UK Fisheries Administrations within 48 hours of sale by the registered buyer of the fish, except at designated auction centres where the registered seller has responsibility.

Requirements to submit logbook and landing declaration data electronically are being phased in for UK vessels 12 metres and over in overall length. From 1 July 2012, UK fisheries administrations have been enforcing a strict expectation that all UK fishing vessels 15 metres and over should be reporting data by electronic means only. A process of rolling-out similar requirements to vessels 12 to 15 metres in length has also begun and is in the final stages of roll-out. Additionally, from 1 January 2009, buyers and sellers with an annual turnover of first sale fish of more than 400,000 euro have been required to submit sales notes electronically; this threshold was reduced to 200,000 euro from 1 January 2011. A UK Electronic Reporting Systems (ERS) Hub has been set-up to collect, process, and store these data. For more information please see the Marine Management Organisation website at:
http://www.marinemanagement.org.uk/fisheries/monitoring/electronic.htm.

Data collection for vessels 10 metres and under in overall length

For 10 metre and under vessels, there is no statutory requirement under either EU or national legislation for fishermen to declare their catches. Historically, information for this sector has been collected with the co-operation of the industry: it comprised log sheets and landing declarations voluntarily supplied by fishermen as well as sales notes and assessments of landings collected from market sources and by correspondents located in the ports. This collection of data has now been replaced after the introduction in September 2005 of a scheme of registration for buyers and sellers of first sale fish (see above). Sales notes are now used in addition to the voluntary information from fishermen.
During 2005 and 2006, UK Fisheries Administrations introduced a system of restrictive licensing for activity targeted at shellfish. As part of this system, new reporting requirements were introduced involving a requirement for fishermen fishing with under 10 metre vessels to complete diaries of their daily activity which needed to be submitted on a monthly basis. Summary information from these diaries is now in use in Northern Ireland but was discontinued in the rest of the UK at the end of February 2009.

Coverage

Data collection for vessels over 10 metres overall length aims to achieve full coverage of activity by this sector of the fleet. For the sector 10 metres or under in overall length, landings are only

reported where the fish are sold or data have been provided voluntarily, leading to reduced coverage[1].

The reliability of the data collected is dependent on the information provided by fishermen. Inspectors at port offices carry out a mix of manual and automatic checks on the information provided by vessel operators. These include a check between logbook information and that given in the sales notes or observed as landed as well as checks against other sources of information (e.g. satellite position reports, information from aerial and at-sea surveillance and inspection activity carried out by UK enforcement officers).

Despite legal obligations for fishermen to declare their catches, a proportion of fishing activity remains unreported. This chiefly affects landings data and the effects on statistics on fishing effort are considered to be small. A 2009 study[2] jointly funded by the Department for Environment, Food and Rural Affairs and the Department for International Development estimated that between 2000 and 2003, illegal fishing in the northeast Atlantic amounted to between 5 and 13 per cent of reported catches of species studied.

The extent of illegal and unreported fishing by UK vessels is uncertain and varies across stocks. However, it is considered that the overall level of unreported fishing has been reduced in recent years following the introduction of a scheme of registration for buyers and sellers of first sale fish, and the implementation of Commission Regulation (EC) No. 1005/2008 establishing a Community system to prevent, deter and eliminate illegal, unreported and unregulated fishing.

It should be noted that landings do not typically equate to total catches, as fish may be returned to the sea through a practice known as discarding. The degree of discarding varies by stock, and by the sector of the fleet involved. The figures presented in this publication should not be interpreted as total removals from the sea.

Data processing

Information from log sheets, landing declarations, sales notes and other sources is keyed into computers connected to the main databases by government staff at port offices, or is transferred electronically from the UK ERS Hub. Details of the areas fished are taken from the logbooks and entered as codes for the ICES divisions and statistical rectangles. Where a statistical rectangle is split into different areas (e.g. part is in EU waters and part in Norwegian waters) an additional code is used to indicate the zone fished. Where a vessel fishes in more than one area in a single trip, the total amounts for the trip of each species, as given in the sales notes and landing declarations are allocated to the areas in proportion to the estimated quantities of the species taken from each area, as recorded in the logbook.

In many cases only the weight of fish landed is provided, as it is impractical to record the weight of fish at the time of capture due to working conditions. The landed weight may differ significantly from the weight of the fish as it was taken from the sea, in large part due to the processing of the catch on board the vessel (e.g. gutting, filleting, etc). To render these data comparable, the landed weights are converted to a live weight equivalent using standard conversion factors according to the species landed and its presentation (e.g. gutted, skinned, etc).

The complete fishing records are transmitted to the central computer systems where further checks are carried out on the data before they are reflected in the main landings databases. Activity and landings data for the UK are compiled in a central database containing key information from systems run by the MMO and Marine Scotland. The former holds information on all landings into

[1] 2011 data showed an increase in reported landings into the Isle of Man. From 1 January 2011 the Isle of Man authorities became fully integrated with the data collection and recording systems operated by mainland fisheries administrations, enabling the inclusion of activity that was previously not available.

[2] Agnew DJ, Pearce J, Pramod G, Peatman T, Watson R, et al. (2009) Estimating the Worldwide Extent of Illegal Fishing. PLoS ONE 4(2): e4570.

England, Wales and Northern Ireland and the Isle of Man by UK vessels and of landings abroad by vessels administered by the MMO, WAG, DARD and Isle of Man Department of Environment, Food and Agriculture. The latter provides figures for landings into Scotland by all UK vessels and landings abroad by Scottish administered vessels.

Regular checks are made on the quality of the data and unusual records referred to staff in coastal offices to confirm or correct as necessary. In addition, prior to publication of these data, amendments are made to records with extreme prices for the weight of fish sold and values imputed based on average prices for the same species.

The sale value of transhipped landings is also imputed using an average price. These are instances where fish may be landed in the UK, but it is transported (usually by road and ferry) out of the UK before it is sold. This usually happens to allow vessel owners to take advantage of higher market prices for some species of fish when sold at continental markets rather than in the UK. Note that this differs from transhipment at sea. This involves transferring fish between vessels before landing, which is banned within community waters.

Effort statistics for the UK are calculated using trip data from the fishing logbook to determine the time spent at sea with each gear in each ICES sub-division and rectangle. This is combined with information from the Register of Shipping and Seamen on the capacity and engine power of vessels in order to calculate fishing effort exerted in GT days or kW days. These data are aggregated for different sea areas and gear types to produce the statistics shown.

In some instances the spatial resolution of the data is not sufficient to permit exact attribution of time spent at sea to recovery areas defined by EU legislation. In the Cod Recovery Zone, it is assumed that all effort deployed in ICES sub-division IIIa occurs outside of Kattegat. In the Western Waters, it is assumed that effort occurring within ICES rectangles transected by the boundaries of the Biologically Sensitive Area (BSA) occurs within the BSA itself. In this way measures of effort in the North Sea and BSA may be overestimates.

Effort deployed in the Western Waters is classified according to the target species of the trip. This is determined using a decision tree approved by the Scientific, Technical and Economic Committee for Fisheries (STECF) of the European Commission. The target species is assigned on the basis of the gears used and the species composition of the vessel's landings.

Changes in processing for UK Sea Fisheries Statistics 2012

As mentioned in Chapter 3, there have been some changes to the way the landings data are processed in this year's publication.

Firstly, all mussel landings with a zero landings value, since 2008, have been removed from the dataset used to create all the tables in Chapter 3. These landings were identified to be landings of mussel seed which, rather than being sold for human consumption at this point are re-laid for aquaculture. They are then harvested and sold at a later stage. As these landings are not sold at the point of initial dredging they have been removed and the data recalculated. The effect has been a reduction in the reported amount of mussels landed of 0.4 thousand tonnes in 2008, rising to 8.4 thousand tonnes in 2011.

Secondly, in the calculation of average prices throughout Chapter 3, landings with a zero value have not been included in the calculation as inclusion would result in a lower average price. There are various reasons why landings may have a zero value. There are some fish which cannot be sold and therefore have a zero value e.g. undersize fish landed as part of catch quota work, or scientific dispensation landings which cannot be sold but have to be recorded in sales notes to allow cross checks with landings declarations. There are also instances where fish are not offered for sale or are intended for sale at a later date, and so are subject to takeover declarations.

EU reporting requirements on fishing activity data

As part of the EU legislation that established controls on fishing activity, limits are set in two key areas:

(i) Fish quotas – limits on the level of fish that can be caught and landed related to the species of fish and sea area of activity.

(ii) Fishing effort – limits in terms of the total fishing effort that can be exerted, usually in terms of the days spent at sea by vessels combined with a measure of their catching capacity such as engine power.

The legislation that sets out control limits in these two areas also includes requirements on Member States to report data on the uptake by their fishing fleets against these levels. However, the information reported to the Commission has to be collated in line with two conflicting requirements, that is to report accurate data that are available as at the time of submission, as well as meet the tight reporting deadlines for providing information to the Commission after the end of a period. For example, information for end year quota and effort uptake has to be reported by the 15th calendar day after the end of the period in question.

Following the reporting of data to the Commission, there are additional processes that need to occur to allow the "close-down" of a year for quota and effort management purposes, such as additional checks with the Commission and other Member States on data, the agreement of end year quota and effort swaps, and the agreement on banking and borrowing of fish quotas between years. This close-down is a necessary element within the management of fishing activity as it allows for the level of any overfishes for the previous year to be determined and penalties needed for the current year to be set. This needs to be done as early in the year as possible to ensure that both national administrations and the fishing industry know the levels of quota and effort they have to operate with, so that any detrimental effect on management of activity within the current year is avoided.

As part of ensuring the close-down process takes place as early as possible, the Commission sets out operational requirements related to reporting amendments to data. For example, once submitted on 15 January, the data on quota uptake for the previous year should only be amended in light of corrections made to landings already included, and information on any landings not previously reported should not be included as part of any revisions. We apply the same principles to the reporting of fishing effort to ensure a consistent approach to the preparation and reporting of data. There are, however, lags in the reporting of data on activity by fishermen that include:

- The legislative requirement on fishermen is to submit the reports on their operations within 48 hours of a landing taking place. This does not guarantee that fishing administrations receive this information within 48 hours, and we frequently experience significant delays in receiving documentation.

- Processing of documentation takes time as there is a significant amount of information reported on the logbook on the activity of vessels. The EU logbook system used for the vessels over 10 metres in length covers many different reporting obligations, thus the volume and complexity of data involved can lead to delays in data entry.

- The information received is thoroughly checked and validated before reporting to the Commission. This can delay the use of data.

Thus the information we report to the Commission at the end of a year is based on and includes all data that have been received by administrations by that time that have gone through the full data entry process (i.e. successfully passed data validation stages as well as cross-checks between data sources to ensure its accuracy). However the Commission accepts that as a consequence of

the early reporting deadline and the required close-down of a year, there will be data entered after the reports have been sent to the Commission.

The desire to reduce the impact of these lags in information is one of the key drivers for larger fishing vessels to move to electronic reporting of data on activity. Currently nearly all UK vessels 15 metres and over in length submit activity data electronically. Vessels 15 metres and over in length accounted for 84 per cent of the total quantity of landings by UK vessels in 2012. This is currently being extended to vessels 12 metres and over in length. The electronic reporting of activity will significantly reduce the lags in the reporting of activity.

Data are prepared for the annual statistics publication at a point significantly after the close-down date for EU reporting systems. These reports are prepared to meet a wide range of uses. As such when preparing the reports, data received after the EU close-down date are included so that the publication gives as complete a picture as possible of total UK vessel activity in quantity and value terms. We therefore report on all landings and effort data, including that related to non-quota species (such as shellfish) which are of economic importance to the UK industry. See Appendix 5 for details of our policy with regards to data revisions.

Requirements to report fishing activity data electronically

Requirements to report data on fishing activity through electronic reporting systems rather than by using the paper community logbook were first introduced by Council Regulation (EU) 1996/2006. A phased approach to the introduction of requirements to report data electronically was planned to cover all vessels over 15m overall length. These requirements were subsequently revised by Council Regulation (EU) No. 1224/2009 that introduced an extended deadline for the change-over as well as extending the requirements so that all EU fishing vessels over 12m overall length would eventually be required to report data by electronic means. The full requirements of the electronic reporting system are in Commission Implementing Regulation (EU) No. 404/2011. This sets out the various elements of activity during a fishing trip that must be reported – these cover all possible events and activities from the vessel leaving port to its return to land fish. More details on these requirements can be found on the MMO internet site and that of the European Commission via the links given below:

http://www.marinemanagement.org.uk/fisheries/monitoring/electronic_elogbooks.htm

http://ec.europa.eu/fisheries/cfp/control/technologies/ers/index_en.htm

As such, by the end of 2012, virtually all active UK fishing vessels of at least 15 metres in length were reporting their data electronically. Both data reported electronically and on paper declarations go through extensive validation checks, with the system used for electronic returns extended to cover the differences in structure and the additional elements required within it, as compared to the paper equivalent. The validation system also covers checks mandated by EU legislation that must take place on all landings data received via electronic or paper declarations. These checks are set out in Article 109 of Council Regulation (EU) No. 1224/2009, and require the data reported on fishing activity in logbooks, landing declarations and sales notes to be cross-checked for consistency and accuracy. Activity data reported in these documents are also compared with other sources of information, such as satellite surveillance information from vessels where available. The process of roll-out to vessels over 12m overall length has continued in 2013 and is likely to extend into 2014.

The fishing activity data reported to the European Commission under the various sets of EU legislation have all gone through these checks before inclusion in the reports, with any discrepancies identified going through investigation to identify the causes in case further action is required. The investigation of discrepancies involves a significant degree of resources in all four UK fisheries administrations, but the complex nature of these checks does lead to instances where there can be a lag in time between the activity taking place and it being included in the data reports. The change-over to electronic reporting systems has increased the length of the validation

process in some cases as vessel operators have had to become used to their new role as data reporters using the new electronic systems.

The instances of increased lags in data being fully validated during 2012 led to the decision to delay the release of information on fleet structure and fleet landings in 2012. These investigations resulted in a conclusion that while lags had been present and were greater in 2012 than in previous years, the release of 2012 data could go ahead as the datasets available were as complete as possible and certainly complete to a level comparable with previous years. The data checks mentioned above mean the quality of data for 2012 is comparable with that for earlier years as well.

Imports and exports

HM Revenue & Customs (HMRC) is responsible for collecting the UK's international trade in goods data. The data are compiled from trade declarations made using commodity codes from the UN Tariff (HS Nomenclature) and its EU derivative the Intrastat Classification Nomenclature (ICN). These data are sent annually to the MMO, who process the data for this publication.

Landings of fish into the UK by foreign vessels are typically included in import statistics; however, statistics on imports and landings by foreign registered vessels may not strictly be comparable. Arrivals of fish should be reported where the economic owner of the vessel is outside the UK. In some cases, the countries of vessel registration and economic ownership may differ. A further complication is that import statistics do not include fish landed into the UK by foreign vessels which have a final destination outside the UK. Lastly, in some cases there exists a value threshold for declaration of imports. For these reasons it is possible that imports of fish may be below the quantity of landings reported for foreign registered vessels.

Exports include dispatches of fish by UK economically owned vessels when landing outside the UK. For similar reasons to those for imports, these are not directly comparable with landings by UK registered vessels abroad.

Household consumption and expenditure

Data on household purchases are sourced from the Living Costs and Food Survey run by the Office for National Statistics. The Family Food module of the survey collects detailed quantity and expenditure information on household and eating out purchases of food and drink for use by the Department for Environment, Food and Rural Affairs (Defra).

The survey is an annual voluntary sample survey of private households. The survey is continuous, with interviews being spread evenly over the year to ensure that seasonal effects are covered. Each report details the number of people and households that completed a diary during the reporting year.

Each individual aged 16 and over in the household is asked to keep diary records of daily expenditure for two weeks. Information about regular expenditure, such as rent and mortgage payments, is obtained from a household interview along with retrospective information on certain large, infrequent expenditures such as those on vehicles. Simplified diaries are kept by children aged between 7 and 15.

Prior to 2008, the Living Costs and Food Survey was named the Expenditure and Food Survey. In 2001-2002 this replaced the National Food Survey and the Family Expenditure Survey. More detailed methodological information for all four surveys is available from Defra and the Office for National Statistics.

Inflation

The Retail Price Index (RPI) and Consumer Price Index (CPI) measures of inflation are produced by the Office for National Statistics. The Landed Price Index (LPI) is produced by the MMO.

Only the components of the RPI and CPI for fish prices are included in this publication. These were based on a 'basket' of six items: fresh white fish fillets, fresh salmon fillets, frozen prawns, canned tuna, fish fingers, and frozen breaded/battered white fish. These two price indices differ in three main ways:

- population base – the RPI excludes very high and low income households and hence the CPI has a wider population coverage than the RPI.

- formulae used to combine prices – the CPI uses a combination of geometric means and arithmetic means, whereas the RPI only uses arithmetic means.

- commodity coverage – the CPI excludes owner occupiers' housing costs and hence the RPI has wider commodity coverage than the CPI. The fish components of these indices have the same commodity coverage.

Further methodological details for the RPI and CPI are available from the Office for National Statistics.

The LPI is a simple price index used to assess the change in prices at first sale of fish landed into the UK by UK vessels. It is calculated using the average annual prices of 46 categories of fish species, using data collected on all landings into the UK by UK vessels. The prices are aggregated using a weighted mean, with weights chosen as the quantities landed (in live weight equivalent) of each species category into the UK in 2000.

GDP for fishing

The Office for National Statistics produces data on gross value added (GVA), gross domestic product (GDP) and output indices. GVA measures the contribution to the economy of each individual producer, industry or sector in the United Kingdom. It is used in the estimation of GDP, a key indicator of the state of the whole economy. In the UK, three theoretical approaches are used to estimate GDP: 'production', 'income' and 'expenditure'. When using the production or income approaches, the contribution to the economy of each industry or sector is measured using GVA.

The production approach to estimating GDP looks at the contribution of each economic unit by estimating the value of an output (goods or services) less the value of inputs used in that output's production process. The income approach to estimating GDP measures the incomes earned by individuals (e.g. wages) and corporations (e.g. profits) in the production of outputs (goods or services).

The link between GVA and GDP can be defined as: GVA (available by industry only) plus taxes on products (available at whole economy level only), less subsidies on products (available at whole economy level only) equals GDP (available at whole economy level only). In summary:

GVA + taxes on products - subsidies on products = GDP

Further methodological details on GDP and GVA are available from the Office for National Statistics.

Other data sources

EU fishing vessels

The European Commission collects and publishes data on the characteristics of EU fishing vessels in the EU Fleet Register. Each Member State provides the Commission with a complete snapshot of their national register to the EU Fleet Register on the first working day of March, June, September and December each year, as required by Commission Regulation (EC) No 26/2004. Validation checks are performed to confirm the consistency of data submitted before the data are published in an online database.

Accidents, lost vessels and fatalities

Data on accidents involving UK fishing vessels are collected and compiled by the Marine Accident Investigation Branch (MAIB), a separate branch within the Department for Transport. MAIB inspectors examine and investigate all types of marine accidents involving UK vessels worldwide, and other vessels in UK territorial waters.

EU landings

EU member states exchange information on landings of quota species via the Fisheries Data Exchange System (FIDES). Data on the quantity landed of each stock subject to quotas are submitted to meet monthly reporting deadlines set out in EU legislation, in particular Council Regulation (EC) No. 1224/2009. These reporting deadlines are often shortly after the close of the fishing period; data lags mean that the figures reported are typically slight underestimates of the true quantity landed. Each member state reports the landings into their own country by vessels registered in other member states, leading to occasional differences with figures reported by the UK on landings by UK vessels abroad. The figures are compiled by the European Commission to give an overall picture of the landings by each member state.

Stock assessments

Stock assessments are provided by the International Council for the Exploration of the Seas (ICES) using data supplied by national administrations. In the UK, the Centre for Environment, Fisheries, and Aquaculture Science (Cefas), an executive agency of Defra, provides expert advice on fisheries assessment.

The world fishing industry

Data on the world fishing industry are compiled by the Fisheries and Aquaculture Department of the Food and Agriculture Organisation of the United Nations (FAO). Data on landings by UK vessels are supplied by the MMO on an annual basis; separate figures for the Isle of Man and the Channel Islands are sent directly by their Fisheries Departments. FAO figures are not directly comparable with landings figures in Chapter 3 owing to differences in time of production.

Appendix 5: Revisions policy

Where possible, the Marine Management Organisation produces revised figures each year to ensure that users have access to the latest data available. Revisions typically affect fishing effort, catches and trade data, where data from logbooks, landing declarations, sales notes and trade declarations may occasionally be received or amended several months after the event. The magnitude of revisions to tables is typically larger for more recent years although the size of revisions is usually very small. Any revised data presented in this publication will be clearly marked with an 'R' against the relevant entries.

There are a number of causes of the revisions made in this publication:

i) **Receipt of additional data**. Despite strict data reporting requirements, some data are not received or entered at the time of publication. This typically affects data for more recent years.

ii) **Revisions to data sources**. Corrections are made to database entries throughout the year where these are found to be incorrect. In addition, for landings data systematic corrections are made to implausible quantities and values prior to production of the publication to reduce the influence of outliers.

iii) **Rectification of data processing errors**. Where data are found to have been incorrectly processed for a previous publication, these errors are corrected as soon as possible.

Users should always refer to the latest figures published by the Marine Management Organisation. Previous editions of all publications are made available online on the Marine Management Organisation website should users wish to examine the effect of revisions in further detail.

The Marine Management Organisation adheres to the Department for the Environment, Food and Rural Affairs' policy on revisions and errors. Further information can be found in the *Statement on Revisions and Errors* at www.defra.gov.uk/statistics/national-statistics.

Structure and activity of the UK fishing industry

Several tables in Chapter 2 are revised annually as follows:

Table	Title
2.7	Number of accidents, lost vessels and fatalities involving UK vessels: 2002 to 2012 (revised by the Marine Accident Investigation Branch)
2.8	Beam trawl activity in the Sole Recovery Zone: 2002 to 2012
2.9	Effort of UK 10m and over vessels fishing in the Cod Recovery Zone: 2002 to 2012
2.10	Effort of UK 15m and over vessels fishing in the Western Waters: 2002 to 2012
2.11	Days at sea for the over 10m UK fishing fleet: 2002 to 2012 (supplementary table)

Landings

Tables in Chapter 3 are revised annually for the preceding four years to reflect information received since the previous publication. The following table shows the effect of revisions to landings data published in *UK Sea Fisheries Statistics 2011*:

Figures published in *UK Sea Fisheries Statistics 2012* as a proportion of figures previously published in *UK Sea Fisheries Statistics 2011*

	Quantity				Value			
	2008	2009	2010	2011	2008	2009	2010	2011
Landings into the UK by UK vessels:								
Demersal	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.1%
Pelagic	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Shellfish	99.3%	98.9%	97.9%	96.5%	99.5%	100.0%	100.1%	101.1%
Total	99.8%	99.6%	99.3%	98.7%	99.8%	100.0%	100.0%	100.5%
Landings into the UK by foreign vessels:								
Demersal	100.0%	100.0%	107.5%	105.7%	100.0%	100.0%	104.5%	103.1%
Pelagic	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Shellfish	100.0%	100.1%	100.0%	100.0%	100.0%	100.1%	100.0%	100.0%
Total	100.0%	100.0%	102.2%	102.5%	100.0%	100.0%	102.5%	101.7%
Landings abroad by UK vessels:								
Demersal	100.0%	100.0%	100.0%	100.1%	100.0%	100.0%	100.0%	100.1%
Pelagic	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Shellfish	100.0%	100.0%	100.0%	102.6%	100.0%	100.0%	100.0%	101.8%
Total	100.0%	100.0%	100.0%	100.1%	100.0%	100.0%	100.0%	100.1%

Source: Fisheries Administrations in the UK

Revisions to more detailed landings figures may differ in magnitude to the above indicative proportions.

The reduction in shellfish landings by UK vessels into the UK is largely a result of our decision to exclude mussels with zero value. These were actually mussel seed which are re-laid for aquaculture and were not sold for human consumption.

It is worth noting that the larger increases in this year's publication relate to relatively small amounts of landings. For example, 2010 demersal landings by foreign vessels increased by 7 per cent. This represents an increase of just 2.4 thousand tonnes, from 31.7 thousand tonnes in last year's publication to 34.1 thousand tonnes this year.

Supplies, overseas trade and marketing

All tables in Chapter 4 are revised annually as follows:

i) Landings data (Tables 4.1, 4.4a-e, 4.5) are revised annually for the preceding four years, in keeping with conventions used in Chapter 3.

ii) Trade data (Tables 4.1, 4.2, 4.2a, 4.3, 4.3a, 4.4a-e) are revised annually for the preceding year. The current year's data are provisional.

iii) Household consumption, RPI, CPI and GDP data are revised for all previous years using data received from the Department for Environment, Food and Rural Affairs and the Office for National Statistics.

The following table shows the effect of revisions to trade data published in *UK Sea Fisheries Statistics 2011*:

Trade data published in *UK Sea Fisheries Statistics 2012* as a proportion of figures previously published in *UK Sea Fisheries Statistics 2011*

	Imports (2011)		Exports (2011)	
	Quantity	Value	Quantity	Value
Fish (excluding Shellfish)	100.0%	100.0%	100.0%	100.0%
Shellfish (Crustaceans and Molluscs)	100.0%	100.0%	98.8%	99.6%
Fish Products	100.0%	100.0%	100.0%	100.0%
Total	100.0%	100.0%	99.7%	99.9%

Source: H.M. Revenue and Customs

Main stocks and their level of exploitation

The time series estimates of abundance and fishing mortality are revised each year using the data provided by the International Council for the Exploration of the Seas (ICES). Stock assessments for previous years are as provided in annual ICES reports and are not updated using more recent data.

Overview of the world fishing industry

All tables in Chapter 6 are revised annually for all previous years using data received from the United Nations Food and Agriculture Organisation (FAO).

Appendix 6: Further information

Official publications

Other official publications on sea fisheries statistics include:

MMO / DEFRA	UK Fishing Vessel List. List of registered and licensed vessels of over 10 metres overall length. Published monthly. The Monthly Return for England and Wales. Summary publication of landings into England and Wales. Published monthly. Available from www.marinemanagement.org.uk/fisheries/statistics or by writing to Marine Management Organisation, Area 8C, 9 Millbank, c/o 17 Smith Square, London SW1P 3JR. Tel: 020 7270 8071; statistics@marinemanagement.org.uk
Marine Scotland	Scottish Fisheries Statistics 2011. Tel: 0131 244 6437. Available online from www.scotland.gov.uk/statistics
DARDNI	Report on the sea and inland fisheries of Northern Ireland. Available from DARDNI Fisheries division, Tel: 028 9052 5508 http://www.dardni.gov.uk/index/fisheries.htm
FAO	FAO Yearbook of Fishery and Aquaculture Statistics 2010. Available from www.fao.org/fishery/publications/yearbooks
Eurostat	Agriculture and Fishery Statistics: 2010-2011. Available from www.ec.europa.eu/eurostat

The statistics in this release are derived from the same sources as the above publications in many cases. However, discrepancies may exist between these publications owing to differences in dates and methods of data extraction and compilation.

Useful websites

Marine Management Organisation	www.marinemanagement.org.uk
Defra	www.defra.gov.uk
Marine Scotland	www.scotland.gov.uk/about/directorates/marinescotland
DARDNI	www.dardni.gov.uk
Welsh Assembly Government	www.wales.gov.uk
National Statistics	www.statistics.gov.uk
Sea Fish Industry Authority	www.seafish.co.uk
Maritime and Coastguard Agency	www.dft.gov.uk/mca

Marine Accident Investigation Branch	www.maib.gov.uk
Centre for Environment, Fisheries and Aquaculture Science	www.cefas.defra.gov.uk
European Commission - Fisheries	www.ec.europa.eu/fisheries
Eurostat	www.ec.europa.eu/eurostat
EU Fleet Register	www.ec.europa.eu/fisheries/fleet
FAO Fisheries Department	www.fao.org/fishery
ICES	www.ices.dk