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PROJECT INSHORE

Species Profiles

Stage 1

November 2012

Prepared For: **Seafish**

Prepared By: **Food Certification International Ltd**



Stage 1 – Species Profiles

November 2012

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Contents

Glossary.....	iv
1 Introduction	1
1.1 Purpose	1
1.2 Data sources.....	1
2 Finfish	2
2.1 Demersal – flatfish	2
2.1.1 Brill	2
2.1.2 Dab	4
2.1.3 Flounders.....	6
2.1.4 Halibut	8
2.1.5 Lemon sole	10
2.1.6 Megrim	12
2.1.7 Plaice	14
2.1.8 Sole	16
2.1.9 Turbot.....	18
2.1.10 Witch	20
2.2 Demersal - round fish.....	22
2.2.1 Bass.....	22
2.2.1 Bream	24
2.2.2 Cod	26
2.2.3 Gurnard	28
2.2.4 Haddock.....	30
2.2.5 Hake.....	32
2.2.6 John dory	34
2.2.7 Ling	36
2.2.8 Monkfish/angler	38
2.2.9 Mullet, grey	40
2.2.10 Mullet, red	42
2.2.11 Pollack	44
2.2.12 Pouting	46
2.2.13 Saithe.....	48
2.2.14 Whiting	50
2.3 Elasmobranch.....	52
2.3.1 Blonde ray	52
2.3.2 Cuckoo ray	54
2.3.3 Small eyed ray	56
2.3.4 Spotted ray	58
2.3.5 Thornback ray.....	60

2.3.1	Smooth-hound.....	63
2.4	Pelagic	65
2.4.1	Anchovy	65
2.4.2	Herring.....	67
2.4.3	Horse mackerel.....	69
2.4.4	Mackerel.....	71
2.4.5	Pilchard/sardine	73
2.4.6	Sprat	75
3	Shellfish	77
3.1	Bivalve	77
3.1.1	Clam, manila	77
3.1.2	Clam, carpet shell	79
3.1.3	Cockle	81
3.1.4	Mussel	82
3.1.5	Oysters, native.....	83
3.1.1	Oyster, Pacific.....	85
3.1.2	Razorshell	86
3.1.3	Scallop	87
3.2	Cephalopod	89
3.2.1	Cuttlefish	89
3.2.2	Squid.....	91
3.3	Crustacean	93
3.3.1	Crab, brown	93
3.3.2	Crab, shore	95
3.3.3	Crab, spider	96
3.3.4	Crab, velvet.....	98
3.3.5	Crawfish / spiny lobster	100
3.3.6	Lobster.....	102
3.3.7	Nephrops.....	104
3.3.8	Shrimp, brown	106
3.4	Gastropod	108
3.4.1	Periwinkle	108
3.4.2	Whelk	109
	References.....	111

Glossary

CPUE	Catch per Unit Effort
Defra	Department for Environment, Food and Rural Affairs
EC	European Commission
EU	European Union
ICES	International Council for the Exploration of the Sea
IFCA	Inshore Fisheries and Conservation Authorities
MMO	Marine Management Organisation
MSC	Marine Stewardship Council

1 Introduction

1.1 Purpose

The purpose of these species records is to provide information on:

- Biological attributes and characteristics;
- Species distribution maps;
- Details on whether ICES stock assessments have been undertaken and links to these reports;
- Details of whether the species is already MSC certified, in assessment or has withdrawn from the process including links to assessment downloads; and
- An overview of landings from inshore areas i.e. ICES rectangles that overlap IFCA districts, including the following detail:
 - Five year trends in landings live weight and value (2006-2010);
 - Five year trends in landings live weight by vessel length category (for under 10m vessels, 10-15m and over 15m vessels);
 - Landings by IFCA district for 2010 data, based on ICES rectangles that overlap IFCA districts;
 - Landings live weight proportion by gear type, based on five year average;
 - Five year and average seasonal trends in landings; and
 - Key landing ports.

1.2 Data sources

All data sources in the biological sheets are appropriately referenced; for the following images:

- Unless otherwise stated, all species images are taken from the Scandinavian Fishing Year Book: <http://www.scandfish.com/ig/gallery.asp?categoryid=1>
- Unless otherwise stated all species distribution maps are taken from Fishbase species summaries: <http://www.fishbase.org/search.php>

Landings data has been sourced from MMO. A five year data set for 2006-2010 was collated; data for 2011 was not available for release from the MMO. Due to data confidentiality, restrictions have been put in place by the MMO to ensure that data surmising statistics from less than five vessels is not released. For this reason a detailed data set across all parameters could not be obtained. Instead, five separate excel datasets were provided with the following detail per column:

- Species dataset: Year, ICES rectangle, species, weight, value;
- Vessel length dataset: Year, vessel length category (<10m, ≥10-15m, ≥15m), ICES rectangle, species, weight, value;
- Port of landing dataset: Year, port of landing, ICES rectangle, species, weight, value;
- Month dataset: Year, month, ICES rectangle, species, weight, value; and
- Gear type dataset: Year, gear type, ICES rectangle, species, weight, value.

Where an entry exists for less than five vessels, data points have been amalgamated by MMO into a 'species unknown' category. It is likely that the 'species unknown' is made up of other species represented in the catch.

Due to the species unknown category and the separate datasets, data presented from one dataset may not correlate exactly with data from another.

Landings data are not available (and therefore not presented) for the following species: shore crab, mussels, Pacific oyster, razorshell and periwinkle.

2 Finfish

2.1 Demersal – flatfish

2.1.1 Brill

Scophthalmus rhombus



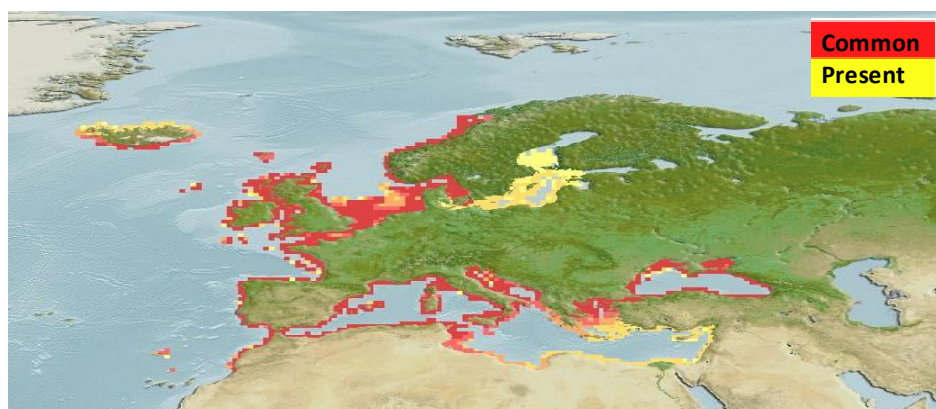
ICES stocks [2012 Brill in Subarea IV and Divisions IIIa and VIId,e](#)

MSC assessments	Assessed: none
	In Assessment: none
	Withdrawn: none

Brill are flatfish with an oval body outline and eyes on the left side of the head. The dorsal and anal fins run the length of the body but do not join the tail fin (Hayward & Ryland, 1998). Unlike turbot, brill have scales and no tubercles but similarly they do have a lateral line which is strongly arched above the pectoral fin. Their colouration and markings are variable depending on the colour of the seabed (Dipper, 1987) but they are commonly greyish brown with an abundance of dark and light speckles on top and white underneath.

Little is known about the migratory behaviour of brill within English inshore waters, but in general brill migrate further offshore with age. A study has showed that brill perform short migrations into deeper water in the autumn and winter and return to the same shallow water area each spring (Hachero-Cruzado *et al.* 2007). It is likely that brill are very similar in their movements to turbot and that if they have settled as juveniles in the district they are likely to stay within (or in the close vicinity of) that district throughout the year and thus their lifespan.

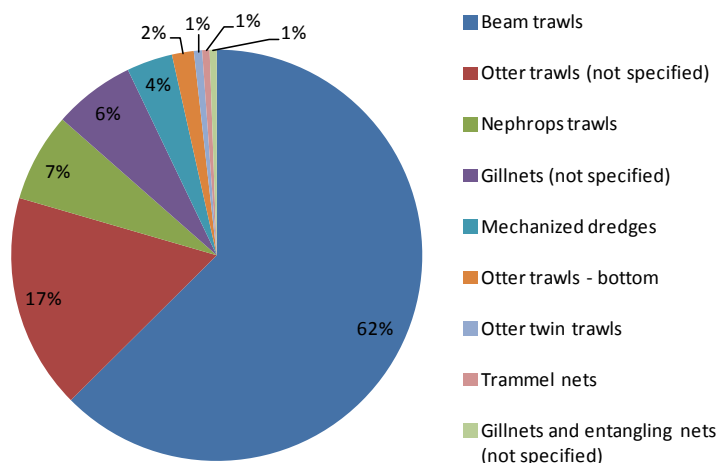
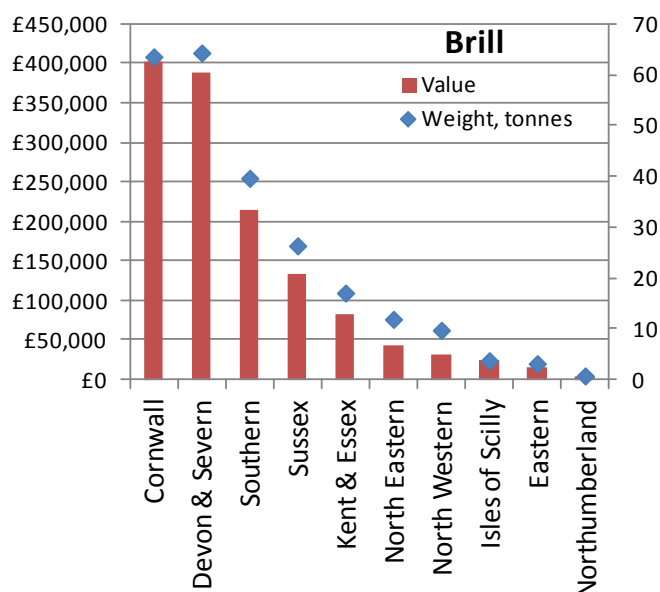
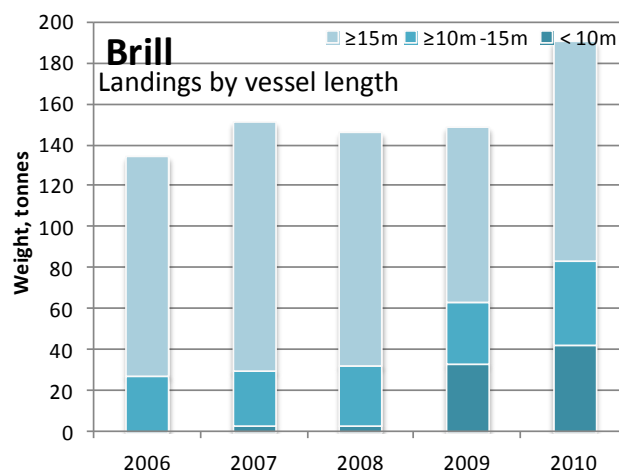
Species distribution



Species biological attributes			
Species	Brill	Average age at maturity	1.5 yr
Reproductive strategy	Broadcast spawners	Average maximum age	6 yr
Length of larvae phase		Fecundity (No of eggs)	>100,000 per kg
Movement of adults	Migratory	Average size at maturity	22 cm
Sediment type	Marine, demersal	Average maximum size	75 cm
Depth	Subtidal, 5-50m	Trophic level	3.8

Brill landings

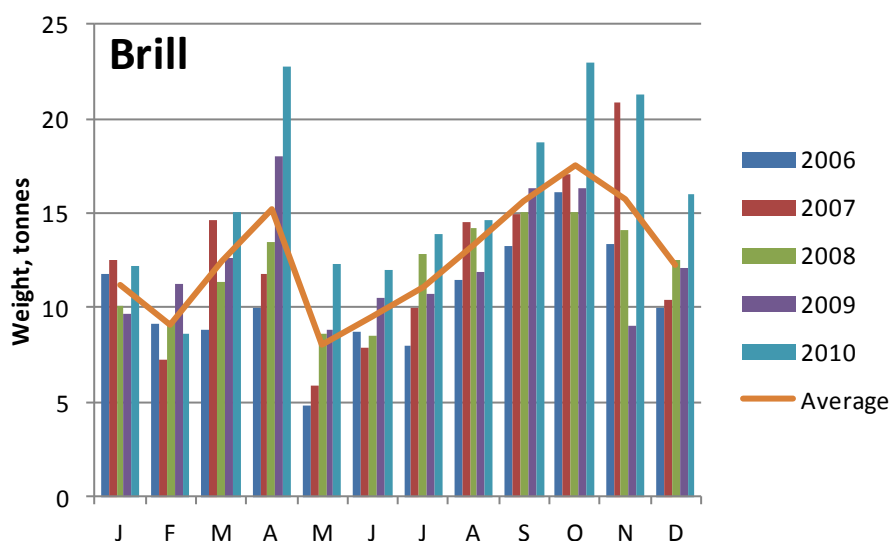
Total inshore landings		
Brill	Live weight, tonnes	Landed value
2006	137	£780,652
2007	156	£876,849
2008	152	£897,582
2009	151	£890,523
2010	194	£1,083,274



Brill landings from ICES rectangles that overlap IFCA districts have remained relatively stable from 2006-2009, with increases in 2010 when the value was recorded at over £1 million, equating to 194 tonnes.

Based on a five year average, beam trawls land the majority of the catch (62% by weight), followed by demersal trawl (24%) and gillnets (6%). Key IFCA districts include Cornwall, Devon & Severn and Southern.

Landings occur throughout the year and on average peak during autumn and spring.



Key landing ports include:

- Brixham
- Newlyn
- Plymouth
- Shoreham
- Whitehaven
- Newhaven
- Whitby
- Looe
- Poole
- Maryport

2.1.2 Dab

Limanda limanda



ICES stocks 2012 Dab in Subarea IV and Division IIIa

MSC assessments	Assessed: none
	In Assessment: none
	Withdrawn: none

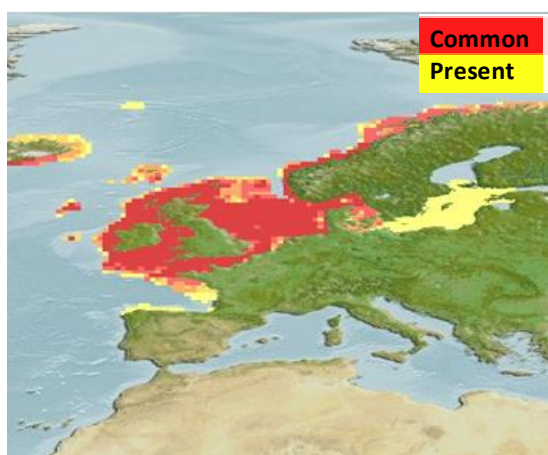
The dab is one of Britain's commonest flatfish, occurring all round Britain and Ireland and is particularly abundant in the North Sea.

The dab is a small and very common flatfish, similar in general shape to the plaice *Pleuronectes platessa*, and flounder *Platichthys flesus*. Both eyes are on the right side of the body. The basic colour is brown with darker blotches and small speckles. Some fish may have a few orange spots but these are not as well developed as they are in the plaice. The most characteristic feature is the lateral line, which is strongly arched. Most dab reach only 25 cm long but individuals up to 42 cm have been found (Ruiz, 2008).

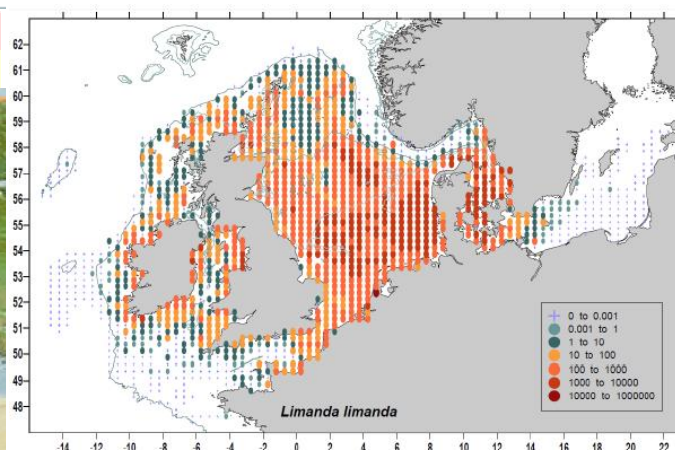
Dab live in sandy areas from the shore down to 150 m but are most common between 20-40 m. The young live close inshore, usually in less than 1 m of water and the adults migrate inshore from deeper water in the warmer summer months.

Spawning depends on water temperature and therefore on latitude but is in spring and early summer around Britain. Dab will eat almost any bottom-living animal they catch.

Species distribution



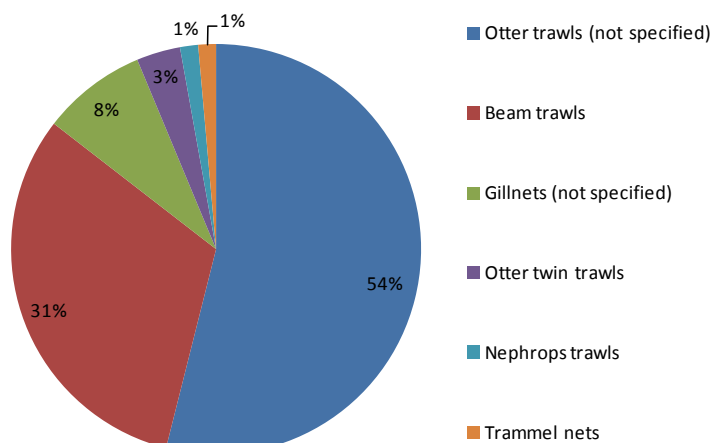
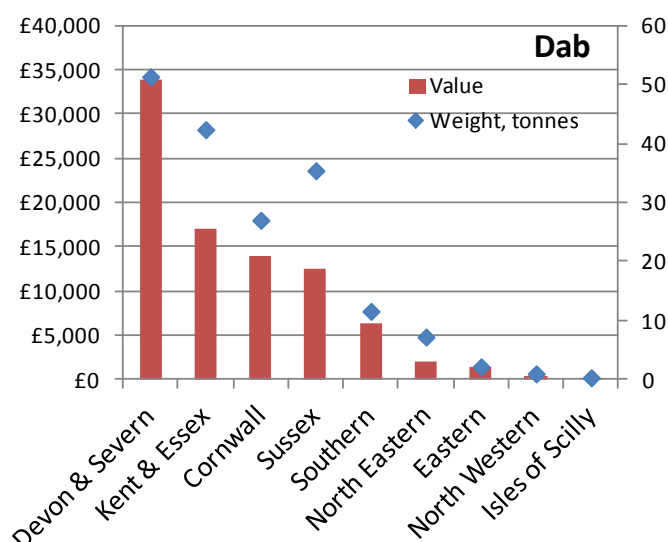
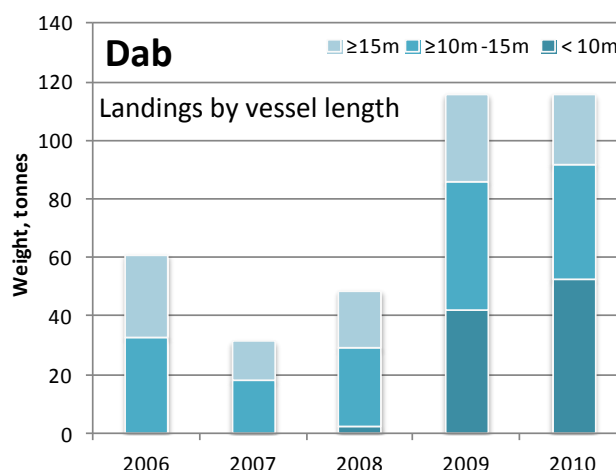
CPUE distribution of dab in trawl surveys (ICES,2012)



Species biological attributes			
Species	Dab	Average age at maturity	2 yr
Reproductive strategy	Broadcast spawners	Average maximum age	12 yr
Length of larvae phase		Fecundity (No of eggs)	50,000-150,000
Movement of adults	Migratory	Average size at maturity	26 cm
Sediment type	Marine, demersal	Average maximum size	40 cm
Depth	Subtidal, 20-150m	Trophic level	3.3

Dab landings

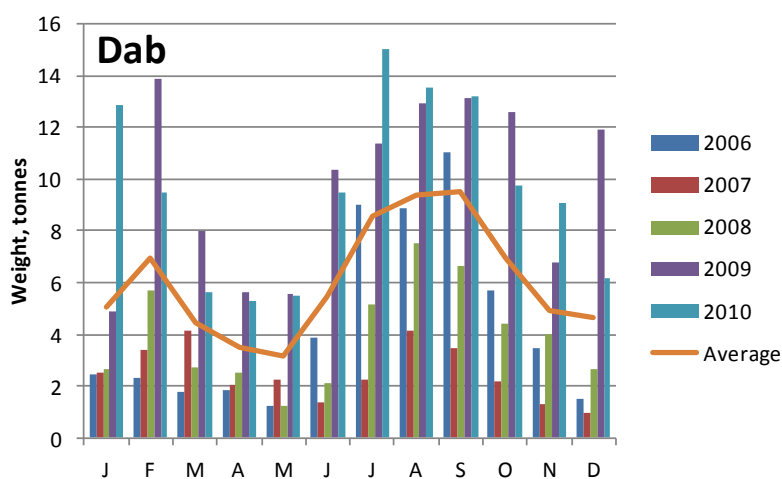
Total inshore landings		
Dab	Live weight, tonnes	Landed value
2006	71	£36,731
2007	46	£25,841
2008	54	£34,493
2009	125	£63,024
2010	125	£64,852



Dab landings from ICES rectangles that overlap IFCAs have increased significantly since 2006, with a total value of over £64,000, and 125 tonnes landed in 2010.

Based on a five year average, otter trawls land the majority of the catch (54% by weight), followed by beam trawl (31%) and gillnets (8%). Key IFCAs are Devon and Severn, Kent and Essex, Cornwall and Sussex.

Landings occur throughout the year and on average peak during autumn.



Key landing ports include:

- Brixham
- Plymouth
- Rye
- Newlyn
- Hastings
- Newhaven
- Looe
- Fleetwood
- Shoreham
- Ramsgate

2.1.3 Flounders

Platichthys flesus



ICES stocks 2012 Flounder in Division IIIa and Subarea IV

MSC assessments

Assessed: (different species) OCI Grand Bank yellowtail flounder trawl;
Kyoto Danish Seine Fishery Federation snow crab and flathead flounder

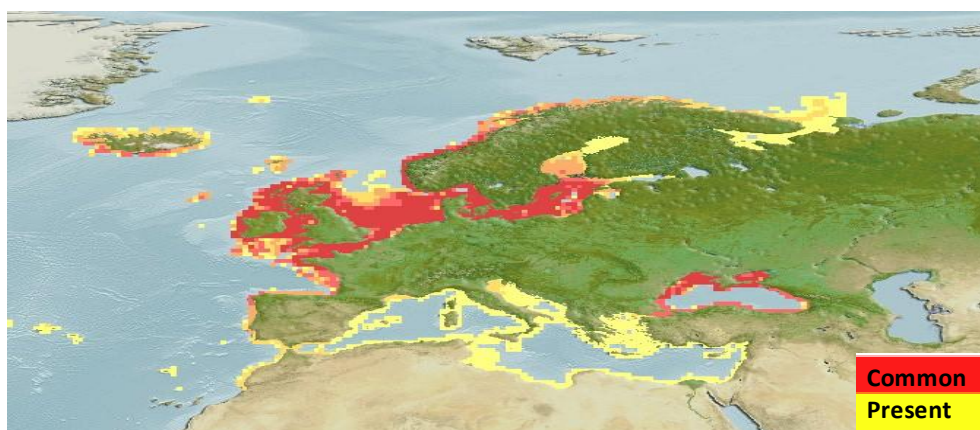
In Assessment: none

Withdrawn: none

The flounder is common to all British and Irish coasts. The flounder has a roughly oval shape, with both eyes on the right side of its head and has a small mouth and pointed snout. Hybrid individuals have been known to occur through interbreeding between flounder and plaice (Pizzolla, 2005).

Flounder are bottom dwelling fish living in inshore waters to depths of 50 m. They are migratory, although for most of the year can be found in estuaries. Normally found on mud and sand bottom habitats in shallow water, at sea and brackish; also often entering freshwater. During winter, adults retreat to deeper, warmer waters, where they spawn in spring (Cooper and Chapleau, 1998). Larvae and early juveniles use selective tidal transport to migrate upstream rivers using a range of triggers such as salinity, prey density and water temperature (Bos, 2004). Juveniles live in shallow coastal waters and estuaries, which are also the summer feeding grounds for the adults. Juveniles of less than a year old feed on plankton and larvae of insects, juveniles of more than a year and adults feed on benthic fauna, including small fishes and invertebrates.

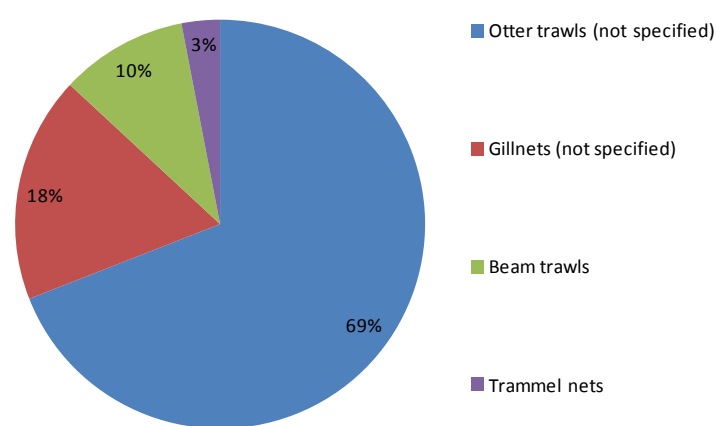
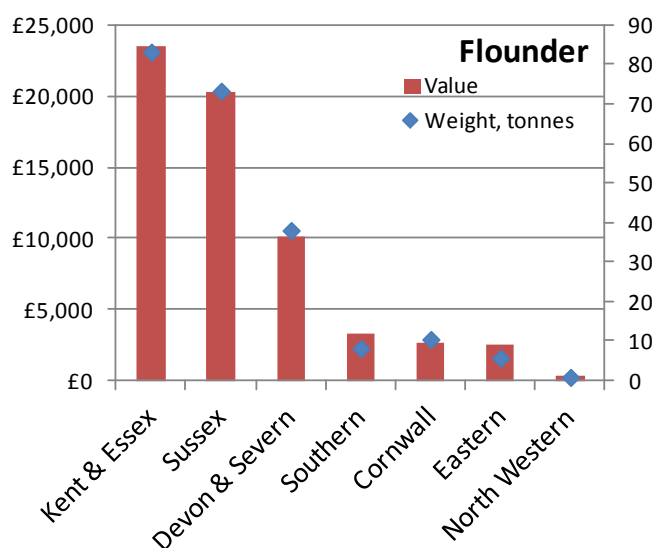
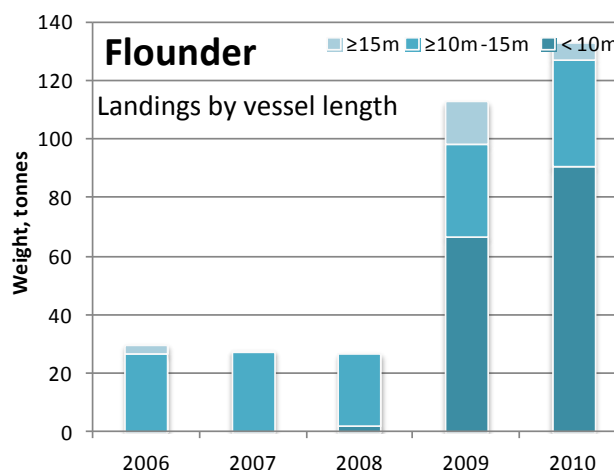
Species distribution



Species biological attributes			
Species	Flounders/fluke	Average age at maturity	3 yr
Reproductive strategy	Broadcast spawners	Average maximum age	15 yr
Length of larvae phase		Fecundity (No of eggs)	200,000-2,000,000
Movement of adults	Migratory	Average size at maturity	22.3 cm
Sediment type	Marine, brackish	Average maximum size	60 cm
Depth	Subtidal, 1-100m	Trophic level	3.2

Flounder landings

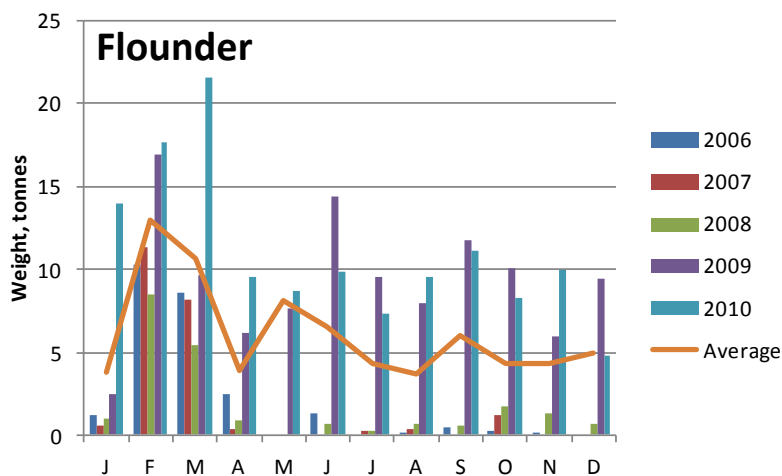
Total inshore landings		
Flounder	Live weight, tonnes	Landed value
2006	46	£12,314
2007	29	£6,979
2008	44	£12,595
2009	120	£36,909
2010	140	£40,521



Flounder landings from ICES rectangles that overlap IFC districts have increased significantly since 2006, with a total value of over £40,000, and 140 tonnes landed in 2010. Landings by under 10m vessels dominate in 2009 and 2010, and are responsible for much of the observed increase since 2008.

Based on a five year average, otter trawls land the majority of the catch (69% by weight), followed by gillnets (18%) and beam trawls (10%). Kent and Essex and Sussex are key IFCAs for this species.

Landings occur throughout the year and on average peak during late winter.



Key landing ports include:

- Rye
- Brixham
- Hastings
- Lowestoft
- Newhaven
- Fleetwood
- Exmouth
- Newlyn
- Shoreham
- Looe

2.1.4 Halibut

Hippoglossus hippoglossus



ICES stocks Not assessed at ICES level

MSC

assessments

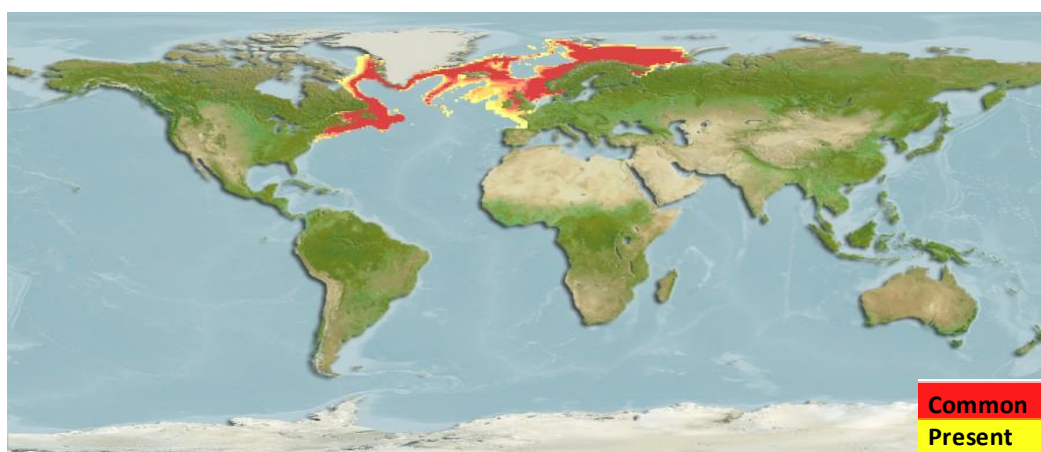
Assessed: (different species) Canada Pacific halibut (British Columbia); US North Pacific halibut
In Assessment: Canada Atlantic halibut
Withdrawn: none

The Atlantic halibut is the largest of the flatfish and one of the largest marine fish in the UK.

Adults are benthic but occasionally pelagic and feed mainly on other fishes (cod, haddock, pogge, sand-eels, herring, capelin), but also takes cephalopods, large crustaceans and other bottom-living animals. Halibut are batch spawners, reaching sexual maturity at approximately 10 to 11 years of age, or at a length of 70 to 100 cm (Murua and Saborido-Rey, 2003).

Growth rate varies according to density, competition and availability of food. Slow growth rate and late onset of sexual maturity, halibut populations can be seriously affected by overfishing.

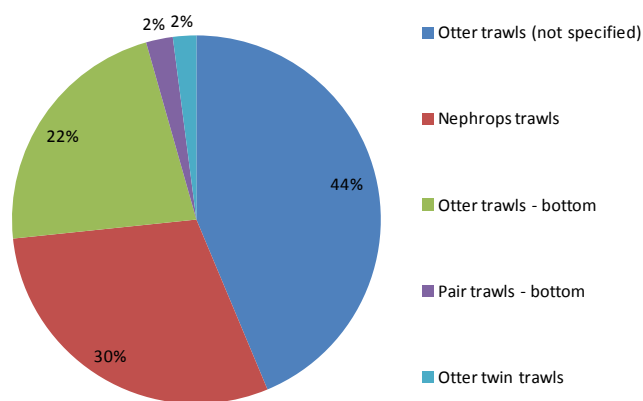
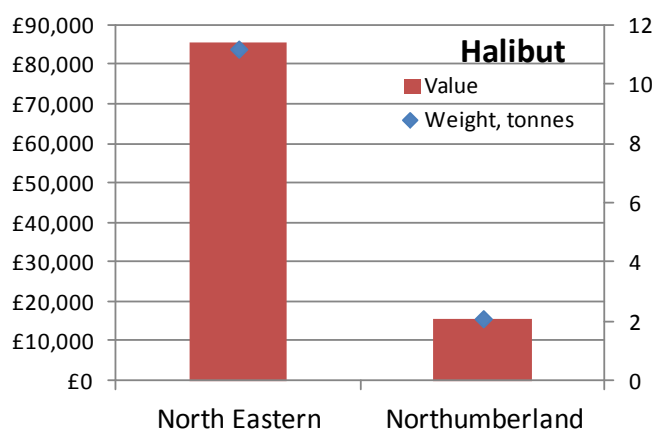
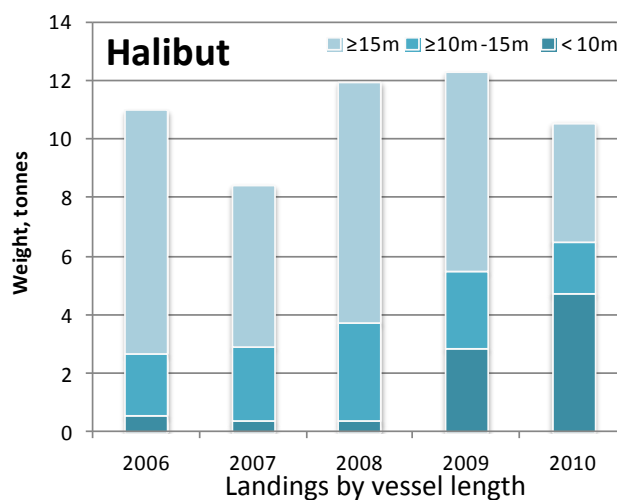
Species distribution



Species biological attributes			
Species	Halibut	Average age at maturity	6 yr
Reproductive strategy	Broadcast spawners	Average maximum age	50 yr
Length of larvae phase		Fecundity (No of eggs)	1.3-3.5 million
Movement of adults	Migratory	Average size at maturity	122 cm
Sediment type	Marine, demersal	Average maximum size	470cm
Depth	Subtidal, 50-2000m	Trophic level	4.5

Halibut landings

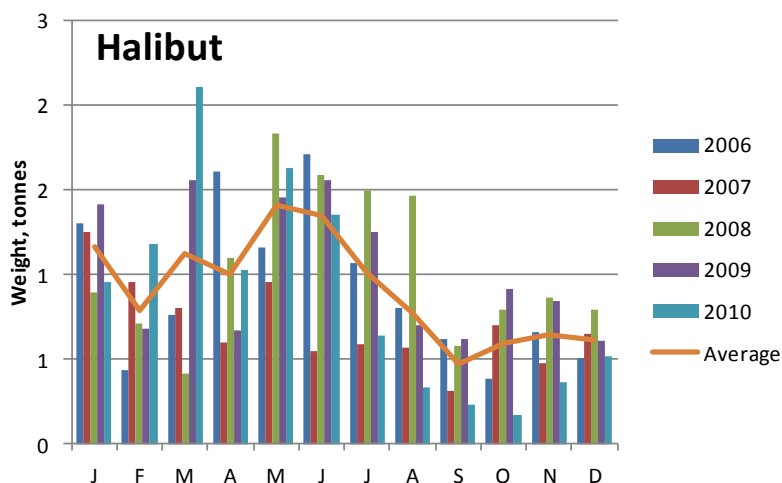
Total inshore landings		
Halibut	Live weight, tonnes	Landed value
2006	12	£86,589
2007	9	£71,053
2008	14	£93,227
2009	13	£97,020
2010	11	£85,588



Halibut landings from ICES rectangles that overlap IFCA districts have remained fairly consistent across the last five years, with a total value of over £85,000, and 11 tonnes landed in 2010. Landings are recorded only in the North Eastern and Northumberland IFCA's.

Based on a five year average, otter trawls land 100% of the catch.

Landings occur throughout the year and on average peak during late spring and early summer.

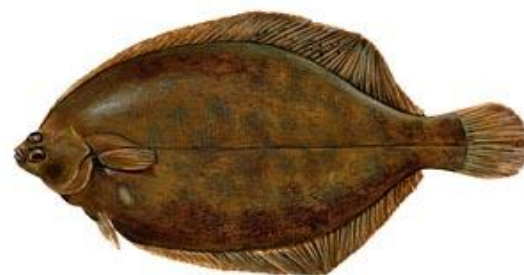


Key landing ports include:

- Whitby
- North Shields
- Blyth
- Scarborough
- Hartlepool
- Amble

2.1.5 Lemon sole

Microstomus kitt



ICES stocks 2012 Lemon sole in Subarea IV and Divisions IIIa and VIId

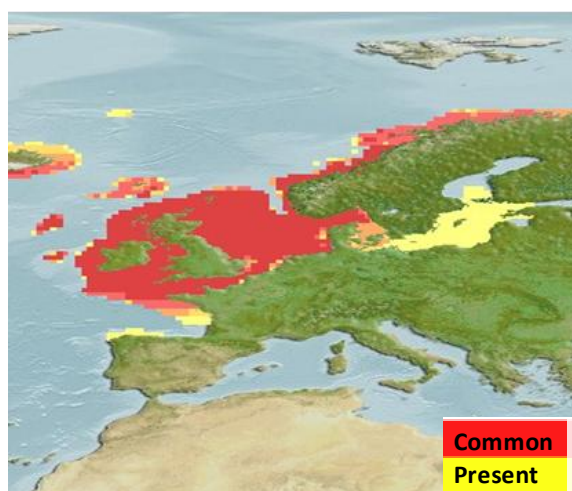
MSC assessments	Assessed: none
	In Assessment: none
	Withdrawn: none

The lemon sole is a demersal species usually found on stony bottoms from depths of 10 m to 200 m. Lemon sole are moderately sized flatfish reaching up to 30 cm (rarely up to 45 cm) in length. It lies left-handed with its eyes on the left side of its body and is therefore not a member of the sole family.

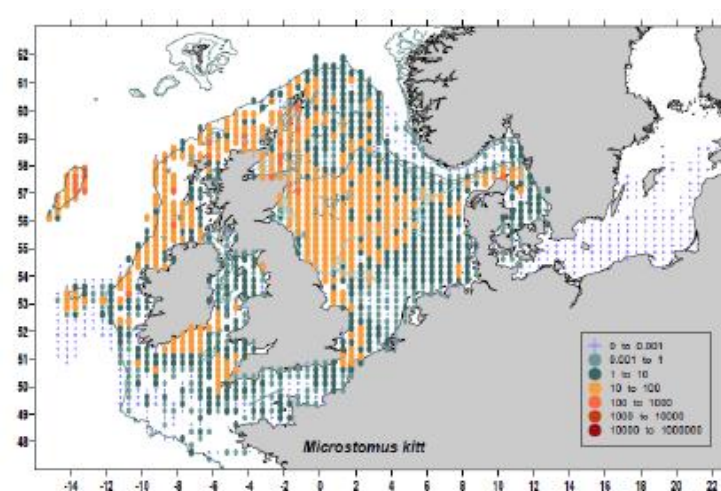
Widely distributed through the British Isles and Ireland but most commonly found in the English Channel and Irish Sea (Barnes, 2008).

Feeds on a variety of small invertebrates, but polychaetes seem to dominate. Apparently they do not feed in wintertime (Flintegård, 1987). Spawning is mainly confined to depths of 55-91 m in the northwestern North Sea and commences at a minimum temperature of 6.5 °C in Scottish waters. Sex ratio is about 1:1, but females progressively predominate upon sexual maturity.

Species distribution



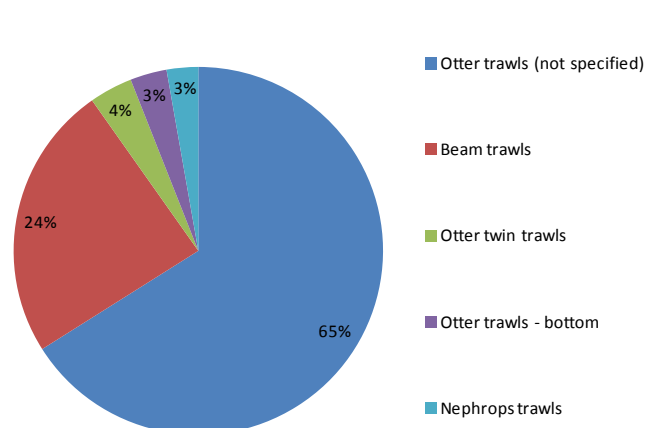
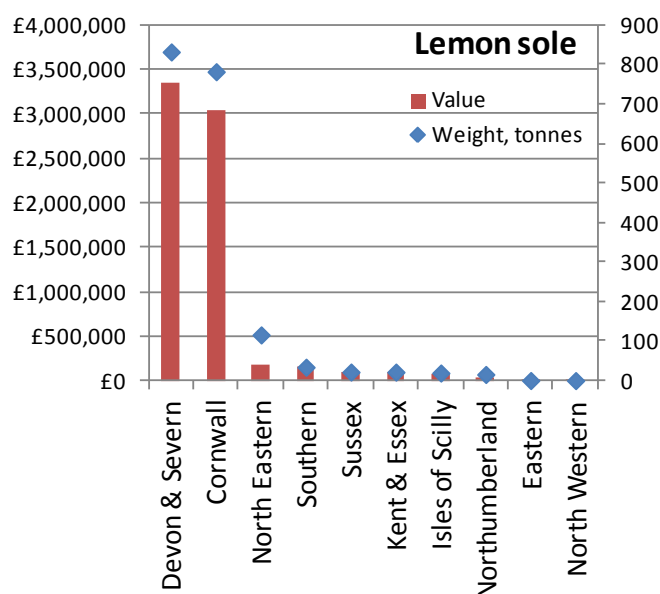
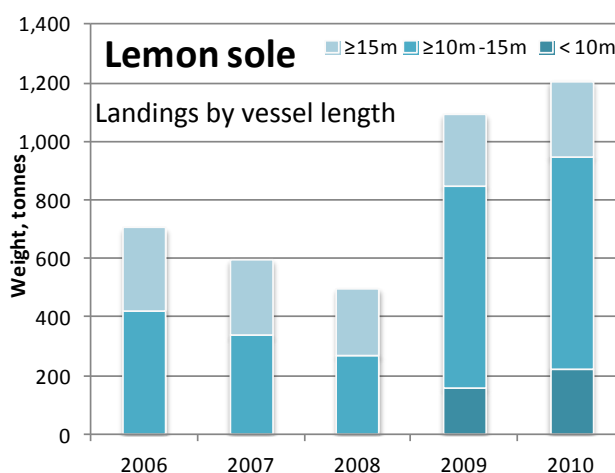
CPUE distribution of lemon sole in trawl surveys (ICES,2012)



Species biological attributes			
Species	Lemon sole	Average age at maturity	4 yr
Reproductive strategy	Broadcast spawners	Average maximum age	23 yr
Length of larvae phase		Fecundity (No of eggs)	20,000-600,000
Movement of adults	Mobile	Average size at maturity	27 cm
Sediment type	Marine, demersal	Average maximum size	35 cm
Depth	Subtidal, 10-200m	Trophic level	3.3

Lemon sole landings

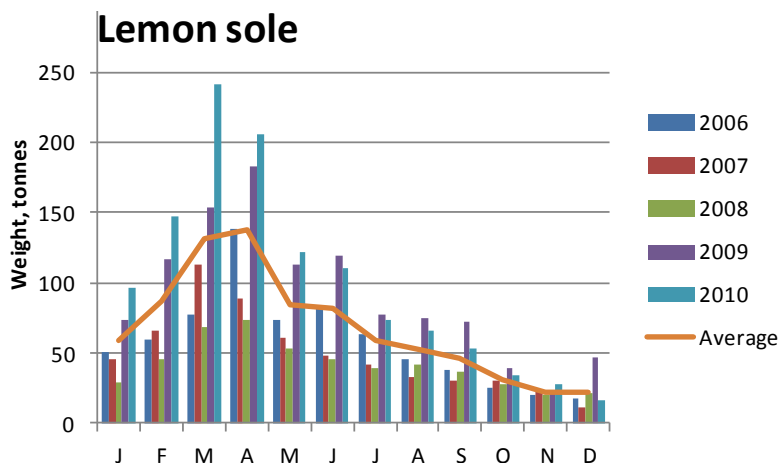
Total inshore landings		
Lemon Sole	Live weight, tonnes	Landed value
2006	716	£2,637,714
2007	606	£2,449,207
2008	524	£1,969,643
2009	1,106	£3,223,539
2010	1,210	£4,473,079



Lemon sole landings from ICES rectangles that overlap IFCA districts have increased significantly since 2006, with a total value of over £4.4 million, and 1,200 tonnes landed in 2010. Landings by 10-15m vessels dominate in 2009 and 2010, and are, together with the under 10m fleet responsible for much of the observed increase since 2008.

Based on a five year average, otter trawls land the majority of the catch (76% by weight), the remainder (24%) being taken by beam trawls. Almost all landings are into Devon and Severn and Cornwall IFCA's

Landings occur throughout the year but with a clear peak during spring.



Key landing ports include:

- Brixham
- Plymouth
- Newlyn
- Looe
- Whitby
- Mevagissey
- Polperro
- North Shields
- Shoreham
- Newhaven

2.1.6 Megrim

Lepidorhombus whiffiagonis



ICES stocks 2012 Megrim (*Lepidorhombus whiffiagonis*) in Divisions VIIb–k and VIIIa,b,d

MSC assessments

Assessed: none

In Assessment: C&WSTG English Channel megrim, monk and sole beam trawl

Withdrawn: none

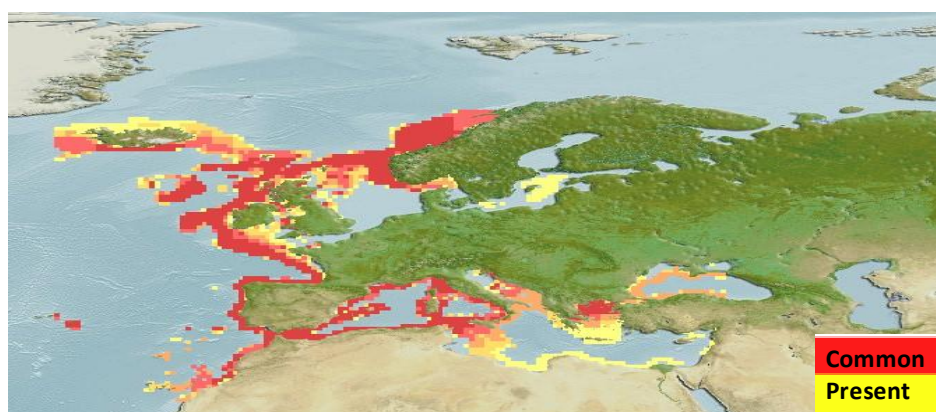
There are two species of megrim landed to the west of Britain and in the Bay of Biscay, *Lepidorhombus whiffiagonis*, and four-spot megrim, *Lepidorhombus boscii*.

Megrim is a common flatfish. It is left-eyed flatfish with a slightly larger head and narrower body than usual for flatfish. Megrim is a pale yellow-translucent colour on the top and its moist flesh is covered with numerous dark spots. It has big eyes, which are both on the left side of its head, and a big mouth.

Megrim is a demersal species that reaches a maximum size of about 60cm and a maximum age of 14-15 years. Megrim is found mainly in muddy seabed habitats at around 100-300m depths, but can occur at depths ranging from 50 to 800m. They spawn in deep waters off Iceland and west of the British Isles (Rainer, 2011). Megrim is a voracious predator, feeding on small bottom-living fishes as well as on squids and crustaceans.

Megrim is found in shelf areas throughout the North East Atlantic from Morocco and the Mediterranean Sea, to northern Norway. Iceland is at the northern most part of its range, where megrim is found in the warmest waters along the south coast

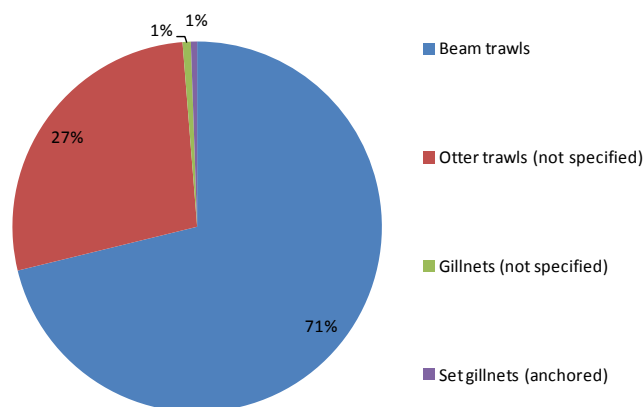
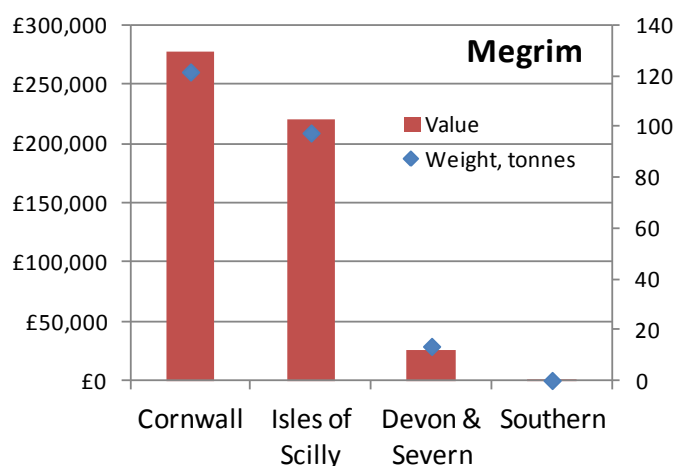
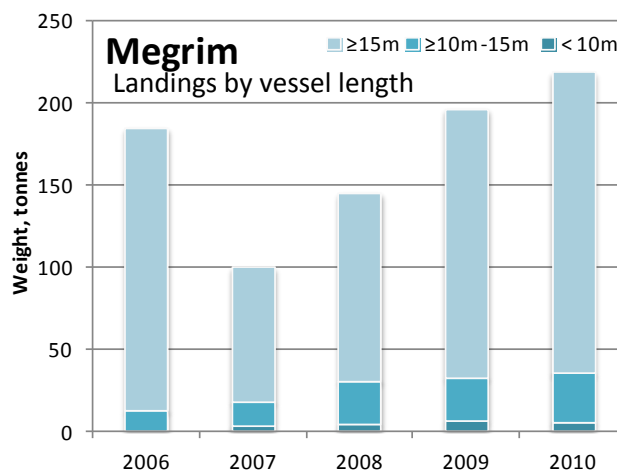
Species distribution



Species biological attributes			
Species	Megrim	Average age at maturity	3 yr
Reproductive strategy	Broadcast spawners	Average maximum age	14 yr
Length of larvae phase		Fecundity (No of eggs)	>100000
Movement of adults	Mobile	Average size at maturity	26.6 cm
Sediment type	Marine, bathydemersal	Average maximum size	60 cm
Depth	Subtidal, 100-700m	Trophic level	4.2

Megrim landings

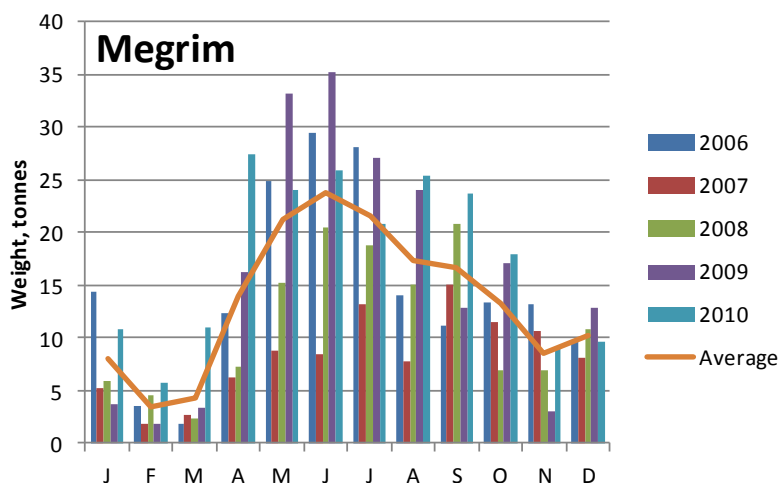
Total inshore landings		
Megrim	Live weight, tonnes	Landed value
2006	186	£605,580
2007	102	£308,359
2008	147	£427,727
2009	199	£405,406
2010	220	£499,726



Megrim landings from ICES rectangles that overlap IFCA districts are predominately by the over 15m fleet and had a total value of ~£500,000, and 220 tonnes landed in 2010. The majority of the catch is landed from Cornwall and Isles of Scilly IFCA districts.

Based on a five year average, beam trawls land the majority of the catch (71% by weight), followed by otter trawl (27%) and gillnets (2%).

Landings occur throughout the year with a clear peak from April to August.



Key landing ports include:

- Newlyn
- Plymouth
- Brixham
- Looe
- Mevagissey
- River Fal - Falmouth
- Padstow
- Polperro
- Whitehaven
- Bideford

2.1.7 Plaice

Pleuronectes platessa



ICES stocks 2012 Plaice in Division VIIa (Irish Sea); 2012 Plaice in Division VIId (Eastern Channel); 2012 Plaice in Division VIle (Western Channel) ; 2012 Plaice in Divisions VIIf,g (Celtic Sea) ;2012 Plaice in Subarea IV (North Sea)

MSC assessments

Assessed: DFPO Denmark North Sea plaice; Ekofish Group-North Sea twin rigged otter trawl plaice ; Osprey Trawlers North Sea twin-rigged plaice
In Assessment: Cooperative Fishery Organisation (CVO) North Sea plaice and sole
Withdrawn: none

Plaice is a demersal species generally living on sandy substrates but may also be found on mud and gravel. As juveniles and adults, plaice have a striking appearance and can be readily distinguished from other flatfish species by their general colour and markings. The eyed, right hand, side is a warm greenish brown with bright red to orange spots on it and the underside is a pearly white. This coloration varies with the substrate into which it very lightly merges.

Plaice is a shallow water species found from the near coast as juveniles down to around 150 m in northern waters. In the North Sea it is generally found in depths less than 100 metres. Plaice are widely distributed on the continental shelf from the Bay of Biscay in the south through the English Channel, North Sea and Irish Sea to the Baltic, Iceland, the Norwegian coast and Barents Sea in the north.

Plaice feed on bottom-living animals, particularly shellfish such as cockles and razor shells. Worms, crustaceans, brittle stars and sand eels are also eaten. Plaice mostly spawn between January to March, each female producing up to half a million eggs. Around Britain, the eggs are laid in fairly shallow water between 20-40 m in well-defined spawning grounds.

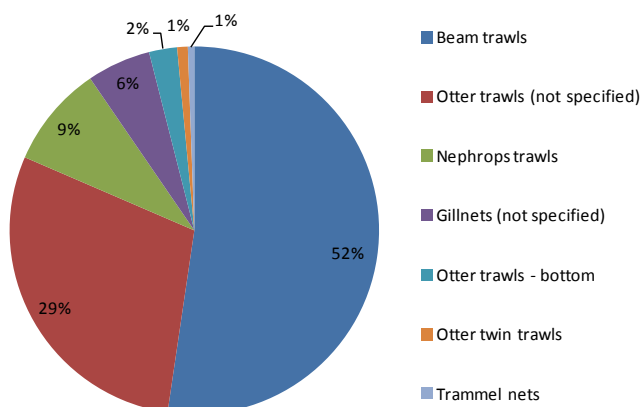
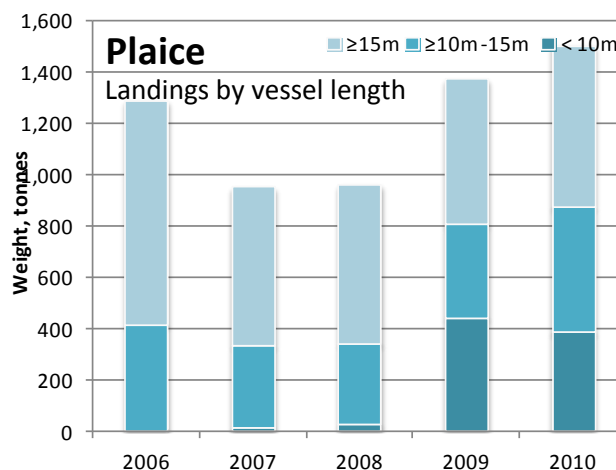
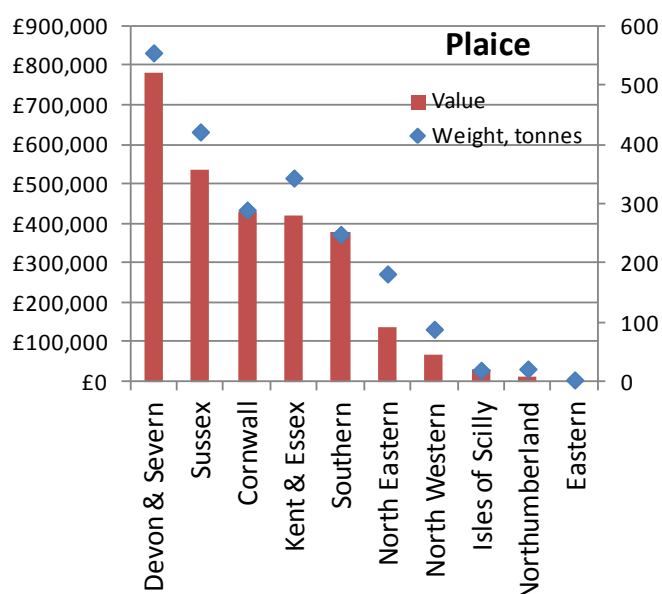
Species distribution



Species biological attributes			
Species	Plaice	Average age at maturity	3 yr
Reproductive strategy	Broadcast spawners	Average maximum age	50 yr
Length of larvae phase		Fecundity (No of eggs)	50,000-500,000
Movement of adults	Migratory	Average size at maturity	30.4 cm
Sediment type	Marine, demersal	Average maximum size	100 cm
Depth	Subtidal, 10-200m	Trophic level	3.3

Plaice landings

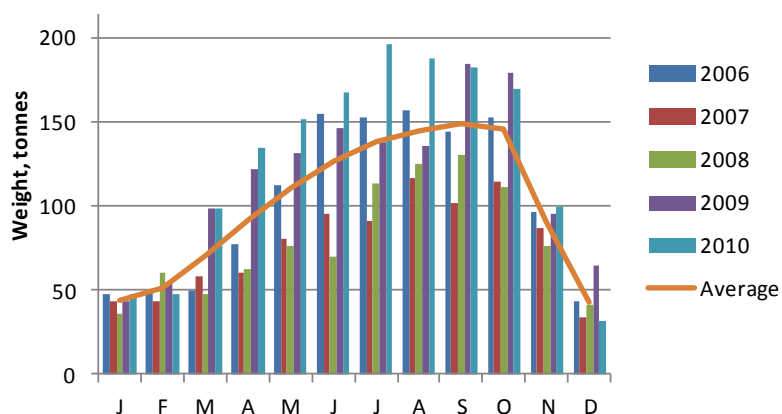
Total inshore landings		
Plaice	Live weight, tonnes	Landed value
2006	1,326	£1,785,138
2007	1,001	£1,399,230
2008	1,016	£1,453,769
2009	1,405	£1,769,504
2010	1,535	£1,954,563



Plaice landings from ICES rectangles that overlap IFCA districts have increased slightly since 2006, with a total value of over £1.9 million, and 1,500 tonnes landed in 2010. Landings are recorded throughout vessel length categories and throughout a number of IFCA's. Highest levels are taken from Devon and Severn, Sussex, Cornwall, Kent and Essex and Southern IFCA's

Based on a five year average, beam trawls land the majority of the catch (52% by weight), followed by otter trawls (41%), gillnets (2%) and trammel nets (1%).

Landings occur throughout the year and on average peak during summer and autumn.

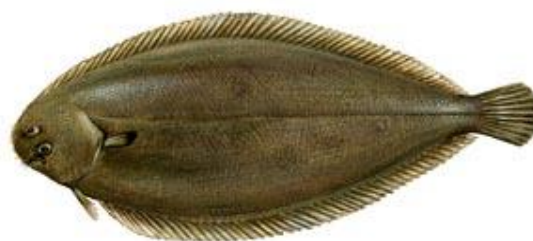


Key landing ports include:

- Brixham
- Plymouth
- Shoreham
- Newhaven
- Fleetwood
- Whitehaven
- Newlyn
- Rye
- North Shields
- Whitby
- Hastings
- Looe
- Maryport
- Blyth

2.1.8 Sole

Solea solea



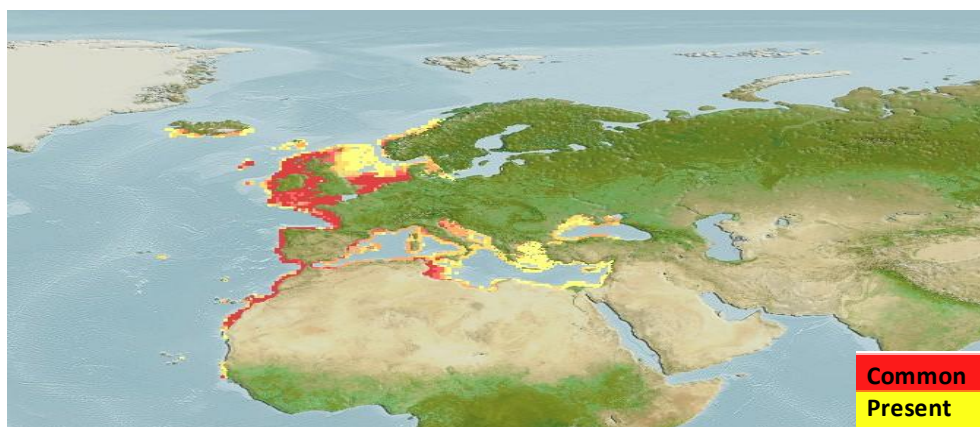
ICES stocks 2012 Sole in Division VIIa (Irish Sea); 2012 Sole in Division VIId (Eastern Channel); 2012 Sole in Division VIIe (Western Channel); 2012 Sole in Divisions VIIf,g (Celtic Sea); 2012 Sole in Subarea IV (North Sea)

MSC assessments	Assessed: DFPO Denmark North Sea sole; Dutch Fisheries Organisation (DFO) gill net sole; Hastings fleet Dover sole trawl and gill-net
	In Assessment: C&WSTG English Channel megrim, monk and sole beam trawl; Cooperative Fishery Organisation (CVO) North Sea plaice and sole; Hastings fleet Dover sole (trammel net)
	Withdrawn: none

Sole is a widely distributed species, extending from the Mediterranean and Northwest African coast, as far south as Senegal, to the Irish Sea, southern North Sea and Skagerrak and Kattegat. In autumn, triggered by falling temperatures, sole leave the shallow inshore waters and migrate to warmer offshore grounds. In severe winters sole populations may form aggregations in deeper, less cold parts of the North Sea and English Channel.

Spawning occurs in spring, peaking in May, triggered by rising sea water temperatures. Although it has been shown that spawners return to the same spawning grounds each year, it is not known whether recruits return to the grounds where they were born. Females are batch spawners producing on average around 350,000 eggs (35cm fish) per year. Sole are nocturnal and olfactorial feeders, spending the day buried in the sediment. The blind side of the sole has sensory organs to detect prey. Sole feed on polychaete worms, molluscs and small crustaceans.

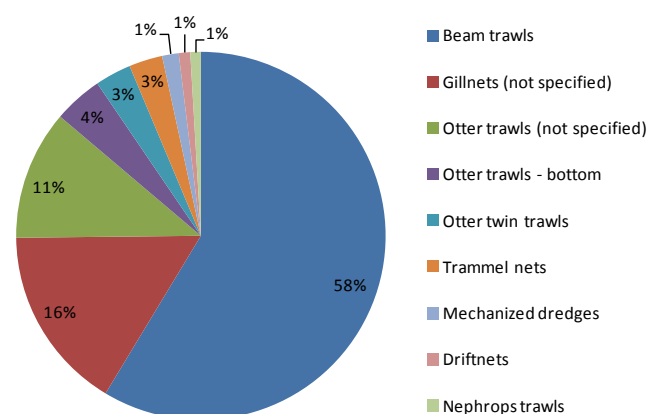
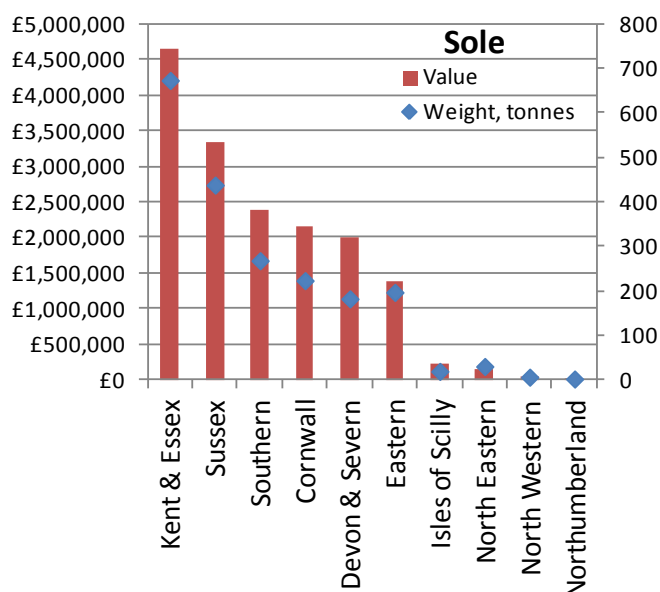
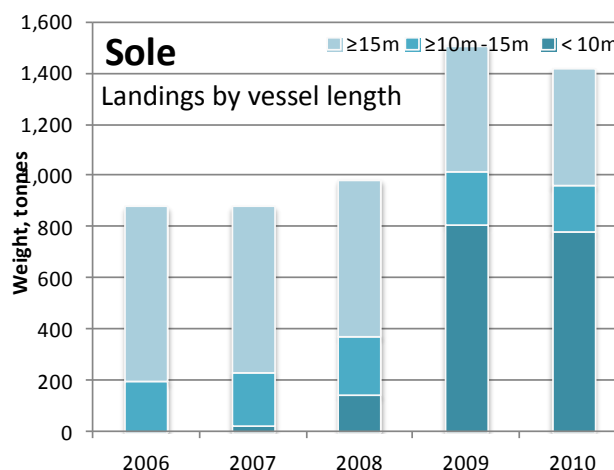
Species distribution



Species biological attributes			
Species	Sole, Dover	Average age at maturity	2.5 yr
Reproductive strategy	Broadcast spawners	Average maximum age	26 yr
Length of larvae phase	35 days	Fecundity (No of eggs)	100,000-350,000
Movement of adults	Migratory	Average size at maturity	30.3 cm
Sediment type	Marine, brackish, demersal	Average maximum size	70 cm
Depth	Subtidal, 10-150m	Trophic level	3.1

Sole landings

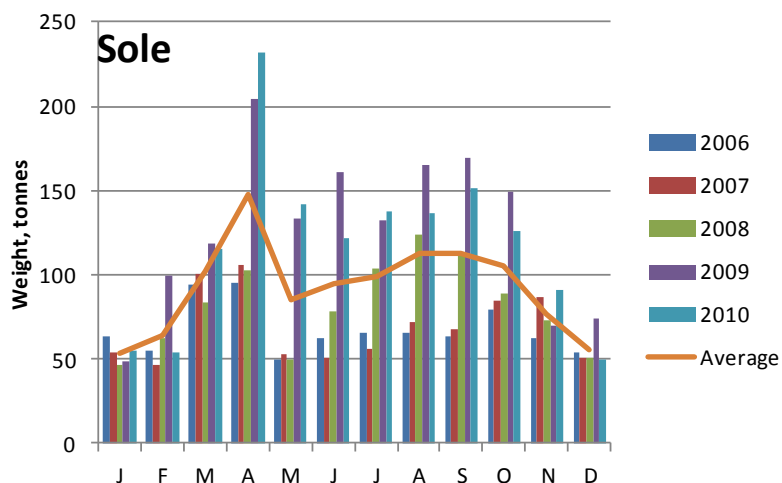
Total inshore landings		
Sole	Live weight, tonnes	Landed value
2006	893	£7,265,183
2007	895	£7,209,691
2008	1,020	£7,698,505
2009	1,541	£11,097,934
2010	1,432	£11,662,914



Sole is the most commercially important species landed from ICES rectangles that overlap IFCA districts with a total value of over £11.6 million, and 1,400 tonnes landed in 2010. In 2009 and 2010 landings from this area were dominated by under 10m vessels.

Based on a five year average, beam trawls land the majority of the catch (58% by weight), followed by gillnets (16%), otter trawls (14%) and trammel nets (3%).

Landings occur throughout the year and on average peak during spring.



Key landing ports include:

- Brixham
- Newlyn
- Plymouth
- Shoreham
- Newhaven
- Rye
- Ramsgate
- West Mersea
- Eastbourne
- Lowestoft
- Hastings
- Poole
- Dungeness
- Brighton

2.1.9 Turbot

Scophthalmus maximus



ICES stocks 2012 Turbot in Subarea IV and Division IIIa

MSC assessments	Assessed: none
	In Assessment: none
	Withdrawn: none

The turbot is large, round left-eyed flatfish with a broad body 1.5 times as long as it is wide. Usually 50-80 cm in length but occasionally grows up to 1 m. The skin bears no scales but scattered strong bony tubercles are present on the upper body surface. The lateral line is strongly arched over the pectoral fin. Colouration is variable and the fish can change colour to match its background. It is usually a dull sandy-brown to grey, with minute brown, blackish or greenish specks scattered over the body and extending onto the fins.

Turbot breed from April until August, laying their eggs predominantly on gravel bottom at depths >10m (Vause, 2009). The eggs are planktonic and hatch after 7 - 9 days; following this the larva remains in the pelagic zone for 4 - 6 months (Vause 2009). Metamorphosis occurs at approximately 25mm after which they adopt their demersal life style (Vause 2009).

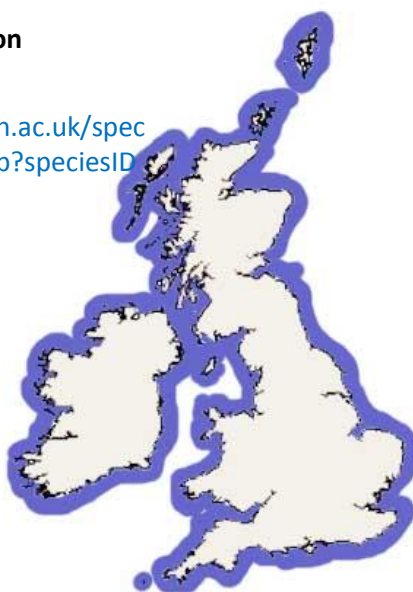
In general turbot migrate of shore with age. Tagging studies conducted in Sweden suggest that turbot move into breeding areas (which are shallower) during spring and summer to spawn and then return back to deeper waters in the autumn (Fishbase, 2000).

Species distribution

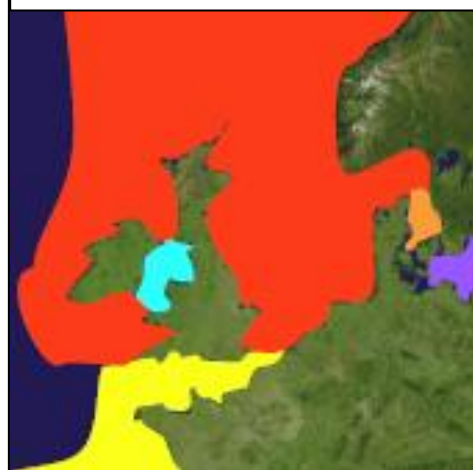
Source:

<http://www.marlin.ac.uk/speciesinformation.php?speciesID=4218>

- (●) Recorded
- (●) Expected



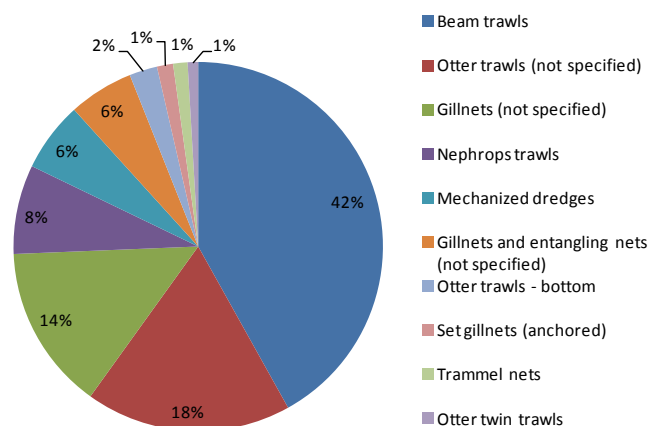
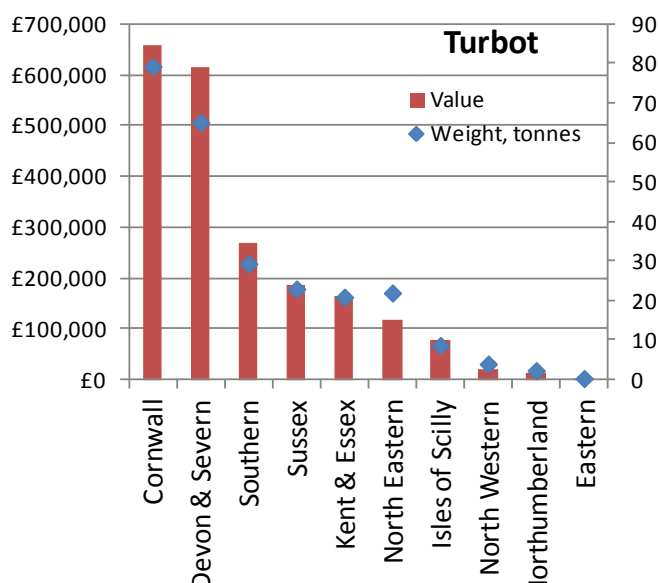
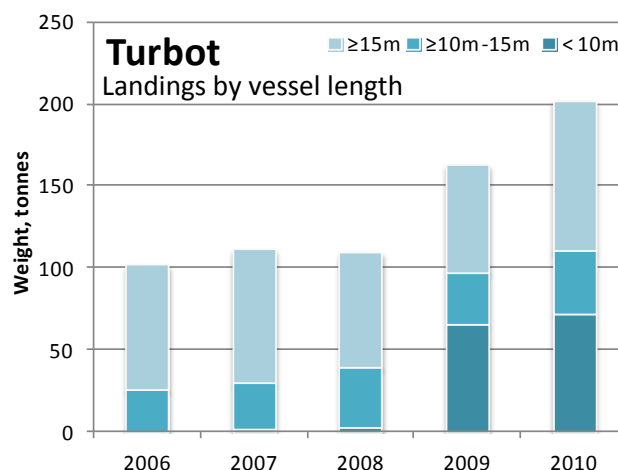
Preliminary map defining different populations of turbot, represented by different colours (ICES, 2012)



Species biological attributes			
Species	Turbot	Average age at maturity	4 yr
Reproductive strategy	Broadcast spawners	Average maximum age	25 yr
Length of larvae phase	4-6 months	Fecundity (No of eggs)	5,000,000-15,000,000
Movement of adults	Migratory	Average size at maturity	49 cm
Sediment type	Marine, demersal	Average maximum size	100 cm
Depth	Subtidal, 20-70m	Trophic level	4

Turbot landings

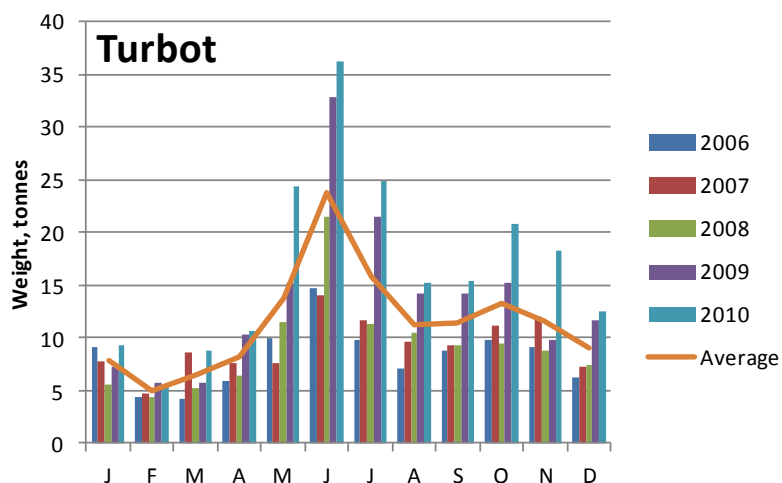
Total inshore landings		
Turbot	Live weight, tonnes	Landed value
2006	108	£928,376
2007	118	£1,063,178
2008	116	£1,048,262
2009	169	£1,380,195
2010	209	£1,724,782



Turbot landings from ICES rectangles that overlap IFCA districts have increased significantly since 2006, with a total value of over £1.7 million, and 209 tonnes landed in 2010. Turbot make up an important retained species in a number of mixed demersal fisheries.

Based on a five year average, beam trawls land the majority of the catch (42% by weight), followed by otter trawls (35%), gillnets (21%) and trammel nets (1%).

Landings occur throughout the year and on average peak during summer.

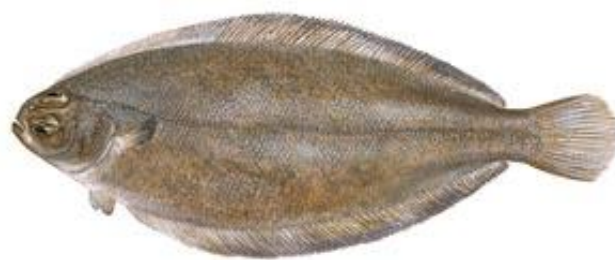


Key landing ports include:

- Brixham
- Newlyn
- Padstow
- Plymouth
- North Shields
- Whitby
- Whitehaven
- Shoreham
- Looe
- Newhaven

2.1.10 Witch

Glyptocephalus cynoglossus



ICES stocks Not assessed at ICES level

MSC

assessments

Assessed: none

In Assessment: none

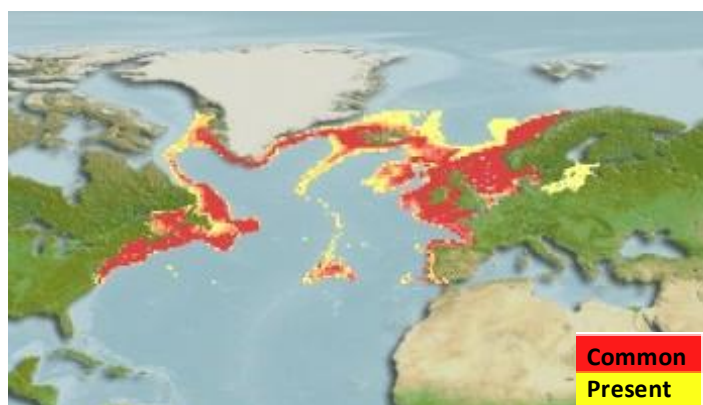
Withdrawn: none

Witch flounder appear to be sedentary, preferring moderately deep areas with few fish taken shallower than 27 m and most are caught between 110 and 275 m, although they have been recorded at depths of up to 1570m.

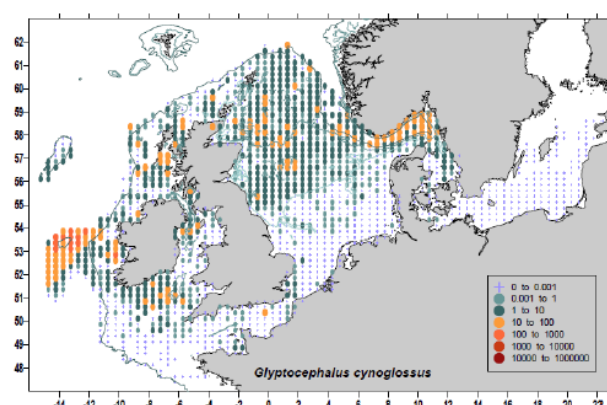
Witch flounder diet consists mostly of polychaete worms. Witch flounder attain lengths up to 78 cm and weights of approximately 2 kg, but are slow-growing, late-maturing and can live as old as 30 years. Female witch flounder reach maturity between ages 5 and 6; spawning occurs in late spring and summer. The larval period is relatively long, between 6 to 12 months.

Witch flounder prefer soft mud and sand-mud habitats, and temperatures of 2–6 °C. They feed on crustaceans, polychaetes, brittle stars and fishes. Spawning occurs from May to September (Luna, 2011)

Species distribution



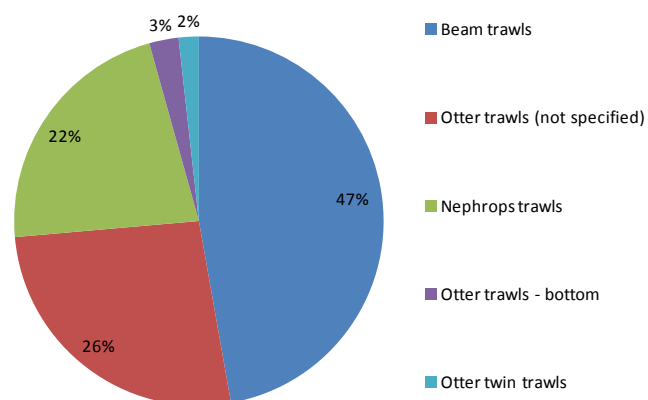
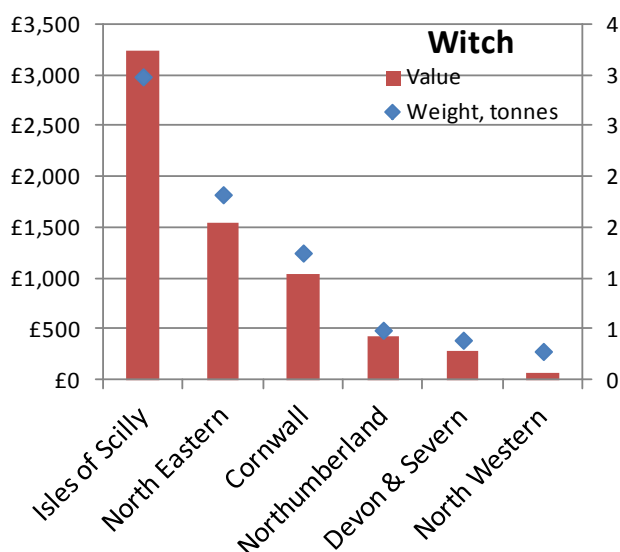
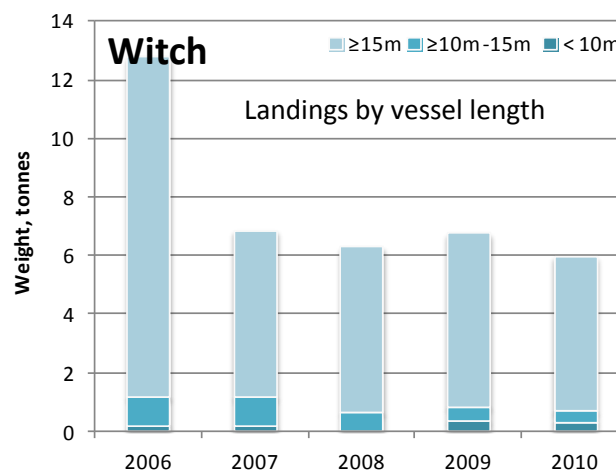
Distribution of catches from 1975-2010 (ICES, 2012)



Species biological attributes			
Species	Witch Flounder	Average age at maturity	5 yr
Reproductive strategy	Broadcast spawners	Average maximum age	25 yr
Length of larvae phase	6-12 months	Fecundity (No of eggs)	50,000-600,000
Movement of adults	Mobile	Average size at maturity	30.4 cm
Sediment type	Marine, demersal	Average maximum size	60 cm
Depth	Subtidal, 18-1570m	Trophic level	3.1

Witch landings

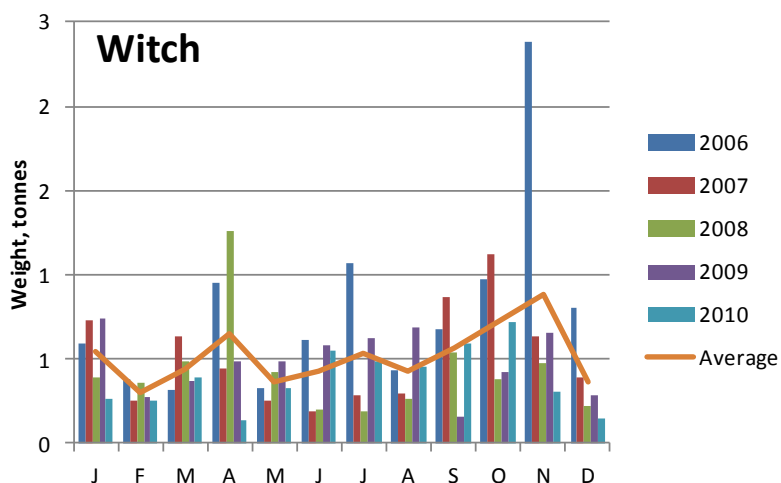
Total inshore landings		
Witch	Live weight, tonnes	Landed value
2006	13	£16,802
2007	7	£7,560
2008	7	£7,357
2009	7	£5,773
2010	6	£5,907



Witch landings from ICES rectangles that overlap IFCA districts dropped from 2006 to 2007, but have remained stable since then. The majority of landings are by over 15m vessels and the catch has a low value compared to other flatfish species.

Based on a five year average, beam trawls land the majority of the catch (47% by weight), with the remainder taken by otter trawls.

Landings occur throughout the year and on average peak during late autumn.



Key landing ports include:

- Newlyn
- North Shields
- Whitehaven
- Blyth
- Whitby
- Mevagissey
- Plymouth
- Amble
- Brixham
- Hartlepool

2.2 Demersal - round fish

2.2.1 Bass

Dicentrarchus labrax



ICES stocks Assessment for European seabass in the Northeast Atlantic

MSC assessments

Assessed: Dutch rod and line fishery for sea bass

In Assessment: Bristol Channel sea bass

Withdrawn: North Eastern Inshore Fisheries and Conservation Authority sea bass

There are two species of sea bass in European marine waters, *Dicentrarchus labrax*, the European sea bass, and *Dicentrarchus punctatus*, the spotted bass. The latter is found throughout the Mediterranean Sea and along the Atlantic coasts of Portugal, Spain and France, only occasionally straying north into UK waters.

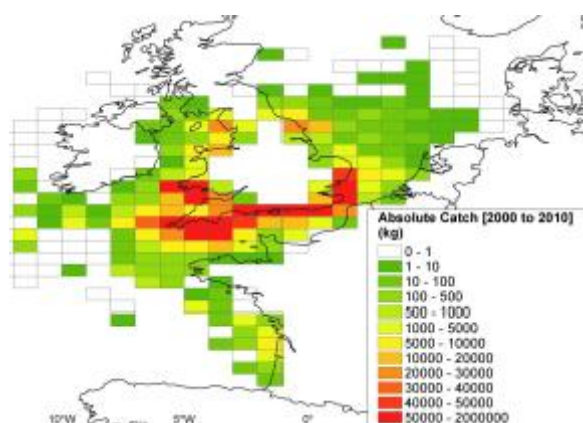
Adult sea bass migrate between well-defined feeding areas and pre-spawning and spawning areas which tend to be offshore to the south and west. First-year sea bass are found in estuaries and harbours, and along the adjacent coastline. After four to eight years, or at approximate lengths of 31- 35 cm for males and 40-45 cm for females, sea bass attain maturity and adopt the migratory movements of the adult fish.

Bass are opportunistic predators throughout life, feeding on the species of crustaceans and fish which are the most readily available in any particular environment.

Distribution of stocks (Fritsch et al., 2007)



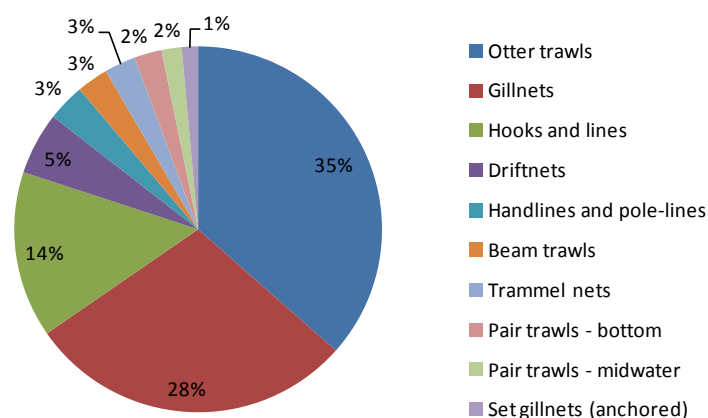
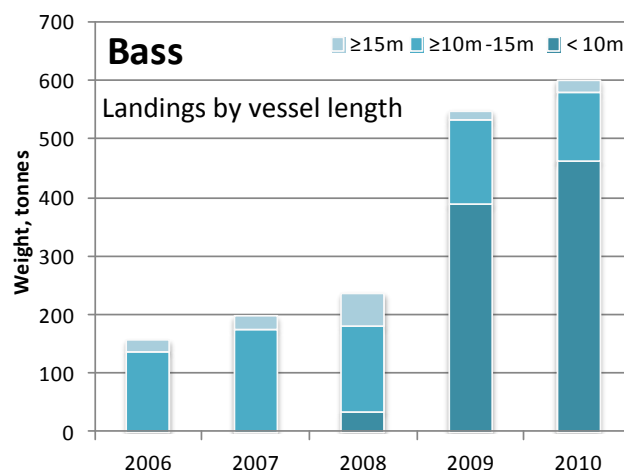
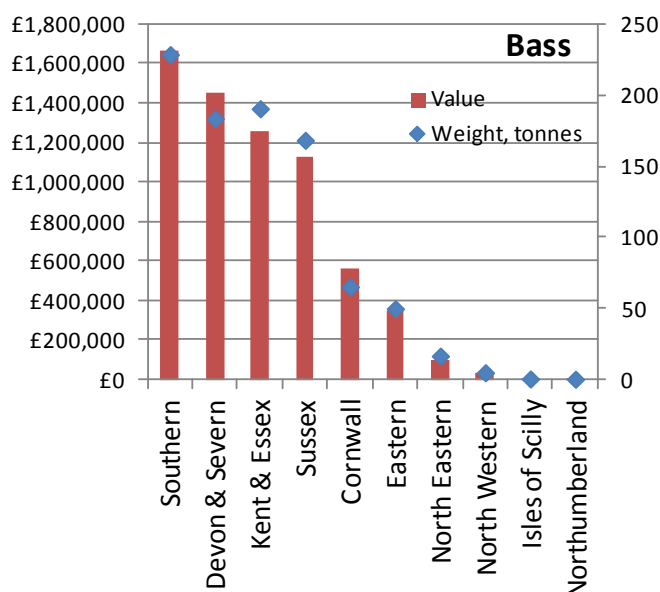
Distribution of UK landings of sea bass 2000-2010 (ICES, 2012)



Species biological attributes			
Species	Bass	Average age at maturity	5 yr
Reproductive strategy	Broadcast spawners	Average maximum age	20 yr
Length of larvae phase	3 months	Fecundity (No of eggs)	200,000-800,000
Movement of adults	Migratory	Average size at maturity	32.3 cm
Sediment type	Marine, brackish	Average maximum size	103 cm
Depth	Subtidal, 10-100m	Trophic level	3.8

Bass landings

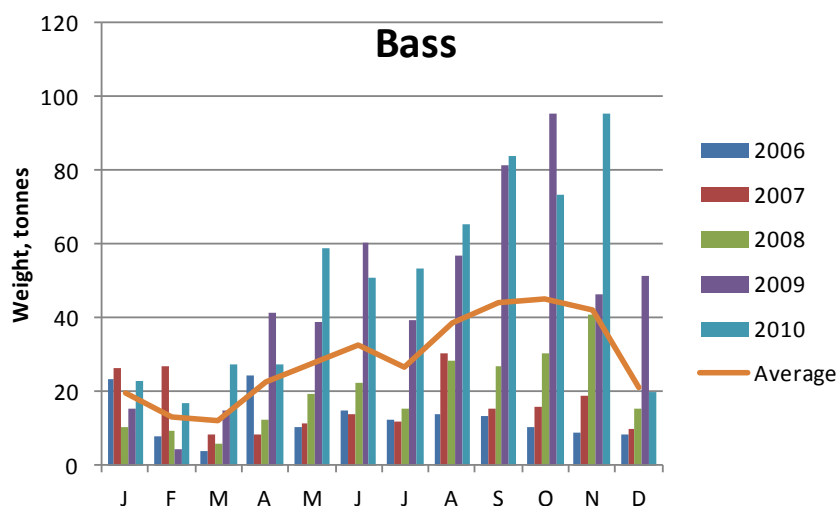
Total inshore landings		
Bass	Live weight, tonnes	Landed value
2006	162	£968,976
2007	204	£1,185,193
2008	246	£1,454,334
2009	558	£3,651,186
2010	604	£4,327,437



Bass landings from ICES rectangles that overlap IFCA districts have increased significantly since 2006, with a total value of over £4.3 million, and 604 tonnes landed in 2010. Landings by under 10m vessels dominate in 2009 and 2010, and are responsible for much of the observed increase since 2008.

Based on a five year average, otter trawls land the majority of the catch (35% by weight), followed by gillnets (28%), hooks and lines (14%) and drift nets (5%).

Landings occur throughout the year and on average peak during autumn.



Key landing ports include:

- Shoreham
- Brixham
- Plymouth
- Weymouth
- Ramsgate
- Portsmouth
- Appledore
- Ilfracombe
- Eastbourne
- Newhaven

2.2.1 Bream

Spondyliosoma cantharus



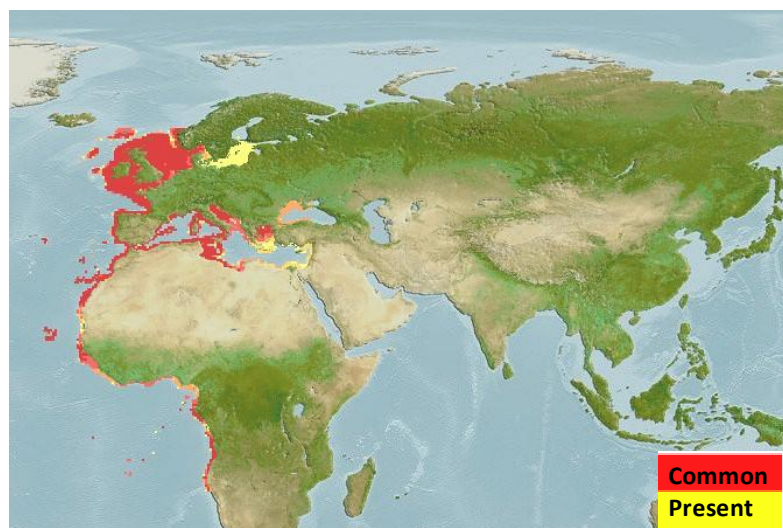
ICES stocks 2012 Red (=blackspot) seabream (*Pagellus bogaraveo*) in Subareas VI, VII, and VIII;
 2012 Red (=blackspot) seabream (*Pagellus bogaraveo*) in the Northeast Atlantic

MSC assessments	Assessed: none
	In Assessment: none
	Withdrawn: none

Black sea bream has an oval outline with a single dorsal fin which is spiny-rayed at the front, a tail fin which is forked and a small mouth which does not extend back to the level of the eye (Miller, 1997; Lythgoe & Lythgoe, 1971). Adults are 35-40 cm in length; they are silvery in jaws are equal in length. The profile of the head is smoothly convex in the young but changes to concave in mature males.

Sexual maturity of black sea bream is believed to take place at approximately 20cm in length and the sex change from female to male is likely to occur between 30 and 40 cm (Pawson, 1995). The larger individuals in the population are mature males. They are demersal spawners and actively seek gravelly areas on which to spawn (Southern Science, 1995). The young fish remain in inshore for 2 - 3 years (till they reach approximately 20cm in length), when they become sexually mature and recruit to the adult stock. The hermaphroditic nature of black bream may have important consequences for the sustained reproductive capacity of the stock.

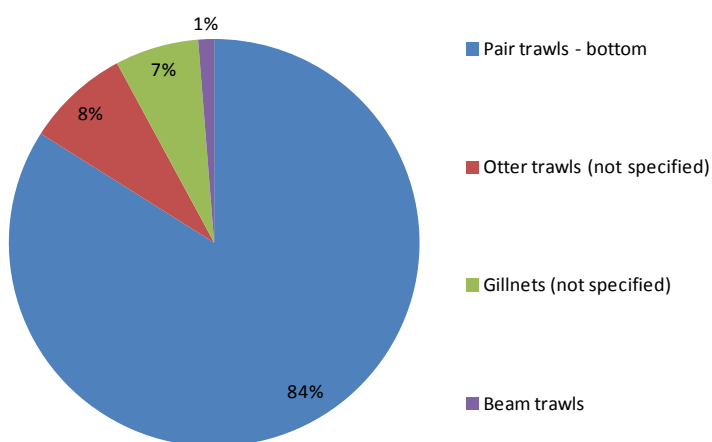
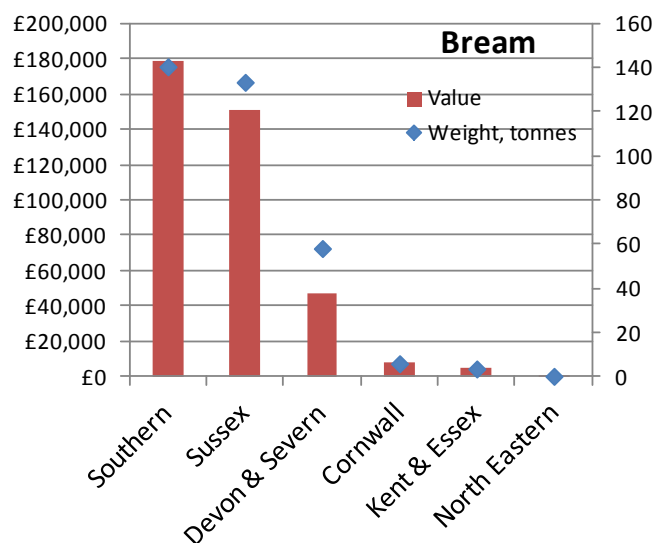
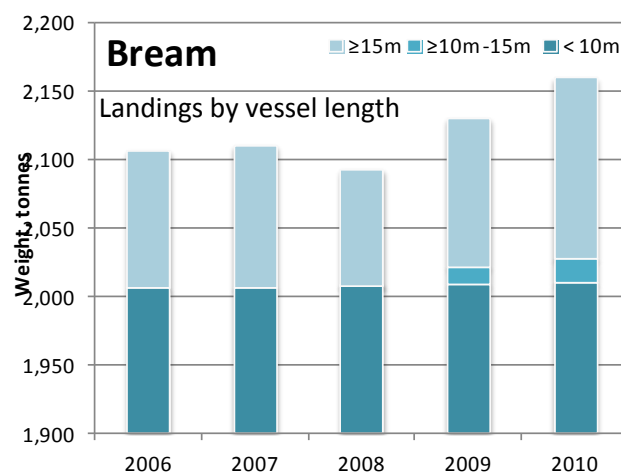
Species distribution



Species biological attributes			
Species	Bream	Average age at maturity	4 yr
Reproductive strategy	Broadcast spawners	Average maximum age	15 yr
Length of larvae phase		Fecundity (No of eggs)	70,000-500,000
Movement of adults	Migratory	Average size at maturity	25 cm
Sediment type	Marine, benthopelagic	Average maximum size	70 cm
Depth	Subtidal, to 700m	Trophic level	3.7

Bream landings

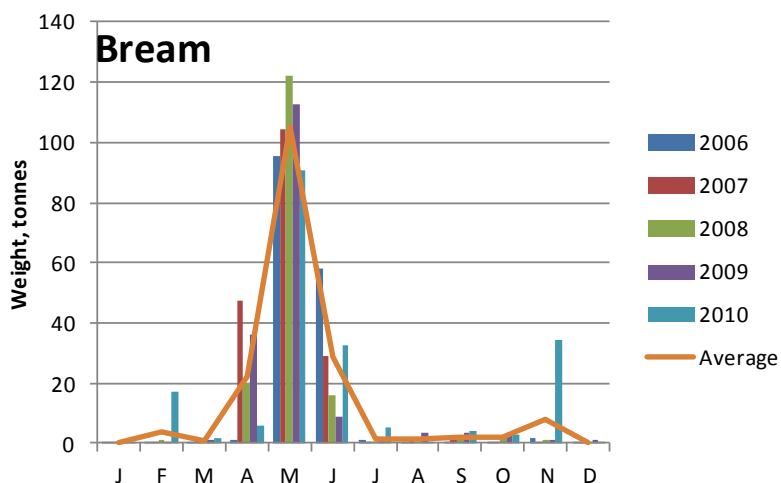
Total inshore landings		
Bream	Live weight, tonnes	Landed value
2006	178	£118,299
2007	203	£175,562
2008	168	£279,358
2009	176	£156,625
2010	200	£225,987



Bream landings from ICES rectangles that overlap IFCA districts have remained relatively consistent across the past five years, with small increase seen in 2010 where total catch was ~£225,000 and 200 tonnes. Southern and Sussex IFCA's are key to this mainly English Channel fishery.

Based on a five year average, demersal pair trawls land the majority of the catch (84% by weight), followed by otter trawls (8%), gillnets (7%) and beam trawls (1%).

Landings occur from April to June, with an obvious peak in May.

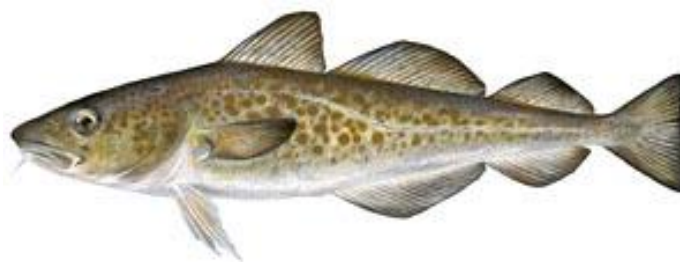


Key landing ports include:

- Shoreham
- Newhaven
- Plymouth
- Brixham
- Poole
- Portland
- Christchurch
- Lyme Regis
- Portsmouth
- Selsey

2.2.2 Cod

Gadus morhua



ICES stocks Division VIIa (Irish Sea); Divisions VIIe–k (Celtic Sea cod); Subarea IV (North Sea) and Divisions VIId (Eastern Channel) and IIIa West (Skagerrak)

MSC assessments

Assessed: Atlantic cod and haddock longline, handline and Danish seine; Barents Sea cod and Barents Sea haddock; Comapêche and Euronor cod and haddock; DFPO Denmark Eastern Baltic cod; Faroe Island North East Arctic cod; Fiskbranschens Sweden Eastern Baltic cod; Germany Eastern Baltic cod; IGP Icelandic cod ; Küstenfischer Nord eG Heiligenhafen Eastern Baltic cod; Norway North East Arctic cod; Pescafria-Pesquera Rodriguez Barents sea cod; UK Fisheries/DFFU/Doggerbank Northeast Arctic cod, haddock and saithe

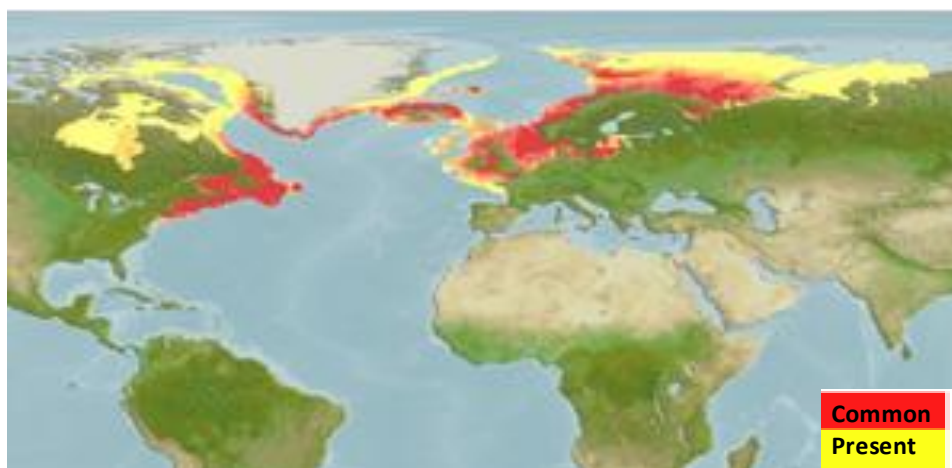
In Assessment: AGARBA Spain Barents Sea cod; FIUN Barents & Norwegian Seas cod and haddock; Samherji Icelandic cod & haddock trawl & longline

Withdrawn: Domstein Longliner Partners North East Arctic cod

The Atlantic cod is a demersal species, distributed across the continental shelves and in the coastal waters of the northern North Atlantic, from the Bay of Biscay and the Baltic Sea to the Barents Sea, around Iceland (Icelandic cod), along the southern part of Greenland and off Newfoundland's coasts and further southwest to North Carolina in the United States.

Cod prefers water temperatures from 2°C to 8°C and water depth from 10 m to 200 m. Within its geographical range cod is a generalist, both in terms of habitat use and diet.

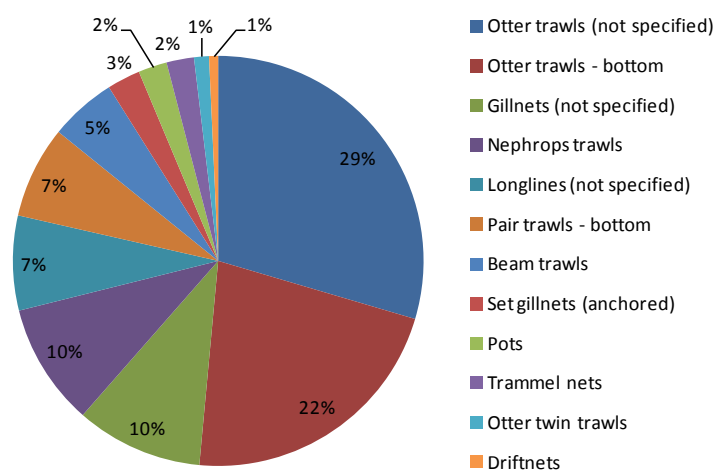
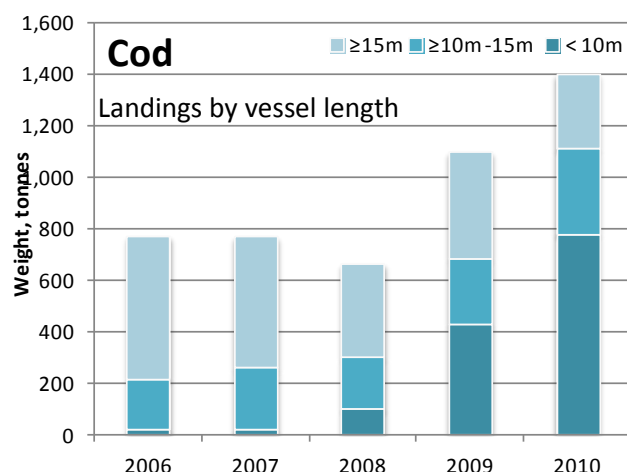
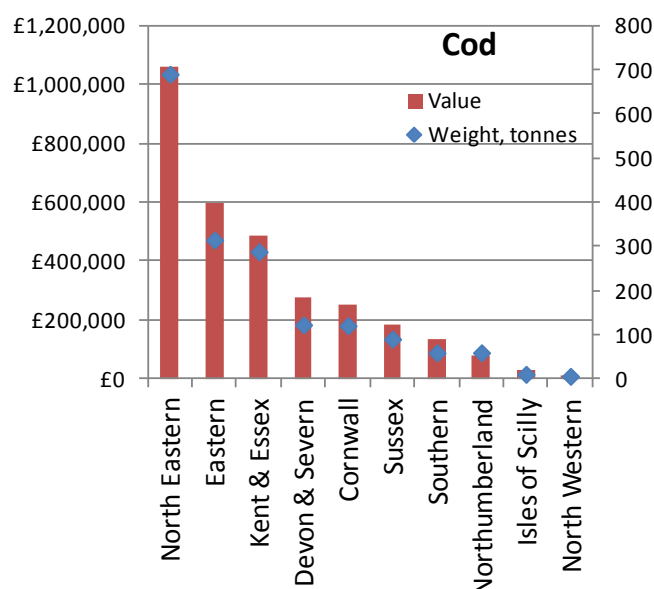
Species distribution



Species biological attributes			
Species	Cod	Average age at maturity	2 yr
Reproductive strategy	Broadcast spawners	Average maximum age	25 yr
Length of larvae phase	3 months	Fecundity (No of eggs)	200,000-5 million
Movement of adults	Migratory	Average size at maturity	41.1 cm
Sediment type	Marine, benthopelagic	Average maximum size	200 cm
Depth	Subtidal, 150-600m	Trophic level	4.4

Cod landings

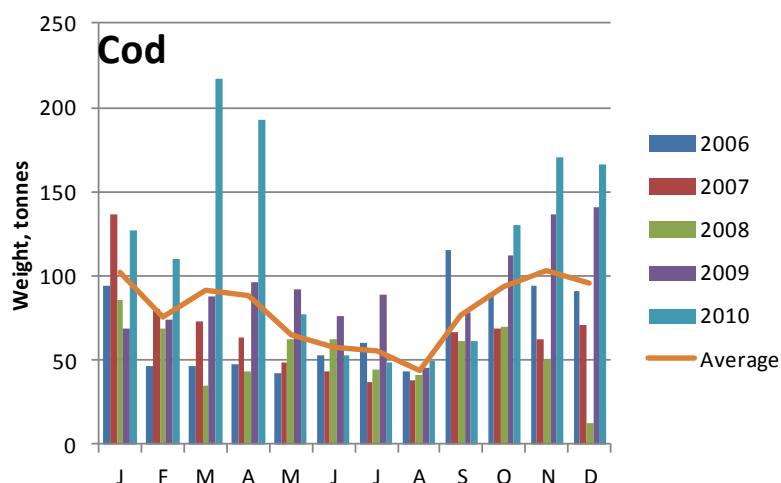
Total inshore landings		
Cod	Live weight, tonnes	Landed value
2006	941	£1,523,370
2007	958	£1,617,467
2008	773	£1,496,097
2009	1,155	£1,934,162
2010	1,430	£2,489,119



Cod landings from ICES rectangles that overlap IFCA districts have increased significantly since 2006, with a total value of over £2.4 million, and 1,400 tonnes landed in 2010. Landings by under 10m vessels dominate in 2009 and 2010, and are responsible for much of the observed increase since 2008. Landings occur across most IFCA districts with the exception of Isles of Scilly and North Western which have only small levels of catch.

Based on a five year average, otter trawls land the majority of the catch (69% by weight), followed by gillnets (13%), longline (7%), beam trawls (5%), pots (2%), trammel nets (2%) and drift nets (1%).

Landings occur throughout the year with slight peaks in winter.

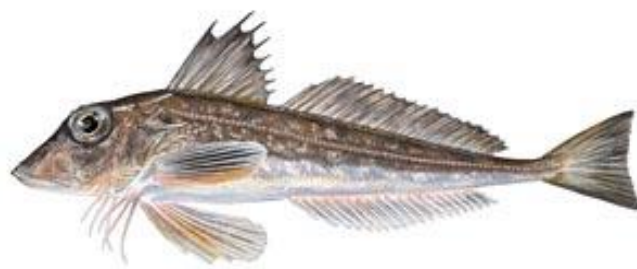


Key landing ports include:

- Whitby
- Scarborough
- North Shields
- Newlyn
- Blyth
- Lowestoft
- Brixham
- Hartlepool
- Ramsgate
- Plymouth

2.2.3 Gurnard

Triglidae spp.



ICES stocks Not assessed at ICES level

MSC assessments
 Assessed: none
 In Assessment: none
 Withdrawn: none

Gurnards belong to a group of fish known collectively as Triglidae (sea robins). The yellow or tub gurnard is the largest European gurnard. It attains a maximum length of 75cm, usually between 50-60cm.

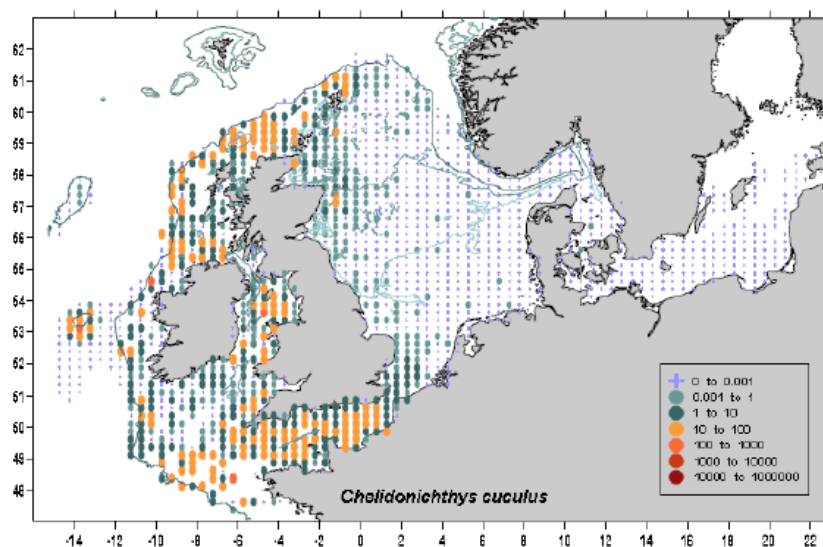
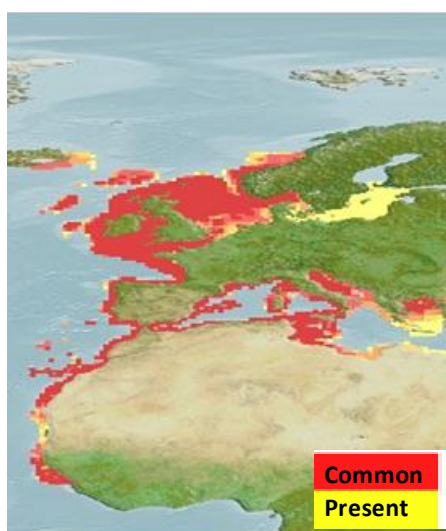
Gurnards are bottom-dwelling coastal fish with a spiny armored head and fingerlike pectoral fins used for crawling along the sea bottom.

Maximum reported age for gurnards is 21 years. They reach sexual maturity at 2 years and spawn from May to July. Gurnards are able to grunt or growl by the use of muscles associated with the swim bladder, and this is believed to aid in keeping schools together (MCS, 2012).

There is no stock assessment for the species, but there have been increases in abundance in North Sea beam trawl time series surveys.

Species distribution

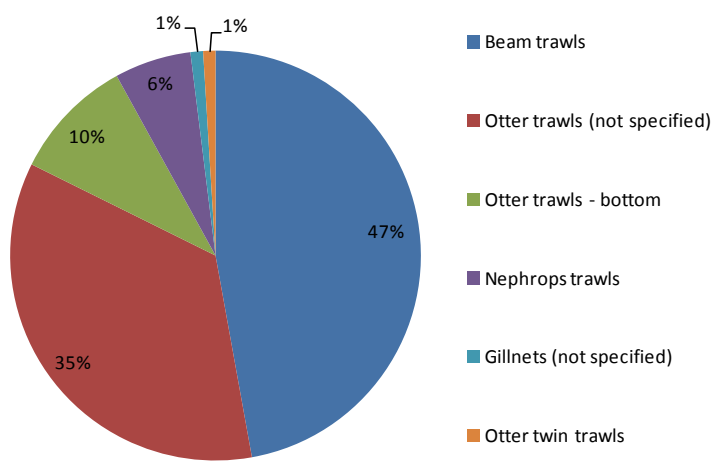
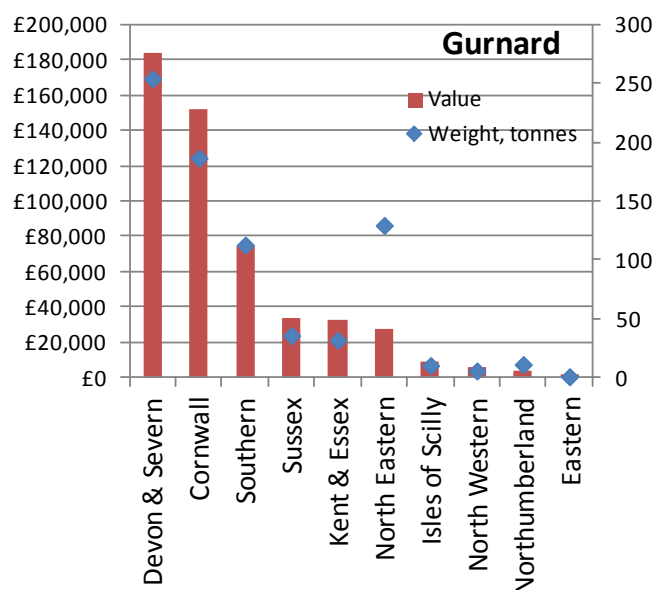
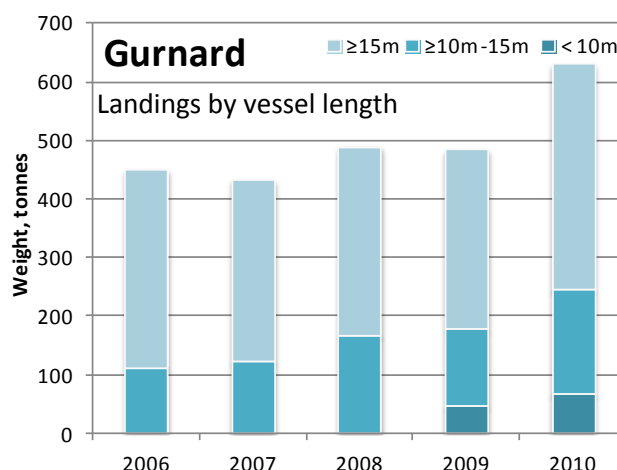
Distribution of red gurnard (ICES, 2012)



Species biological attributes			
Species	Gurnard	Average age at maturity	2 yr
Reproductive strategy	Broadcast spawners	Average maximum age	21 yr
Length of larvae phase		Fecundity (No of eggs)	150,000
Movement of adults	Mobile	Average size at maturity	18 cm
Sediment type	Marine, demersal	Average maximum size	60 cm
Depth	Subtidal, 15-400m	Trophic level	3.9

Gurnard landings

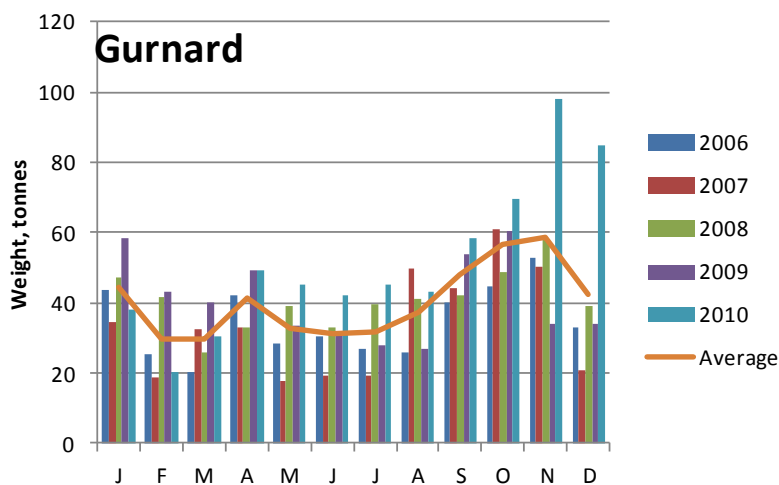
Total inshore landings		
Gurnard	Live weight, tonnes	Landed value
2006	457	£224,981
2007	445	£200,950
2008	514	£270,866
2009	512	£313,858
2010	656	£418,952



Gurnard landings from ICES rectangles that overlap IFCA districts have remained consistent from 2006-2009, with a slight increase in 2010 when landings valued ~£419,000, and 656 tonnes. Key IFCA districts include Devon and Severn, Cornwall and Southern.

Based on a five year average, otter trawls land the majority of the catch (52% by weight), followed by beam trawls (47%) and gillnets (1%).

Landings occur throughout the year and on average peak during autumn.

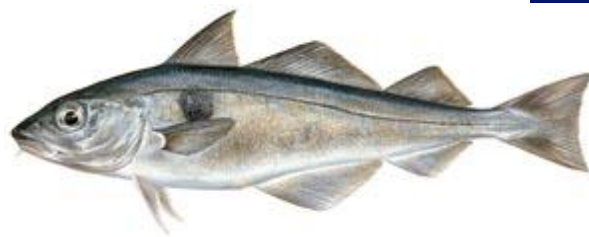


Key landing ports include:

- Brixham
- Newlyn
- Whitby
- Plymouth
- Hartlepool
- Shoreham
- North Shields
- Newhaven
- Fleetwood
- Looe

2.2.4 Haddock

Melanogrammus aeglefinus



ICES stocks 2012 Haddock in Division VIIa (Irish Sea); 2012 Haddock in Divisions VIIb–k; 2012 Haddock in Subarea IV (North Sea) and Division IIIa West (Skagerrak)

MSC assessments

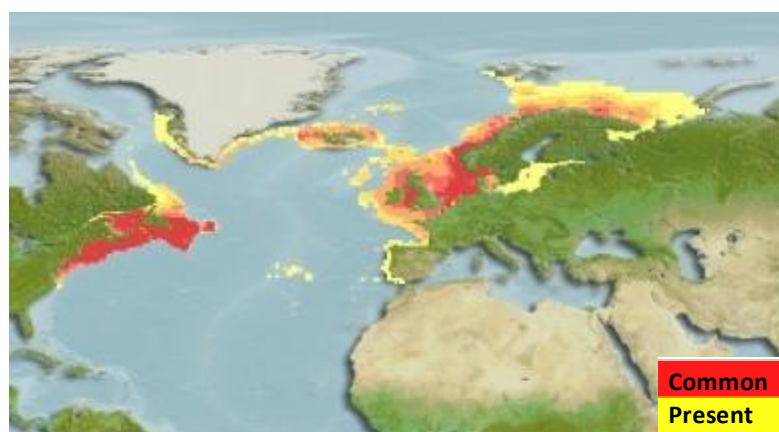
Assessed: Atlantic cod and haddock longline, handline and Danish seine; Barents Sea cod and Barents Sea haddock; Canada Scotia-Fundy haddock; Comapêche and Euronor cod and haddock; DFPO Denmark North Sea & Skagerrak haddock; Faroe Island North East Arctic haddock; IGP Icelandic haddock; Norway North East Arctic haddock; Scottish Fisheries Sustainable Accreditation Group (SFSAG) North Sea haddock; UK Fisheries/DFFU/Doggerbank Northeast Arctic cod, haddock and saithe

In Assessment: FIUN Barents & Norwegian Seas cod and haddock; Samherji Icelandic cod & haddock trawl & longline

Withdrawn: Samherji Icelandic cod & haddock trawl & longline

Haddock are bottom feeding fish and occur mainly in waters from 40–200m deep, but are found down to 350m. Haddock mature at around 2–3 years of age, and can spawn anywhere in the area between the eastern Scottish coast and the Norwegian Deep. Larvae hatch after one to two weeks and, at a length of 5.5mm, begin hunting for tiny crustaceans and other organisms from among the zooplankton. During this phase the young haddock remain in the open sea, near the surface, often seeking protection beneath the umbrellas of large Medusae (jellyfish). After one or two years, when haddock have reached about 10cm they leave the pelagic habitat and become demersal. The maximum age of the haddock is said to be 20 years. However the haddock caught today are mostly between 2-6 years old and weigh around 400 grams to 1 kg approximately. Haddock feed mainly on small bottom-living organisms including crustaceans, molluscs, echinoderms, worms and fishes although they can vary their diet and act as both predator and plankton-eater or benthos-eater.

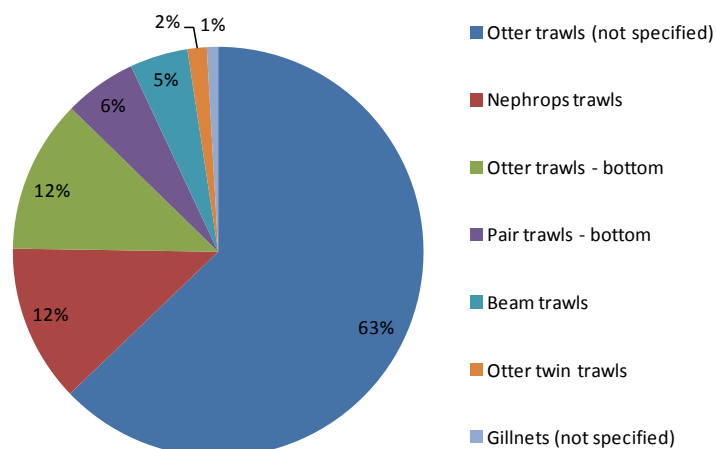
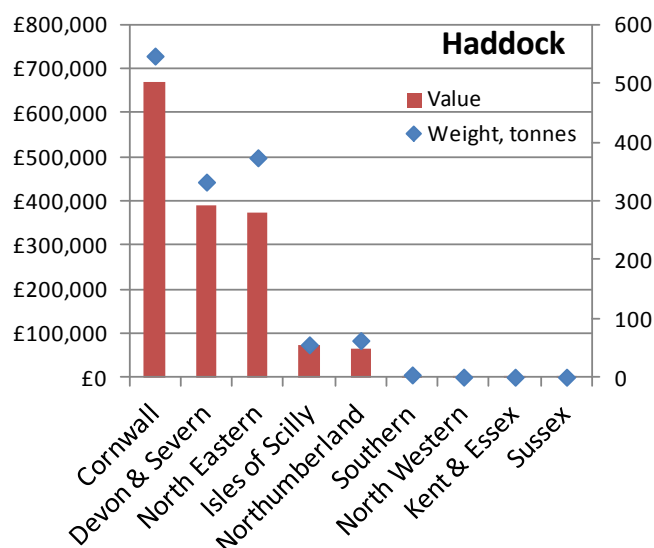
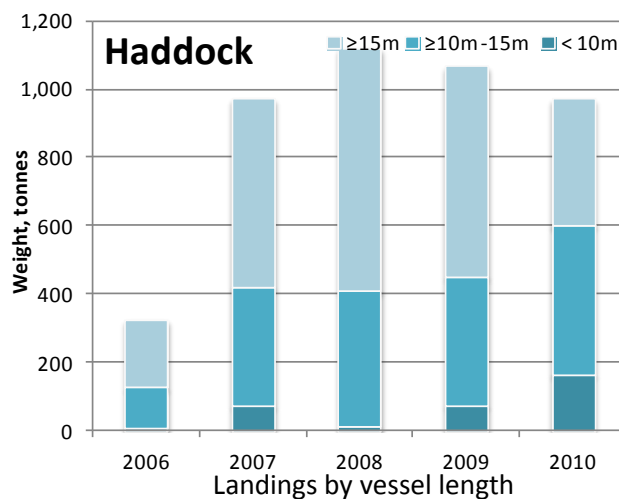
Species distribution



Species biological attributes			
Species	Haddock	Average age at maturity	2 yr
Reproductive strategy	Broadcast spawners	Average maximum age	20 yr
Length of larvae phase		Fecundity (No of eggs)	100,000-2 million
Movement of adults	Mobile	Average size at maturity	37.9 cm
Sediment type	Marine, demersal	Average maximum size	112 cm
Depth	Subtidal, 10-450m	Trophic level	4.1

Haddock landings

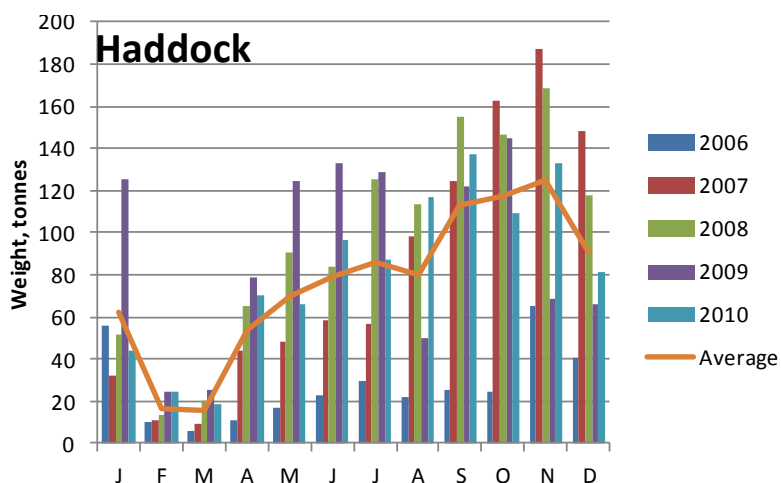
Total inshore landings		
Haddock	Live weight, tonnes	Landed value
2006	345	£373,512
2007	1,085	£879,397
2008	1,244	£1,162,852
2009	1,148	£1,224,505
2010	1,007	£1,141,492



Haddock landings from ICES rectangles that overlap IFCA districts have increased dramatically from 2006 to 2007 where they have remained relatively consistent to 2010, with a slight peak in 2008. Landings from this area had a total value of over £1.1 million, and 1,000 tonnes in 2010. Key IFCA districts include Cornwall, Devon and Severn and North Eastern.

Based on a five year average, otter trawls land the majority of the catch (95% by weight), followed by beam trawls (5%) and gillnets (1%).

Landings occur throughout the year and on average peak during autumn.



Key landing ports include:

- Newlyn
- North Shields
- Whitby
- Blyth
- Scarborough
- Plymouth
- Amble
- Hartlepool
- Mevagissey
- Looe

2.2.5 Hake

Merluccius merluccius



ICES stocks 2012 Hake in Division IIIa, Subareas IV, VI, and VII, and Divisions VIIIa,b,d (Northern stock)

MSC assessments

Assessed: Pacific hake mid-water trawl; South Africa hake trawl

In Assessment: Cornish hake gill net; DFPO Denmark North Sea, Skagerrak & Kattegat hake; Grupo Regal Spain hake longline; Chile hake trawl; New Zealand EEZ hake trawl fishery

Withdrawn: none

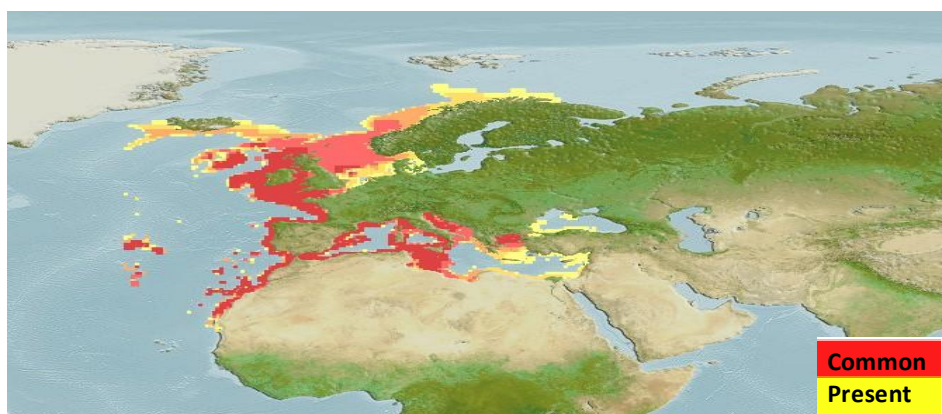
The European hake is a demersal species that is usually found between 70-350 m. It may be observed feeding alone on the bottom or in shoals in the water column.

Most hake species show large vertical movements from near the sea bed, where they spend the day, into mid and surface waters at night to feed. Hake also show substantial offshore and along-shore migrations, a characteristic that is reflected in the large areas used for stock assessment and management

Adults feed mainly on fish (small hakes, anchovies, pilchard, herrings, cod fishes, sardines and gadoid species) and squids. The young feed on crustaceans (especially euphausiids and amphipods). Hake are batch spawners releasing 2-7 million eggs.

Merluccius merluccius has been observed using its pectoral and pelvic fins to dig into soft sandy substrates, often throwing sand onto their backs.

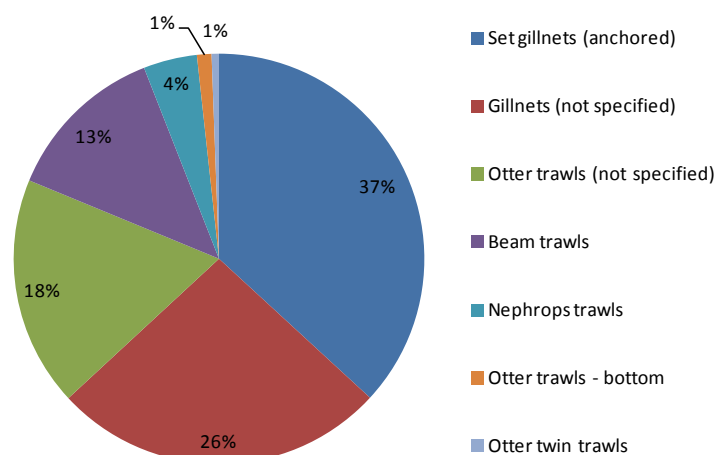
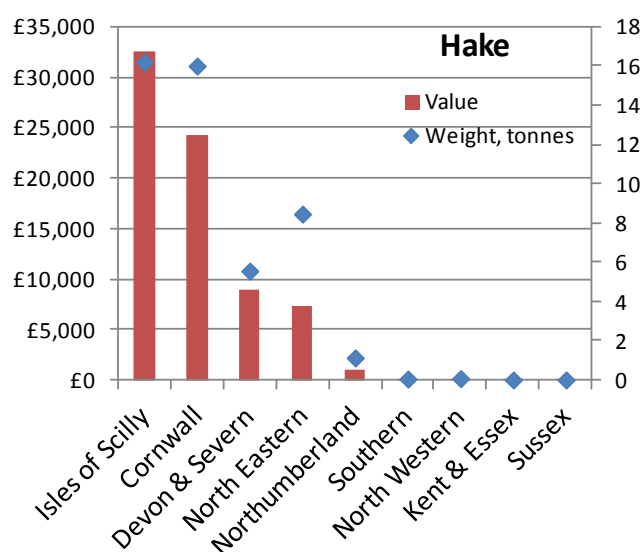
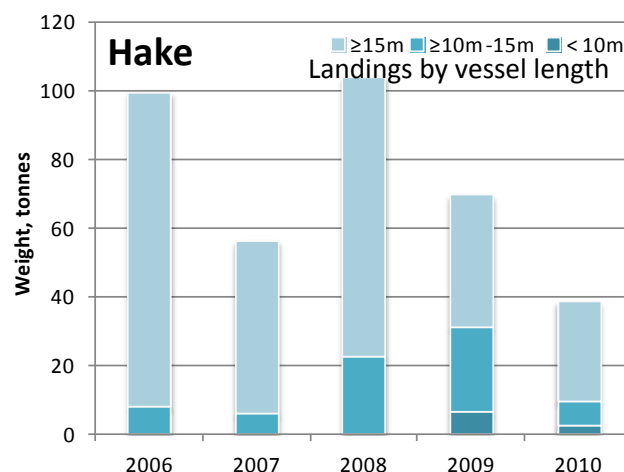
Species distribution



Species biological attributes			
Species	Hake	Average age at maturity	3 yr
Reproductive strategy	Broadcast spawners	Average maximum age	20 yr
Length of larvae phase		Fecundity (No of eggs)	2-7 million
Movement of adults	Mobile	Average size at maturity	42.8 cm
Sediment type	Marine, demersal	Average maximum size	140 cm
Depth	Subtidal, 30-1075m	Trophic level	4.4

Hake landings

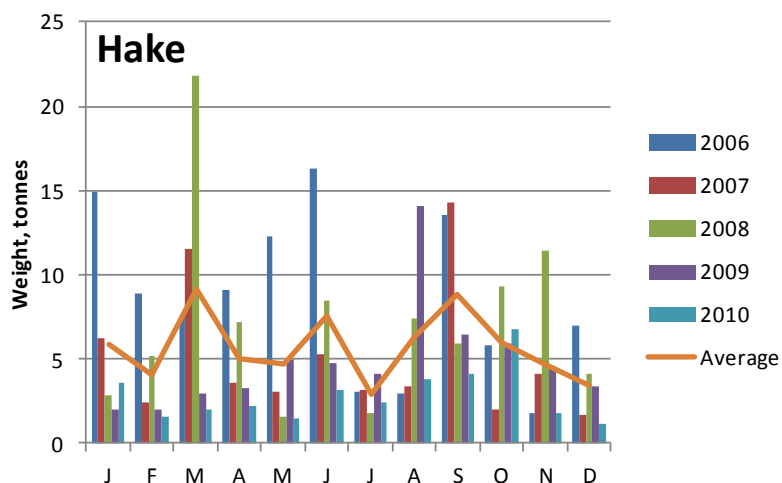
Total inshore landings		
Hake	Live weight, tonnes	Landed value
2006	107	£401,752
2007	62	£205,302
2008	106	£272,775
2009	70	£102,183
2010	42	£66,053



Hake landings from ICES rectangles that overlap IFCA districts have fluctuated across the past five years with peaks in 2006 and 2008 and lows in 2007 and 2010. Landings from this area had a total value of ~£66,000 and 42 tonnes in 2010. The majority of landings are by the over 15m fleet.

Based on a five year average, gill nets land the majority of the catch (63% by weight), followed by otter trawls (24%) and beam trawl (13%).

Landings occur throughout the year and on average peak during March, June and September.



Key landing ports include:

- Newlyn
- North Shields
- Plymouth
- Brixham
- Looe
- Whitby
- Mevagissey
- Blyth
- Hartlepool
- Polperro

2.2.6 John dory

Zeus faber



ICES stocks Not assessed at ICES level

MSC

assessments

Assessed: none

In Assessment: none

Withdrawn: none

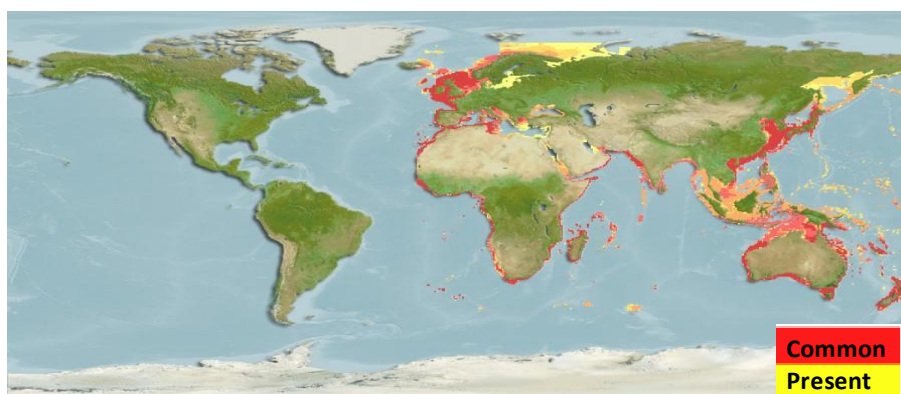
John dory, also referred to as dory or St Peters Fish, is highly regarded as a food fish. Although traditionally not a target species, John dory is an important bycatch in various trawl fisheries of the North East Atlantic.

John dory is a demersal species found mostly over soft and muddy areas close to rocks, in depths ranging from 20 to more than 400 m, however most of the catches occur between 20 and 160 metres. The average length is 40cm, with males rarely growing larger than 50cm, while females can reach 60cm or more.

Maximum reported age is 12 years. Reproduction takes place at the end of winter and the start of spring in the North East Atlantic; eggs are pelagic, and maturity is reached at 4 years.

Once they grow over 14cm they feed on schooling bony fish, for example pilchards. John dory is generally a solitary fish and is rarely found in great concentrations (Seafish, 2012).

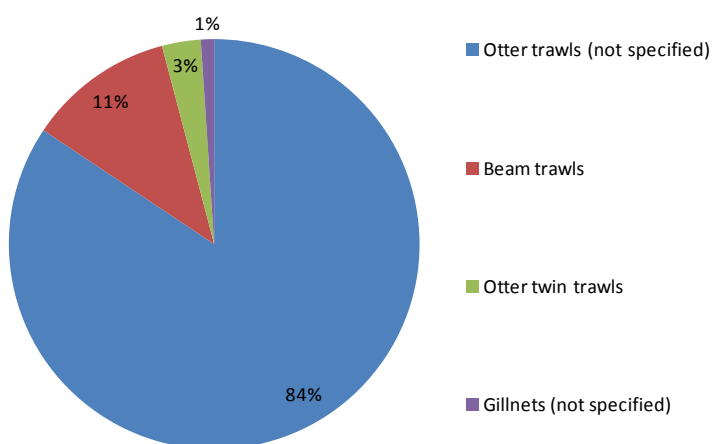
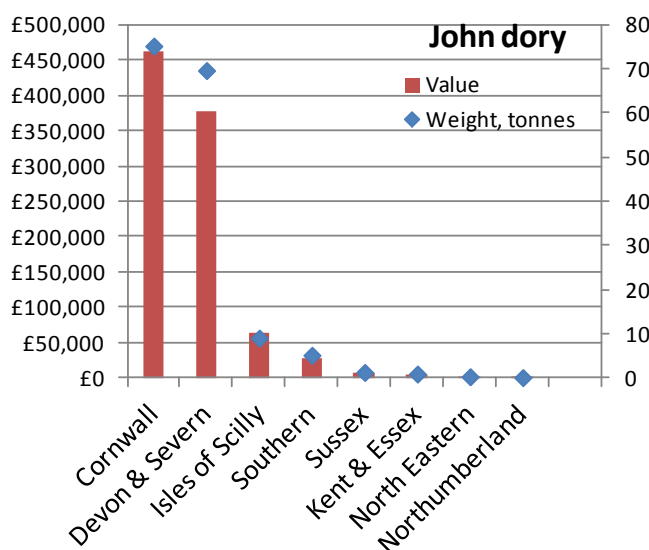
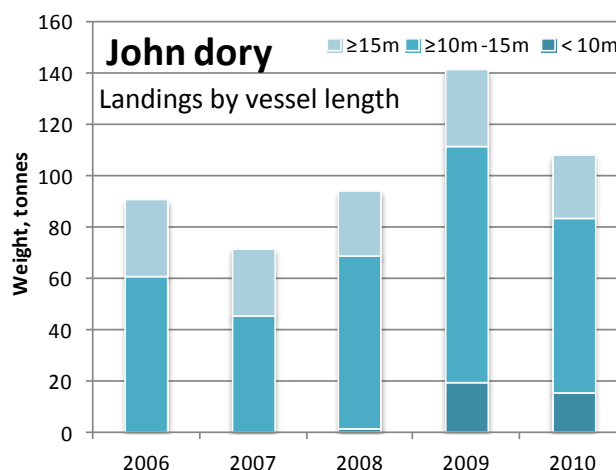
Species distribution



Species biological attributes			
Species	John dory	Average age at maturity	4 yr
Reproductive strategy	Broadcast Spawners	Average maximum age	12 yr
Length of larvae phase		Fecundity (No of eggs)	
Movement of adults	Mobile	Average size at maturity	36.2cm
Sediment type	Marine	Average maximum size	90cm
Depth	Subtidal, 5-400m	Trophic level	4.5

John dory landings

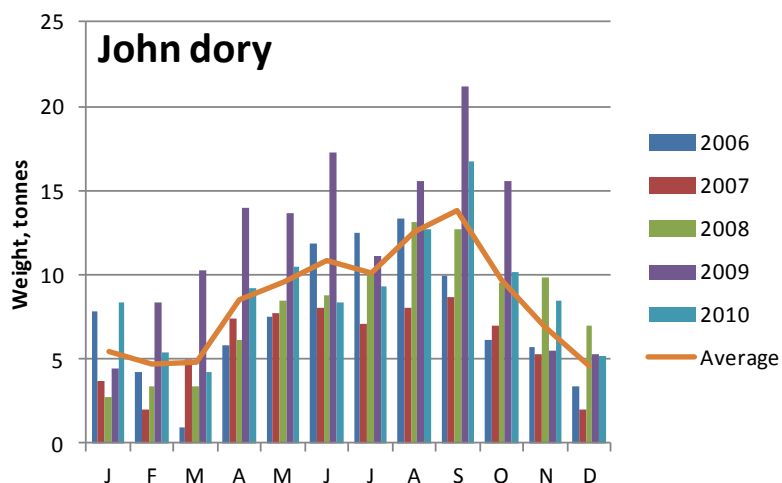
Total inshore landings		
John Dory	Live weight, tonnes	Landed value
2006	92	£456,389
2007	74	£415,842
2008	98	£496,364
2009	145	£617,428
2010	111	£669,288



John dory landings from ICES rectangles that overlap IFCA districts have increased slightly since 2006, peaking in 2009 and with a total value of ~£700,000, and 111 tonnes landed in 2010. Landings are mainly by vessels 10-15m in length operating from the Cornwall and Devon and Severn IFCA's.

Based on a five year average, otter trawls land the majority of the catch (87% by weight), followed by beam trawls (11%) and gill nets (1%).

Landings occur throughout the year and on average peak during autumn.



Key landing ports include:

- Newlyn
- Brixham
- Plymouth
- Looe
- Mevagissey
- Appledore
- Polperro
- Exmouth
- Ilfracombe
- River Fal - Falmouth

2.2.7 Ling

Molva molva



ICES stocks 2012 Ling (*Molva molva*) in Divisions IIIa and IVa, and in Subareas VI, VII, VIII, IX, XII, and XIV (other areas); 2012 Ling (*Molva molva*) in the Northeast Atlantic

MSC assessments	Assessed: none
	In Assessment: New Zealand EEZ ling trawl and longline fishery
	Withdrawn: none

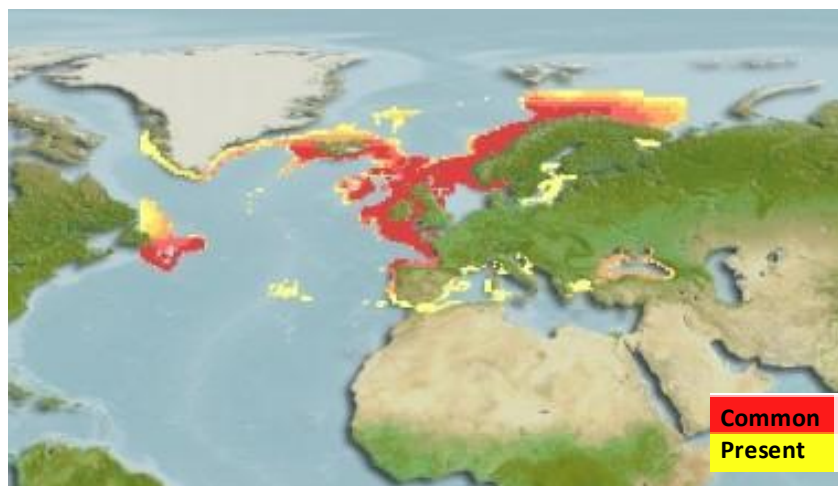
Ling is the largest fish of the cod family, growing up to 200 cm in length and 30 kg in weight. Ling is a deep water species found at depths up to 1,000 meters but juveniles and occasionally adults are found as shallow as 10 meters. This species is primarily solitary and benthic, lurking amongst rocks, crevices and wrecks in deep water.

Ling is widely recorded around the British Isles, mainly off the south and west coasts of England, Ireland and the west Scotland.

Spawning occurs offshore between March and August at a depth of 100-300 m. The females produce between 20-60 million pelagic eggs ca.1 mm in diameter.

Molva molva primarily feeds on other fish such as *Trisopterus esmarkii*, *Gadus gadus*, *Clupea harengus* and flat fish, and invertebrates such as crustaceans and starfish may also be consumed, but more likely by the inshore juveniles (Rowley, 2008).

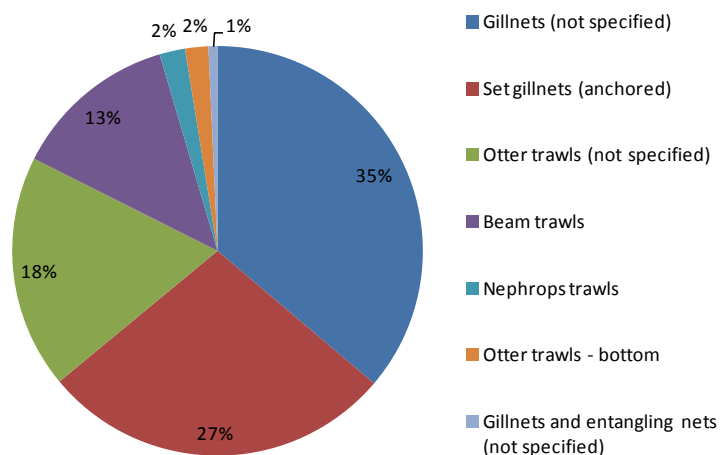
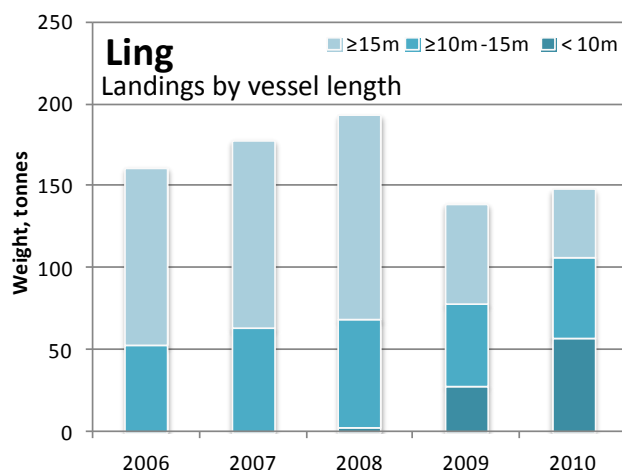
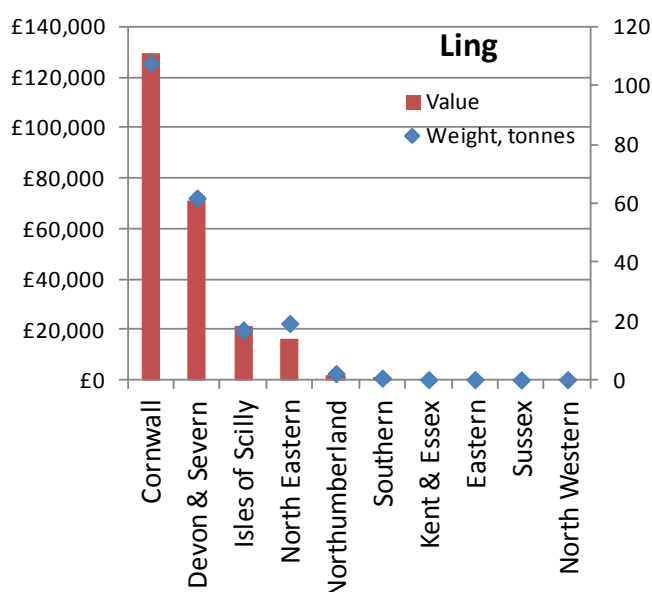
Species distribution



Species biological attributes			
Species	Ling	Average age at maturity	5 yr
Reproductive strategy	Broadcast spawners	Average maximum age	25 yr
Length of larvae phase		Fecundity (No of eggs)	60 million
Movement of adults	Mobile	Average size at maturity	90 cm
Sediment type	Marine, demersal	Average maximum size	200 cm
Depth	Subtidal, 100-1000m	Trophic level	4.3

Ling landings

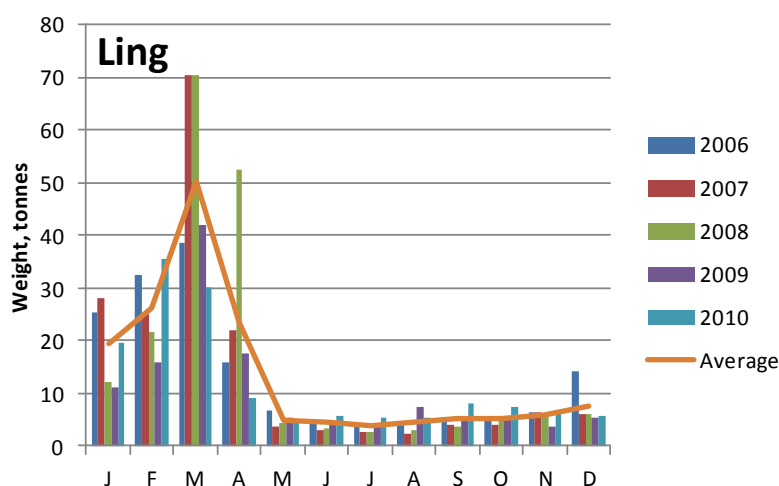
Total inshore landings		
Ling	Live weight, tonnes	Landed value
2006	170	£188,292
2007	181	£178,980
2008	197	£206,935
2009	144	£164,482
2010	152	£175,695



Ling landings from ICES rectangles that overlap IFCA districts have decreased slightly in 2009 and 2010 compared to 2006-2008 figures, with a total value of over ~£175,000, and 152 tonnes landed in 2010. Landings pre 2009 were dominated by over 15m vessels, but since then have been landed across all fleet sizes. Key IFCA's are Cornwall and Devon and Severn.

Based on a five year average, gill nets land the majority of the catch (63% by weight), followed by otter trawls (22%) and beam trawls (13%).

The majority of landings occur from January to April, peaking in March, although small quantities are landed throughout the remainder of the year.

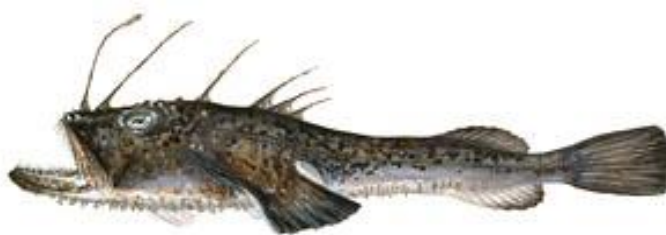


Key landing ports include:

- Newlyn
- Plymouth
- Brixham
- Mevagissey
- Looe
- Whitby
- North Shields
- Helford River
- Blyth
- Hartlepool

2.2.8 Monkfish/angler

Lophius piscatorius



ICES stocks 2012 Anglerfish (*Lophius piscatorius* and *L. budegassa*) in Division IIIa, and Subareas IV and VI
 2012 Anglerfish (*Lophius piscatorius* and *L. budegassa*) in Divisions VIIb–k and VIIIa,b,d

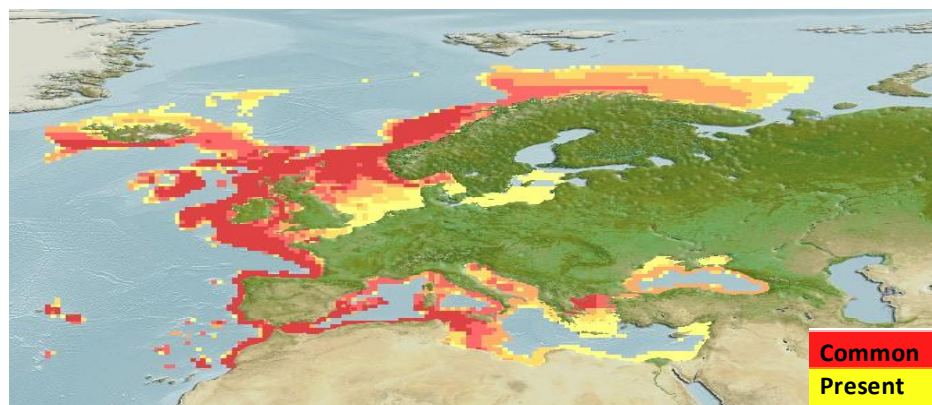
MSC assessments	Assessed: none
	In Assessment: none
	Withdrawn: none

Monkfish, also known as angler fish, grow up to 200 cm in length and is a very distinctive fish, recognizable by having its head and body depressed, a wide mouth, broad head and a fleshy 'lure' at the end of its first dorsal spine, which is used to attract prey. Prey items are usually smaller fish (such as spurdogs, rays, sand eels, sculpins, sea snails, cod, whiting, pouting, haddock, flatfishes).

Monkfish is present in waters from the low intertidal down to depths of 550 m. It is uncommon to see monkfish in water shallower than 18 m though it may migrate down to as deep as 2000 m in offshore waters in order to spawn. It is found mostly on sandy or muddy bottoms but is also present on shell, gravel and occasionally rocky areas.

Monkfish occurs in coastal waters all around Britain and Ireland. It is predominantly recorded on the west coast of England, Wales and Scotland and the north, south and east coasts of Ireland (Reeve, 2008).

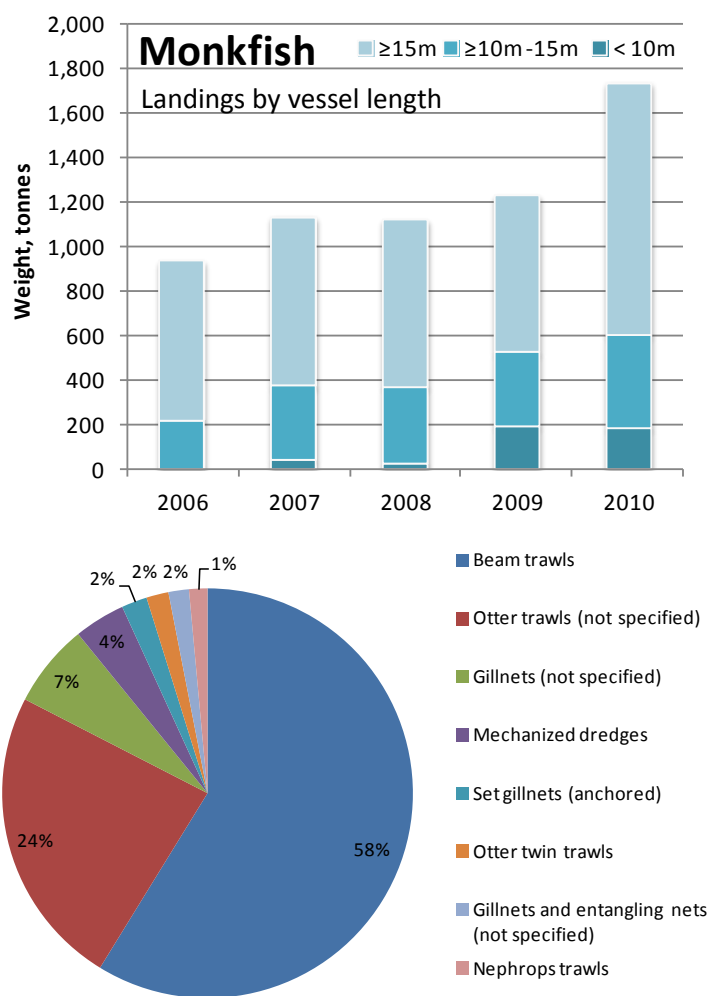
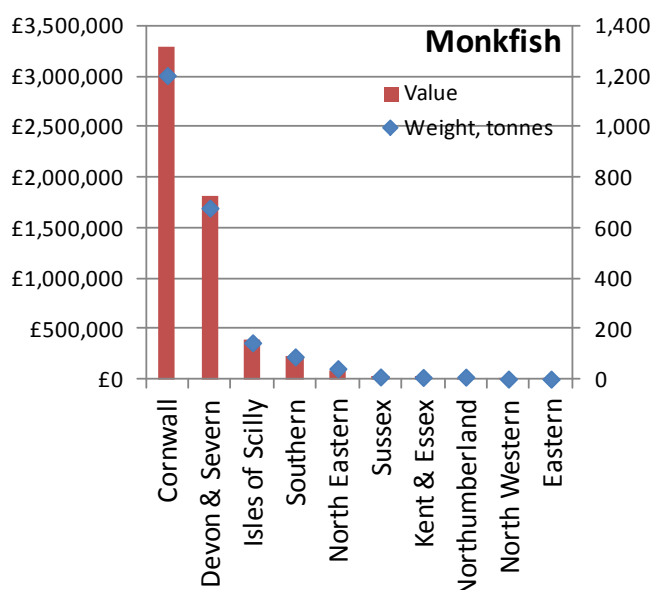
Species distribution



Species biological attributes			
Species	Monkfish/angler	Average age at maturity	4.5 yr
Reproductive strategy	Demersal egg layer	Average maximum age	24 yr
Length of larvae phase		Fecundity (No of eggs)	1 million
Movement of adults	Mobile	Average size at maturity	35 cm
Sediment type	Marine	Average maximum size	200 cm
Depth	Subtidal, 20-1000m	Trophic level	4.5

Monkfish landings

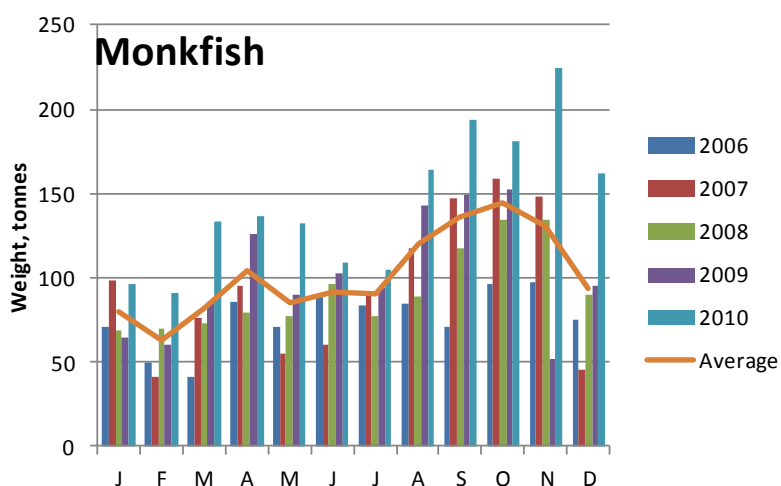
Total inshore landings		
Monkfish	Live weight, tonnes	Landed value
2006	939	£2,297,635
2007	1,144	£2,737,909
2008	1,126	£3,147,957
2009	1,230	£3,414,132
2010	1,739	£4,684,251



Monkfish landings from ICES rectangles that overlap IFCA districts have increased annually since 2006, with a significant increase in 2010 which had a total value of over £4.6 million, and 1,739 tonnes. Landings are dominated by the over 15m fleet. Key IFCA's are Cornwall and Devon and Severn.

Based on a five year average, beam trawls land the majority of the catch (58% by weight), followed by otter trawls (27%), gillnets (11%) and dredges (4%).

Landings occur throughout the year and on average peak during autumn.

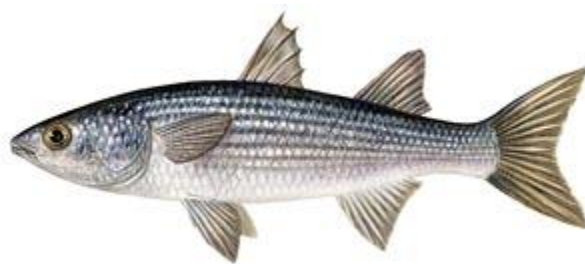


Key landing ports include:

- Newlyn
- Brixham
- Plymouth
- Looe
- Mevagissey
- Helford River
- North Shields
- River Fal - Falmouth
- Polperro
- Padstow

2.2.9 Mullet, grey

Liza ramada, *Liza aurata*
and *Chelon labrosus*



ICES stocks Not assessed at ICES level

MSC

assessments

Assessed: none

In Assessment: none

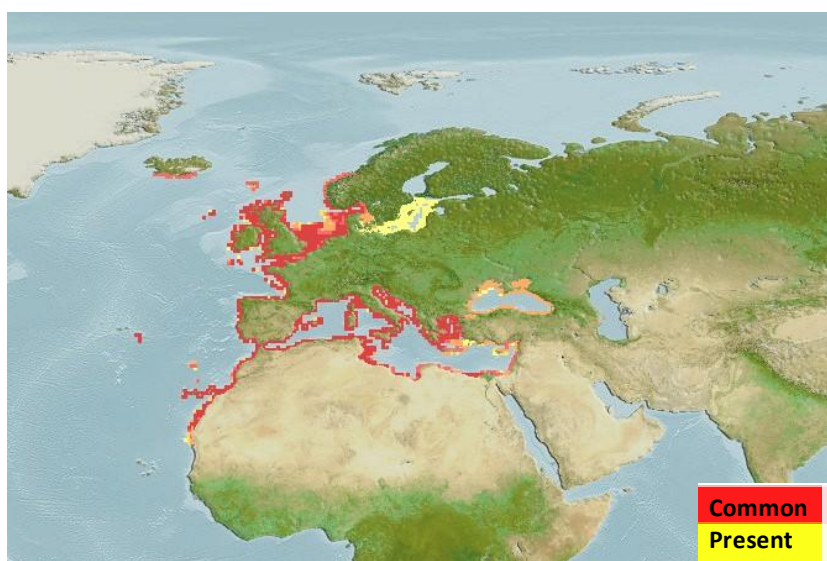
Withdrawn: none

The grey mullet is a demersal catadromous species usually found in shallow inshore waters or entering brackish lagoons, but rarely freshwater. They are found all around the coasts of Britain and Ireland especially southern Scotland and the English Channel.

Maturity is reached at a length of 25 cm, with adults growing up to 70 cm in length.

Grey mullet feed on small benthic organisms, detritus, and occasionally on insects and plankton. Reproduction takes place in the sea, from July to November. Oviparous, eggs are pelagic and non-adhesive.

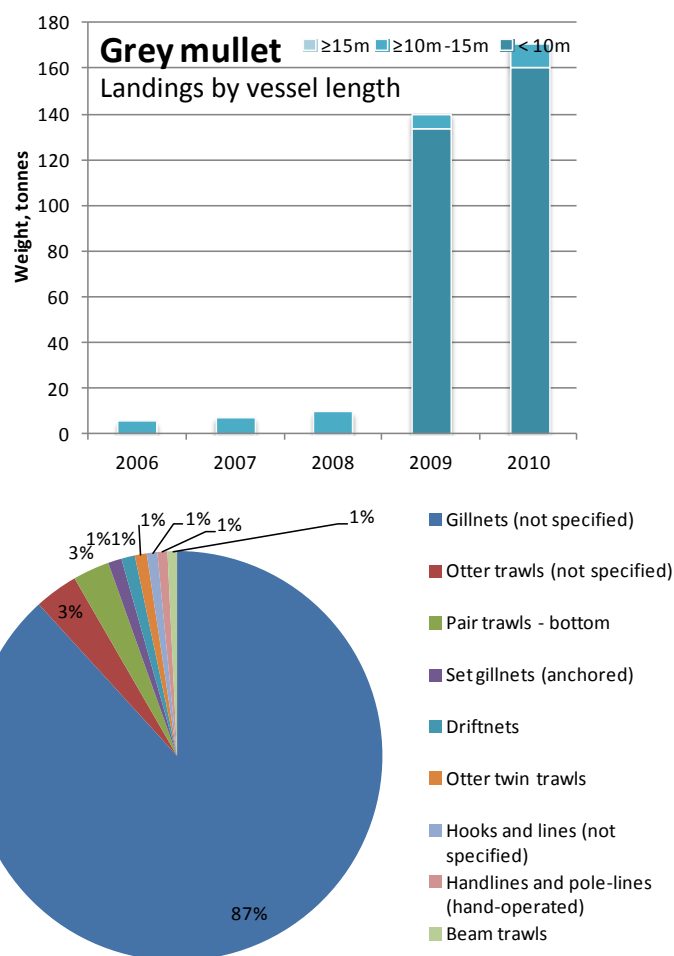
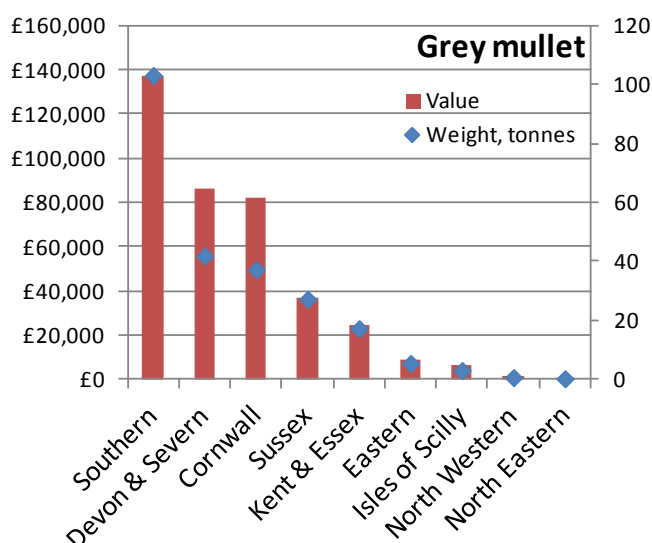
Species distribution



Species biological attributes			
Species	Mullet, grey	Average age at maturity	3 yr
Reproductive strategy	Broadcast spawners	Average maximum age	10 yr
Length of larvae phase	Between a week and two months	Fecundity (No of eggs)	100,000-1.5 million
Movement of adults	Mobile	Average size at maturity	25 cm
Sediment type	Marine/brackish. Pelagic-neritic	Average maximum size	70 cm
Depth	Subtidal, from 10m	Trophic level	2.2

Grey mullet landings

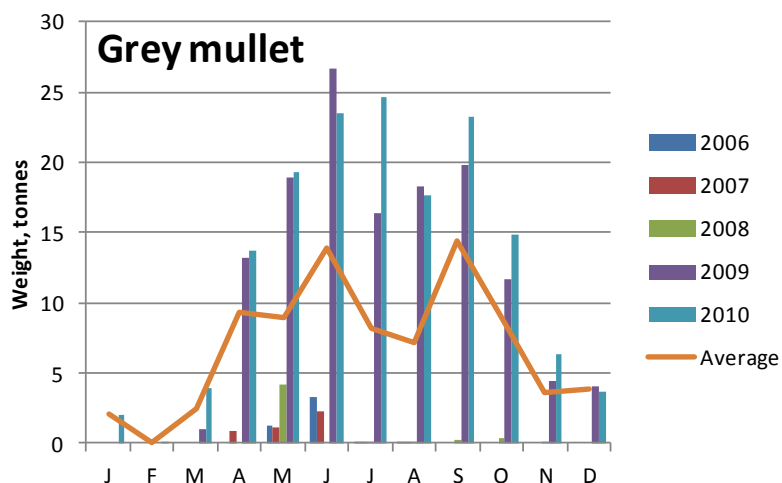
Total inshore landings		
Grey mullet	Live weight, tonnes	Landed value
2006	6	£5,478
2007	8	£6,529
2008	15	£30,229
2009	140	£187,837
2010	172	£270,804



Grey mullet landings from ICES rectangles that overlap IFCA districts were almost none existent from 2006-2008, but jumped to a value of ~£270,000 and 170 tonnes in 2009-2010. Landings by under 10m vessels dominate in 2009 and 2010.

Based on a five year average, gill nets land the majority of the catch (87% by weight), followed by otter trawls (7%) and gill nets (1%).

Landings generally occur from late spring through to end of autumn.



Key landing ports include:

- Poole
- Plymouth
- Portsmouth
- Shoreham
- Brixham
- Newhaven
- Christchurch
- Newlyn
- Lyme Regis
- Portland

2.2.10 Mullet, red

Mullus surmuletus



ICES stocks 2012 Striped red mullet in Subarea IV (North Sea) and Divisions VIId (Eastern English Channel) and IIIa (Skagerrak–Kattegat)

2011 Striped red mullet in the Northeast Atlantic

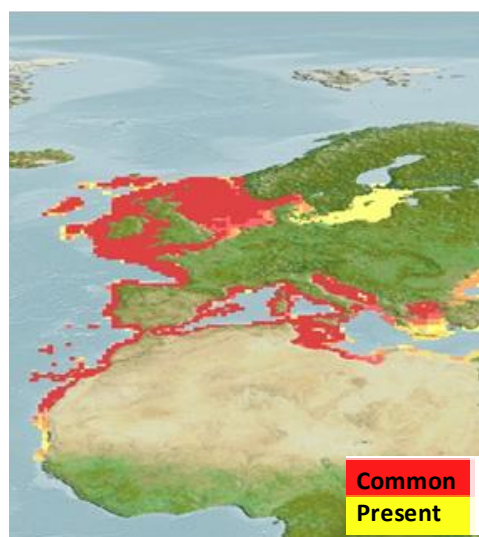
MSC assessments	Assessed: none
	In Assessment: none
	Withdrawn: none

Red mullet (sometimes called stripped red mullet) have a moderately elongated body up to 40cm in length, with a steep snout and are easily recognized by their two long chemosensory barbels that protrude from the chin (Miller, 1997). They have two dorsal fins which are spaced well apart and large fragile scales. Their colouration varies with depth, emotion and time of day but generally they are reddish to pink with three yellow strips along their sides (Lythgoe & Lythgoe, 1971).

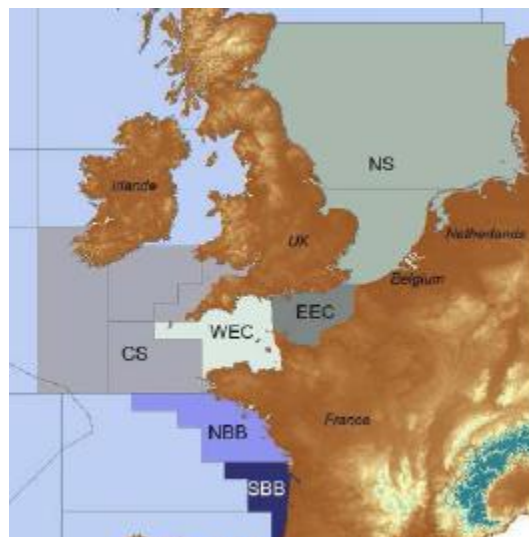
Red mullet breed from May until July in depths of 10-55m, the larvae hatch out of the eggs at a size of 2.8mm and both the egg and larval phase are planktonic. The young red mullet live in the open water; they are silvery blue in colour which provides camouflage and they drift with the plankton until they are 5cm in length. Following this they take up their bottom dwelling existence (Vause, 2009).

In general red mullet migrate offshore as they grow larger. It is likely that as adults they perform seasonal migrations, coming into shallower inshore areas to breed (Vause, 2009). Red mullet are a very soft fish with delicate flesh and scales; they usually suffer damage during capture and are mostly dead upon hauling.

Species distribution



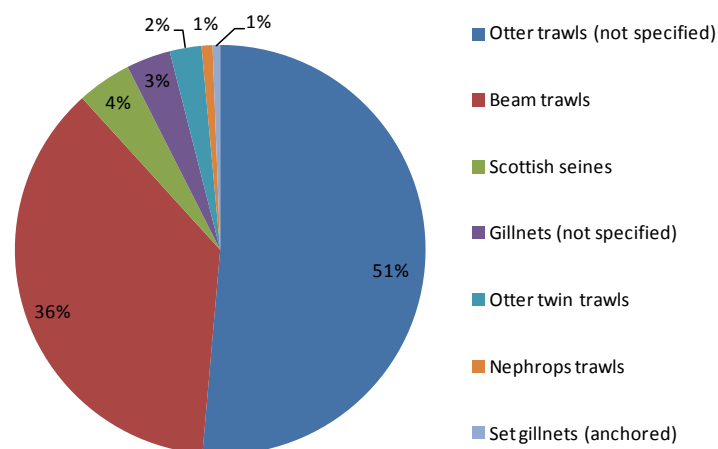
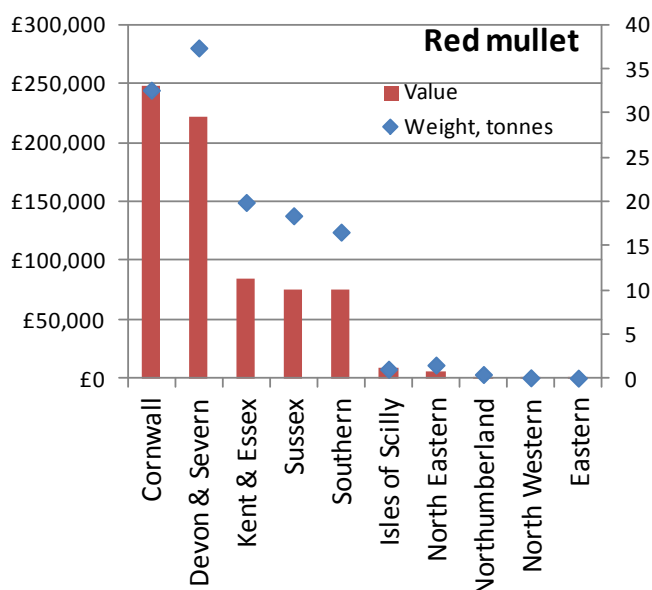
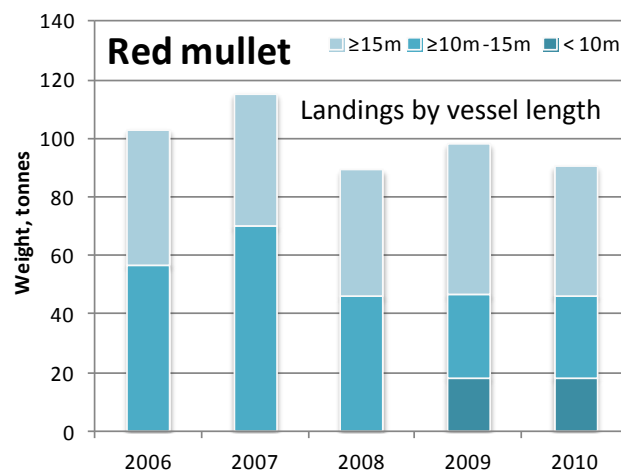
Red mullet geographic sectors (ICES, 2012)



Species biological attributes			
Species	Mullet, red	Average age at maturity	1 yr
Reproductive strategy	Broadcast spawners	Average maximum age	10 yr
Length of larvae phase		Fecundity (No of eggs)	100,000-130,000
Movement of adults	Migratory	Average size at maturity	16.4 cm
Sediment type	Marine, demersal	Average maximum size	40 cm
Depth	Subtidal, 5-409m	Trophic level	3.4

Red mullet landings

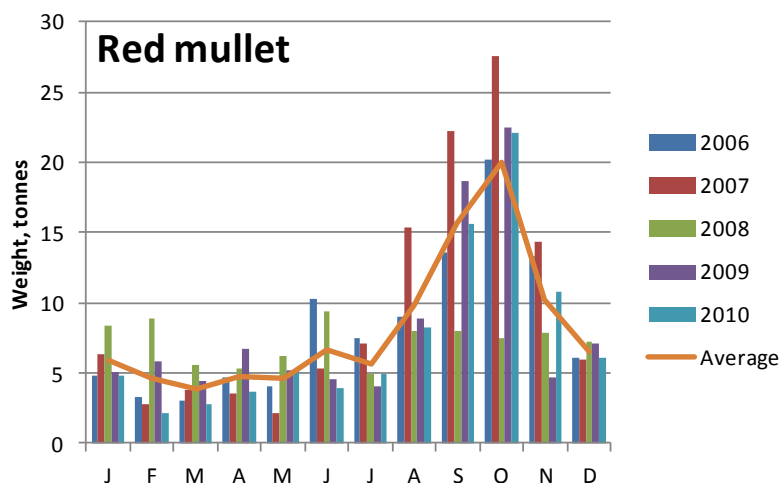
Total inshore landings		
Red Mullet	Live weight, tonnes	Landed value
2006	104	£348,061
2007	119	£287,134
2008	90	£337,759
2009	99	£552,163
2010	93	£517,598



Red mullet landings from ICES rectangles that overlap IFCA districts have remained relatively consistent since 2006 with slight drop across 2007-2008. A total value of over ~£517,000 and 93 tonnes were landed from this area in 2010. Key IFCA's are Cornwall, Devon and Severn, Kent and Essex, Sussex and Southern.

Based on a five year average, otter trawls land the majority of the catch (54% by weight), followed by beam trawls (36%), Scottish seine (4%) and gillnets (4%).

Landings occur throughout the year but with clear peaks during autumn, and in particular during October.



Key landing ports include:

- Brixham
- Newlyn
- Plymouth
- Newhaven
- Looe
- Shoreham
- Mevagissey
- Exmouth
- North Shields
- Whitby

2.2.11 Pollack

Pollachius pollachius



ICES stocks [2012 Pollack in Subarea IV and Division IIIa](#)

[2012 Pollack in Subareas VI and VII \(Celtic Sea and West of Scotland\)](#)

MSC assessments	Assessed: none
	In Assessment: none
	Withdrawn: none

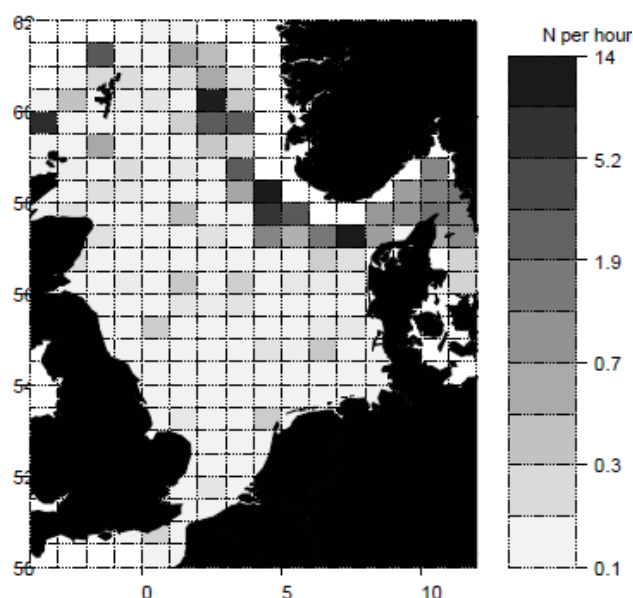
Pollack can be found in inshore waters but also down to 200 m depth, in areas with hard bottoms. Juveniles are pelagic, spending 2-3 years near the coast including rocky areas, kelp beds, sandy shores and estuaries, either solitary or in small shoals. It is both an offshore pelagic or coastal benthic species found on the sea bed around rocks, wrecks and kelp forests. Pollack is a large fish up to 130 cm in length and weighing up to 14 kg. It has a relatively large mouth with a protruding lower jaw, no barbell and conspicuously large yellow eyes. This is both a solitary and shoaling species, more likely to shoal during spawning events. Spawning up to ca 100 meters depth between January and April, with the greatest intensity during March (Wheeler, 1969).

Pollack feed on deep sea prawns, herring, anchovy, sprat and other open water fish, and can be observed hanging above or within kelp forests and wrecks (Rowley, 2008).

Species distribution



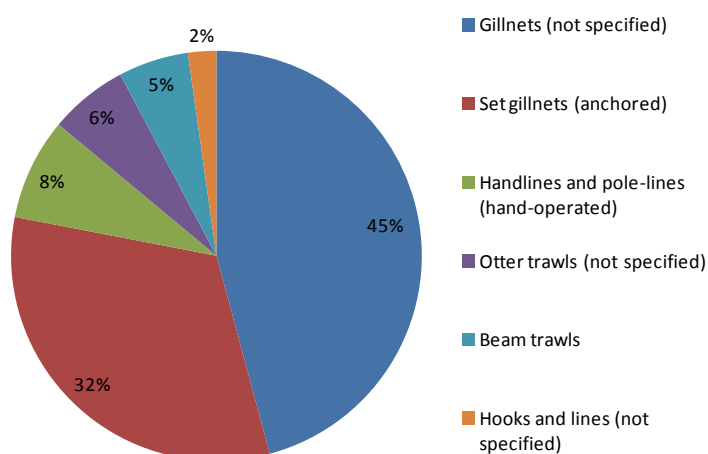
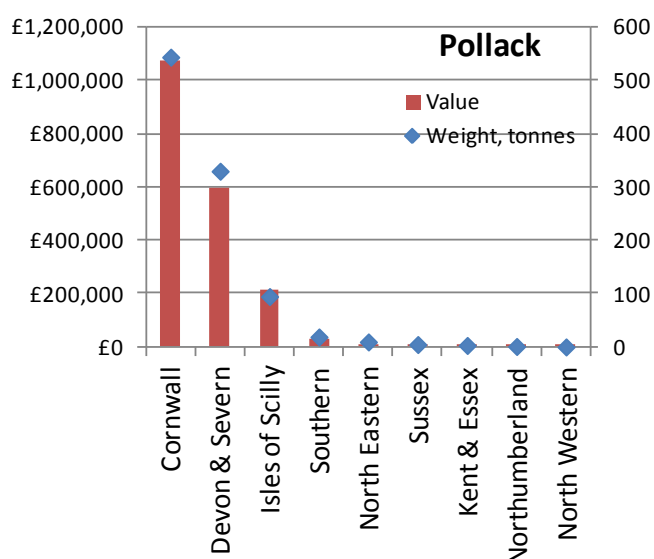
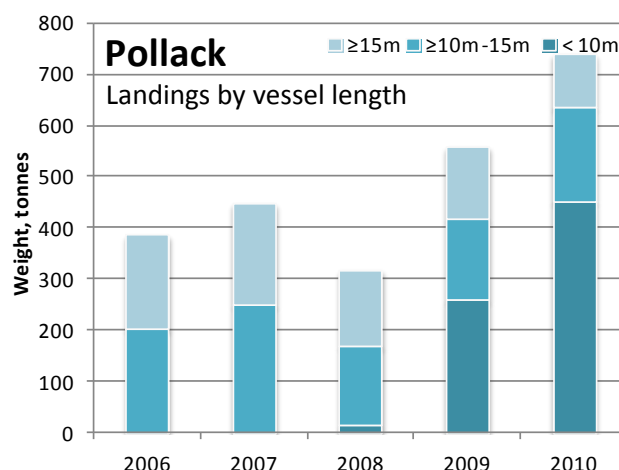
Distribution of Pollack in North Sea (number caught per hour) (ICES, 2012)



Species biological attributes			
Species	Pollack	Average age at maturity	2 yr
Reproductive strategy	Broadcast spawners	Average maximum age	25 yr
Length of larvae phase		Fecundity (No of eggs)	200,000-8 million
Movement of adults	Migratory	Average size at maturity	39 cm
Sediment type	Marine, benthopelagic, 40-200m	Average maximum size	130 cm
Depth	Subtidal, 37-364 m	Trophic level	4.2

Pollack landings

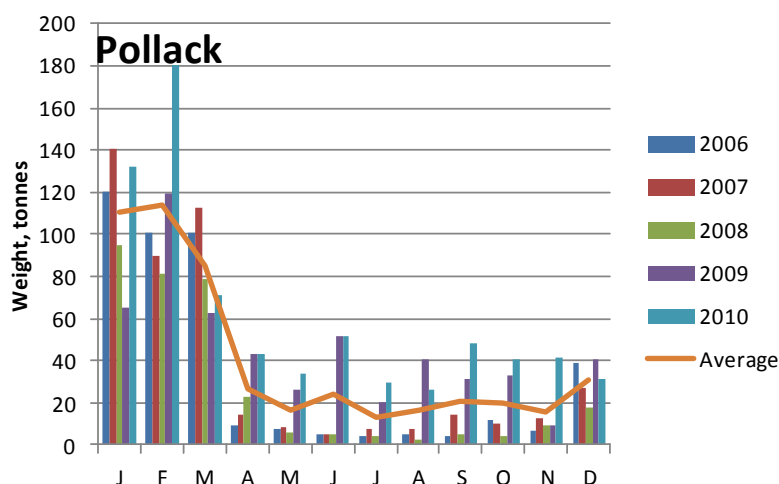
Total inshore landings		
Pollack	Live weight, tonnes	Landed value
2006	457	£638,131
2007	471	£679,261
2008	363	£727,024
2009	601	£1,306,517
2010	761	£1,515,421



Pollack landings from ICES rectangles that overlap IFCA districts have increased significantly since 2006, with a total value of over £1.5 million, and 761 tonnes landed in 2010. Landings by under 10m vessels dominate in 2009 and 2010, and are responsible for much of the observed increase since 2008.

Based on a five year average, gill nets land the majority of the catch (77% by weight), followed by handline and pole-lines (8%), beam trawls (5%) and hooks and lines (2%).

Landings predominately occur from January to March, with small quantities taken throughout the rest of the year.



Key landing ports include:

- Newlyn
- Mevagissey
- Brixham
- Plymouth
- Looe
- Padstow
- Dartmouth
- Hayle
- Newquay
- Helford River

2.2.12 Pouting

Trisopterus luscus



ICES stocks Not assessed at ICES level

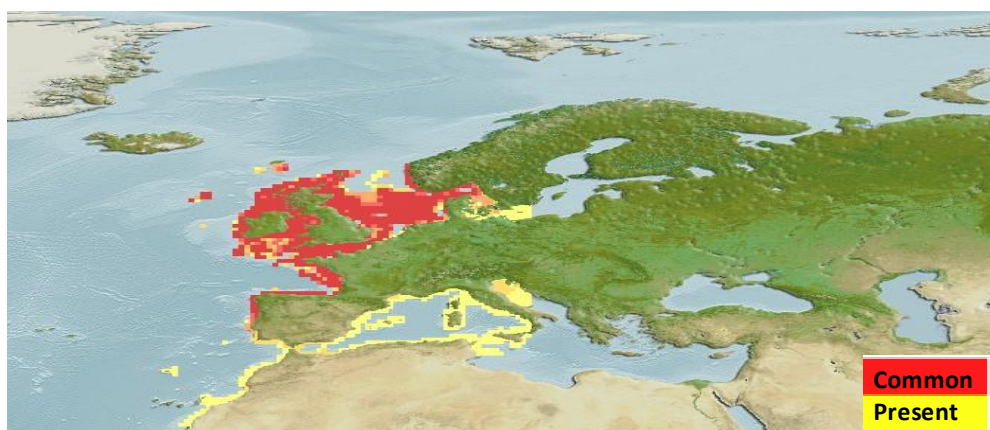
MSC assessments	Assessed: none
	In Assessment: none
	Withdrawn: none

Pouting (also known as bib, pout whiting or pout), is a member of the cod family and is found along the European coast.

Pouting is a short-lived species common in British inshore waters, particularly in rocky areas where large schools form around wrecks and reefs. Pouting are gregarious fish; immature ones often occur in large schools. Adults live mostly on the outer shelf, but move inshore to depths of 50 m or less to spawn in March to April.

Can reach 46 cm, but more usually between 20- 32 cm. The maximum reported age is four years. It feeds on benthic crustaceans, but also on small fish and molluscs. It is mature at 21 to 25 cm and at an age of 1-2 years (Seafish, 2011).

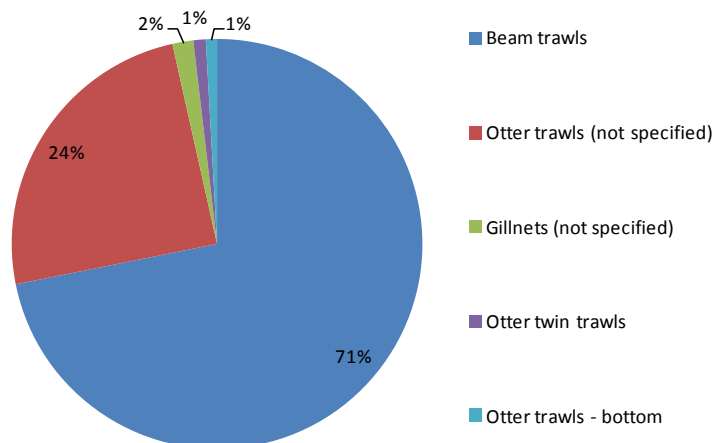
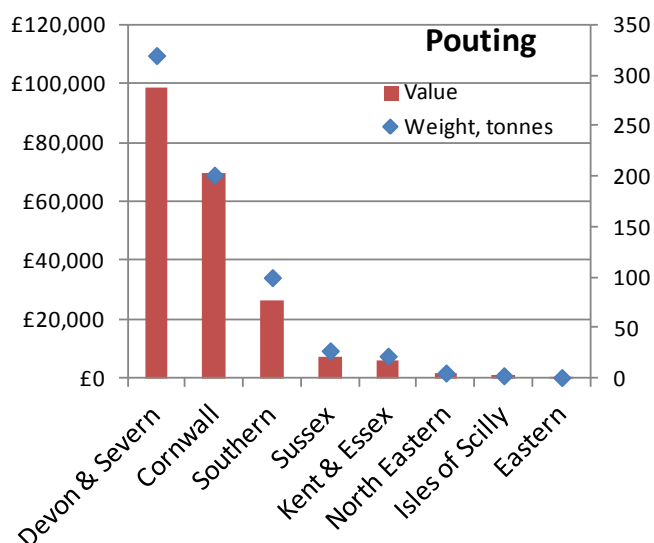
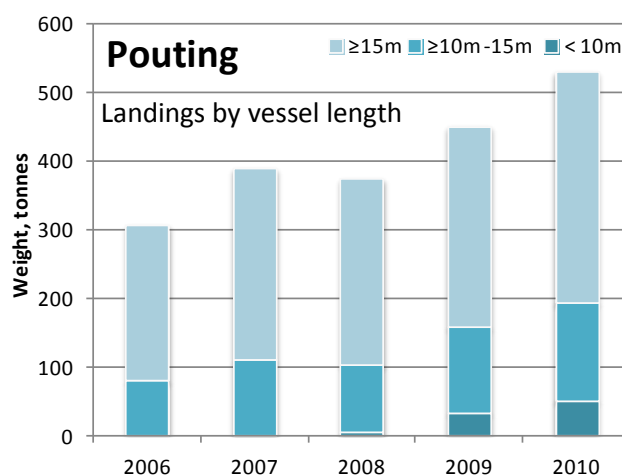
Species distribution



Species biological attributes			
Species	Pouting	Average age at maturity	1-2 yr
Reproductive strategy	Broadcast Spawners	Average maximum age	4 yr
Length of larvae phase		Fecundity (No of eggs)	200,000-800,000
Movement of adults	Migratory	Average size at maturity	21.6cm
Sediment type	Marine, benthipelagic	Average maximum size	46cm
Depth	Subtidal, 30-100m	Trophic level	3.7

Pouting landings

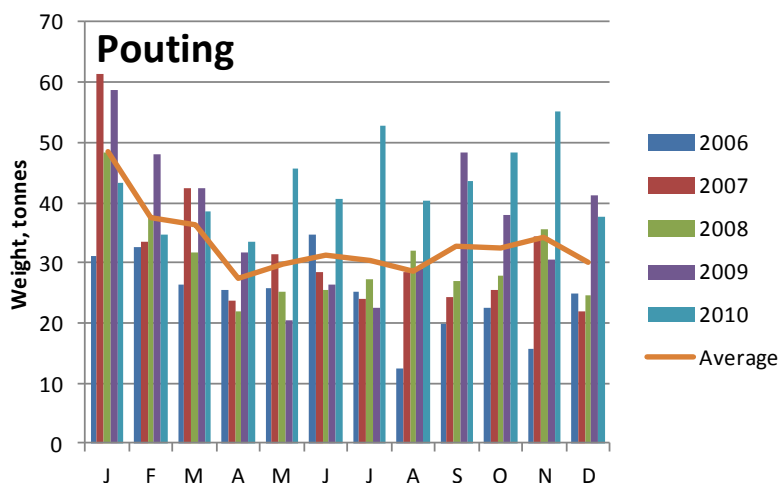
Total inshore landings		
Pouting (Bib)	Live weight, tonnes	Landed value
2006	313	£68,168
2007	399	£115,507
2008	383	£124,030
2009	454	£121,686
2010	537	£161,305



Pouting landings from ICES rectangles that overlap IFCA districts have increased steadily since 2006, with a total value of ~£160,000 and 537 tonnes landed in 2010. Landings are dominated by the over 15m fleet.

Based on a five year average, beam trawls land the majority of the catch (71% by weight), followed by otter trawls (26%) and gillnets (1%).

Landings occur throughout the year with no obvious peaks.



Key landing ports include:

- Brixham
- Plymouth
- Newlyn
- Looe
- Newhaven
- Shoreham
- Mevagissey
- Whitby
- Lyme Regis
- Portsmouth

2.2.13 Saithe

Pollachius virens



ICES stocks 2012 Saithe in Subarea IV (North Sea), Division IIIa (Skagerrak), and Subarea VI (West of Scotland and Rockall)

MSC assessments

Assessed: DFPO Denmark North Sea & Skagerrak saithe; Euronor saithe ; Germany North Sea saithe trawl; Norway North East Arctic saithe; Norway North Sea saithe; Scapêche and Compagnie de Pêche de St. Malo saithe; UK Fisheries/DFFU/Doggerbank Group saithe; UK Fisheries/DFFU/Doggerbank Northeast Arctic cod, haddock and saithe

In Assessment: Faroe Island saithe; Scottish Fisheries Sustainable Accreditation Group (SFSAG) saithe

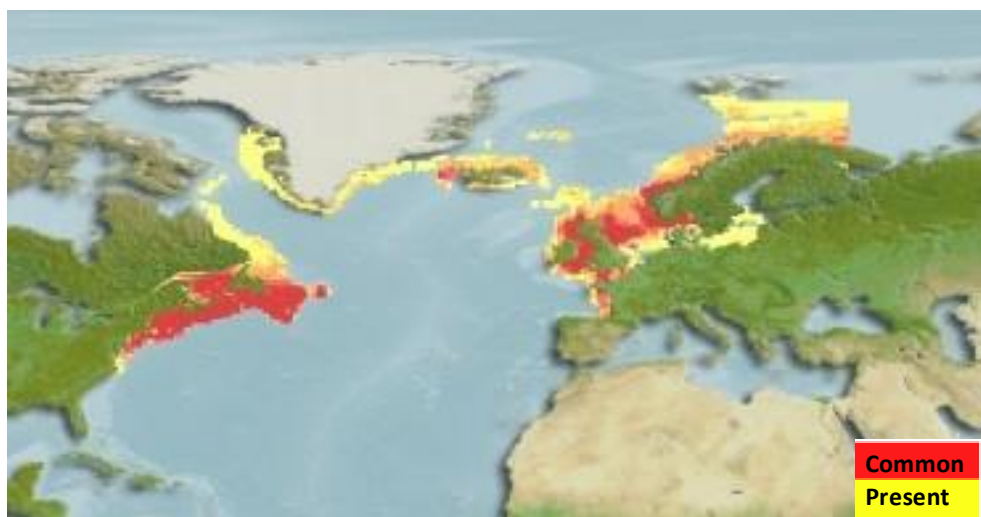
Withdrawn: none

An active, gregarious fish occurring inshore and offshore waters. Usually enters coastal waters in spring, particularly in rocky areas and at reefs, and returns to deeper waters in winter. It is often commonly named coalfish due to the dark colour of the flesh.

Smaller fish in inshore waters feed on small crustaceans (copepods, amphipods, euphausiids) and small fish, while larger fish prey predominantly upon fishes.

Fish mature between five to seven years and spawn along coastal banks (Luna, 2012), mainly in February when the water temperature is 6-10 °C. Following spawning, larvae settle in inshore areas and migrate to the coastal areas at 2-4 years of age.

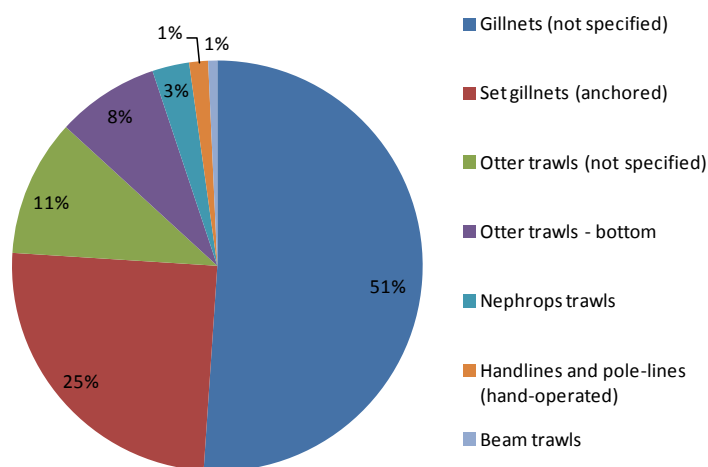
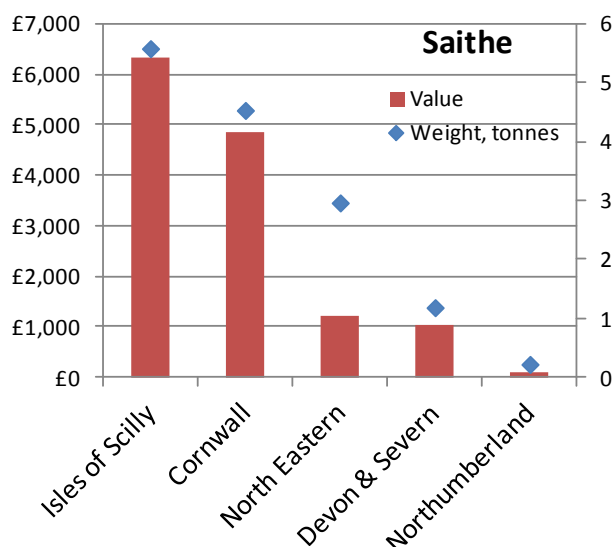
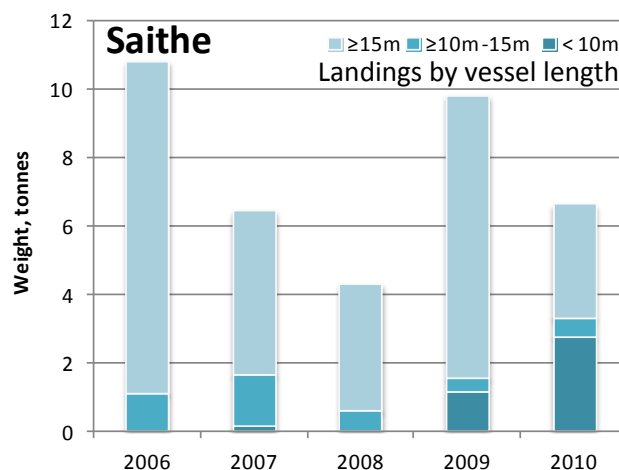
Species distribution



Species biological attributes			
Species	Saithe	Average age at maturity	2 yr
Reproductive strategy	Broadcast spawners	Average maximum age	25 yr
Length of larvae phase		Fecundity (No of eggs)	200,000-8 million
Movement of adults	Migratory	Average size at maturity	39.1 cm
Sediment type	Marine, demersal	Average maximum size	130 cm
Depth	Subtidal, 37-364 m	Trophic level	4.4

Saithe landings

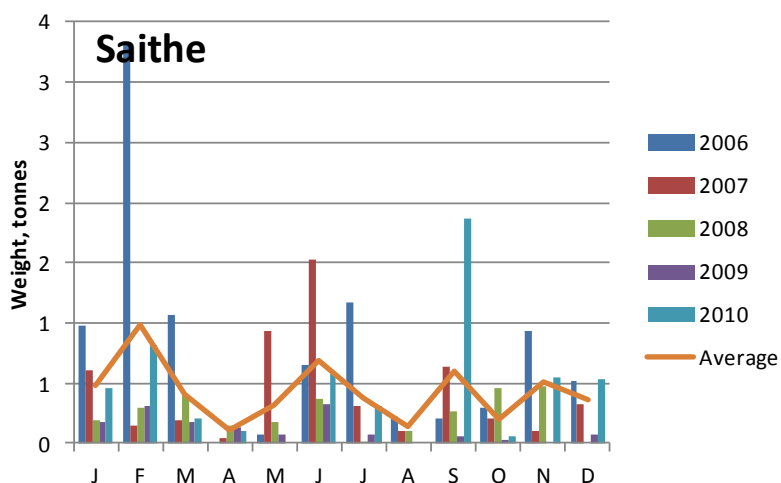
Total inshore landings		
Saithe	Live weight, tonnes	Landed value
2006	14	£12,186
2007	8	£4,708
2008	7	£5,723
2009	18	£14,431
2010	13	£12,433



Saithe landings from ICES rectangles that overlap IFCA districts have fluctuated since 2006, with peaks in 2006 and 2009 and a total value of ~£12,000 and 13 tonnes landed in 2010. Landings are dominated by the over 15m fleet, although have increased by the under 10m fleet in 2010.

Based on a five year average, gill nets land the majority of the catch (76% by weight), followed by otter trawls (22%), handline and pole-line (2%) and beam trawls (1%).

Small quantities of landings occur throughout the year.



Key landing ports include:

- Newlyn
- Whitby
- North Shields
- Brixham
- Mevagissey
- Blyth
- Hartlepool
- Amble
- Plymouth
- Looe

2.2.14 Whiting

Merlangius merlangus



ICES stocks 2012 Whiting in Division VIIa (Irish Sea)
 2012 Whiting in Divisions VIIe–k
 2012 Whiting in Subarea IV (North Sea) and Division VIId (Eastern Channel)

MSC assessments

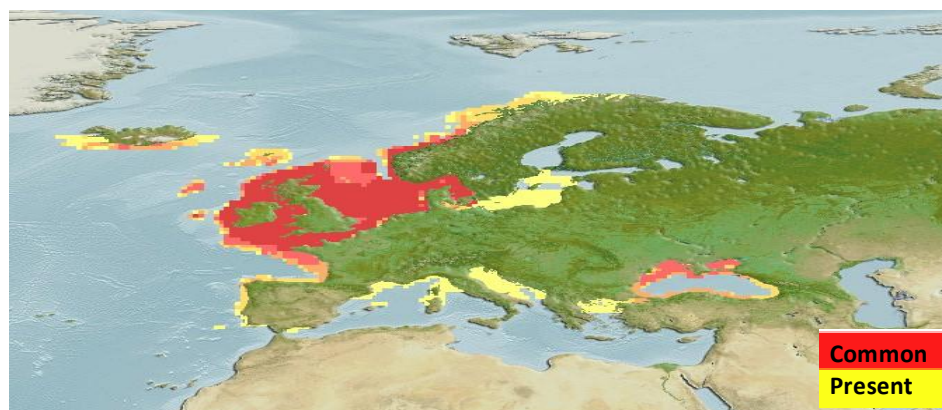
Assessed: none
 In Assessment: none
 Withdrawn: none

The whiting *Merlangius merlangus* is a cod-like fish. It has an elongated body with a small head and a pointed snout. It can grow up to 70 cm in length.

Found off western Scotland, south-east England and the English Channel, and in the Irish Sea off the coasts of east England, Wales and Ireland.

The whiting is a benthopelagic species usually found from 30 to 100 m, mainly on mud and gravel bottoms, but also on sand and rock. Feed on shrimps, crabs, mollusks, small fish, polychaetes and cephalopods. Migrate to the open sea only after the first year of life. Eggs are pelagic. Larvae and juveniles are associated with jellyfish. Upon maturity, small chin barbel characteristic of juveniles disappear. Whiting spawn in batches (Prévost, 2005).

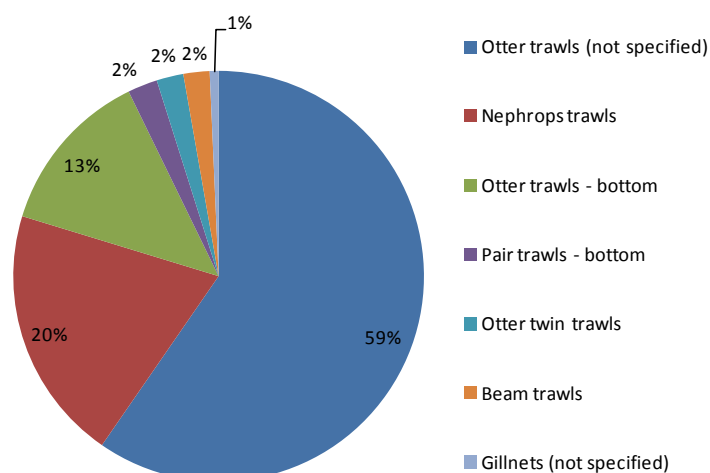
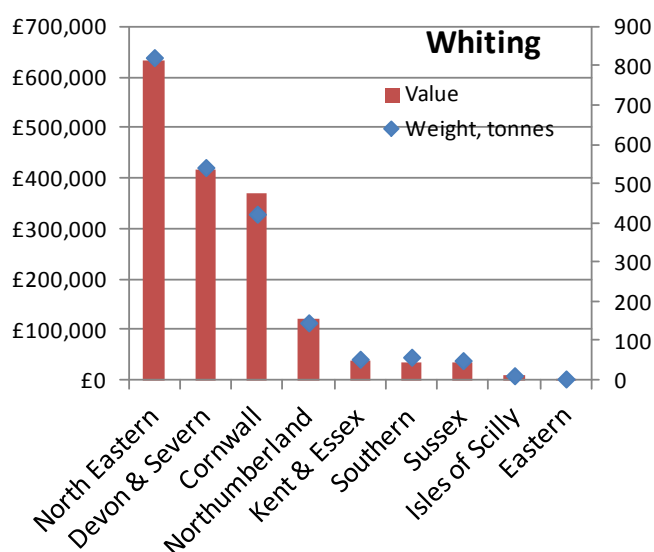
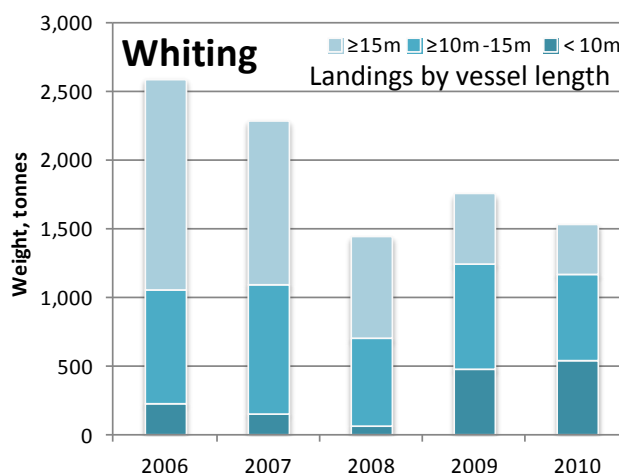
Species distribution



Species biological attributes			
Species	Whiting	Average age at maturity	2 yr
Reproductive strategy	Broadcast spawners	Average maximum age	20 yr
Length of larvae phase		Fecundity (No of eggs)	100,000-1 million
Movement of adults	Migratory	Average size at maturity	29 cm
Sediment type	Marine, benthopelagic	Average maximum size	70 cm
Depth	Subtidal, 10-200m	Trophic level	4.4

Whiting landings

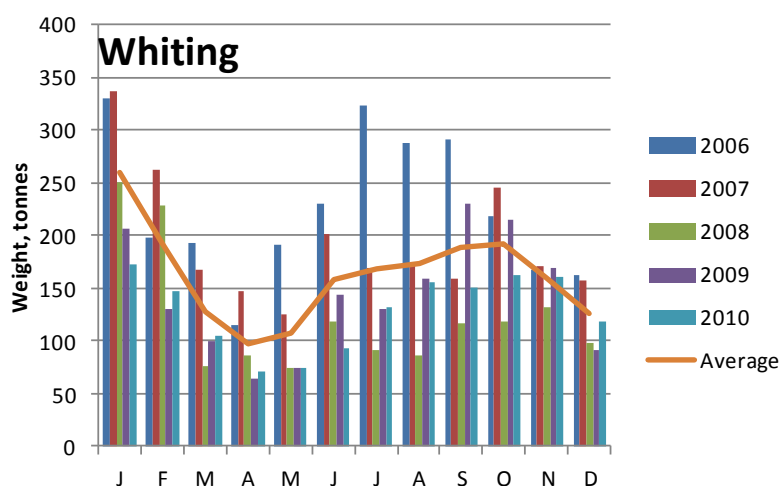
Total inshore landings		
Whiting	Live weight, tonnes	Landed value
2006	2,829	£1,615,486
2007	2,493	£1,743,757
2008	1,567	£1,068,437
2009	1,809	£1,116,995
2010	1,567	£1,196,760



Whiting landings from ICES rectangles that overlap IFCA districts have dropped since 2007, with a total value of over £1.1 million, and 1,567 tonnes landed in 2010. Key IFCAs include North Eastern, Devon and Severn and Cornwall.

Based on a five year average, otter trawls land the majority of the catch (96% by weight), followed by beam trawls (2%) and gillnets (1%).

Landings occur throughout the year and on average peak during January.



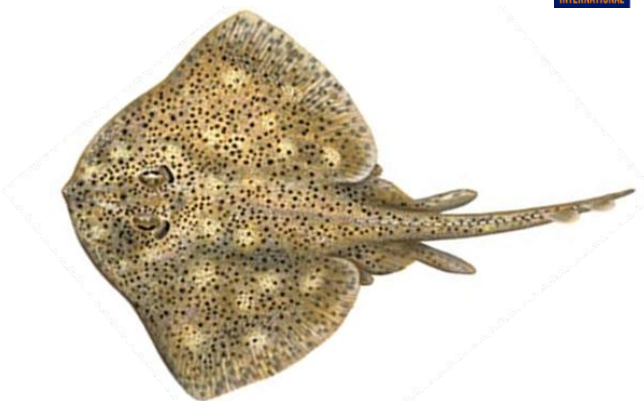
Key landing ports include:

- North Shields
- Whitby
- Blyth
- Scarborough
- Brixham
- Amble
- Plymouth
- Looe
- Newlyn
- Hartlepool

2.3 Elasmobranch

2.3.1 Blonde ray

Raja brachyura



ICES stocks Not assessed at ICES level

MSC assessments

Assessed: none

In Assessment: [Bristol Channel ray \(including thornback ray, blonde ray, small eyed ray, sandy ray, spotted ray and cuckoo ray\)](#)

Withdrawn: none

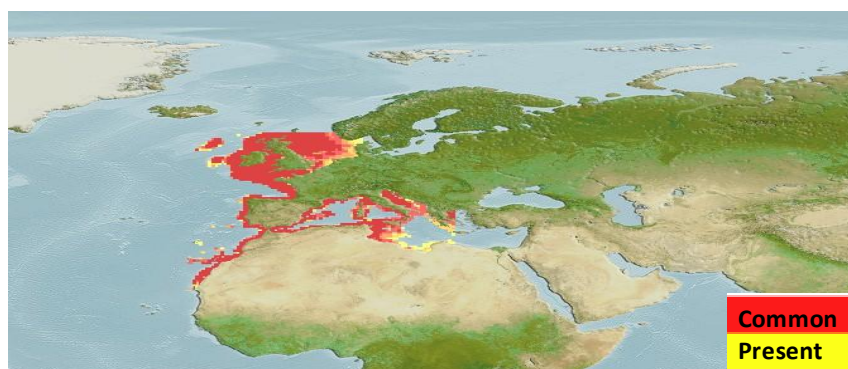
The disc of the blonde ray is quadrangular and brownish in colour (CFB Ireland, 2003). The back is covered in small, dark spots that extend to the very edge of the wings, distinguishing it from the Spotted Ray, *Raja montagui*, on which the spots stop short of the very margins of the fins. The Blonde ray commonly has larger, much lighter spots on its back, also absent from the Spotted Ray

Both male and female blonde rays grow to a maximum total length of approximately 120cm and mature at approximately 80- 90cm. It is thought that the blonde ray reaches a maximum age of around 15 years (Gallagher *et al.*, 2005). Females lay between 40 and 140 eggs a year between February and August (Shark Trust, 2008). The incubation period is approximately 7 months

The blonde ray is a bottom dwelling species that prefers sandy and muddy areas. It has been recorded down to 900m and can most commonly be found at depths around 350m. As with many elasmobranch species, shallower coastal waters are used as nursery areas leading to a greater number of rays found near shore being juveniles

The blonde ray is commercially important and is caught and landed across its range (Catchpole *et al.*, 2007). It is sometimes targeted in areas where it is locally abundant but is normally taken as bycatch in mixed demersal fisheries.

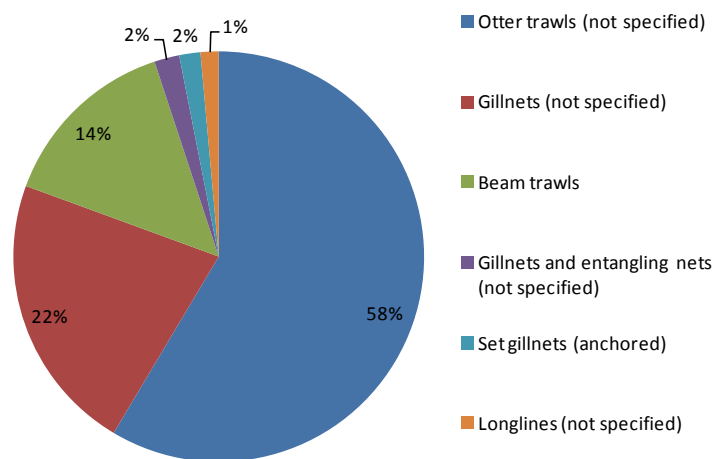
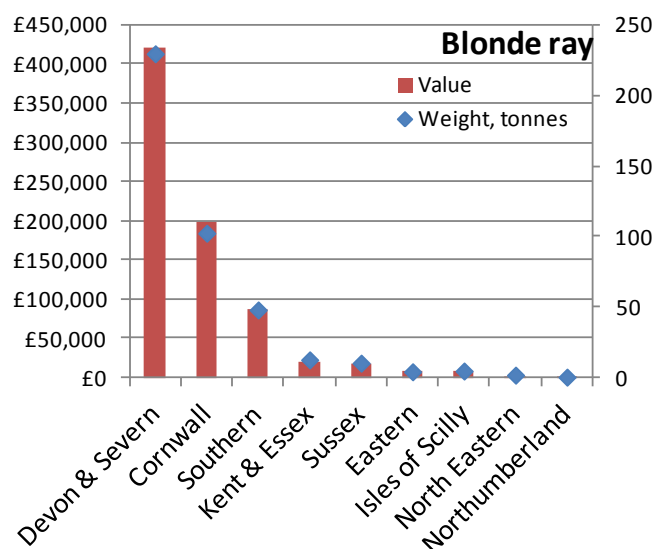
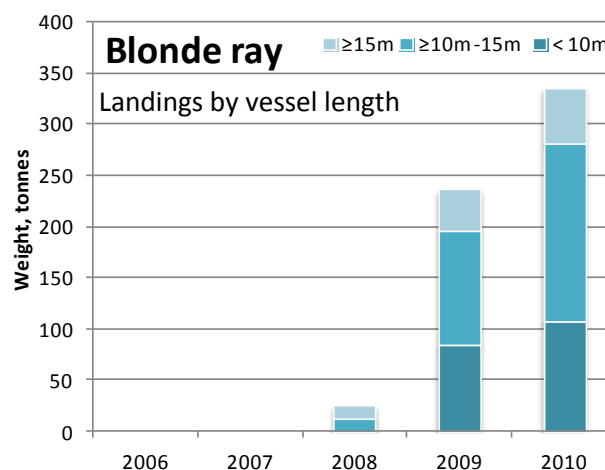
Species distribution



Species biological attributes			
Species	Blonde ray	Average age at maturity	4-5 yr
Reproductive strategy	Demersal egg layer	Average maximum age	15 yr
Length of larvae phase	7 months	Fecundity (No of eggs)	40-140
Movement of adults	Mobile	Average size at maturity	80cm
Sediment type	mud, sand and gravel bottoms, rarely on rougher bottoms	Average maximum size	120 cm
Depth	Subtidal down to 900m	Trophic level	4

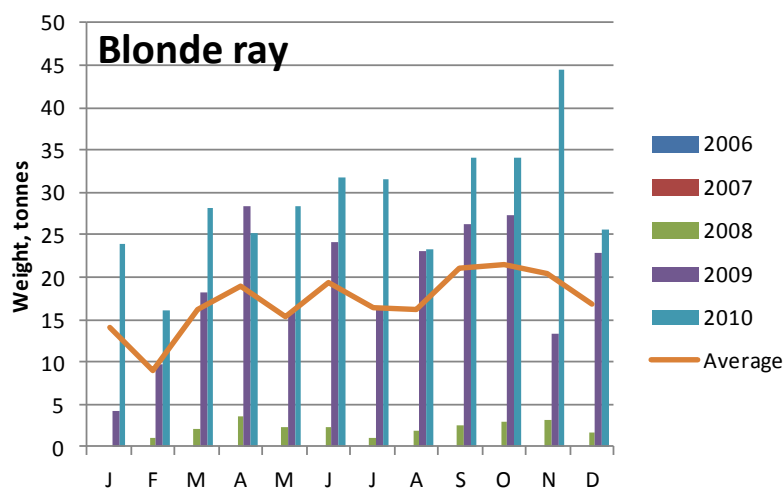
Blonde ray landings

Total inshore landings		
Blonde Ray	Live weight, tonnes	Landed value
2008	90	£98,449
2009	261	£439,951
2010	365	£671,417



In 2009 the EC introduced a regulation (43/2009, which came into force on 16th January 2009), requiring all Member States to record landings of five species of rays separately, as opposed to amalgamating them into a single 'skates and rays' category. This is of relevance to the following five species of ray: cuckoo ray (*Leucoraja naevus*), thornback ray (*Raja clavata*), blonde ray (*Raja brachyura*), spotted ray (*Raja montagui*) and starry ray (*Amblyraja radiata*). For this reason very little landings data is available in 2008 on a species basis and none are available from 2006-2007 when all ray landings were recorded under 'skates and rays'. It is also possible that 2009 data under-represent landings by species as fishermen become more adept at identification.

Data for 2009-2010 do not represent a sufficient time series to identify trends, although it can be seen that all vessels size categories land this species, with the most important IFCA's being Devon and Severn and Cornwall. Landings are predominately by otter trawls (58% by weight), followed by gill nets (22%) and beam trawls (14%).

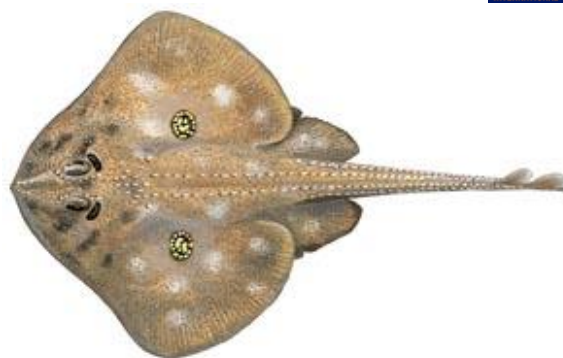


Key landing ports include:

- Newlyn
- Ilfracombe
- Brixham
- Plymouth
- Appledore
- Salcombe
- Bideford
- Shoreham
- Padstow
- Poole

2.3.2 Cuckoo ray

Leucoraja naevus



ICES stocks Not assessed at ICES level

MSC assessments

Assessed: none

In Assessment: [Bristol Channel ray \(including thornback ray, blonde ray, small eyed ray, sandy ray, spotted ray and cuckoo ray\)](#)

Withdrawn: none

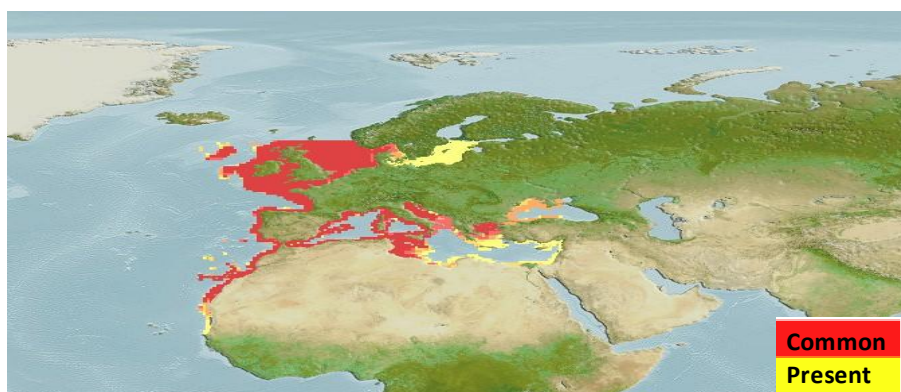
The cuckoo ray is easily identified by the black eye-spot that is present on each pectoral fin. These are large and marbled with yellow stripes making them extremely distinctive. The rest of the dorsal surface of the disc is light grey to brown and the ventral surface is white.

The cuckoo ray is a bottom dwelling species that is most commonly encountered around 200m (655ft), but can be found as shallow as 12m (40ft) or as deep as 290m.

The cuckoo ray reaches maturity at a length of around 60cm and an age of 4 to 5 years, and is known to mate throughout the year (Vaz *et al.*, 2006). It lays between 70 and 150 eggs a year which are deposited in sandy or muddy substrates (Luna, 2009). The embryos take approximately eight months to develop and the hatchlings measure around 12cm in length (Serena, 2005). Juveniles congregate further offshore than most skate and ray young and are particularly abundant in the western Irish Sea and northern St. Georges Channel (Ellis *et al.*, 2005).

There is no targeted fishery for the cuckoo ray although it is an important bycatch species in mixed demersal fisheries throughout its range (Gibson *et al.*, 2006).

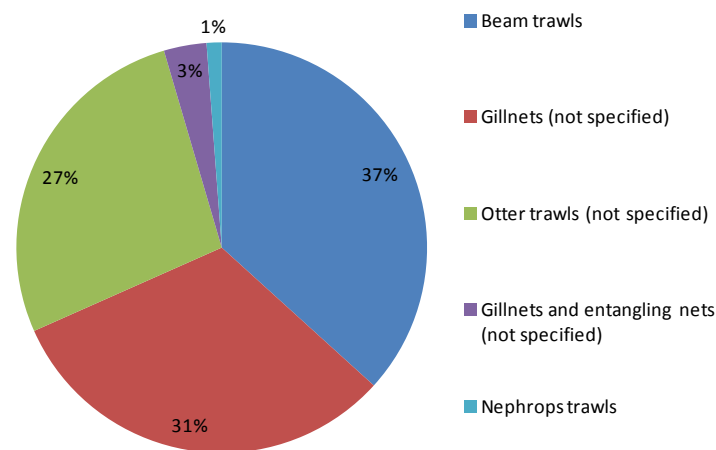
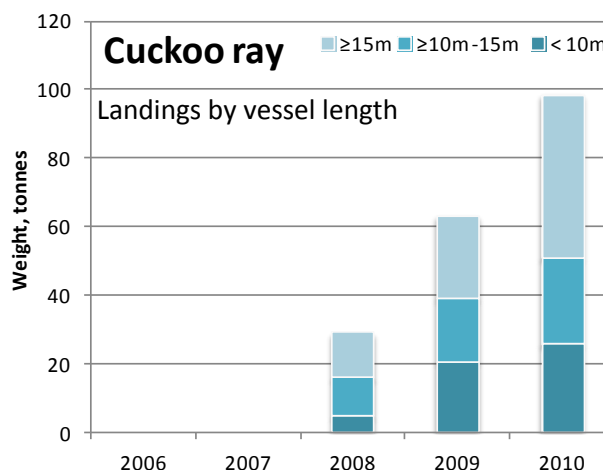
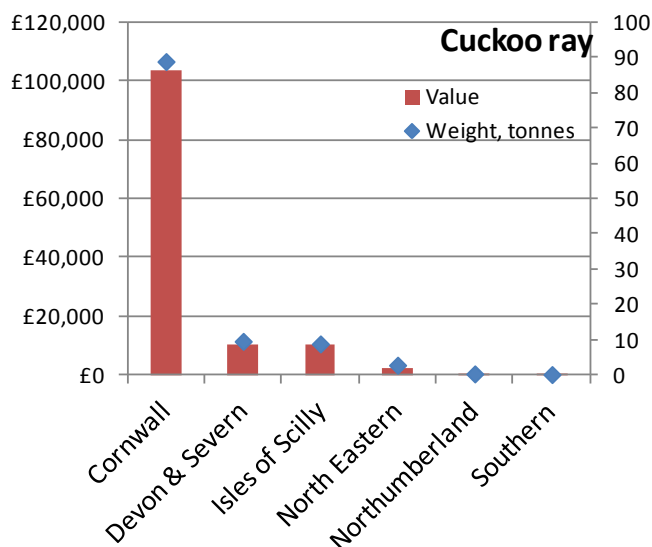
Species distribution



Species biological attributes			
Species	Cuckoo ray	Average age at maturity	4-5 yr
Reproductive strategy	Demersal egg layer	Average maximum age	15 yr
Length of larvae phase	8 months	Fecundity (No of eggs)	70-150
Movement of adults	Mobile	Average size at maturity	60 cm
Sediment type	mud, sand and gravel bottoms, rarely on rougher bottoms	Average maximum size	71cm
Depth	Subtidal, 12-290m	Trophic level	3.9

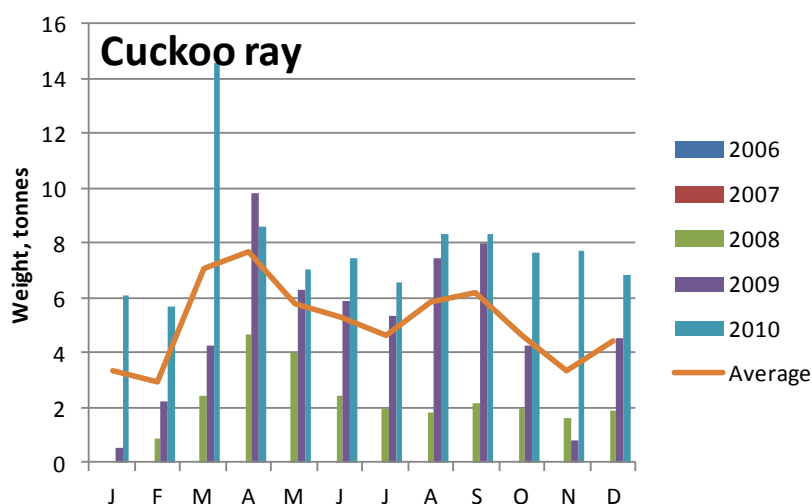
Cuckoo ray landings

Total inshore landings		
Cuckoo Ray	Live weight, tonnes	Landed value
2008	31	£29,809
2009	66	£70,399
2010	102	£116,739



In 2009 the EC introduced a regulation (43/2009, which came into force on 16th January 2009), requiring all Member States to record landings of five species of rays separately, as opposed to amalgamating them into a single 'skates and rays' category. This is of relevance to the following five species of ray: cuckoo ray (*Leucoraja naevus*), thornback ray (*Raja clavata*), blonde ray (*Raja brachyura*), spotted ray (*Raja montagui*) and starry ray (*Amblyraja radiata*). For this reason very little landings data is available in 2008 on a species basis and none are available from 2006-2007 when all ray landings were recorded under 'skates and rays'. It is also possible that 2009 data under-represent landings by species as fishermen become more adept at identification.

Data for 2009-2010 do not represent a sufficient time series to identify trends, although it can be seen that all vessels size categories land this species, with the most important IFCA area being Cornwall. Landings are predominately by beam trawls (37% by weight), followed by gill nets (34%) and otter trawls (28%).

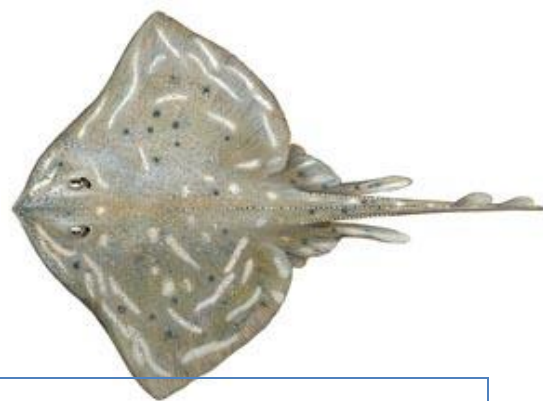


Key landing ports include:

- Newlyn
- Helford River
- Brixham
- Plymouth
- River Fal - Falmouth
- Cadgwith
- North Shields
- Hartlepool
- Mevagissey
- Newquay

2.3.3 Small eyed ray

Raja microocellata



ICES stocks Not assessed at ICES level

MSC assessments

Assessed: none

In Assessment: Bristol Channel ray (including thornback ray, blonde ray, small eyed ray, sandy ray, spotted ray and cuckoo ray)

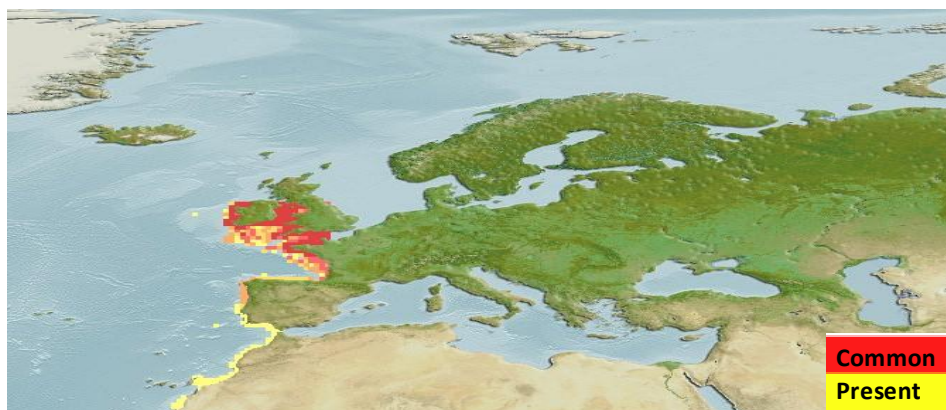
Withdrawn: none

The small-eyed ray gets its name from its conspicuously small eyes, surrounded by small orbital thorns. The upper surface of the disc is predominantly spiny with the exception of the centre and rear third of the pectoral fins which are smoother. Along the midline from the head to the first dorsal fin there is a regular row of around 50 thorns. These can become worn in older specimens.

The small-eyed ray inhabits inshore and coastal waters down to about 100m. It is found on soft substrates favouring sandy bays and sand banks to which its camouflage is perfectly suited (Kaiser *et al.*, 2004). They are found on continental shelves in the east Atlantic from southwest England and Ireland to Gibraltar and northern Morocco. Not found in the North Sea (Gibson *et al.*, 2006).

Small-eyed rays are only abundant in a few sites such as the Bristol Channel in the UK (Gibson *et al.*, 2006). In the English Channel at least, the small-eyed ray breeds during the summer producing between 54 and 61 eggs a year. The embryos take about 7 months to develop and the newly hatched young measure less than 13cm long (Fowler *et al.*, 2005)

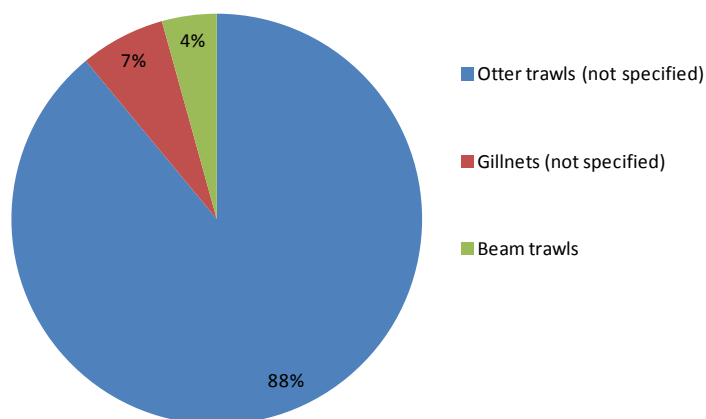
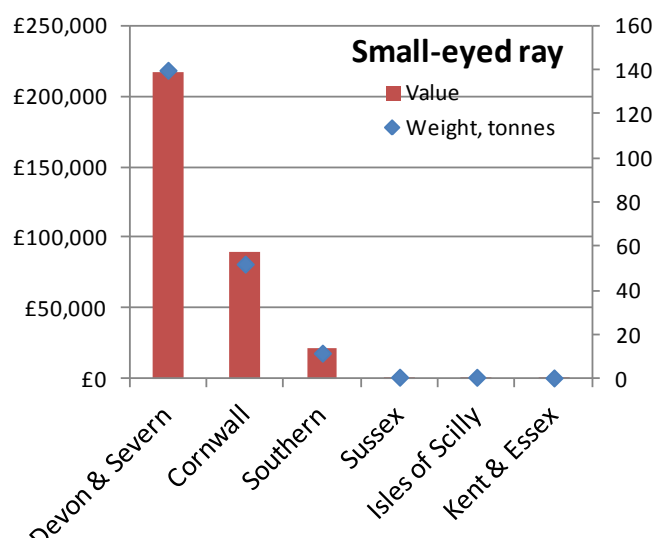
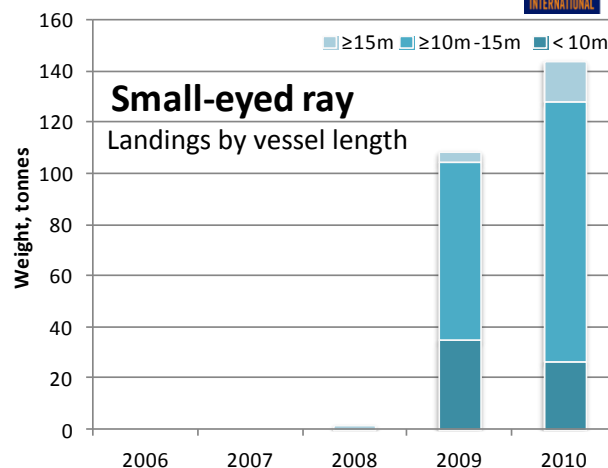
Species distribution



Species biological attributes			
Species	Small eyed ray	Average age at maturity	4-5 yr
Reproductive strategy	Demersal egg layer	Average maximum age	24 yr
Length of larvae phase	7 months	Fecundity (No of eggs)	54-61
Movement of adults	Mobile	Average size at maturity	70cm
Sediment type	mud, sand and gravel bottoms, rarely on rougher bottoms	Average maximum size	80cm
Depth	Subtidal down to 100m	Trophic level	3.9

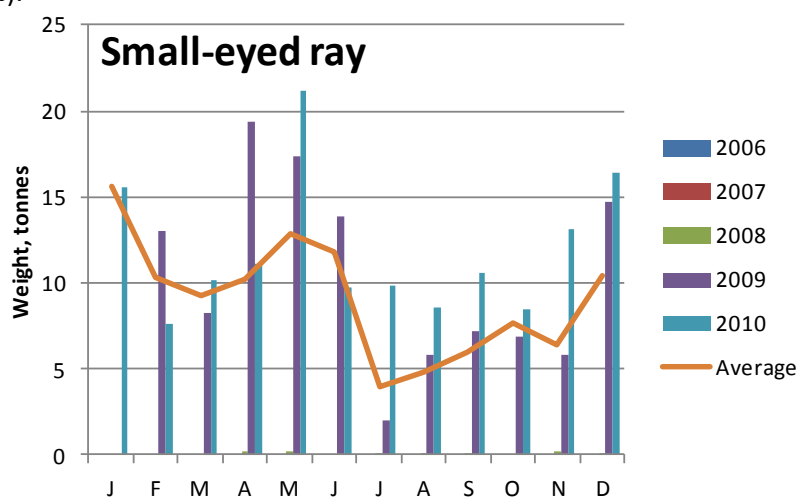
Small-eyed ray landings

Total inshore landings		
Small-eyed Ray	Live weight, tonnes	Landed value
2008	2	£2,202
2009	142	£187,091
2010	184	£294,034



In 2009 the EC introduced a regulation (43/2009, which came into force on 16th January 2009), requiring all Member States to record landings of five species of rays separately, as opposed to amalgamating them into a single 'skates and rays' category. This is of relevance to the following five species of ray: cuckoo ray (*Leucoraja naevus*), thornback ray (*Raja clavata*), blonde ray (*Raja brachyura*), spotted ray (*Raja montagui*) and starry ray (*Amblyraja radiata*). For this reason very little landings data is available in 2008 on a species basis and none are available from 2006-2007 when all ray landings were recorded under 'skates and rays'. It is also possible that 2009 data under-represent landings by species as fishermen become more adept at identification.

Data for 2009-2010 do not represent a sufficient time series to identify trends, although it can be seen that 10-15m vessels land the majority of this species, with the most important IFCA areas being Devon and Severn and Cornwall. Landings are predominately by otter trawls (88% by weight), followed by gill nets (7%) and beam trawls (4%).



Key landing ports include:

- Appledore
- Padstow
- Bideford
- Brixham
- Newlyn
- Plymouth
- West Bay
- Lyme Regis
- Exmouth
- Looe

2.3.4 Spotted ray

Raja montagui



ICES stocks Not assessed at ICES level

MSC assessments

Assessed: none

In Assessment: [Bristol Channel ray \(including thornback ray, blonde ray, small eyed ray, sandy ray, spotted ray and cuckoo ray\)](#)

Withdrawn: none

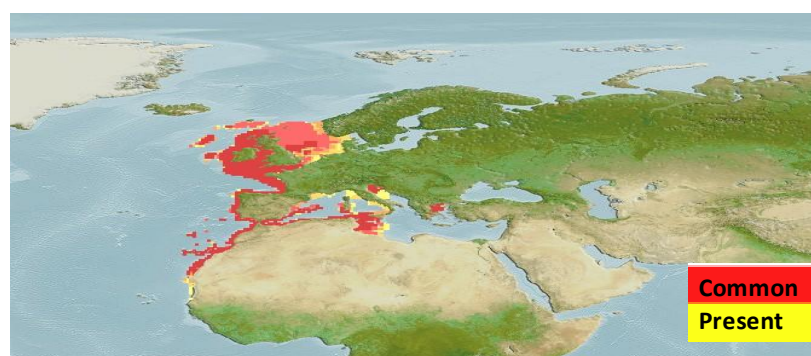
The spotted ray has a diamond shaped body with broad pectoral fins, the corners of which almost form right angles. The maximum reported size of a spotted ray is 80cm total length and 50cm disc width but they generally do not grow larger than 60cm total length.

The spotted ray is widely distributed through the northeast Atlantic from northern Morocco to the western Baltic and the Shetland Isles, including the Mediterranean Sea (Ellis *et al.*, 2007). It is widespread around most coasts of Britain and Ireland but appears to be rare off the east coast (Picton and Morrow, 2005). The spotted ray is not targeted due to its small size but larger individuals are regularly landed and sold in multispecies trawl fisheries across their range.

The spotted ray is found from shallow waters to a depth of 530m with the majority of the population found from 100-500m. It lives on soft substrates, preferring sand, in coastal seas and on continental shelves (Ellis *et al.*, 2007).

The spotted ray reaches sexual maturity at a total length of around 55cm, which corresponds to an age of 3.5-4 years of age (Gallagher *et al.*, 2005). Females lay their eggcases in shallow water in early summer from April through to July (Whitehead *et al.*, 1986). They lay a maximum of 60 to 70 eggs per year with an average number of approximately 24 to 60 (Ellis *et al.*, 2007. Luna, 2009). The embryos take 5-6 months to develop (Shark Trust, 2008).

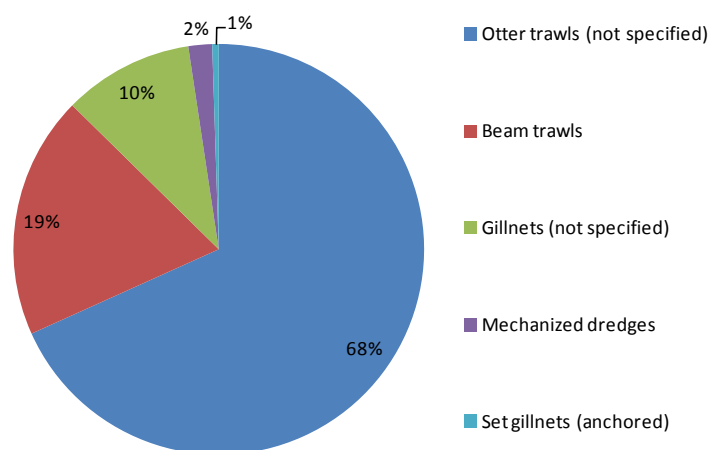
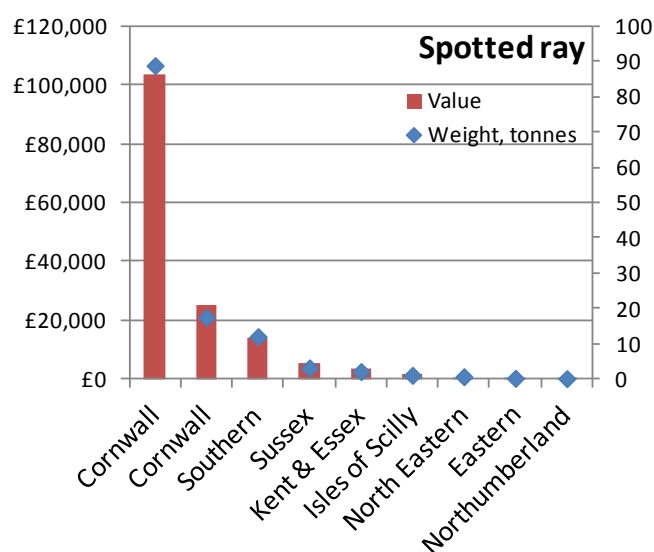
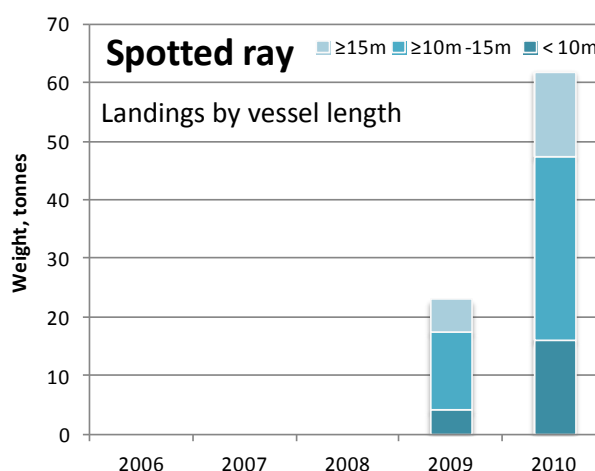
Species distribution



Species biological attributes			
Species	Spotted ray	Average age at maturity	3.5-4 yr
Reproductive strategy	Demersal egg layer	Average maximum age	18 yr
Length of larvae phase	5-6 months	Fecundity (No of eggs)	24-60
Movement of adults	Mobile	Average size at maturity	61cm
Sediment type	mud, sand and gravel bottoms, rarely on rougher bottoms	Average maximum size	80 cm
Depth	Subtidal down to 530m	Trophic level	3.7

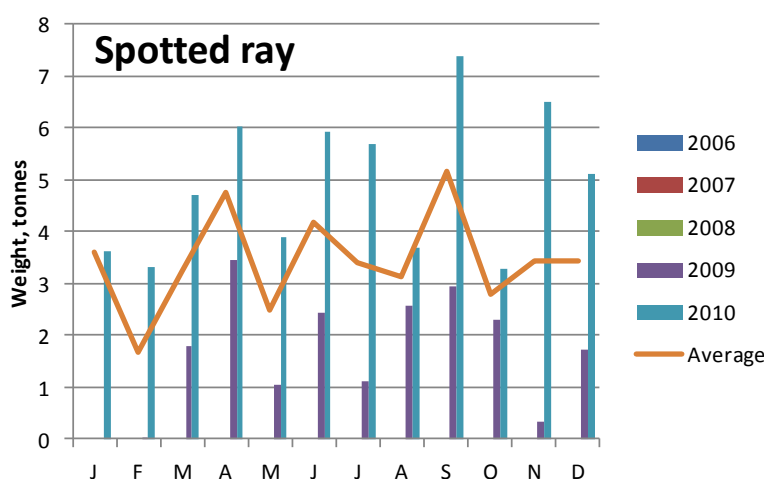
Spotted ray landings

Total inshore landings		
Spotted Ray	Live weight, tonnes	Landed value
2008	1	£908
2009	36	£41,449
2010	65	£78,934



In 2009 the EC introduced a regulation (43/2009, which came into force on 16th January 2009), requiring all Member States to record landings of five species of rays separately, as opposed to amalgamating them into a single 'skates and rays' category. This is of relevance to the following five species of ray: cuckoo ray (*Leucoraja naevus*), thornback ray (*Raja clavata*), blonde ray (*Raja brachyura*), spotted ray (*Raja montagui*) and starry ray (*Amblyraja radiata*). For this reason very little landings data is available in 2008 on a species basis and none are available from 2006-2007 when all ray landings were recorded under 'skates and rays'. It is also possible that 2009 data under-represent landings by species as fishermen become more adept at identification.

Data for 2009-2010 do not represent a sufficient time series to identify trends, although it can be seen that 10-15m vessels land the majority of this species, with the most important IFCA area being Cornwall. Landings are predominately by otter trawls (68% by weight), followed by beam trawls (19%) and gill nets (11%).

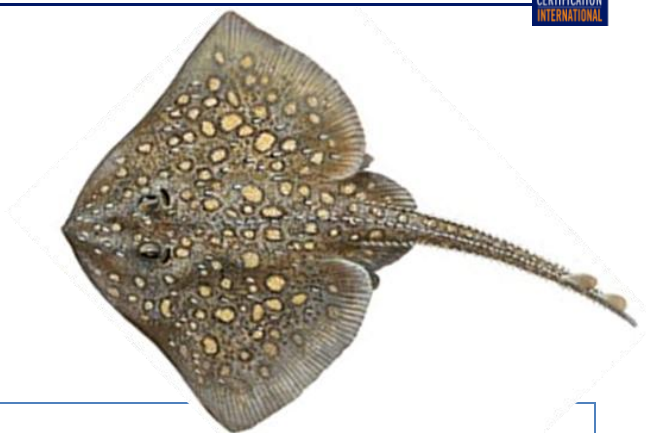


Key landing ports include:

- Brixham
- Appledore
- Newlyn
- Plymouth
- Ilfracombe
- Bideford
- Salcombe
- Eastbourne
- Exmouth
- Portsmouth

2.3.5 Thornback ray

Raja clavata



ICES stocks Not assessed at ICES level

MSC assessments

Assessed: none

In Assessment: [Bristol Channel ray \(including thornback ray, blonde ray, small eyed ray, sandy ray, spotted ray and cuckoo ray\)](#)

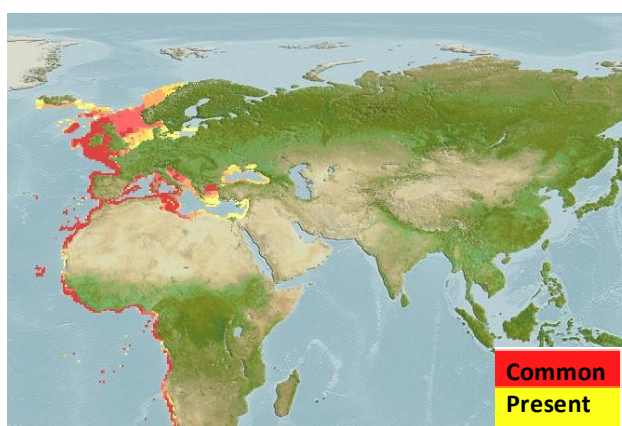
Withdrawn: none

Raja clavata frequents a wide variety of grounds from mud, sand, shingle and gravel. It is less frequently recorded on coarser sediment types. They are also found on patches of sediment among rocky outcrops and boulders. It may be found to a depth of 300 m but most common between 10 – 60 m. Although mainly a non-migratory species, the fish often moves close inshore during the spring. Juveniles are more likely to be found in near-shore coastal waters (Wilding and Snowden, 2008).

Common all around coasts of Britain and Ireland, the most abundant ray in in-shore waters. Distribution includes the Wash, Outer Thames Estuary, Solent, Carmarthen Bay, Cardigan Bay, Liverpool Bay and Solway Firth (Ellis *et al.*, 2005).

On account of its abundance, *Raja clavata* is an important fish commercially. Most of the skate found in fishmongers is likely to be thornback ray. Thornback rays lay up to 150 egg cases a year. Thornback rays tend to lie covered in sand during the day and feed at night on a range of bottom-dwelling animals. They will eat fish such as sand eels, herrings, sprats and small flatfish however shore and swimming crabs and brown shrimps are its main food. *Raja clavata* are distinguished from other rays by the large thorns scattered on dorsal surface (Wilding and Snowden, 2008)

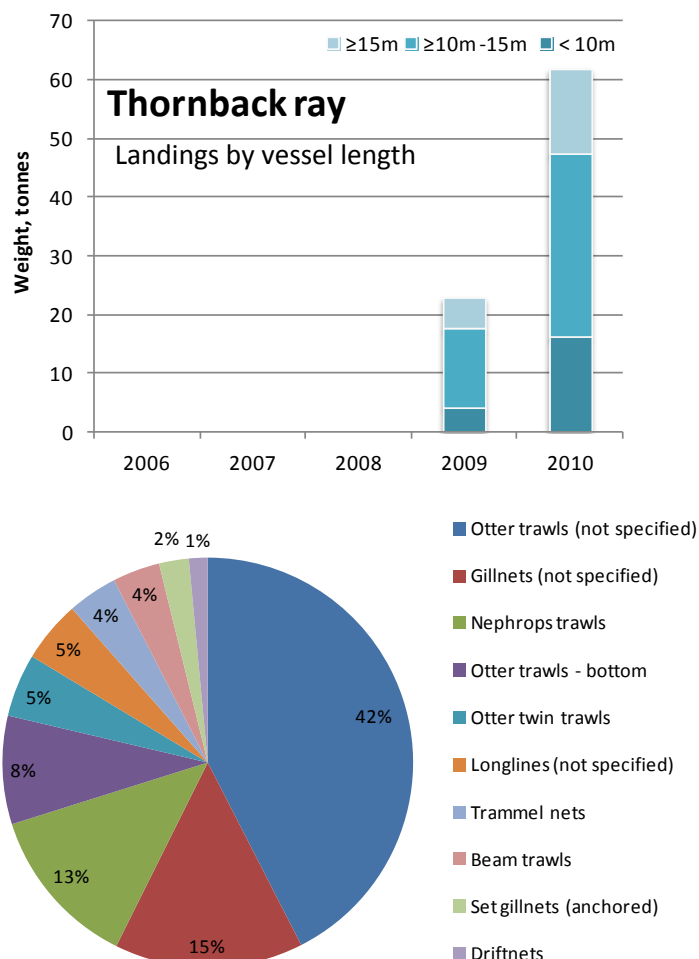
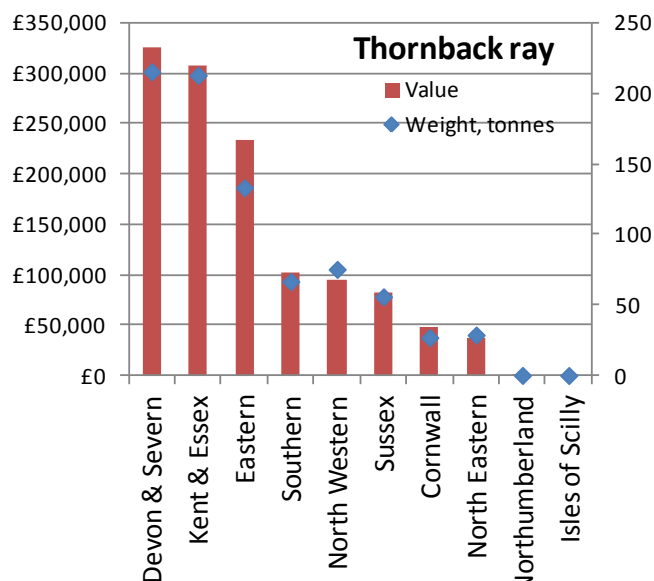
Species distribution



Species biological attributes			
Species	Thornback ray	Average age at maturity	5 yr
Reproductive strategy	Demersal egg layer	Average maximum age	15 yr
Length of larvae phase	Over two months	Fecundity (No of eggs)	0-150
Movement of adults	Mobile	Average size at maturity	76.7 cm
Sediment type	mud, sand and gravel bottoms, rarely on rougher bottoms	Average maximum size	105 cm
Depth	Subtidal: 10-577m	Trophic level	3.8

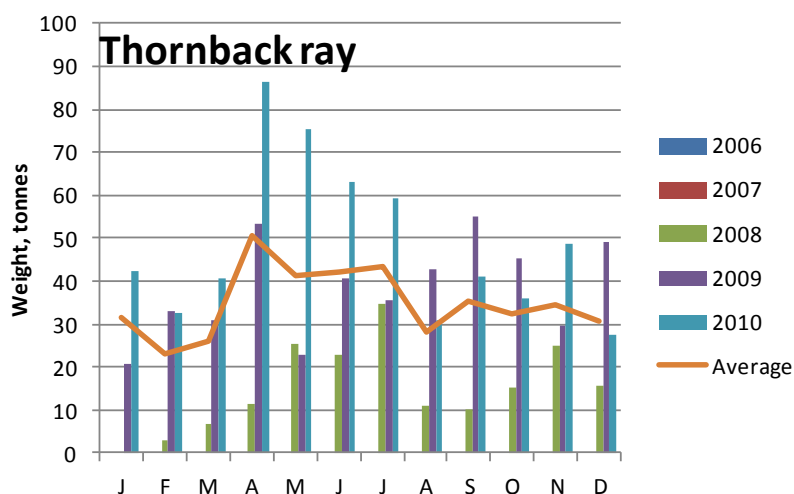
Thornback ray landings

Total inshore landings		
Thornback Ray	Live weight, tonnes	Landed value
2008	299	£336,347
2009	545	£725,985
2010	630	£930,031



In 2009 the EC introduced a regulation (43/2009, which came into force on 16th January 2009), requiring all Member States to record landings of five species of rays separately, as opposed to amalgamating them into a single 'skates and rays' category. This is of relevance to the following five species of ray: cuckoo ray (*Leucoraja naevus*), thornback ray (*Raja clavata*), blonde ray (*Raja brachyura*), spotted ray (*Raja montagui*) and starry ray (*Amblyraja radiata*). For this reason very little landings data is available in 2008 on a species basis and none are available from 2006-2007 when all ray landings were recorded under 'skates and rays'. It is also possible that 2009 data under-represent landings by species as fishermen become more adept at identification.

Data for 2009-2010 do not represent a sufficient time series to identify trends, although it can be seen that all vessel length categories land this species, and thornback ray are landed into many IFCAs. Landings are predominately by otter trawls (68% by weight), followed by gill nets (17%) and longlines (5%).

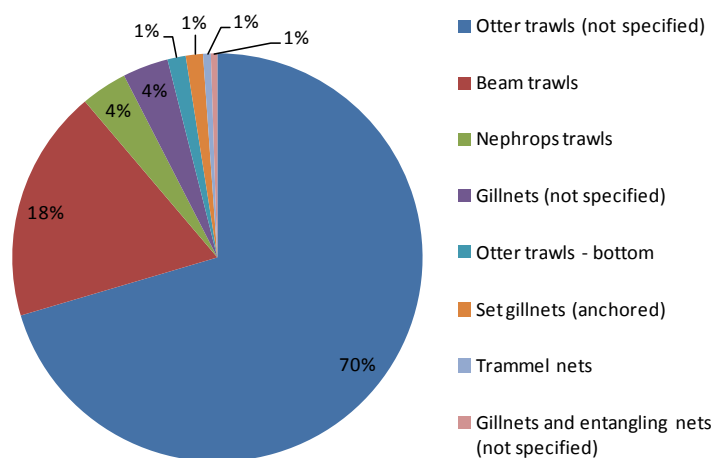
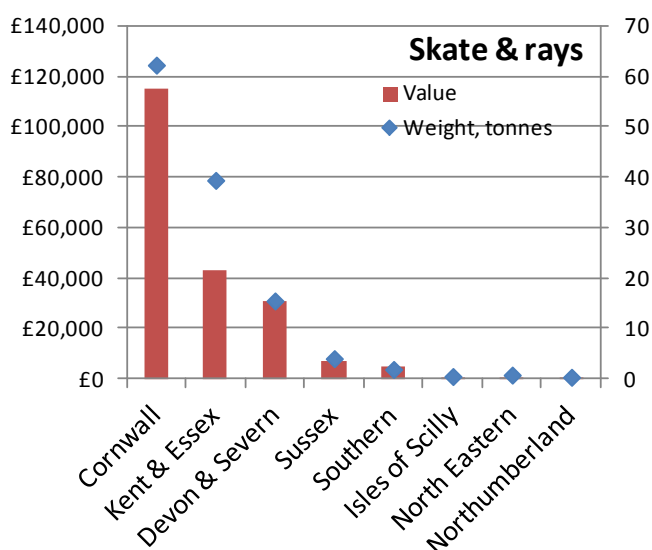
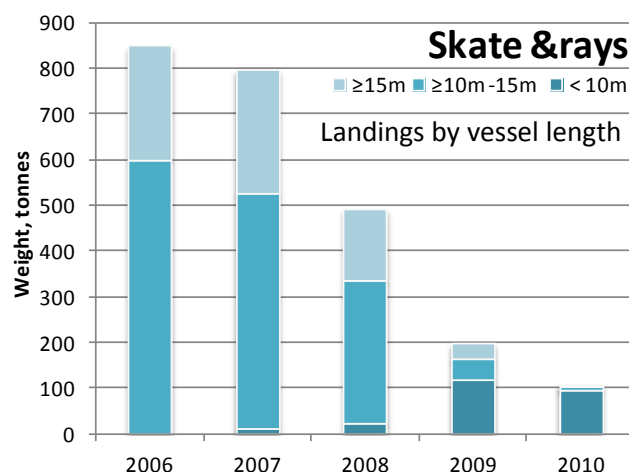


Key landing ports include:

- Ramsgate
- Whitehaven
- Maryport
- West Mersea
- Appledore
- Lowestoft
- Fleetwood
- Brixham
- Bideford
- Eastbourne

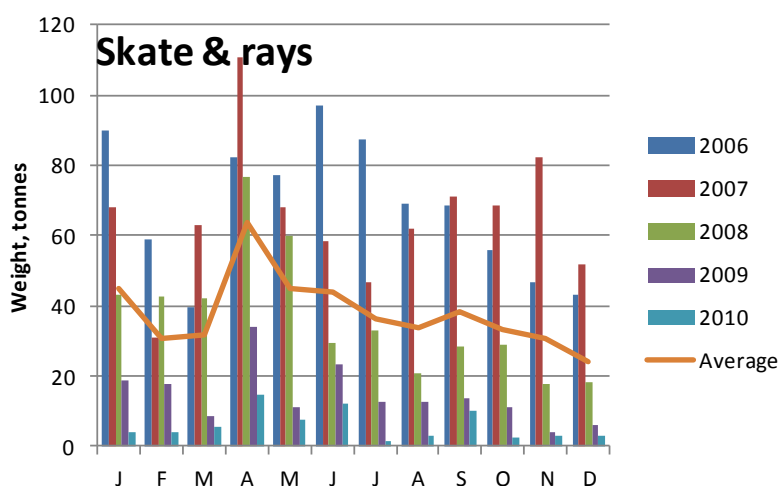
Skates and rays landings

Total inshore landings		
Skates and Rays	Live weight, tonnes	Landed value
2006	910	£1,125,782
2007	850	£1,023,242
2008	572	£729,176
2009	209	£303,751
2010	114	£180,734



Landings of skates and rays have dropped significantly from 2008 onwards on account of landings being recorded to individual species level (see earlier species profiles for rays).

Data from 2006-2008 indicate that landings are predominately by the 10-15m fleet operating otter trawls (75% by weight), followed by beam trawls (18%) and gill nets (6%).



Key landing ports include:

- Appledore
- Ilfracombe
- Brixham
- Newlyn
- Padstow
- Ramsgate
- Fleetwood
- Lowestoft
- Shoreham
- Plymouth

2.3.1 Smooth-hound

Mustelus mustelus



ICES stocks Not assessed at ICES level

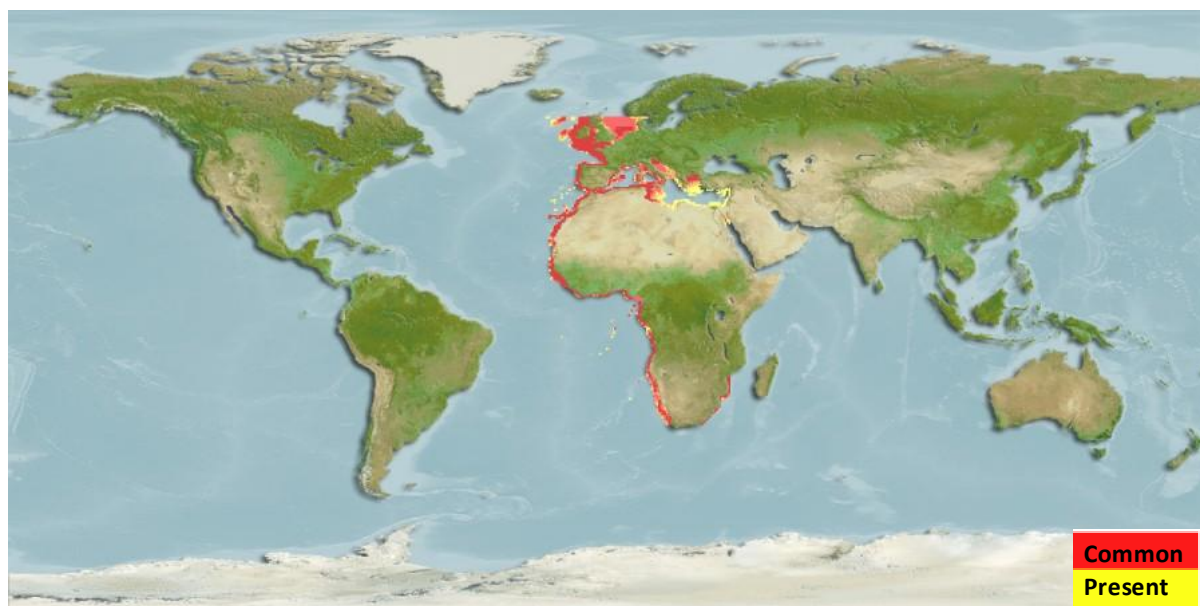
MSC assessments	Assessed: none
	In Assessment: none
	Withdrawn: none

The smooth-hound, is a houndshark found in the eastern Atlantic Ocean from the British Isles to South Africa, in the Mediterranean Sea, Madeira and the Canary Islands at depths ranging from 5m to 625m (although they usually stay at depths of 5-50m). While they can grow to 200 cm, their usual maximum size is 150 cm

They are sometimes found in midwater but prefer to swim near the bottom. Smoothhound feed mainly on crustaceans, but also cephalopods and bony fishes (Rainer and Pauly, 2006).

Like other smooth hounds, they will aggregate in large numbers, like a pack of dogs (which is why they are called hounds).

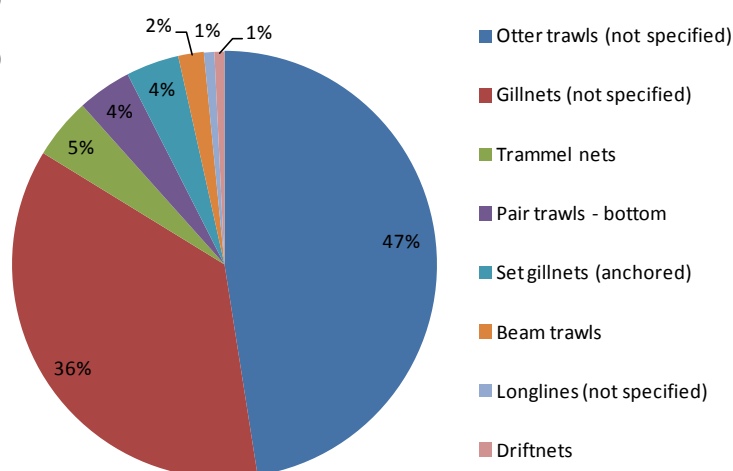
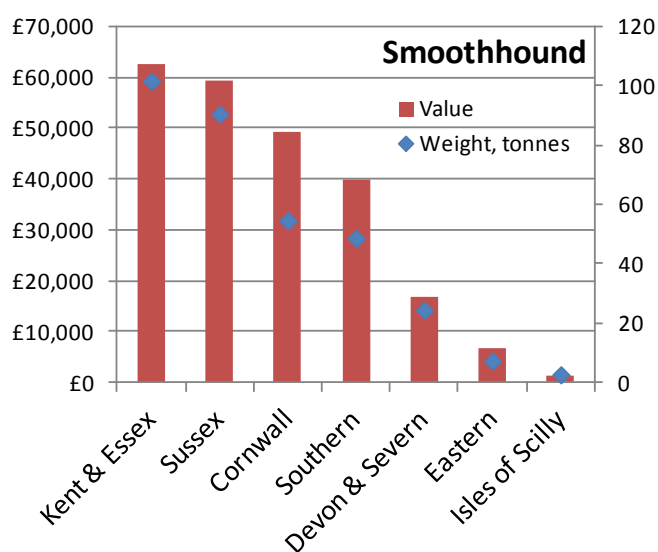
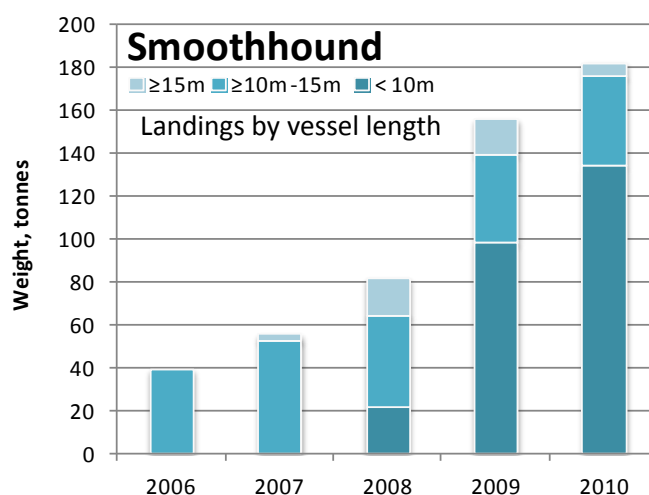
Species distribution



Species biological attributes			
Species	Smooth-hound	Average age at maturity	9 yr
Reproductive strategy	Live bearer	Average maximum age	24 yr
Length of larvae phase	N/A	Fecundity (No of eggs)	4 to 15
Movement of adults	Mobile	Average size at maturity	80 cm
Sediment type	Marine, demersal and mid-water	Average maximum size	200 cm
Depth	Subtidal, 5-624m	Trophic level	3.8

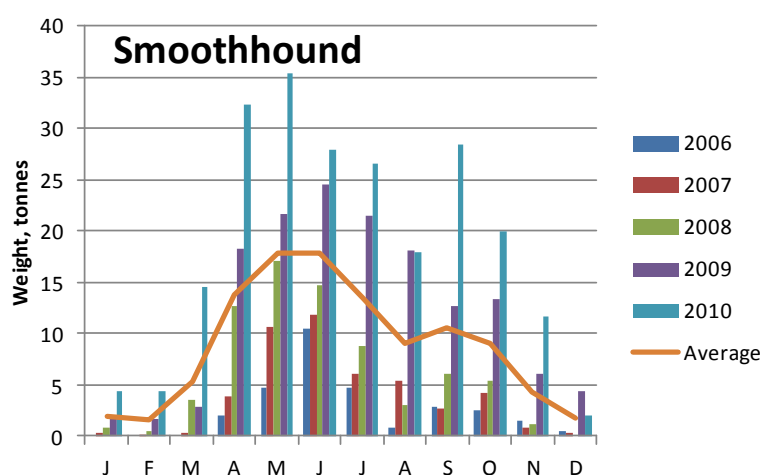
Smooth-hound landings

Total inshore landings		
Smooth-hound	Live weight, tonnes	Landed value
2006	44	£19,148
2007	68	£30,668
2008	90	£43,035
2009	164	£92,978
2010	233	£171,068



Landings of smoothhound have increased significantly in 2009-2010 with more accurate recordings of landings from the under 10m vessels. A total value of £171,000 and 233 tonnes were recorded in 2010 for UK vessels landings into English ports.

Data from 2009-2010 indicate that landings are predominately by the under 10m fleet operating otter trawls (47% by weight), followed by gill nets (36%) and trammel nets (4%). Landings peak in late spring/ early summer.



Key landing ports include:

- Newlyn
- Newhaven
- Shoreham
- Ramsgate

2.4 Pelagic

2.4.1 Anchovy

Engraulis encrasicolus



ICES stocks [Anchovy in Subarea VIII \(Bay of Biscay\)](#)

MSC

assessments

Assessed (different species): [Argentine anchovy](#)

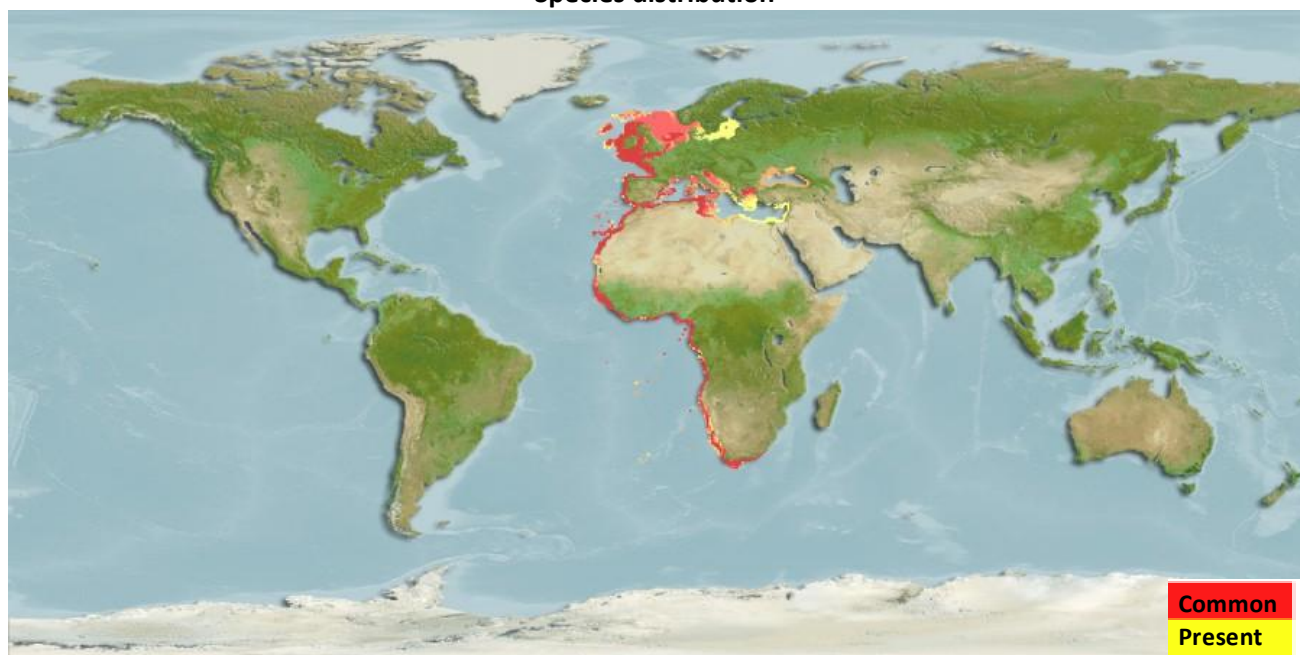
In Assessment: none

Withdrawn: none

Anchovy is mainly a coastal species, forming large schools, sometimes entering lagoons, estuaries and lakes, especially during spawning. They tends to move further north and into surface waters in summer, retreating and descending in winter. Anchovy feed on planktonic organisms. Spawning occurs from April to November with peaks usually in the warmest months. Eggs float in the upper 50 m and hatch in 24-65 hours.

European anchovies are abundant in the Mediterranean and in the UK are caught off the Devon and Cornwall coasts in winter months.

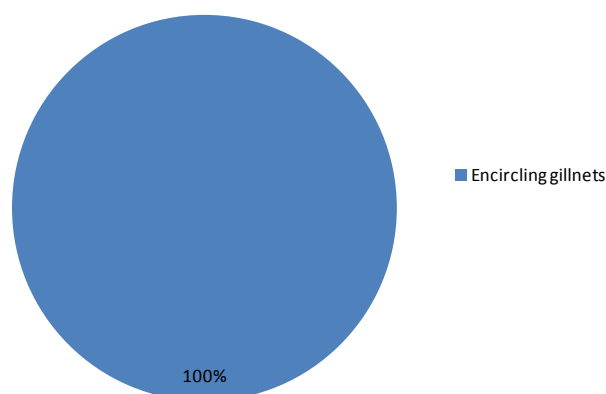
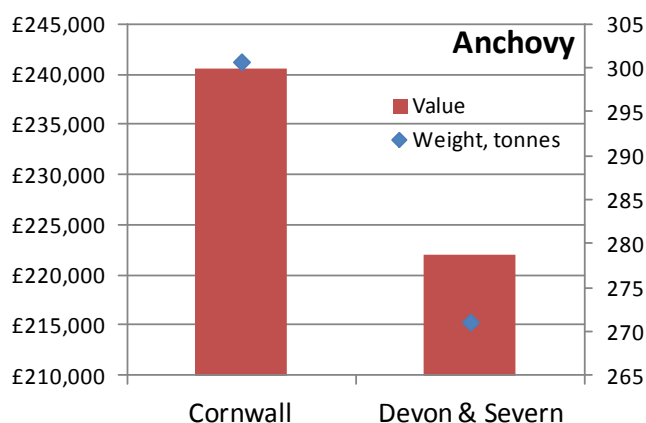
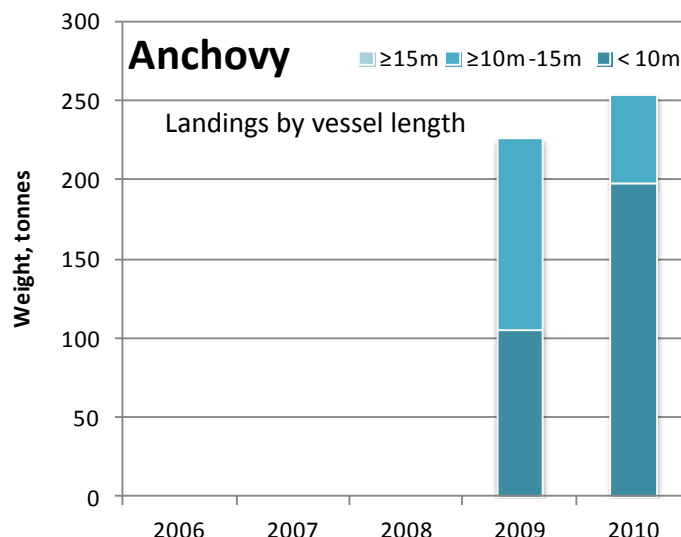
Species distribution



Species biological attributes			
Species	Anchovy	Average age at maturity	1 yr
Reproductive strategy	Broadcast spawners	Average maximum age	3 yr
Length of larvae phase	3 days	Fecundity (No of eggs)	20,000-500,000
Movement of adults	Migratory	Average size at maturity	4-14 cm
Sediment type	Marine, coastal pelagic	Average maximum size	20 cm
Depth	Subtidal, to 400 m	Trophic level	3.1

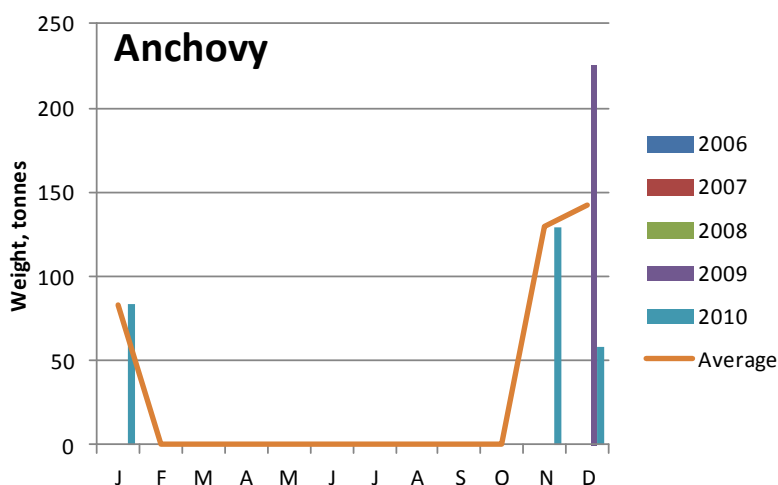
Anchovy landings

Total inshore landings		
Anchovy	Live weight, tonnes	Landed value
2007	75	£148,997
2009	230	£397,160
2010	301	£240,639



Landings of anchovy were recorded in 2009 and 2010 in the Cornwall and Devon and Severn IFCA areas. A total value of £240,000 and 301 tonnes were recorded in 2010 for UK vessels landings into English ports in this area.

Landings are solely by encircling nets by vessels under 15m in length. Landings are highly seasonal and occur in winter months.



Key landing ports include:

- Plymouth
- Mevagissey
- River Fal - Falmouth

2.4.2 Herring

Clupea harengus



ICES stocks 2012 Herring in Division VIIa North of 52° 30'N (Irish Sea); 2012 Herring in Division VIIa South of 52° 30' N and VIIg,h,j,k (Celtic Sea and South of Ireland); 2012 Herring in Divisions VIa (South) and VIIb,c; 2012 Herring in Subarea IV and Divisions IIIa and VIId (North Sea autumn spawners)

MSC assessments	<p>Assessed: Astrid Fiske North Sea herring; CSHMAC Celtic Sea herring; Danish Pelagic Producers Organisation Atlanto Scandian herring; Danish Pelagic Producers Organisation North Sea herring; Faroese Pelagic Organization (FPO) Atlanto-Scandian herring ; Norway North Sea and Skagerrak herring; Norway spring spawning herring; Pelagic Freezer-Trawler Association Atlanto-Scandian herring pelagic trawl; Pelagic Freezer-Trawler Association North Sea herring; Scottish Pelagic Sustainability Group Ltd (SPSG) North Sea herring ; Scottish Pelagic Sustainability Group Ltd Atlanto Scandian herring; SPPO North Sea herring; SPSG West of Scotland herring Pelagic Trawl</p> <p>In Assessment: CSHMAC Celtic Sea herring, sprat & sardine Trawl; Hastings fleet pelagic herring and mackerel; Samherji Norwegian & Icelandic herring trawl and seine ; SPPO Baltic herring and sprats; Western Baltic spring spawning herring; NAFO Division 4R Atlantic herring purse seine</p> <p>Withdrawn: Thames Blackwater herring drift-net</p>
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Atlantic herring is a pelagic species widely distributed throughout the North- East Atlantic north of the Bay of Biscay and is found all over in the North Sea. North Sea herring spawn in coastal waters in areas where the substrate consist of gravel and small stones. The eggs are attached to the substrate and hatch after about three weeks depending on temperature. The requirement for a gravel substrate means that the spawning grounds are relatively small and well defined.

Herring is a central component in the North Sea ecosystem both as predator and as prey. Herring feeds mainly on zooplankton (copepods, mysids, euphausiids, fish egg and larvae) and juvenile fish. Herring is an important prey for most predator species including cod, saithe, whiting, mackerel, sea birds and marine mammals.

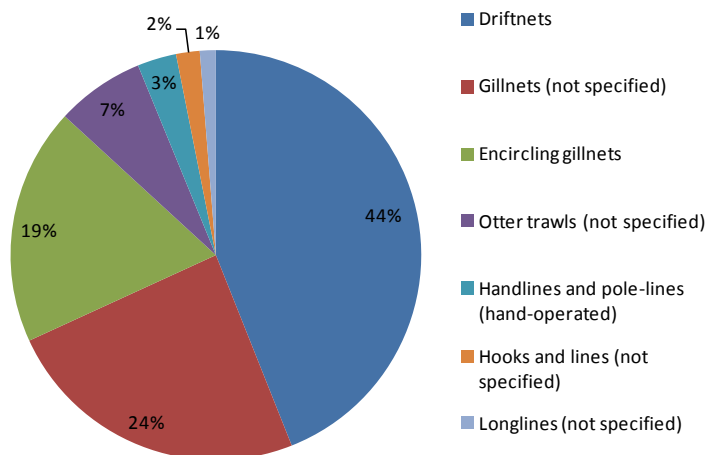
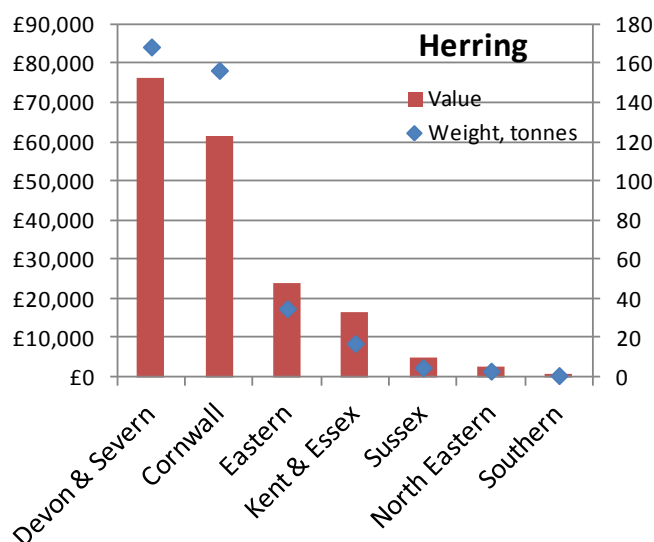
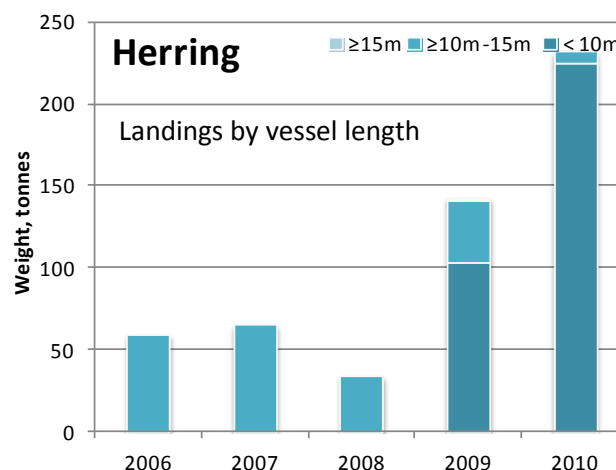
Species distribution



Species biological attributes			
Species	Herring	Average age at maturity	2 yr
Reproductive strategy	Demersal egg layer	Average maximum age	25 yr
Length of larvae phase		Fecundity (No of eggs)	20,000-100,000
Movement of adults	Migratory	Average size at maturity	16.7 cm
Sediment type	Marine, bethopelagic	Average maximum size	45 cm
Depth	Subtidal, to 364m	Trophic level	3.2

Herring landings

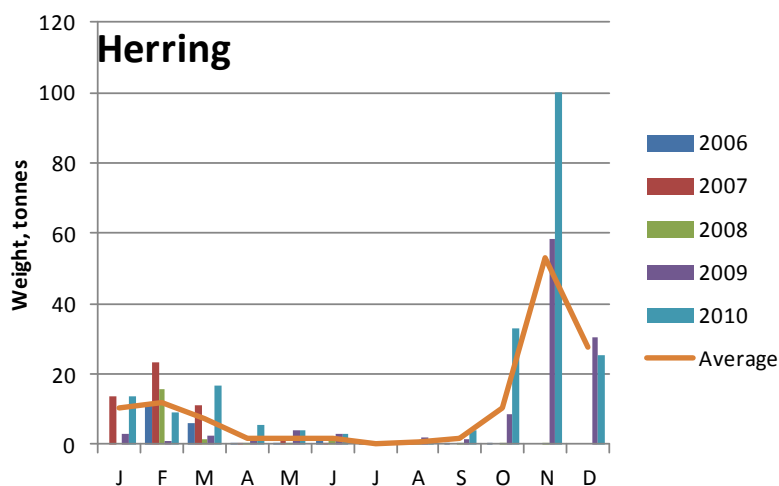
Total inshore landings		
Herring	Live weight, tonnes	Landed value
2006	146	£85,136
2007	182	£70,212
2008	40	£18,947
2009	151	£90,689
2010	241	£117,118



Herring landings from ICES rectangles that overlap IFCA districts have increased significantly since 2006, with a total value of ~£117,000 and 241 tonnes landed in 2010. Landings by under 10m vessels dominate in 2009 and 2010, and are responsible for much of the observed increase since 2008. Significantly higher landings are taken from offshore areas outside IFCA districts.

Based on a five year average, drift nets land the majority of the catch (44% by weight), followed by gillnets (24%), encircling gillnets (19%) and otter trawls (7%).

Landings occur during late autumn and winter months.



Key landing ports include:

- Brixham
- Newlyn
- Plymouth
- Mevagissey
- Great Yarmouth
- Hastings
- West Mersea
- Lowestoft
- North Shields
- St Ives

2.4.3 Horse mackerel

Trachurus trachurus



ICES stocks 2011 Horse mackerel (*Trachurus trachurus*) in Divisions IIa, IVa, Vb, VIa, VIIa–c,e–k, and VIIIa–e (Western stock)

2011 Horse mackerel (*Trachurus trachurus*) in Divisions IIIa, IVb,c, and VIId (North Sea stock)

MSC assessments	Assessed: none
	In Assessment: none
	Withdrawn: none

The horse mackerel *Trachurus trachurus* is a slender schooling species that may reach up to 60 cm in length. The horse mackerel is a pelagic coastal species that may be found on continental shelves down to over 200 m in depth. The horse mackerel has a south-western distribution and can be found in throughout the English Channel, in the Irish Sea as far north as Lancashire and off the south coast of Ireland (Barnes, 2008).

Adults form large schools in coastal areas with sandy substrate. Feed on fish, crustaceans, and cephalopods. Are batch spawners (Murua, and Saborido-Rey, 2003). Females lay 140,000 eggs, which are pelagic and hatch into 5mm long larvae.

Divided into two stocks: West stock and North Sea stock. West stock spawns in a belt from the Biscay to Ireland in early spring, migrates north and eastwards to southern Norway and northern North Sea. North Sea stock spawns in the southern North Sea in summer, migrates to central North Sea, Skagerrak and Kattegat.

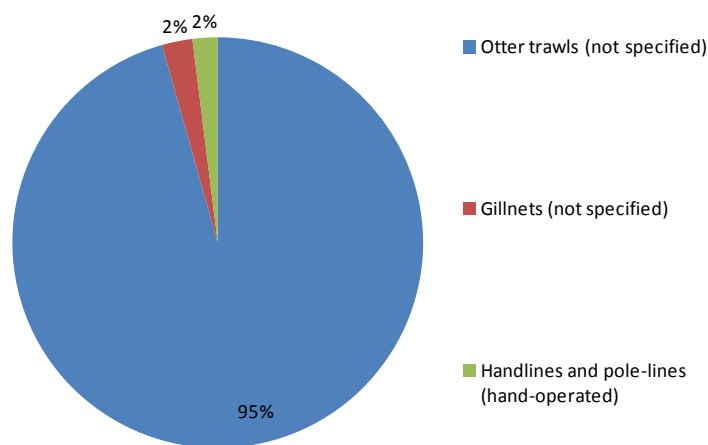
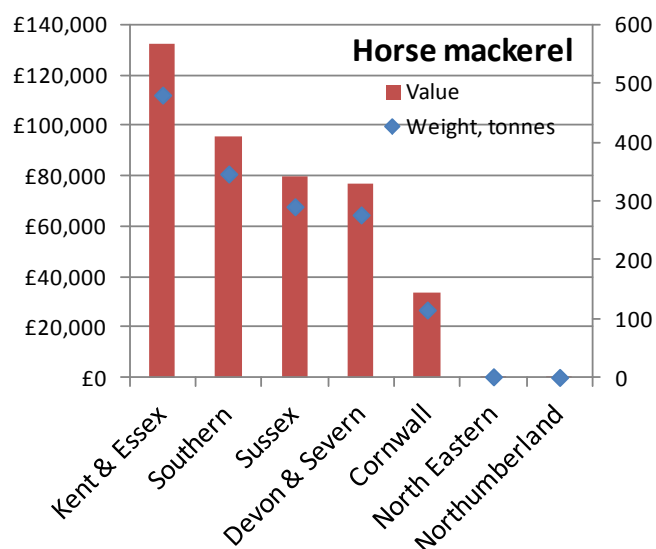
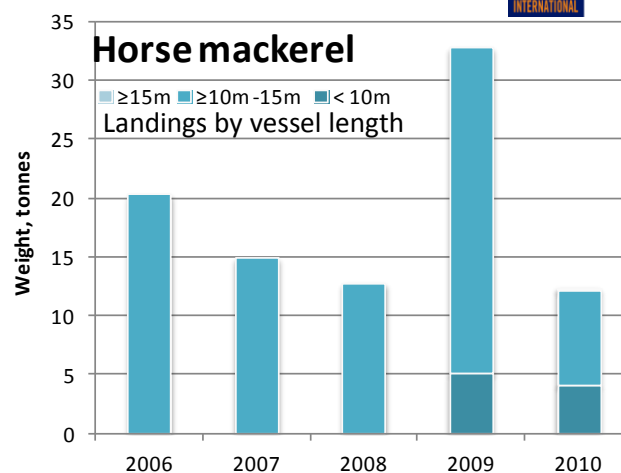
Species distribution



Species biological attributes			
Species	Horse mackerel	Average age at maturity	2 yr
Reproductive strategy	Broadcast spawners	Average maximum age	10 yr
Length of larvae phase		Fecundity (No of eggs)	140,000
Movement of adults	Migratory	Average size at maturity	23.9 cm
Sediment type	Marine	Average maximum size	70 cm
Depth	Subtidal, 100-1050m	Trophic level	3.6

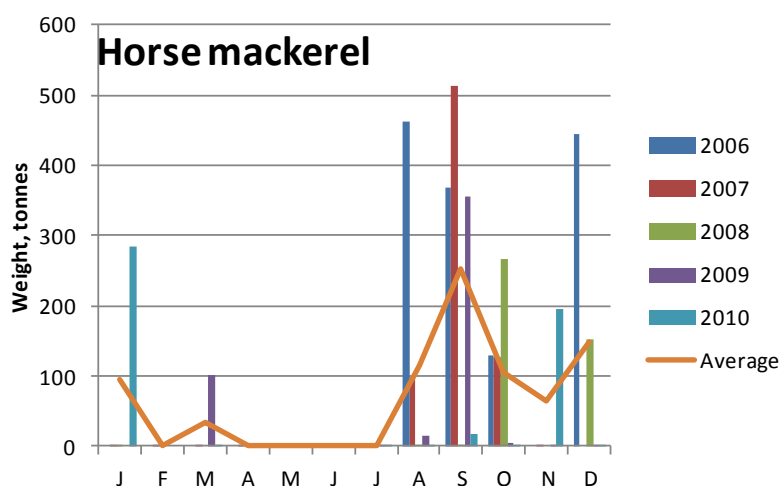
Horse mackerel landings

Total inshore landings		
Horse Mackerel	Live weight, tonnes	Landed value
2006	2,387	£655,778
2007	1,194	£358,041
2008	2,476	£680,571
2009	1,105	£304,808
2010	1,120	£310,911



Horse mackerel landings from ICES rectangles that overlap IFCA districts are predominately landed by vessel 10-15m in length, with a total value of ~£310,000 and 1,120 tonnes landed in 2010. Key IFCA districts are Kent and Essex, Southern, Sussex and Devon and Severn.

Based on a five year average, otter trawls land the majority of the catch (95% by weight), followed by gillnets (2%) and handlines and pole-lines (2%). Landings occur during autumn and winter.



Key landing ports include:

- Plymouth
- Brixham
- Newlyn
- Shoreham
- Newhaven
- Looe
- Mevagissey
- Eastbourne
- Hastings
- North Shields

2.4.4 Mackerel

Scomber scombrus



ICES stocks 2011 Mackerel in the Northeast Atlantic (combined Southern, Western, and North Sea spawning components)

MSC assessments

Assessed: Danish Pelagic Producers Organisation North East Atlantic mackerel; Irish Pelagic Sustainability Association (IPSA) Western mackerel; Irish Pelagic Sustainability Group (IPSG) western mackerel pelagic trawl; North East Atlantic mackerel pelagic trawl, purse-seine and handline; Pelagic Freezer-Trawler Association North East Atlantic mackerel pelagic trawl; Scottish Pelagic Sustainability Group Ltd western component of north east Atlantic mackerel ; SPPO North East Atlantic mackerel
In Assessment: Hastings fleet pelagic herring and mackerel
Withdrawn: South-West handline mackerel
Not certified: Faroese Pelagic Organization (FPO) North East Atlantic mackerel

The mackerel is a shoaling fish that spends much of its time in mid water, i.e. it is a pelagic species, but during the winter it tends to form extensive shoal aggregations, typically along the edge of the continental shelf (c. 200 m).

Mackerel spawn in the summer where sperm and eggs are realised into the water and eggs hatch after 2-6 days. Juvenile mackerel live inshore until they are sexually mature, then move offshore to join the major schools. Mackerel are highly migratory so the stock areas are large. In the North East Atlantic a single stock (with three separate spawning components) extends from southern Portugal to northern Norway.

Plankton forms an important part of mackerel diet but mature fish also feed on other small pelagic fish. Generally, they do not feed over winter and the largest, earliest spawning fish do not commence feeding until after they have spawned.

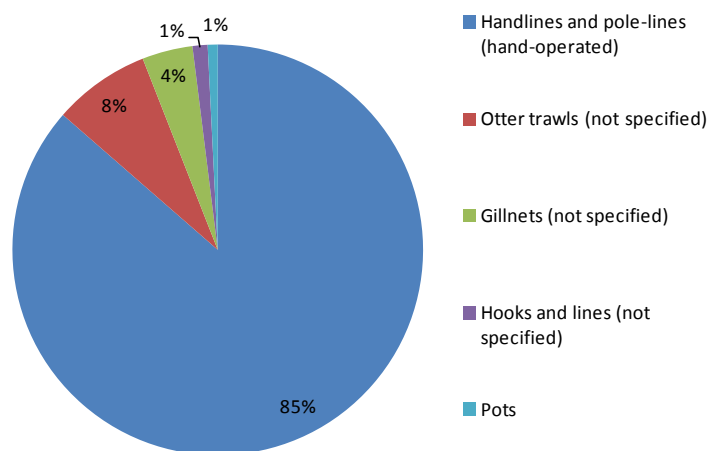
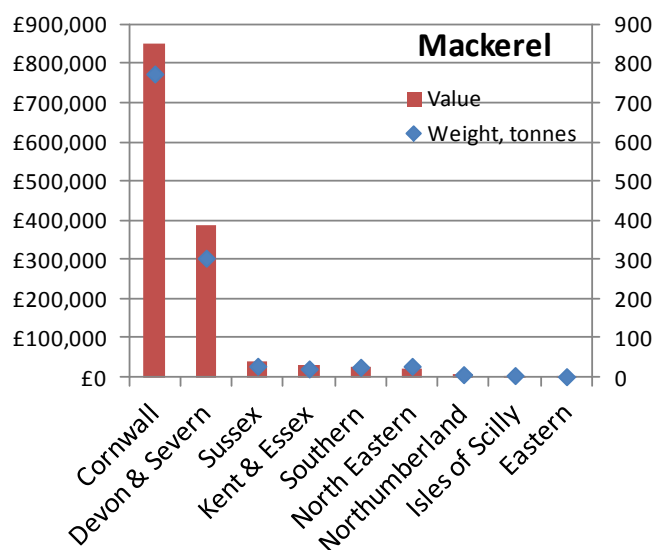
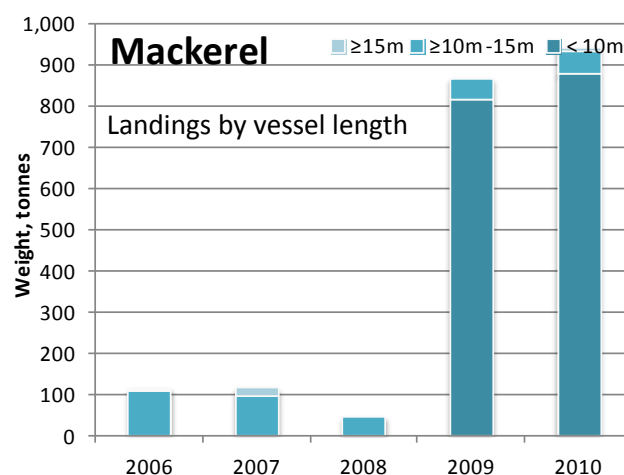
Species distribution



Species biological attributes			
Species	Mackerel	Average age at maturity	2 yr
Reproductive strategy	Broadcast spawners	Average maximum age	17 yr
Length of larvae phase		Fecundity (No of eggs)	200,000-450,000
Movement of adults	Migratory	Average size at maturity	28.6 cm
Sediment type	Marine	Average maximum size	60 cm
Depth	Subtidal, 200-1000m	Trophic level	3.7

Mackerel landings

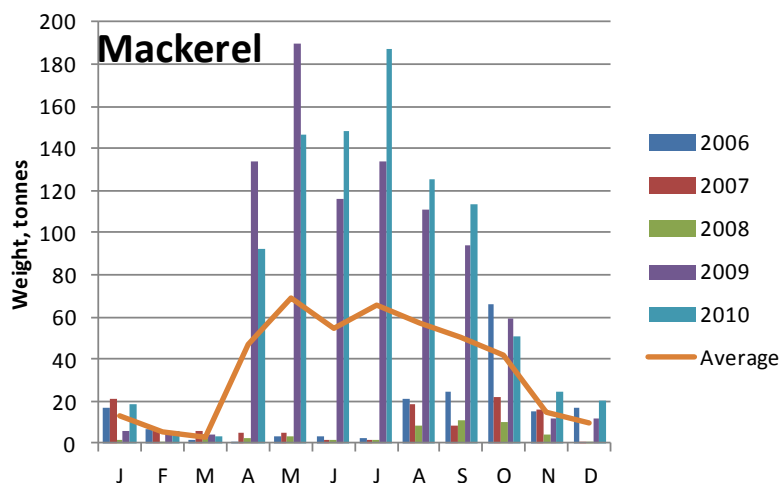
Total inshore landings		
Mackerel	Live weight, tonnes	Landed value
2006	185	£170,884
2007	122	£103,947
2008	56	£61,398
2009	881	£873,238
2010	947	£1,038,675



Mackerel landings from ICES rectangles that overlap IFCA districts have increased dramatically in 2009 and 2010, compared to 2006-2008 values, with a total value of over £1 million and 947 tonnes landed in 2010. Landings by under 10m vessels dominate in 2009 and 2010, and are responsible for the observed increase since 2008.

Based on a five year average, handlines and pole-lines land the majority of the catch (85% by weight), followed by otter trawls (8%) and gillnets (4%).

Landings occur throughout the year and peak from April to October.



Key landing ports include:

- Newlyn
- St Ives
- Brixham
- Looe
- Mevagissey
- Plymouth
- Hayle
- River Fal - Falmouth
- Newhaven
- Amble

2.4.5 Pilchard/sardine

Sardina pilchardus



ICES stocks Not assessed at ICES level

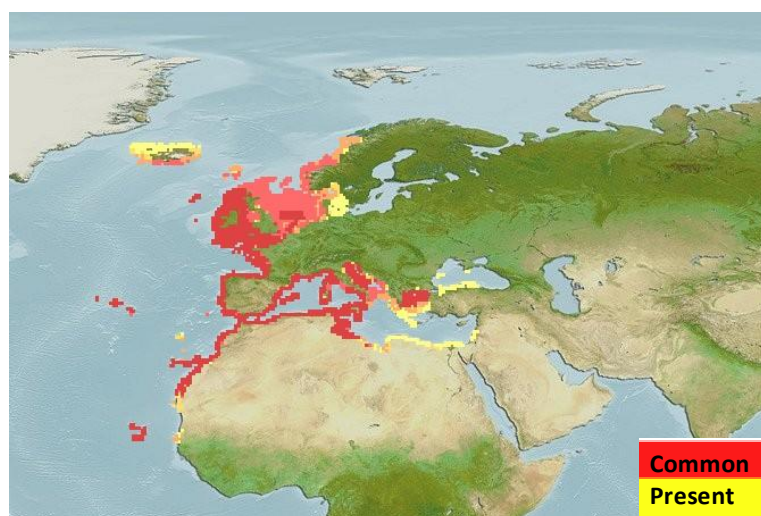
MSC assessments

Assessed: Cornwall sardine, UK; Gulf of California, Mexico – sardine; Portugal sardine purse seine; South Brittany sardine purse seine
In Assessment: CSHMAC Celtic Sea herring, sprat & sardine Trawl
Withdrawn: none

The sardine can be found throughout the North Atlantic eastern continental margin from Senegal to the British Isles and in the Mediterranean and adjacent seas. It is commercially exploited across its distribution range, with the most important fisheries occurring in upwelling areas.

Sardine is a pelagic fish that forms large schools that off the Iberian Peninsula are distributed along the continental shelf of the Atlantic Ocean in depths ranging between 10 m. and 100 m. Sardine is not normally found off the continental shelf. Schools of juvenile fish tend to be separated from adults and are found closer inshore, typically associated with estuaries and rivers.

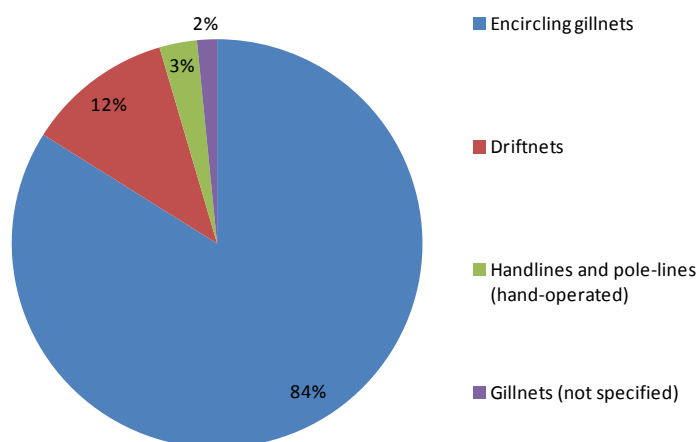
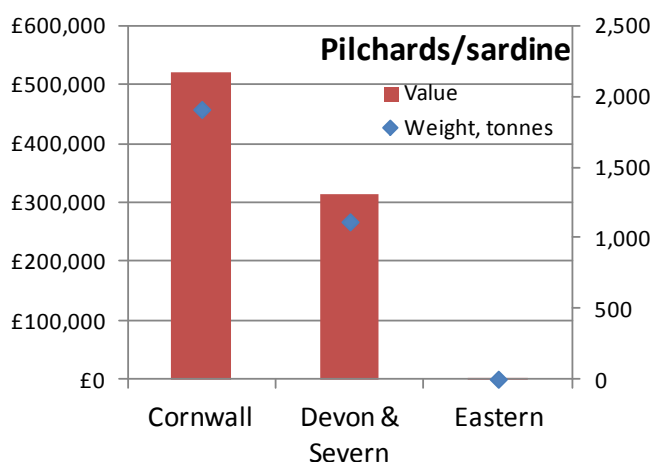
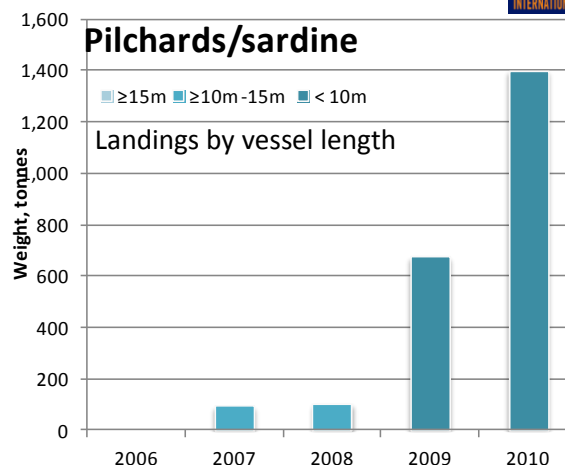
Species distribution



Species biological attributes			
Species	Sardine	Average age at maturity	1.5 yr
Reproductive strategy	Broadcast spawners	Average maximum age	15 yr
Length of larvae phase	Between a week and two months	Fecundity (No of eggs)	50,000-60,000
Movement of adults	Migratory	Average size at maturity	14.8 cm
Sediment type	Marine, pelagic-neritic;	Average maximum size	27.5 cm
Depth	Subtidal: 10-100m	Trophic level	3.1

Pilchard/sardine landings

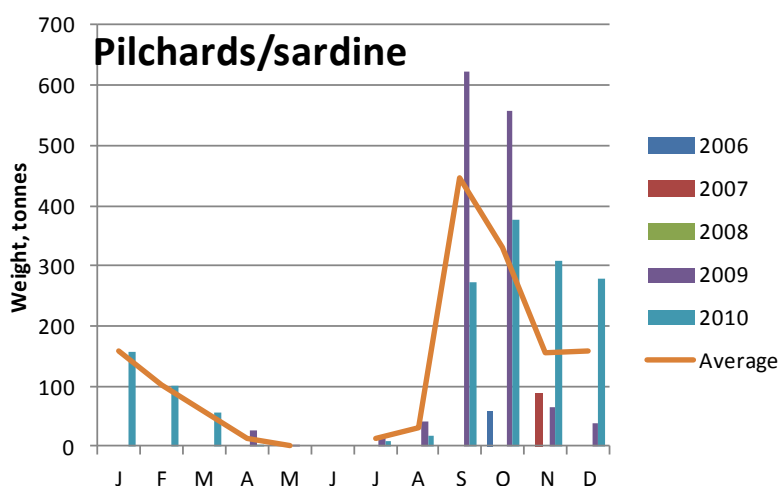
Total inshore landings		
Pilchards	Live weight, tonnes	Landed value
2006	949	£281,761
2007	686	£244,971
2008	1,003	£382,421
2009	1,980	£599,421
2010	2,235	£611,407



Sardine/pilchard landings from ICES rectangles that overlap IFCA districts have increased dramatically in 2009 and 2010, compared to 2006-2008 values, with a total value of ~£610,000 and 2,235 tonnes landed in 2010. Landings by under 10m vessels dominate in 2009 and 2010, and are responsible for the observed increase since 2008.

Based on a five year average, encircling gillnets land the majority of the catch (84% by weight), followed by drift nets (12%), handline and pole-lines (3%) and gillnets (2%).

Landings occur during autumn and winter.



Key landing ports include:

- Newlyn
- Plymouth
- Mevagissey
- Brixham
- Looe

2.4.6 Sprat

Sprattus sprattus



ICES stocks 2012 Sprat in Divisions VII d,e
 2012 Sprat in Subarea IV (North Sea)
 2012 Sprat in Subarea VI and Divisions VII a–c and f–k (Celtic Sea and West of Scotland)

MSC assessments

Assessed: none
 In Assessment: CSHMAC Celtic Sea herring, sprat & sardine Trawl
 SPPO Baltic herring and sprats
 Withdrawn: none

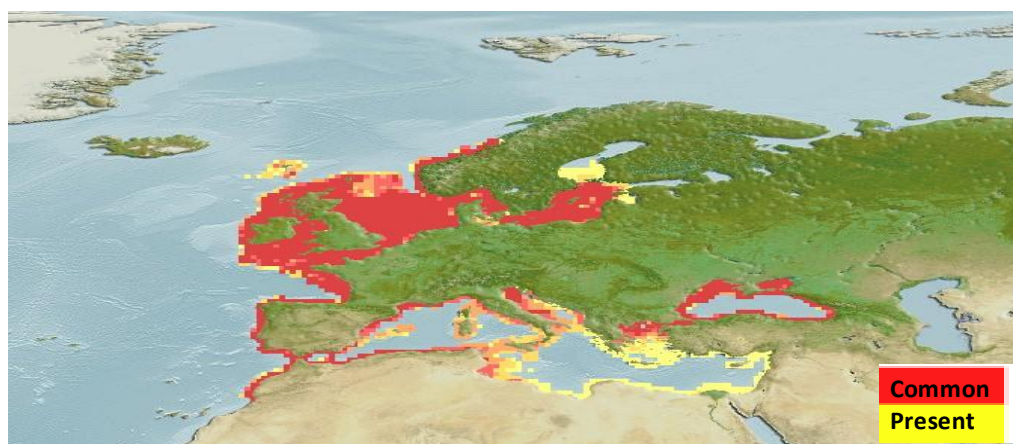
Sprat is a pelagic schooling fish usually found in inshore waters, sometimes entering estuaries. It can also be found down to a depth of up to 150 m.

Sprat are shiny silver to grey in colour and grow up to 16 cm in length.

Sprat show strong migrations between winter feeding and summer spawning grounds. They also undertake vertical migrations, moving to the surface at night. Sprat generally feed on planktonic crustaceans (Flintegård, 1987).

Sprat spawn at depths of 10-20 m producing 8,000-50,000 pelagic eggs. Some spawn almost throughout the year, mainly in spring and summer, near the coast or up to 100 km out to sea, the young drifting inshore.

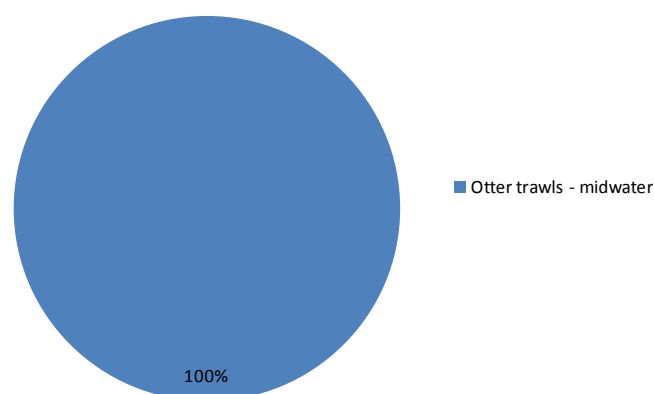
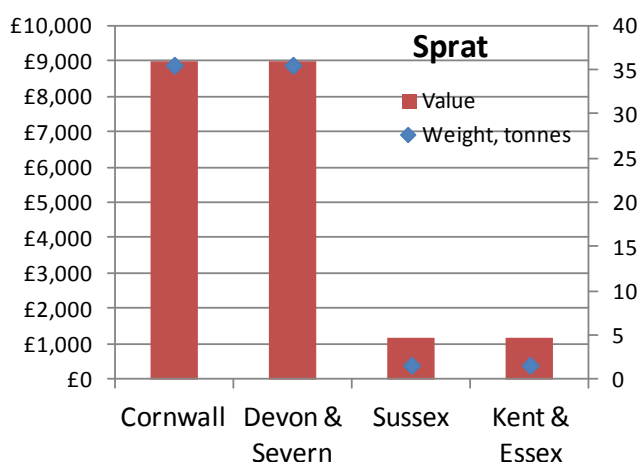
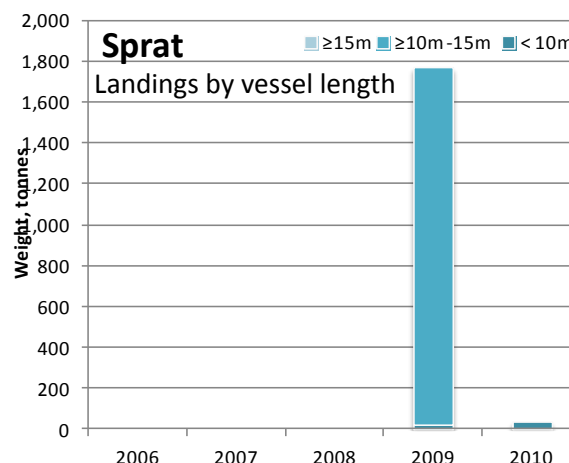
Species distribution



Species biological attributes			
Species	Sprat	Average age at maturity	1-2 yr
Reproductive strategy	Broadcast spawners	Average maximum age	6 yr
Length of larvae phase		Fecundity (No of eggs)	8,000-50,000
Movement of adults	Migratory	Average size at maturity	11.6 cm
Sediment type	Marine, pelagic	Average maximum size	16 cm
Depth	Subtidal, 10-150m	Trophic level	3

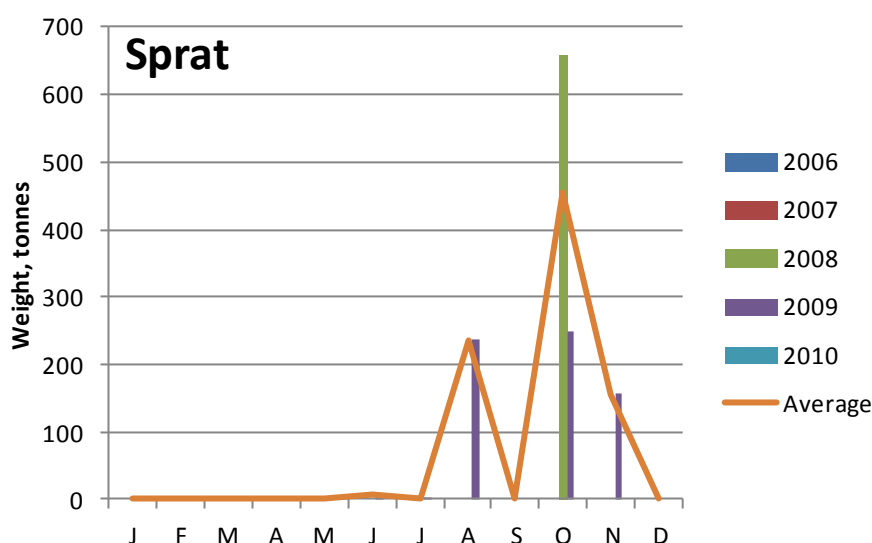
Sprat landings

Total inshore landings		
Sprats	Live weight, tonnes	Landed value
2006	1,929	£250,674
2008	3,053	£576,360
2009	1,765	£507,319
2010	37	£10,162



Sprat landings from ICES rectangles that overlap IFCA districts have fluctuated greatly from 2006-2010, with no landings in 2007 and a peak in 2008 where ~£576,000 were landed (see table top left). Landings by vessel length category are difficult to interpret as data are missing due to landings being made by less than five vessels (due to the nature of the fishery).

Based on a five year average, pelagic otter trawls land all of the catch (100%). Key IFCA districts are Cornwall and Devon and Severn. Landings are recorded to occur in August, October and November.



Key landing ports include:

- Brixham
- Mevagissey
- Dartmouth

3 Shellfish

3.1 Bivalve

3.1.1 Clam, manila

Tapes philippinarum

ICES stocks Not assessed at ICES level



MSC

assessments

Assessed: none

In Assessment: none

Withdrawn: none

Manila clams are indigenous to Japan and are widely used in commercial fisheries. This species is common around American shores but there are no natural populations in the British Isles. The manila clam was introduced to Poole Harbour (lat 50°N) on the south coast of England in 1988 as a novel species for aquaculture. While the Poole Harbour population is currently Europe's most northerly reported self-sustaining, naturalised population, given forecasts of increasing air and sea temperatures it might be expected that this species will eventually spread to more sites around the coasts of Northern Europe.

The Manila clam is found in the mid to upper portion of the intertidal and in protected mud-gravel beaches. The shell is roundly triangular in shape strong and heavy, with radiating ridges and varies in colour from greyish white through yellow to buff brown. The shell also has distinctive black and white markings. The interior surface of the shell is smooth with a deep purple band. It can grow up to 6 cm in length. The tip of the siphon is split. Manila clam is superficially similar in shape and size to the paloured clam *Ruditapes decussatus*, however the flesh of live Manila clams, especially the foot is orange whilst in the paloured clam, the foot is white. The shell of the Manila clam also has distinctive black and white markings (Carter, 2005).



Species distribution

Source:

<http://www.marlin.ac.uk/speciesinformation.php?speciesID=4424>

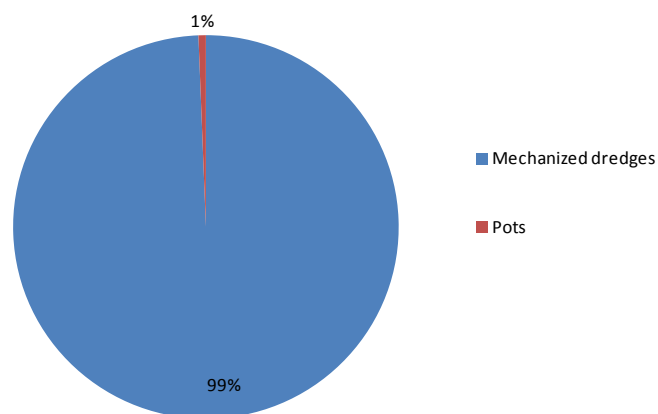
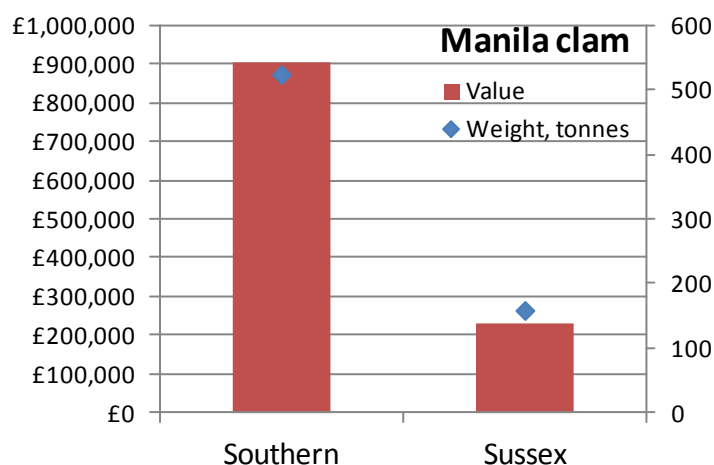
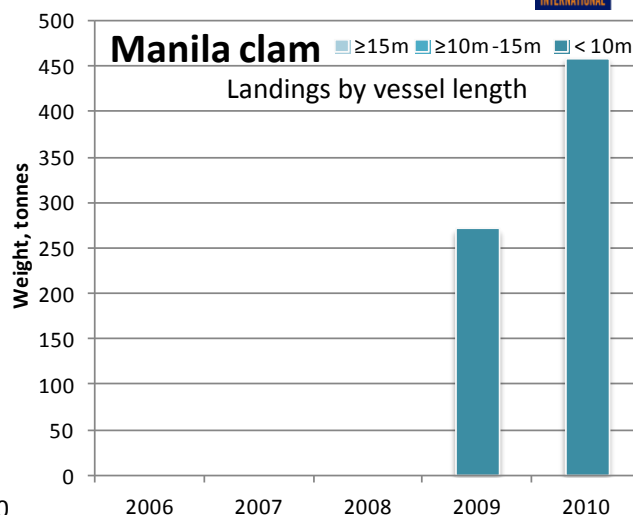
(●) Recorded

(●) Expected

Species biological attributes			
Species	Manila clam	Average age at maturity	1-3 yr
Reproductive strategy	Broadcast spawners	Average maximum age	16 yr
Length of larvae phase	3-4 weeks	Fecundity (No of eggs)	200,000-2.3 million
Movement of adults	Sessile	Average size at maturity	2-2.5 cm
Sediment type	Mud, sand, gravel	Average maximum size	6 cm
Depth	Intertidal	Trophic level	2

Manila clam landings

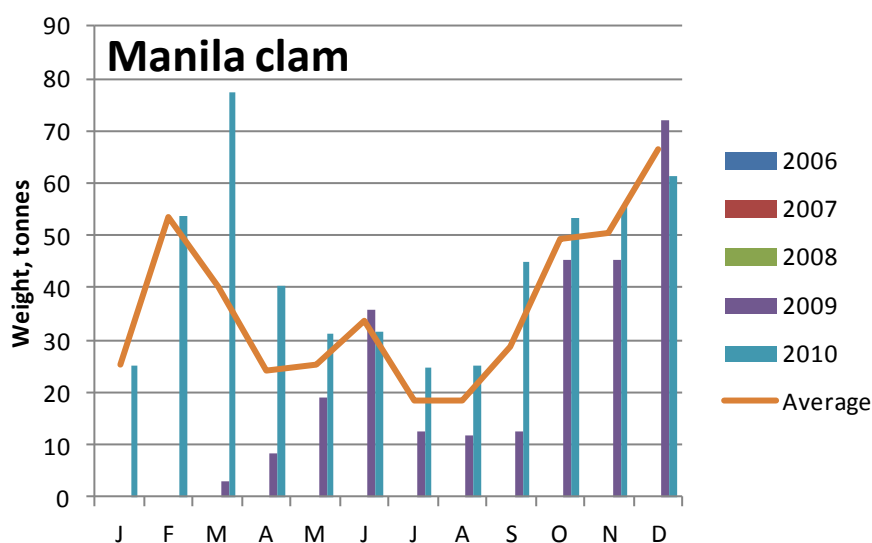
Total inshore landings		
Manila Clam	Live weight, tonnes	Landed value
2009	283	£497,005
2010	525	£904,723



Manila clam landings from ICES rectangles that overlap IFCAs are only recorded in 2009 and 2010, with a total value of ~£900,000, and 525 tonnes landed in 2010. Landings are solely by under 10m vessels and recorded into Southern and Sussex IFCAs, with only three landing ports: Portsmouth, Poole and Southampton.

Based on a five year average, mechanized dredgers land almost all of the catch (99% by weight).

Landings occur throughout the year and on average peak during winter months.



Key landing ports include:

- Portsmouth
- Poole
- Southampton

3.1.2 Clam, carpet shell

Venerupis decussate or

Tapes decussate



ICES stocks Not assessed at ICES level

MSC assessments

Assessed: none

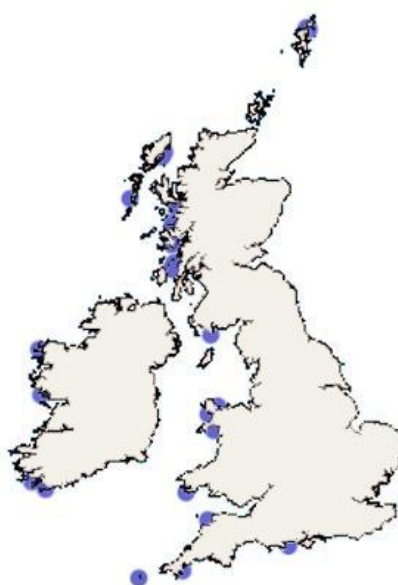
In Assessment: Clams and Cockle Fishery from Ria de Arousa (including cockle, pullet carpet shell, grooved carpet shell and short-necked clam)

Withdrawn: none

The shell of the chequered carpet shell is broadly oval or square in shape and is cream, yellowish, or light brown in colour, often with darker markings. The sculpture of the shell consists of concentric grooves and bold radiating ridges. There are quite distinct criss-cross (decussate) markings present posteriorly. When the valves are closed, below the beak there is a shallow, not particularly distinct, heart-shaped depression with light and dark brown fine radiating ridges.

This species tends to bury itself in sand, muddy gravel, or clay and is found on the lower shore and shallow sublittoral.

Mainly found off the southern and western coasts of Britain and around Ireland. It can grow up to 7.5 cm in length.



Species distribution

Source:

<http://www.marlin.ac.uk/speciesinformation.php?speciesID=4423>

(●) Recorded

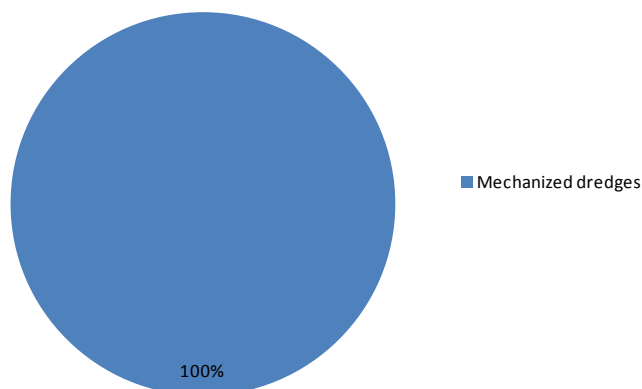
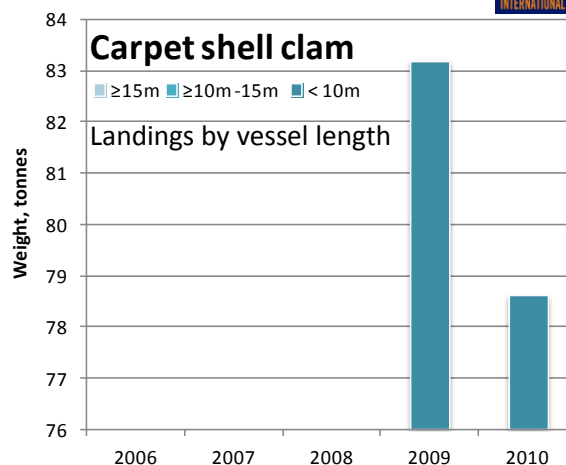
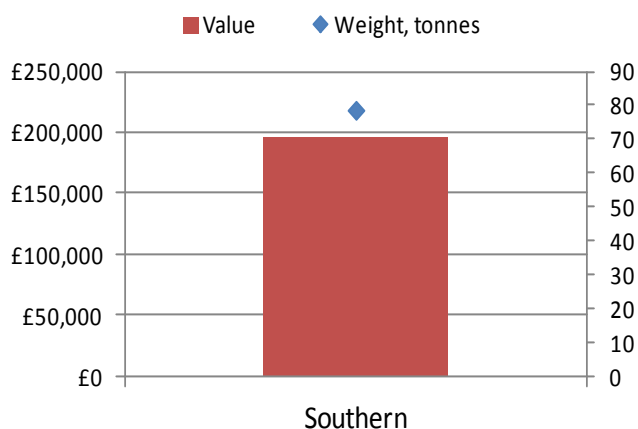
(●) Expected

Species biological attributes			
Species	Carpet shell clam	Average age at maturity	1 yr
Reproductive strategy	Broadcast spawners	Average maximum age	6-10 yr
Length of larvae phase		Fecundity (No of eggs)	
Movement of adults	Sessile	Average size at maturity	1-2 cm
Sediment type	Mud, sand, gravel	Average maximum size	7.5 cm
Depth	Intertidal	Trophic level	2

Carpet shell clam landings

Total inshore landings		
Clams (V.Decussata)	Live weight, tonnes	Landed value
2009	83	£223,941
2010	79	£196,390

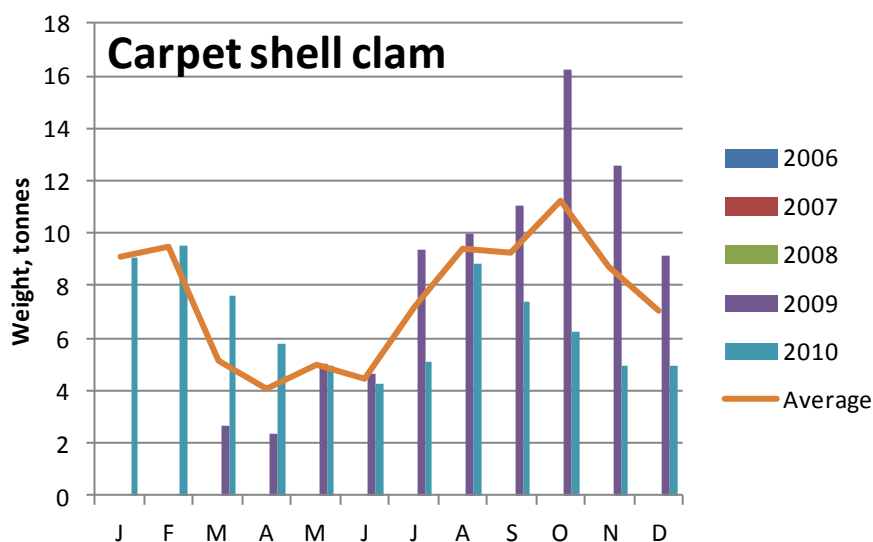
Carpet shell clam



Carpet shell clam landings from ICES rectangles that overlap IFCA districts are only recorded in 2009 and 2010, with a total value of ~£200,000, and 80 tonnes annual landings. Landings are solely by under 10m vessels and recorded into Poole, in the Southern IFCA.

Based on a five year average, mechanized dredgers land all of the catch.

Landings occur throughout the year and on average peak during autumn months.



Key landing ports include:

- Poole

3.1.3 Cockle

Cerastoderma edulis

ICES stocks Not assessed at ICES level



MSC

assessments

Assessed: [Burry Inlet cockles](#); [Dee Estuary cockle](#)

In Assessment: [Clams and Cockle Fishery from Ria de Arousa](#)

[OHV Dutch Waddenzee and Oosterschelde Hand Raked cockle](#)

Withdrawn: none

The cockle is a common burrowing bivalve occurring on all British and European coasts. It is common in the intertidal and shallow subtidal, where it can occur in a variety of sediments, notably muds, sands and muddy gravels. In broad, sheltered bays and estuaries densities can be extremely high. Cockles live within a few cm of the surface and can be washed out en-masse during storms. Lifespan is typically 2-4 years in most situations, although individuals can live to 9 or 10 years. The sexes are separate and spawning normally occurs in the summer at a length of around 15 – 20 mm and an age of around 18 months, although large (>15mm) 1 year old individuals can also spawn. Cockles can be an important food item for many intertidal wading birds, particularly over winter in the UK.

Cockles are commercially fished in areas such as Morecambe Bay, the Wash, Thames Estuary and Dee Estuary (Marlin, 2012).

Definitive data on cockle landings is hard to determine due to both the varied nature of their harvesting but also the varied nature of management. The overall national landings statistics (MMO) show that 1,257 tonnes of cockles were landed by UK vessels in England 2011. However this is a considerable under estimate. Separate figures from DEFRA indicate that in 2011 a total of 11,526 tonnes were harvested from Regulating Order fisheries, 2,482 tonnes from Hybrid Order fisheries and 7.3 tonnes were registered as aquaculture. In addition, there are significant coastal hand gathering fisheries for cockles for which no reliable landings information is available – in one region alone this was estimated to be several thousand tonnes. It is assumed that the tonnage that does appear in the MMO landings statistics is from larger vessels (with log book reporting requirements) which fish outside of regulating orders, but this is not confirmed. It is therefore highly probable that the total landings of cockle exceeds the sum of the DEFRA figures and the MMO figures, suggesting landings somewhere well excess of 15,000t per annum.

When the coastal ICES rectangles are queried for landings of cockles from the MMO database, this shows just 35 tonnes from coastal waters landed mainly into Poole and Portsmouth from mechanised dredge. Again, this is a huge under estimate. For the reasons outlined above cockle landing figures are not presented within this species profile.

Species distribution

Source:

<http://www.marlin.ac.uk/speciesfullreview.php?speciesID=2924>



Species biological attributes			
Species	Cockle	Average age at maturity	1-2 yr
Reproductive strategy	Broadcast spawners	Average maximum age	6-10 yr
Length of larvae phase	Between a week and two months	Fecundity (No of eggs)	> 1 million
Movement of adults	Sessile	Average size at maturity	1.5-2 cm
Sediment type	Sand and mud	Average maximum size	5 cm
Depth	Intertidal and subtidal	Trophic level	2

3.1.4 Mussel

Mytilus edulis

ICES stocks Not assessed at ICES level



MSC

assessments

Assessed: Denmark blue shell mussel; Exmouth mussels; Isefjord and East Jutland Danish blue shell mussel ;Limfjord blue shell mussel (rope grown); Netherlands blue shell mussel; Netherlands suspended culture mussel; North Menai Strait mussel; Royal Frysk Jutland blue shell mussel dredge; Seafood Romo East Jutland and Isefjord blue shell mussel dredge; Shetland and Scottish Mainland Rope Grown mussel Enhanced fishery ; VMI East Jutland blue shell mussel dredge

In Assessment: Germany Schleswig-Holstein blue shell mussel fishery and culture; Germany Lower Saxony mussel dredge and mussel culture; Ireland Bottom Grown Mussel (*Mytilus edulis*) Fishery; Northern Ireland Bottom Grown Mussel (*Mytilus edulis*) Fishery; Chilean mussel fishery and suspended culture Toralla S.A and Cultivos Toralla S.A

Withdrawn: none

The blue mussel *Mytilus edulis* is a sessile bivalve attached to the substratum by a byssus. Mussels can withstand wide variation in salinity, desiccation, temperature and oxygen concentration, resulting in the ability to occupy a large variety of microhabitats. Mussels can be found on any substratum providing a secure anchorage such as rocks, stones, gravel, shingle, dead shells, and even mud and sand. In soft bottom areas the mussels form stabilised mussel beds of interconnected mussels and dead shells.

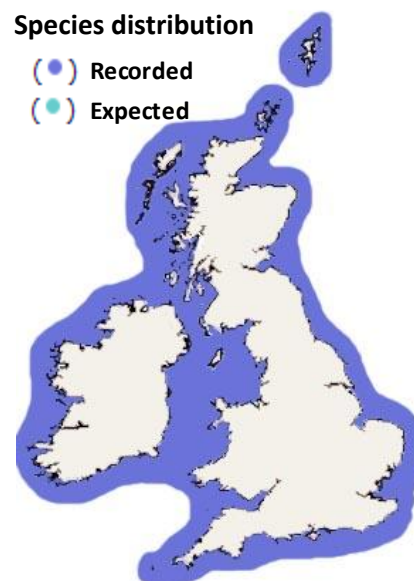
The blue mussel is a filter-feeding bivalve filtering primary on micro-algae and debris, but at lower rates also on zooplankton (Maar et al 2008).

There are three types of mussel fisheries in the English inshore area: adult hand gathered, adult dredge and seed dredge (for re-laying into aquaculture elsewhere). The quantities of hand gathered mussels are not recorded. Dredged adult mussels are likely to be landed by a small number of large vessels, so will be included within the 'species unknown' category and not represented within the inshore MMO statistics. Data from mussel seed dredge fisheries are not included in the MMO statistics since these are not typically sold, but re-layed for aquaculture production. For these reasons mussel landing figures are not presented within this species profile.

Mussels are also produced from Several, Regulating or Hybrid Order fisheries. Defra statistics show that 1,202 tonnes (value £631,000) of mussels were produced in 2010 from such fisheries. There is uncertainty to the degree in which these figures are incorporated into MMO national statistics.

Species distribution

- (●) Recorded
- (●) Expected



Source: <http://www.marlin.ac.uk/speciesfullreview.php?speciesID=3848>

Species biological attributes			
Species	Mussel	Average age at maturity	1-2 yr
Reproductive strategy	Broadcast spawners	Average maximum age	8-10 yr
Length of larvae phase	1-6 months	Fecundity (No of eggs)	> 1 million
Movement of adults	Sessile	Average size at maturity	0.7 cm
Sediment type	Bedrock, boulders, gravel, mud	Average maximum size	6 cm
Depth	Intertidal and subtidal	Trophic level	2

3.1.5 Oysters, native

Ostrea edulis



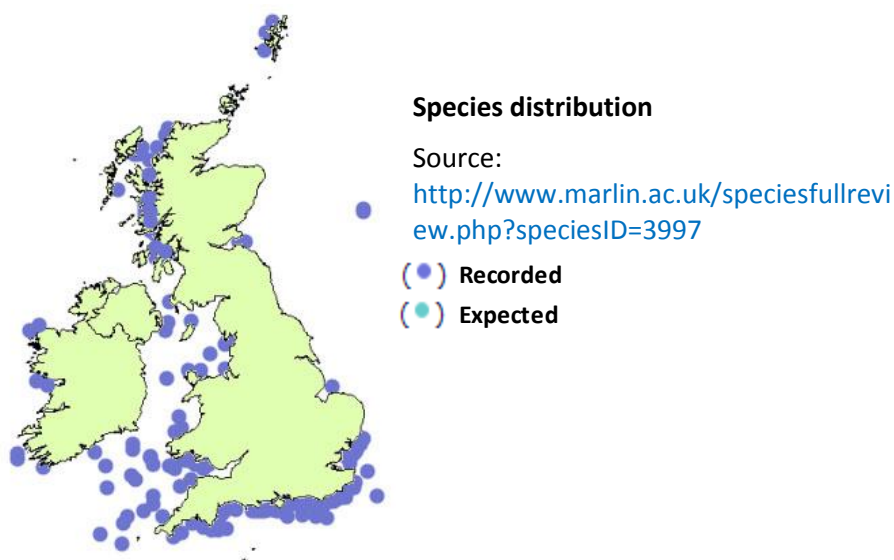
ICES stocks Not assessed at ICES level

MSC assessments	Assessed: Limfjord oyster dredge fishery
	In Assessment: Blackwater native oyster ; Dutch Oyster Association oyster fishery
	Withdrawn: none

Native oysters can be found intertidally but generally occur offshore from about low water down to some 80 m on firm, comparatively immobile bottoms of mud, rocks, muddy sand, muddy gravel with shells, hard silt or old peat bottoms, but the main concentrations are usually in shallower water, down to some 20 m. They are sessile animals, cementing to hard objects on the seabed, so the substrate must contain suitable, clean, hard surfaces for settlement (known as cultch).

Both the planktonic larvae and adult oysters are filter feeders, consuming organic detritus, bacteria, diatoms, dinoflagellates and a variety of protozoans, together with the smallest planktonic crustaceans and fragments of larger animals. *Ostrea edulis* is a protandric sequential hermaphrodite: the young oyster first becomes sexually mature as a male, then changes relatively slowly to a functional female, after which it very quickly becomes a male again and so on alternately throughout life. Spawning takes place in the summer months.

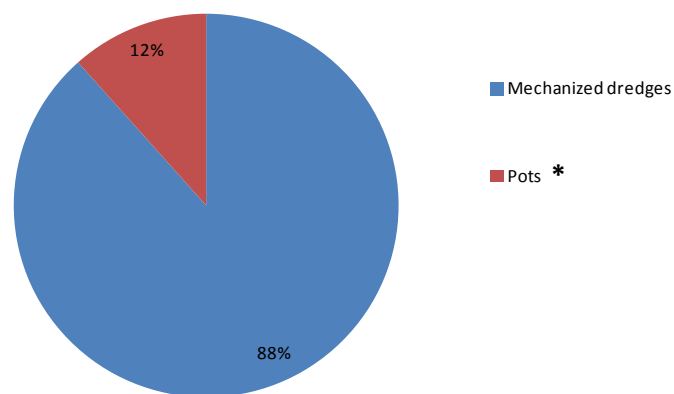
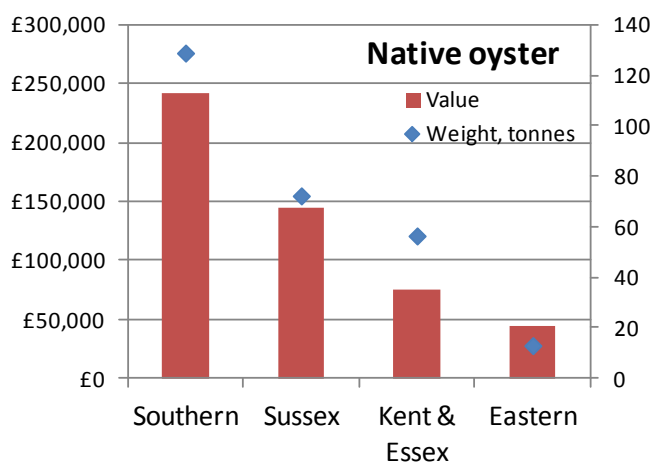
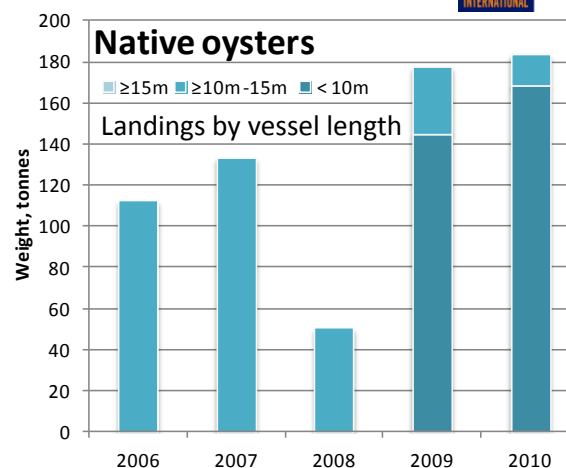
Oysters have numerous invertebrate predators and are also eaten by some fish. In general, the thin shelled spat are the most vulnerable and predation declines as the oysters becomes larger and the shell thickens.



Species biological attributes			
Species	Oysters, native	Average age at maturity	3-5 yr
Reproductive strategy	Broadcast spawners	Average maximum age	6-10 yr
Length of larvae phase	11-30 days	Fecundity (No of eggs)	2 million
Movement of adults	Sessile	Average size at maturity	5 cm
Sediment type	Bedrock, boulders, gravel, mud	Average maximum size	10 cm
Depth	Intertidal and subtidal	Trophic level	2.8

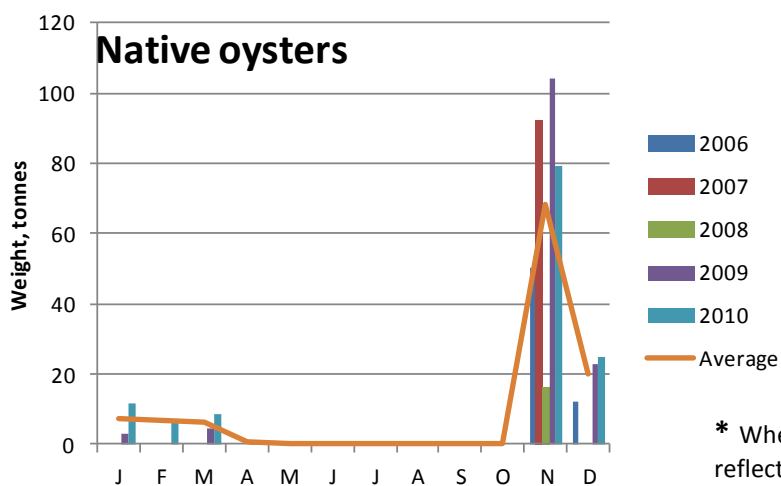
Native oyster landings

Total inshore landings		
Native Oysters	Live weight, tonnes	Landed value
2006	112	£145,463
2007	133	£140,215
2008	54	£53,469
2009	177	£332,431
2010	185	£317,199



Native oyster landings from ICES rectangles that overlap IFCA districts have increased progressively from 2006 to 2010, with the exception of 2008 which saw a large decrease. A total value of ~£317,000 and 185 tonnes were landed in 2010. Landings by under 10m vessels dominate in 2009 and 2010, with vessels 10-15m in length landing the remainder.

Key IFCA's are Southern and Sussex. Landings predominately occur in November.



Key landing ports include:

- Portsmouth
- Whitstable
- Langstone Harbour
- West Mersea
- Selsey
- Shoreham
- Brighton

* Where anomalies such as oyster / pots exist, this is a true reflection of the data and could be due to mis-reporting or a vessel being registered as one gear type but occasionally using another gear.

3.1.1 Oyster, Pacific

Crassostrea gigas

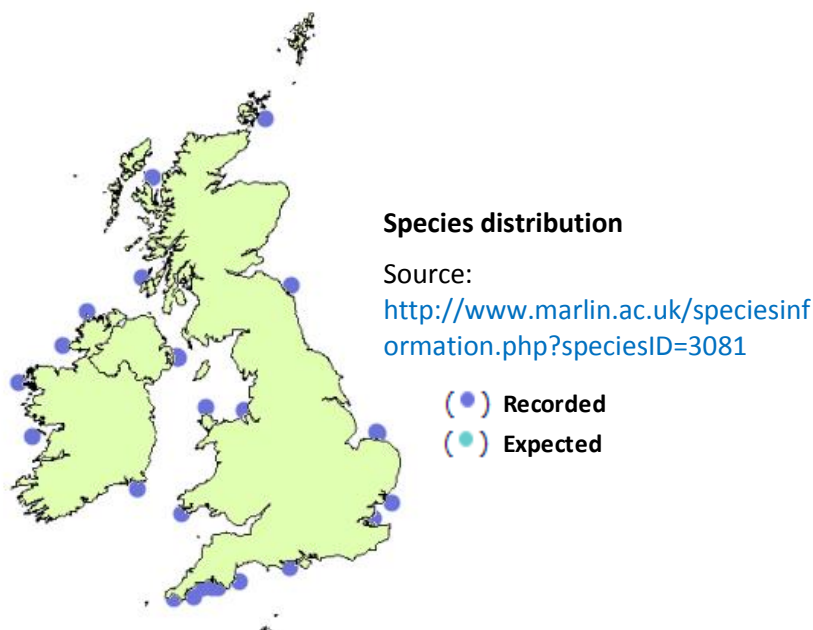


ICES stocks Not assessed at ICES level

MSC assessments	Assessed: none
	In Assessment: none
	Withdrawn: none

Crassostrea gigas was initially introduced from Portugal to Essex in 1926 for mariculture, and then to Cornwall and Essex. It has been farmed on around 300 sites throughout England, Scotland, Wales and Northern Ireland. Since its introduction it has established itself in the wild in various regions. Pacific oysters occur naturally in Japan and south-east Asia and are also known as the Portuguese or Japanese oyster. (Hughes, 2008).

Pacific oyster are estuarine species, but can also be found in intertidal and subtidal zones. They prefer to attach to hard or rocky surfaces in shallow or sheltered waters up to 40 m deep, but have been known to attach to muddy or sandy areas when the preferred habitat is scarce, and can be found in depths up to 80m. The Pacific oyster can also be found on the shells of other animals. Larvae often settle on the shell of adults, and great masses of oysters can grow together to form oyster reefs.



Species biological attributes			
Species	Pacific oyster	Average age at maturity	1 yr
Reproductive strategy	Broadcast spawners	Average maximum age	6-10 yr
Length of larvae phase	14-18 days	Fecundity (No of eggs)	50-200 million
Movement of adults	Sessile	Average size at maturity	5 cm
Sediment type	Bedrock, boulders, gravel, mud	Average maximum size	18 cm
Depth	Intertidal and subtidal	Trophic level	2.8

3.1.2 Razorshell

Ensis spp



ICES stocks Not assessed at ICES level

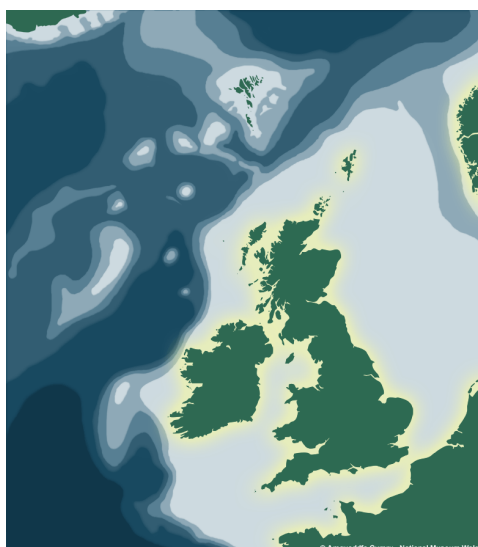
MSC assessments	Assessed: none
	In Assessment: none
	Withdrawn: none

Ensis spp occur virtually everywhere inshore but favourable conditions, such as the lee of reefs, rocks and islands make for high densities beds which interchange individuals with the surrounding areas where they occur in a more dispersed pattern. *Ensis ensis* beds do occur at extreme low water of spring tides but the species is much more common in depths of about 10m (Holme, 1954).

E. ensis occurs off the coasts of northwest Europe, from the Baltic Sea and Norway to the Atlantic coast of Spain. It is common around the coasts of Britain

E. ensis burrows into clean or silty sand on the seabed in the neritic zone and the low intertidal zone. When covered with water this bivalve remains close to the surface but when disturbed or when the substrate is exposed it descends to half a metre below the surface.

E. ensis is often found living in association with other burrowing animals including the sea potato, *Echinocardium cordatum*, and the bivalve molluscs *Tellina fabula* and *Chamelea gallina* (MarLin, 2012).



Species distribution

Source:
<http://naturalhistory.museumwales.ac.uk/britishbivalves/browserecord.php?-recid=53>

Distribution 

Species biological attributes			
Species	Razorshell	Average age at maturity	<5 years
Reproductive strategy	Broadcast Spawners	Average maximum age	10-25 years
Length of larvae phase	A week to two months	Fecundity (No of eggs)	>20,000 eggs per year
Movement of adults	Mobile	Average size at maturity	<40 cm
Sediment type	Mud, sand	Average maximum size	<100 cm
Depth	Intertidal and subtidal	Trophic level	<2.75

3.1.3 Scallop

Pecten maximus



ICES stocks Not assessed at ICES level

MSC assessments

Assessed: Eastern Canada offshore scallop fishery; Isle of Man queen scallop trawl; Patagonian scallop; SSMO Shetland inshore brown & velvet crab and scallop fishery
In Assessment: Faroe Islands queen scallop; FBSA Canada Full Bay Sea Scallop; US Atlantic sea scallop; Japanese scallop hanging and seabed enhanced fisheries; New Zealand southern scallop; Zhangzidao scallop
Not certified: Zhangzidao scallop

King scallops are found on clean firm sand and fine gravel and in currents, which provide good feeding conditions. They occur along the European Atlantic coast from northern Norway, south to the Iberian Peninsula. The bathymetric range of distribution is from the low tide mark to over 100 m, but it is most common in waters of 20-70 m. Scallop can be present in densities of 5-6 m⁻² although a more normal density is 0.2 m⁻²

The life cycle can be divided into the free swimming larval phase and the largely sedentary juvenile and adult phase. The scallop is a filter feeder. In general the potential spawning season is long, from April to September or October, but its timing and duration vary geographically. The larval development period is 2-3 weeks. Recruitment is usually unpredictable as it depends not only on successful spawning and larval production but also on retention of larvae or transport of larvae into the area suitable for settlement. Settlement in a particular area may be unpredictable leading to unstable age structure. As a consequence of this scallop beds frequently show a regional separation of year classes and spatial variability in age structure.



Species distribution

Source:

<http://www.marlin.ac.uk/speciesfullreview.php?speciesID=4056>

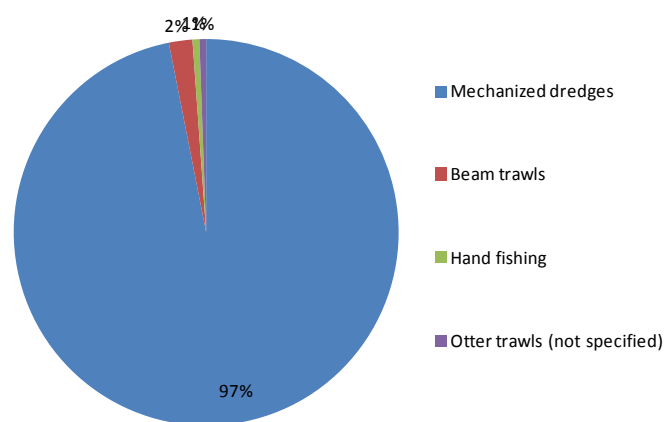
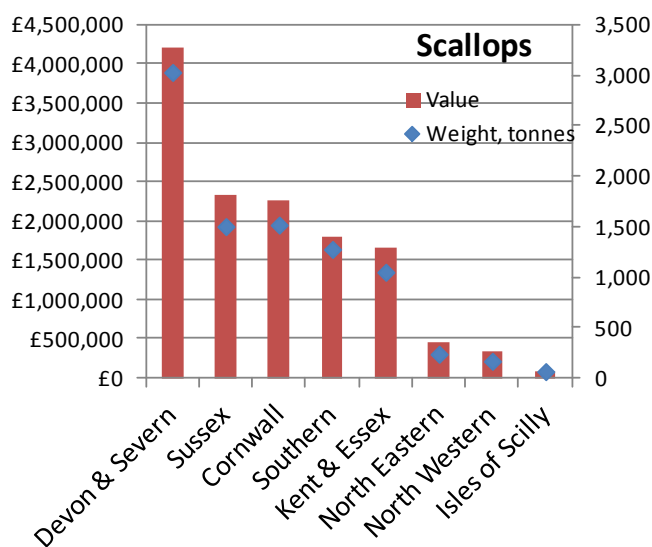
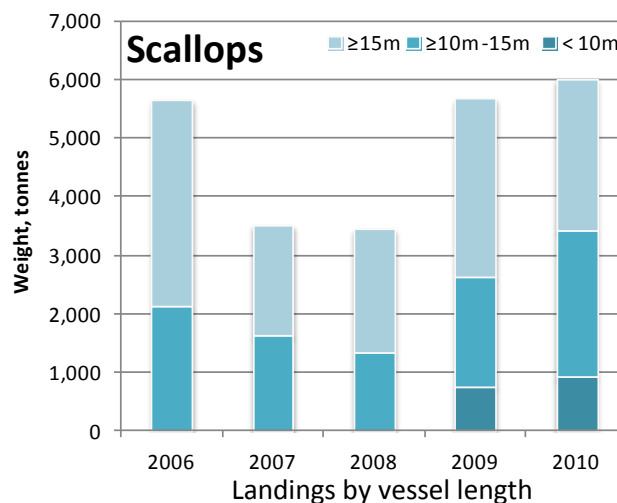
(●) Recorded

(●) Expected

Species biological attributes			
Species	Scallop	Average age at maturity	2-3 yr
Reproductive strategy	Broadcast spawners	Average maximum age	11-20 yr
Length of larvae phase	11-30 days	Fecundity (No of eggs)	15-21 million
Movement of adults	Mobile	Average size at maturity	6 cm
Sediment type	Mud, sand, gravel	Average maximum size	16 cm
Depth	Subtidal: 10-110m	Trophic level	2

Scallop landings

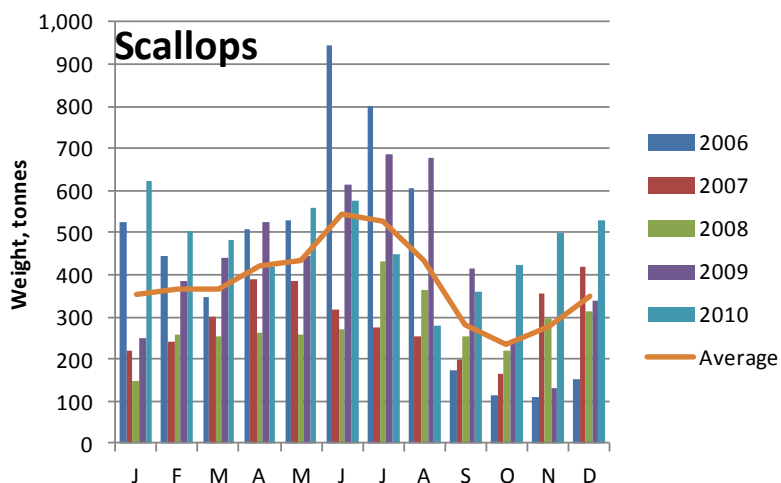
Total inshore landings		
Scallops	Live weight, tonnes	Landed value
2006	5,734	£8,168,542
2007	3,896	£5,791,076
2008	3,679	£5,628,929
2009	5,808	£8,266,531
2010	6,274	£9,260,899



Scallops represent the most commercially important species landed into England. Scallop landings from ICES rectangles that overlap IFCA districts dropped significantly in 2007 and 2008, but returned to 2006 levels in 2009 and had a total value of over £9.2 million with 6,274 tonnes landed in 2010.

Based on a five year average, mechanized dredges land the majority of the catch (97% by weight), followed by beam trawls (2%).

Landings occur throughout the year and on average peak during summer.



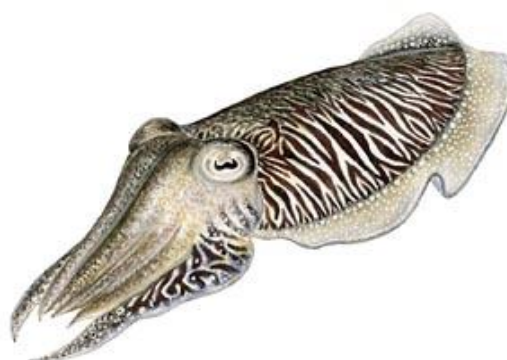
Key landing ports include:

- Brixham
- Plymouth
- Shoreham
- River Fal - Falmouth
- Newlyn
- Newhaven
- Looe
- Scarborough
- Exmouth
- West Bay

3.2 Cephalopod

3.2.1 Cuttlefish

Sepia officinalis



ICES stocks Not assessed at ICES level

MSC

assessments

Assessed: none

In Assessment: none

Withdrawn: none

The common cuttlefish is a highly evolved mollusc with large eyes, tough jaws, 8 arms, 2 retractable tentacles and an internal cuttlebone (Hayward, *et. al.* 1996). The body is flattened and oval in shape, with lateral fins running the entire length of the body (Hayward, *et. al.* 1996) and has a mantle of up to 45cm in length.

Cuttlefish live to approximately two years and the main recruitment occurs mostly in the autumn, although year round recruitment is possible (Challier *et.al.* 2005).

Due to the fishing activity utilising the cuttlefishes breeding behaviour it is common for the females to lay her eggs on trap and subsequently they are damaged.



Species distribution

Source:

<http://www.marlin.ac.uk/speciesfullreview.php?speciesID=4333>

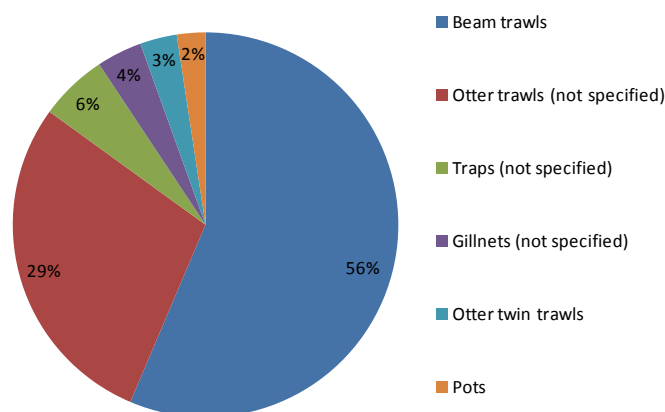
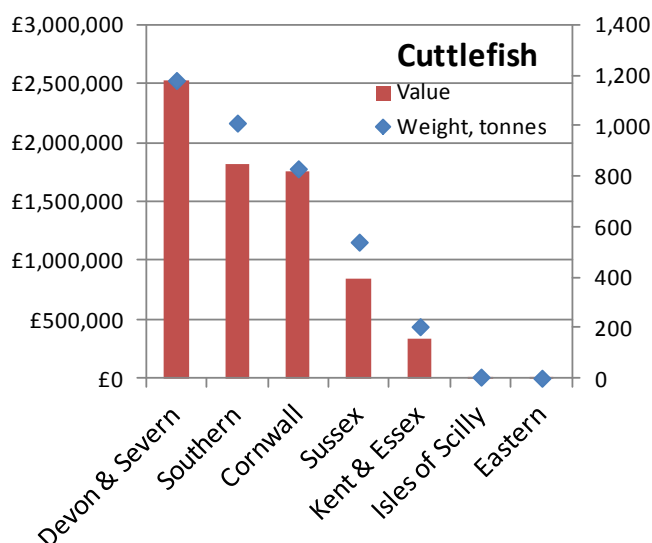
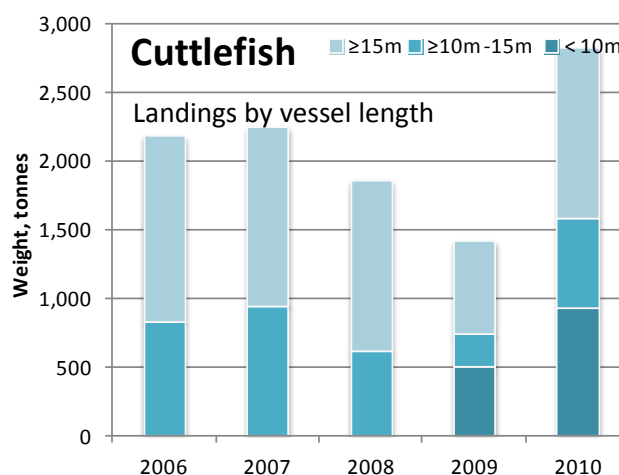
(●) Recorded

(●) Expected

Species biological attributes			
Species	Cuttlefish	Average age at maturity	1 yr
Reproductive strategy	Demersal egg layer	Average maximum age	1-2 yr
Length of larvae phase	Between a week and two months	Fecundity (No of eggs)	100-1,000
Movement of adults	Migratory	Average size at maturity	12 cm
Sediment type	Sand and mud	Average maximum size	45 cm
Depth	Subtidal	Trophic level	3.31

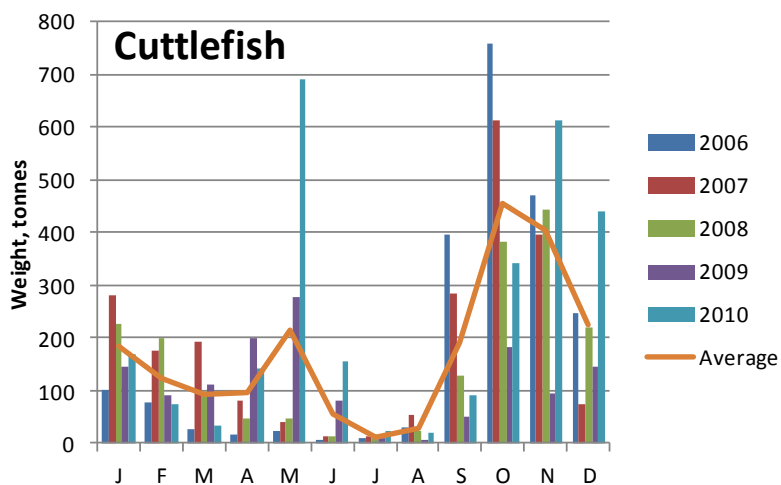
Cuttlefish landings

Total inshore landings		
Cuttlefish	Live weight, tonnes	Landed value
2006	2,192	£3,320,082
2007	2,263	£2,950,020
2008	1,870	£2,816,731
2009	1,433	£2,214,545
2010	2,819	£5,543,458



Cuttlefish landings from ICES rectangles that overlap IFCA districts have increased greatly from 2009 to 2010, with a total value of over £5.5 million, and 2,819 tonnes landed in 2010. Landings are made by all vessel length categories.

Based on a five year average, beam trawls land the majority of the catch (56% by weight), followed by otter trawls (32%), traps (6%) and gillnets (4%). Landings peak during autumn.



Key landing ports include:

- Brixham
- Plymouth
- Newlyn
- Looe
- Shoreham
- Portsmouth
- Selsey
- Eastbourne
- Lymington
- Keyhaven
- Hastings

3.2.2 Squid

Loligo spp.

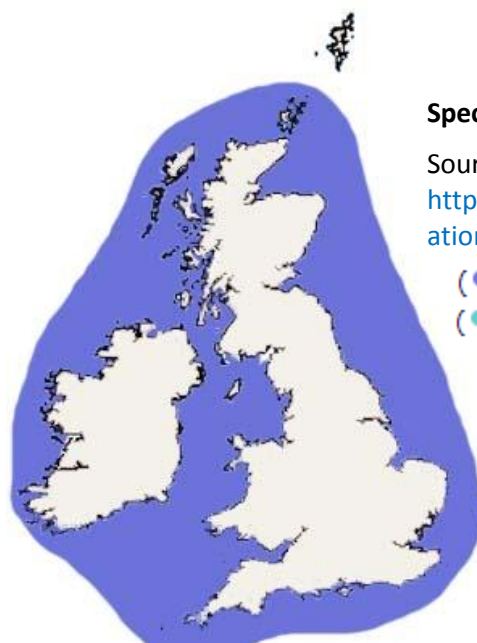


ICES stocks Not assessed at ICES level

MSC assessments	Assessed: none
	In Assessment: none
	Withdrawn: none

Loligo vulgaris can be found on all British and Irish coasts. They grow up to 54 cm in length and have a small shield-like part of the body projecting slightly over the head. The internal shell is horny and pen-like. The colour varies and is often pink to white with purple brown mottling dorsally (Wilson, 2008).

Squid have no preference for a particular bottom type, the only requirement seems to be the presence of substrata for the attachment of egg strings during the spawning period. Spawning occurs all year but mainly in winter. Eggs are deposited in gelatinous tubes containing tens of eggs and attached to rocks, branching organisms and other hard objects on rocky, sandy and muddy bottoms (Wilson, 2008).



Species distribution

Source:

<http://www.marlin.ac.uk/speciesinformation.php?speciesID=3718>

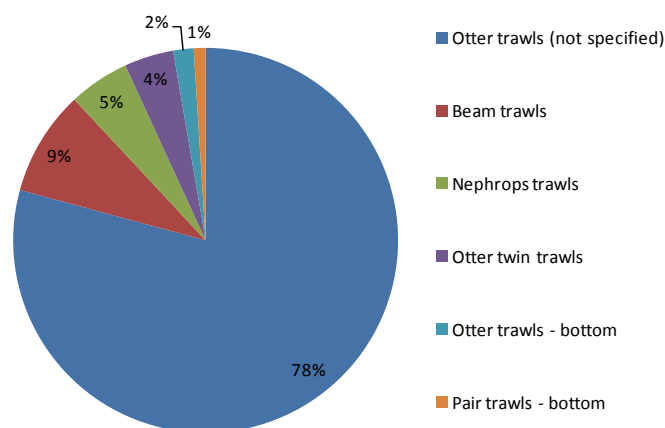
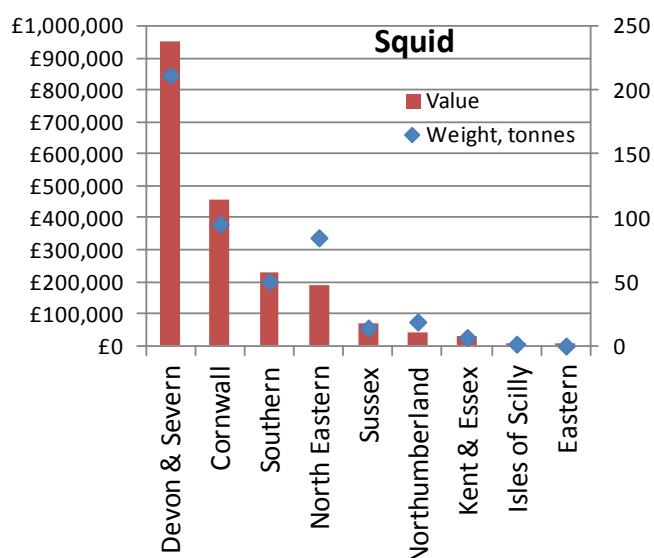
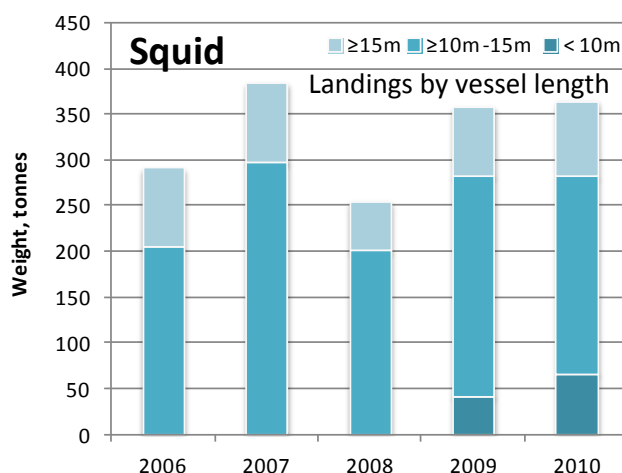
(●) Recorded

(●) Expected

Species biological attributes			
Species	Squid	Average age at maturity	1 yr
Reproductive strategy	Demersal egg layer	Average maximum age	2 yr
Length of larvae phase	Over two months	Fecundity (No of eggs)	30,000-70,000
Movement of adults	Migratory	Average size at maturity	15 cm
Sediment type	Marine	Average maximum size	54 cm
Depth	Subtidal, 0-500m	Trophic level	3.3

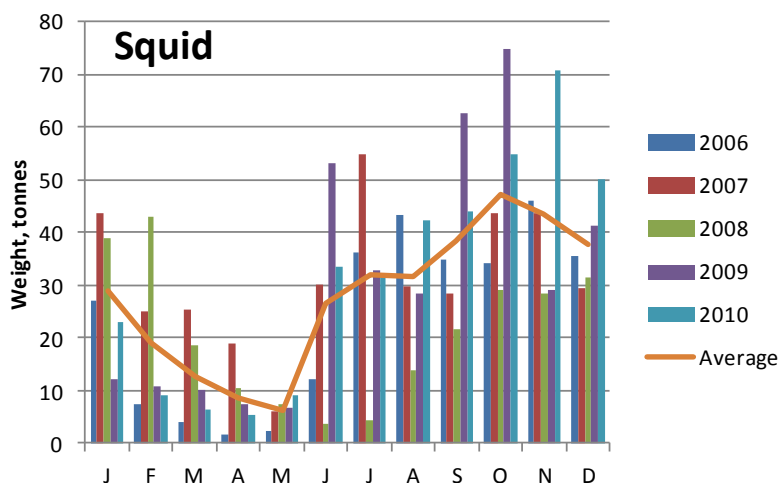
Squid landings

Total inshore landings		
Squid	Live weight, tonnes	Landed value
2006	300	£1,247,964
2007	399	£1,801,635
2008	263	£1,265,690
2009	379	£1,600,789
2010	383	£1,525,690



Squid landings from ICES rectangles that overlap IFCA districts have remained relatively consistent with a slight drop in 2008; a total value of over £1.5 million and 383 tonnes was landed in 2010. Landings are dominated by vessels 10-15m in length. Key IFCA's are Devon and Severn and Cornwall.

Based on a five year average, otter trawls land the majority of the catch (91% by weight), followed by beam trawls (9%). Landings occur throughout the year and on average peak during autumn.



Key landing ports include:

- Brixham
- Looe
- Newlyn
- Plymouth
- Ilfracombe
- Appledore
- North Shields
- Scarborough
- Whitby
- Blyth

3.3 Crustacean

3.3.1 Crab, brown

Cancer pagurus



ICES stocks Not assessed at ICES level

MSC

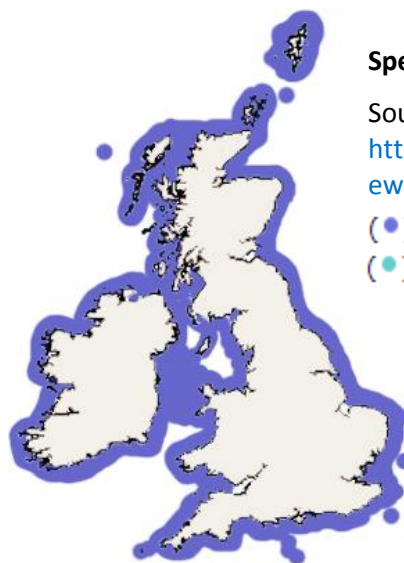
assessments

Assessed: [SSMO Shetland inshore brown & velvet crab and scallop fishery](#)

In Assessment: none

Withdrawn: none

The brown crab is a long-lived large decapods crustacean. Brown crab is distributed from Norway throughout the North Sea and English Channel to the coast of Portugal. *Cancer pagurus*. Moulting may occur each year in smaller crabs but less often as size increases. Mating takes place when the female crab is soft (after moulting) and the male guards the female for a period of time prior to the female moult. Eggs are spawned onto the pleopods where they are carried over winter. The hatching season is prolonged and larvae may be found during spring, summer and autumn depending on latitude and water temperatures. Brown crabs are very productive animals and each female hatch between 1-4 million eggs. Post larvae are known to settle inshore and juvenile crabs are more common in shallow than in deep water. Female adult crabs undertake extensive migrations, which may be associated with reproductive cycle. Male adult crabs tend to not to undertake migrations.



Species distribution

Source:

<http://www.marlin.ac.uk/speciesfullreview.php?speciesID=2872>

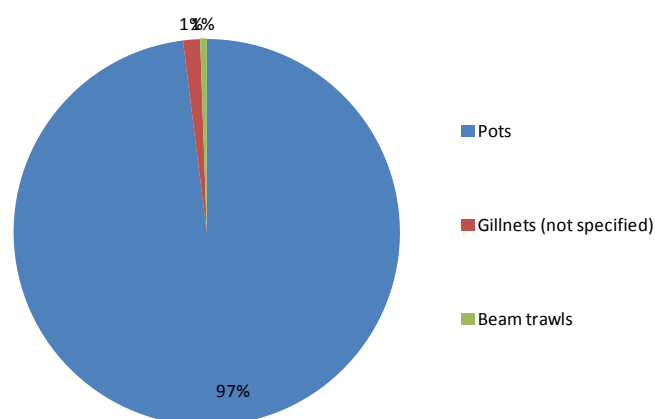
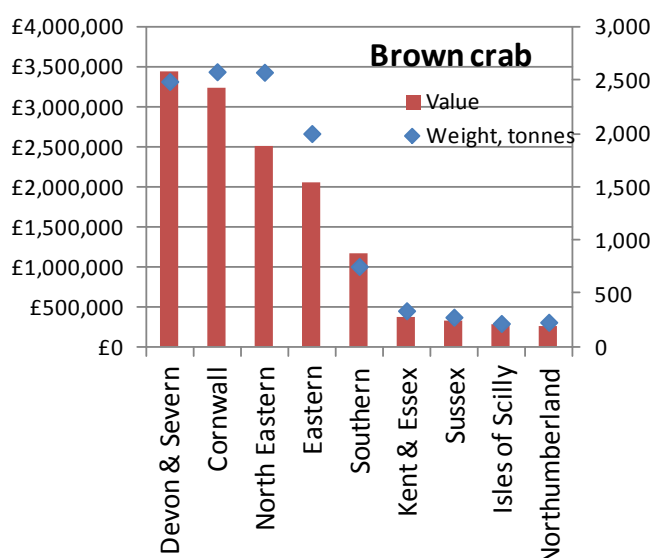
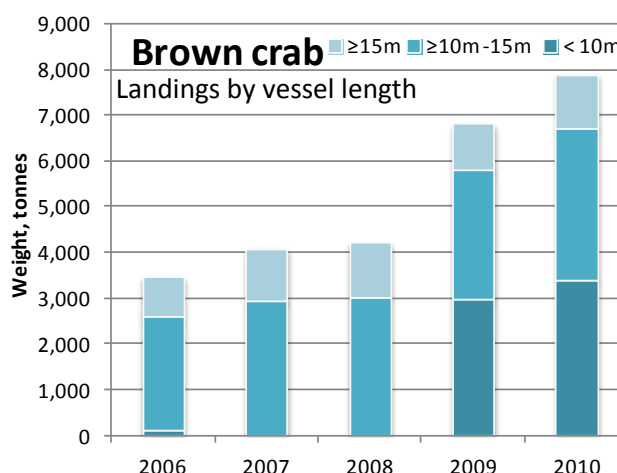
(●) Recorded

(●) Expected

Species biological attributes			
Species	Crab, brown	Average age at maturity	4-6 yr
Reproductive strategy	Broadcast spawners	Average maximum age	21-50 yr
Length of larvae phase	1-6 months	Fecundity (No of eggs)	250,000-4 million
Movement of adults	Migratory	Average size at maturity	11 cm
Sediment type	Sandy mud, sand, gravel, cobbles, bedrock	Average maximum size	27 cm
Depth	Intertidal and subtidal	Trophic level	3.71

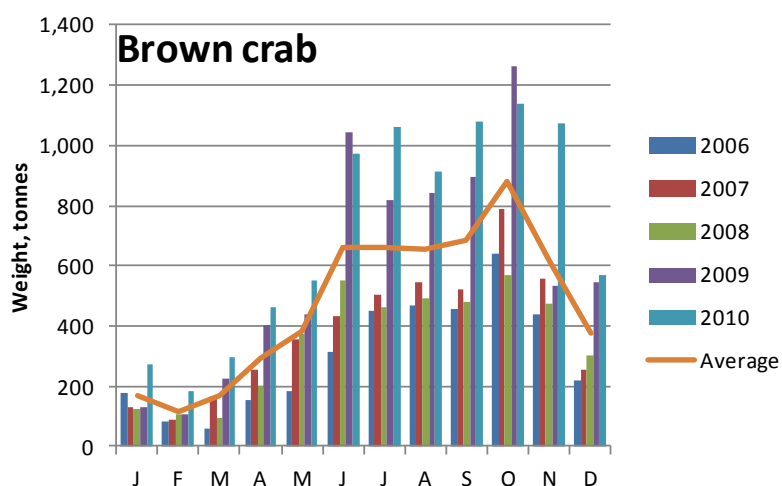
Brown crab landings

Total inshore landings		
Brown crab	Live weight, tonnes	Landed value
2006	4,205	£5,697,276
2007	4,899	£6,664,429
2008	4,655	£5,844,417
2009	7,514	£8,800,353
2010	8,750	£10,652,186



Brown crab landings from ICES rectangles that overlap IFCA districts have increased significantly since 2006, with a total value of over £10.6 million, and 8,750 tonnes landed in 2010, brown crab are the second most important shellfish species in inshore landings (behind lobster). Landings are dominated by vessels less than 15m in length, with significant increases for under 10m vessels in 2009 and 2010.

Based on a five year average, pots/creels land the majority of the catch (97% by weight), followed by gillnets (1%) and beam trawl (1%). Landings occur throughout the year and on average peak during autumn.



Key landing ports include:

- Bridlington
- Newlyn
- Dartmouth
- Salcombe
- Weymouth
- Whitby
- Kingswear
- Plymouth
- Wells
- Newquay

3.3.2 Crab, shore

Carcinus maenas



ICES stocks Not assessed at ICES level

MSC assessments	Assessed: none
	In Assessment: none
	Withdrawn: none

Carcinus maenas is found on all types of shore, from high water to depths of 60 m in the sublittoral, but it is predominantly a shore and shallow water species. It tolerates a wide range of salinities and is especially abundant in estuaries and salt marshes.

Common shore crabs are eaten mainly by fish and birds (e.g. gulls, commorants, eider ducks) although it depends on the size of the crabs and on geographic location

Carcinus maenas can be considered a true omnivore and consumes plants, algae, molluscs, arthropods (including their own species), annelids and carrion.

In the Wadden Sea and, probably colder, northern parts of Britain, *Carcinus maenas* migrates to subtidal areas and remains there until spring. During this time the crabs are inactive in shelters and do not feed (Dittmann & Villbrandt, 1999). Lack of prey in the winter also leads to starvation and inactivity (Scott-Fordsmand & Depledge, 1993).



Species distribution

Source:

<http://www.marlin.ac.uk/speciesfullreview.php?speciesID=2885>

- (●) Recorded
- (●) Expected

Species biological attributes			
Species	Crab, shore	Average age at maturity	1-2 yr
Reproductive strategy	Broadcast spawners	Average maximum age	5-10 yr
Length of larvae phase	1-2 months	Fecundity (No of eggs)	100,000-1 million
Movement of adults	Mobile	Average size at maturity	2-3 cm
Sediment type	no preference	Average maximum size	8.6 cm
Depth	Intertidal and subtidal	Trophic level	2.6

3.3.3 Crab, spider

Maia squinado



ICES stocks Not assessed at ICES level

MSC

assessments

Assessed: none

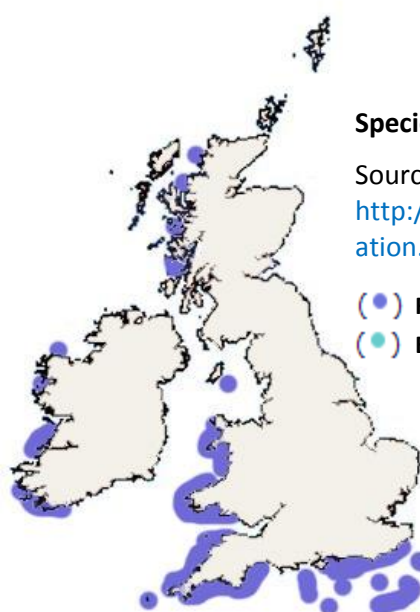
In Assessment: none

Withdrawn: none

The spider crab is a very large species of crab with a circular, convex carapace which is bordered by strong tapering spines. It is red, brownish-red, or yellowish in colour and the body can grow up to 20 cm long and is often covered with attached algae.

Spider crab are found on coarse sand mixed grounds and bedrock on the open coast, and also in deep tide pools and shallow sublittoral to 50 m.

Within the UK, they are predominately found in the west and south-west coasts (Wilson, 2008).



Species distribution

Source:

<http://www.marlin.ac.uk/speciesinformation.php?speciesID=3761>

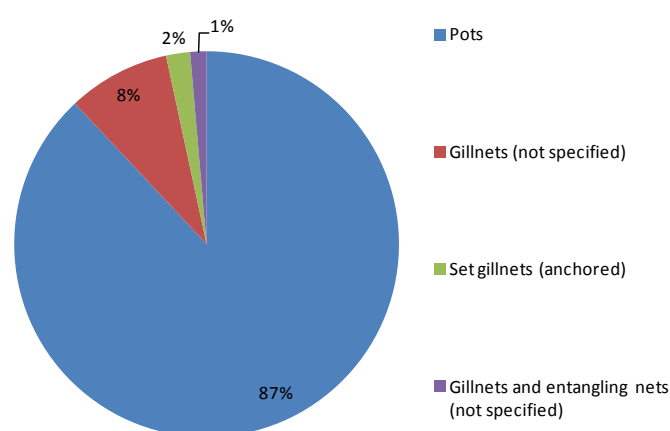
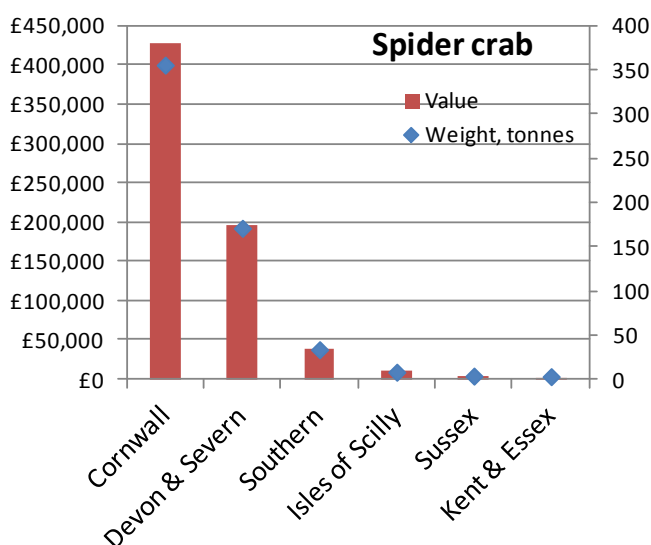
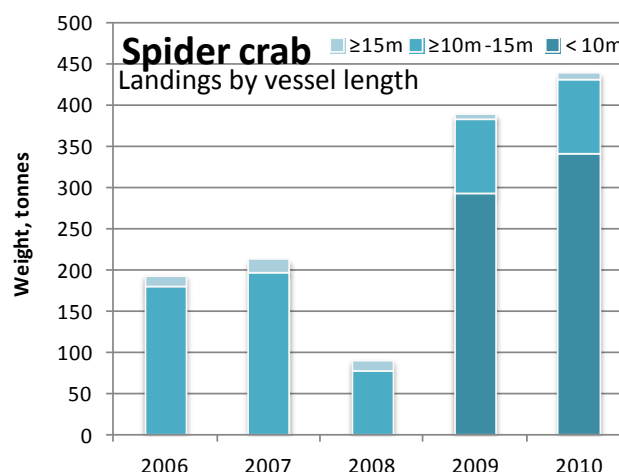
(●) Recorded

(●) Expected

Species biological attributes			
Species	Crab, spider	Average age at maturity	1-2 yr
Reproductive strategy	Broadcast spawners	Average maximum age	8 yr
Length of larvae phase	1-2 months	Fecundity (No of eggs)	156,000
Movement of adults	Migratory	Average size at maturity	8-17 cm
Sediment type	Coarse sand and bedrock	Average maximum size	23 cm
Depth	Intertidal and subtidal	Trophic level	2.6

Spider crab landings

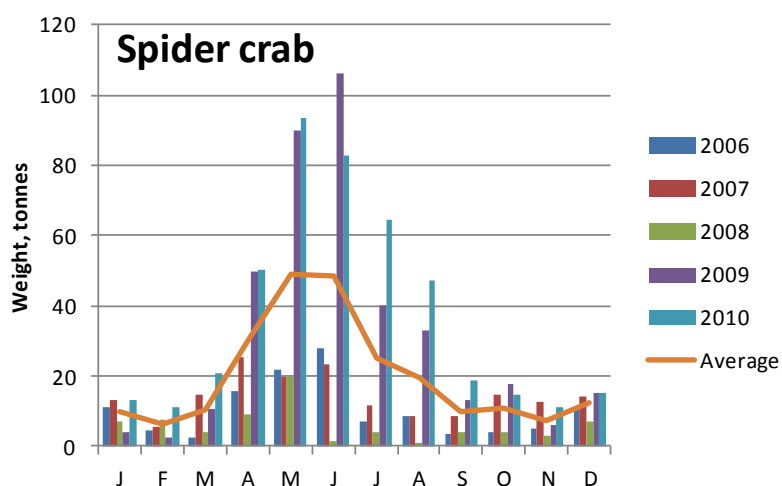
Total inshore landings		
Spider Crabs	Live weight, tonnes	Landed value
2006	212	£200,097
2007	250	£248,474
2008	125	£128,026
2009	403	£417,981
2010	457	£538,514



Spider crab landings from ICES rectangles that overlap IFCA districts have increased significantly since 2006, with a total value of ~£540,000, and 457 tonnes landed in 2010. Landings by under 10m vessels dominate in 2009 and 2010, and are responsible for much of the observed increase since 2008.

Based on a five year average, creels/pots land the majority of the catch (87% by weight), followed by gillnets (11%).

Landings occur throughout the year and on average peak during late spring and early summer.



Key landing ports include:

- Newlyn
- Weymouth
- Newquay
- Port Isaac
- Padstow
- Hayle
- Dartmouth
- Plymouth
- Salcombe
- St Ives

3.3.4 Crab, velvet

Liocarcinus puber



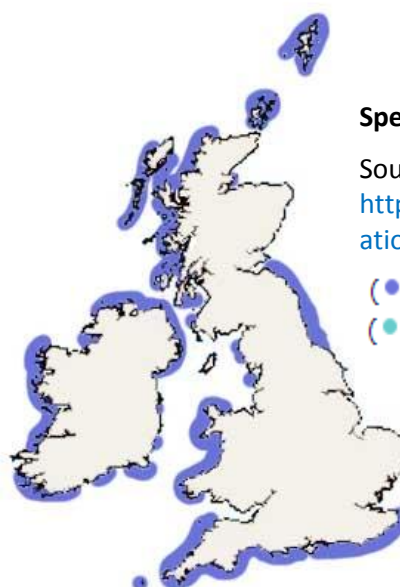
ICES stocks Not assessed at ICES level

MSC assessments	Assessed: SSMO Shetland inshore brown & velvet crab and scallop fishery
	In Assessment: none
	Withdrawn: none

The velvet crab is a decapods crab species found in north-west Europe from Norway to the Shetlands and south to Spain and the Canary Isles and in the Mediterranean off the coasts of Malta. It is a fast moving and aggressive species, most commonly found on rocky substrates down to depths of about 25m. Velvet crabs feed on both animal and algal material, with brown algae being the dominant item found in gut content analysis.

Females grow more slowly and to a smaller maximum size than males, differences which are likely to be due to reduced growth during the females egg bearing phase. Growth is highly seasonal and moulting generally occurs from June to August for males and females. Velvet crabs typically live for four to six years and recruit to the fishery at around age three (65 mm CW).

They reach maturity at a carapace width of approximately 50 mm, although size at maturity varies according to location. Mating occurs after females have moulted, when their shell is still soft. In contrast to brown crabs, velvet crabs are not thought to undertake extensive migrations and rarely move further than a few hundred metres.



Species distribution

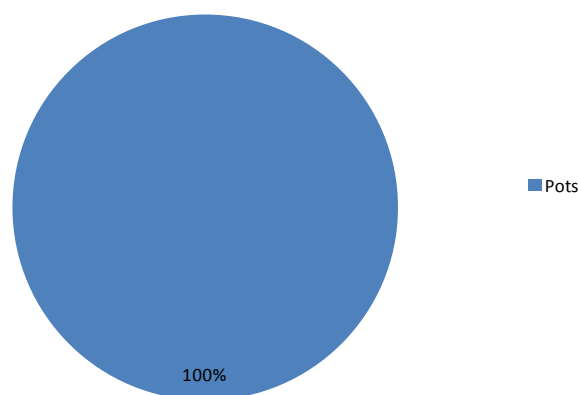
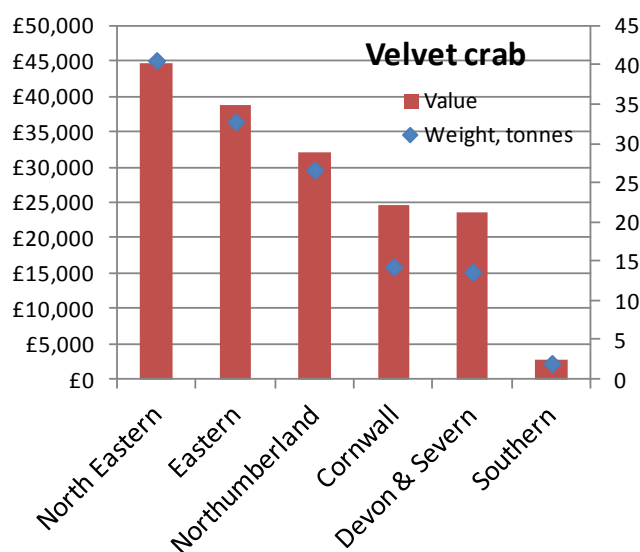
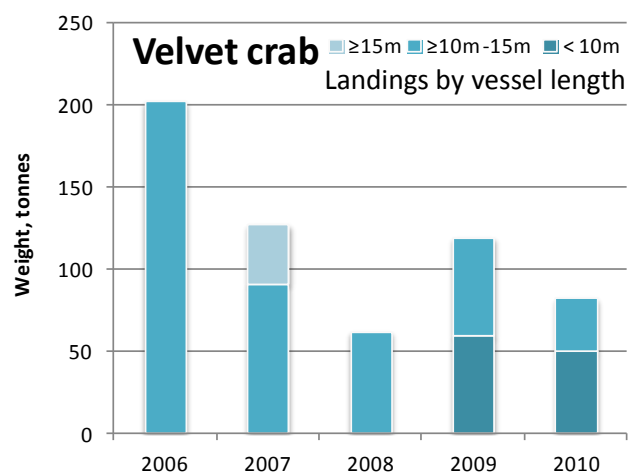
Source:
<http://www.marlin.ac.uk/speciesinformation.php?speciesID=3858>

- (●) Recorded
- (●) Expected

Species biological attributes			
Species	Crab, velvet	Average age at maturity	3 yr
Reproductive strategy	Broadcast spawners	Average maximum age	6-10 yr
Length of larvae phase	1-2 months	Fecundity (No of eggs)	300,000-450,000
Movement of adults	Mobile	Average size at maturity	3-5 cm
Sediment type	Coarse sand and bedrock	Average maximum size	9 cm
Depth	Intertidal and subtidal	Trophic level	2.6

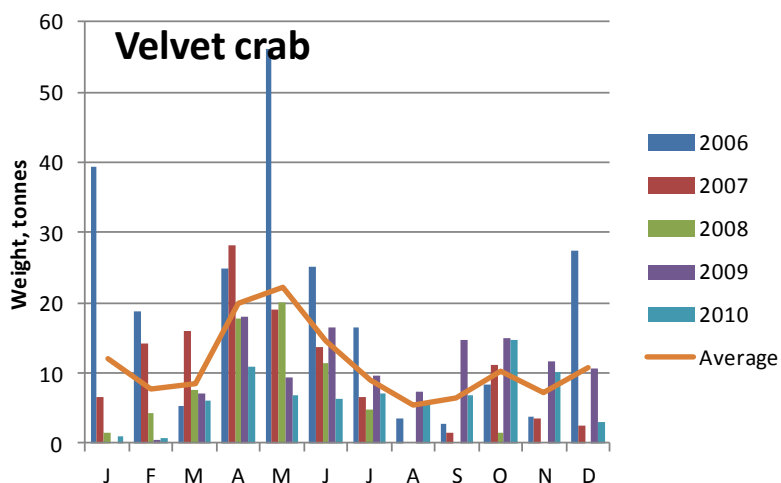
Velvet crab landings

Total inshore landings		
Crabs - Velvet (Swim)	Live weight, tonnes	Landed value
2006	262	£388,581
2007	130	£196,142
2008	75	£135,488
2009	155	£232,960
2010	89	£112,133



Velvet crab landings from ICES rectangles that overlap IFCA districts have dropped considerable since high levels in 2006, with a total value of ~£112,000, and 89 tonnes landed in 2010. Landings are predominately by vessels less than 15m in length and solely landed in pots/creels.

Landings occur throughout the year and on average peak during spring.



Key landing ports include:

- Bridlington
- Seahouses
- Mylor
- Amble
- Sunderland
- Berwick
- North Shields
- Wells
- Whitby
- Poole

3.3.5 Crawfish / spiny lobster

Palinurus elephas



ICES stocks Not assessed at ICES level

MSC assessments

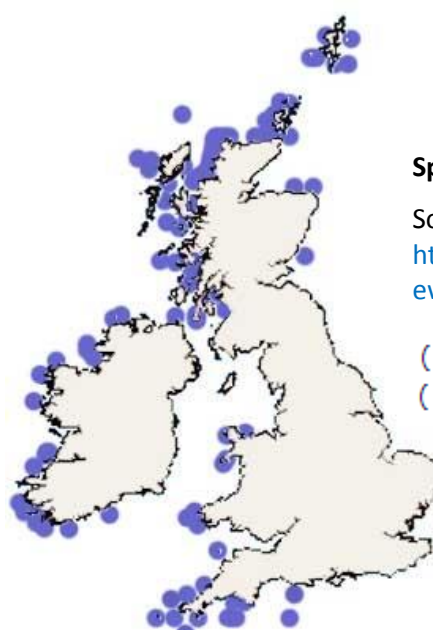
Assessed: [Sian Ka'an and Banco Chinchorro Biosphere Reserves spiny lobster](#)
 In Assessment: none
 Withdrawn: none

Crawfish are large spiny lobsters, growing up to 60 cm in total length, with a stout, heavily armoured body. The main populations are confined to the west coast of Scotland, the extreme south-west coasts of England and Wales and the west coast of Ireland.

Crawfish live subtidally on rocky, exposed coasts in the circalittoral zone.

In Britain and Ireland, females moult in late summer between July and September.

They are known to undertake migrations to deeper water in the Atlantic (Ansell & Robb, 1977). Females move to deeper waters during egg development and return inshore prior to egg hatching (Jackson et al, 2009.).



Species distribution

Source:

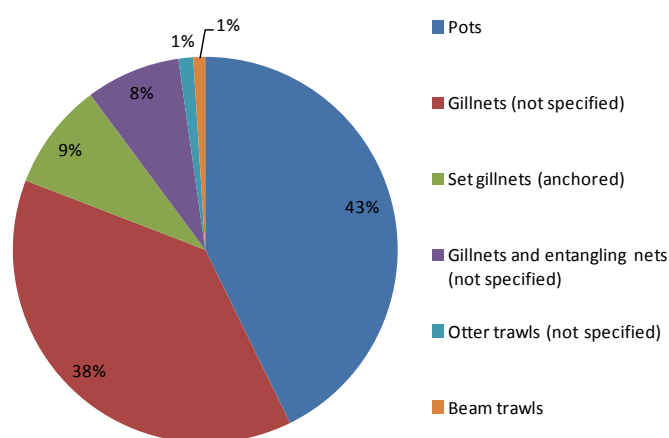
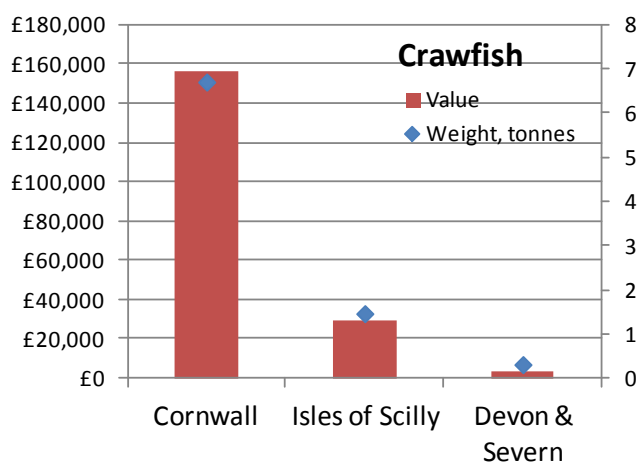
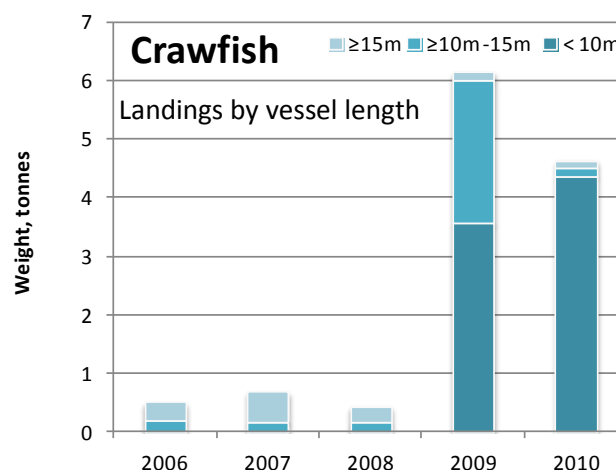
<http://www.marlin.ac.uk/speciesfullreview.php?speciesID=4022>

(●) Recorded
 (●) Expected

Species biological attributes			
Species	Crawfish	Average age at maturity	3-5 yr
Reproductive strategy	Broadcast spawners	Average maximum age	15 yr
Length of larvae phase	1-6 months	Fecundity (No of eggs)	200,000-1 million
Movement of adults	Migratory	Average size at maturity	8 cm
Sediment type	Bedrock, boulders	Average maximum size	60 cm
Depth	Subtidal: 5-70m	Trophic level	3.71

Crawfish landings

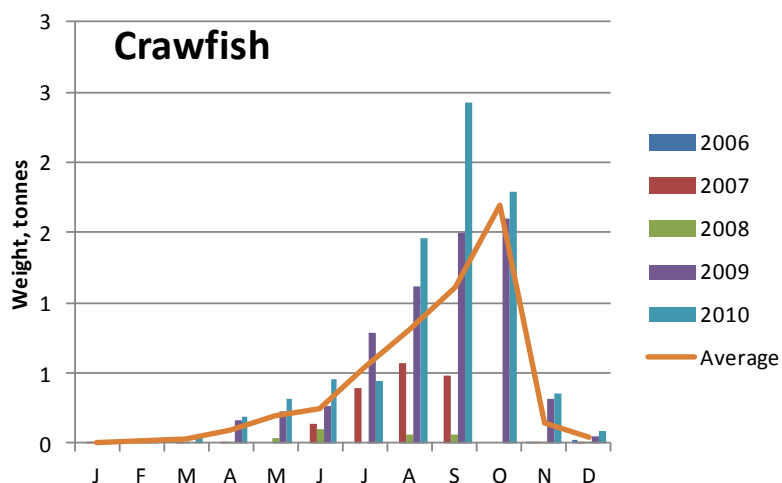
Total inshore landings		
Crawfish	Live weight, tonnes	Landed value
2006	4	£55,279
2007	3	£51,574
2008	2	£54,098
2009	7	£148,194
2010	8	£186,085



Crawfish landings from ICES rectangles that overlap IFCA districts have increased dramatically since 2008, with a total value of ~£186,000 and 8 tonnes landed in 2010. Landings by under 10m vessels dominate in 2009 and 2010, and are responsible for much of the observed increase since 2008.

Based on a five year average, gillnets are responsible for landing the majority of the catch (47% by weight, with crawfish taken as a retained species), followed by pots/creels (43%) and otter trawls and beam trawls 91% each).

Landings occur from April to November, peaking in autumn.



Key landing ports include:

- Newlyn
- Scilly Isles
- Newquay
- Hayle
- St Ives
- Cadgwith
- Sennen
- Plymouth
- Helford River
- Looe

3.3.6 Lobster

Homarus Gammarus



ICES stocks Not assessed at ICES level

MSC assessments

Assessed: Eastern Canada offshore lobster; Normandy and Jersey lobster

In Assessment: North East England lobster pot; Iles-de-la-Madeleine Lobster; Maine Lobster trap fishery

Not certified: Maine Lobster trap fishery

Lobster is a long-lived large decapods crustacean found in Western Europe from Norway and the Shetland Isles south to Morocco, the Mediterranean and the Black Sea. Lobsters live for at least 20 and possibly to 50 years of age and recruit to the fishery probably between ages 4-8 years. Moulting may occur each year in smaller lobsters but less often as size increases (Tully *et al.*, 2006). Average increase in carapace length at each moult is 8-10 mm. Natural mortality of adult lobster is generally low occurring during mostly at moulting when the shell is soft. Octopus accounts as one of the few natural predators of lobsters. Egg production is size related and depends on the frequency of moulting. Eggs are they are carried externally from September to April-May when hatching occurs.

Lobsters larvae swim freely in the water column for about 30-40 days depending on temperature. Larvae occur mainly close to the surface where they can be preyed upon by seabirds and fish species inhabiting at the sea surface. They are the largest crustacean larvae in temperate waters and have strong swimming ability. They descend to the seabed after they have developed to stage IV to settle onto the appropriate habitat. Juveniles or adult lobsters do not undertake any significant migrations and juveniles in the first 3-4 years of life maybe particularly sedentary.



Species distribution

Source:

<http://www.marlin.ac.uk/speciesinformation.php?speciesID=3519>

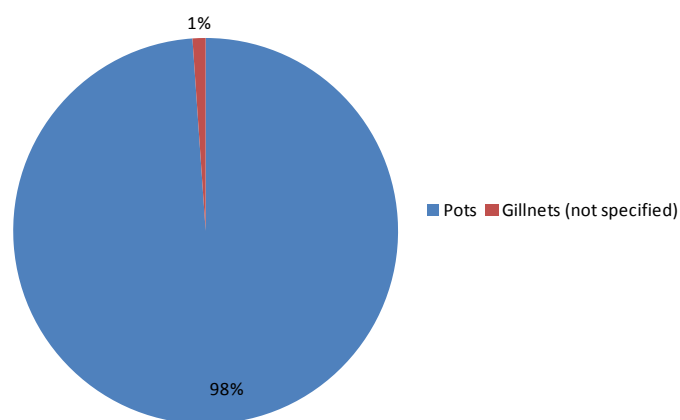
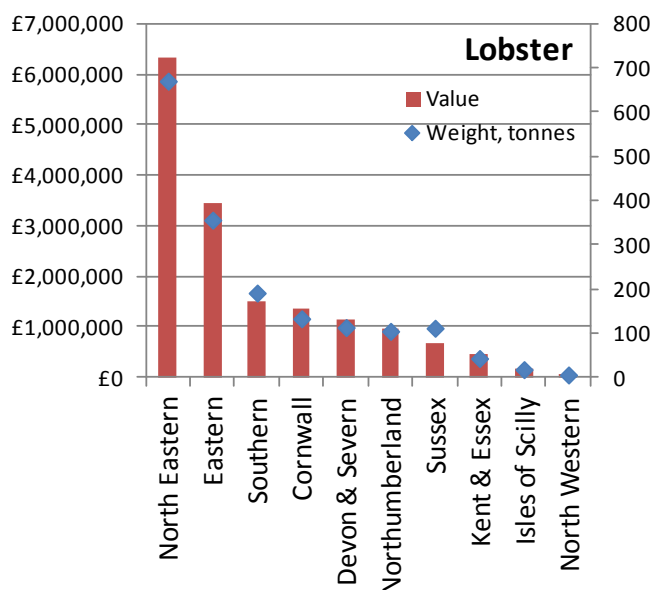
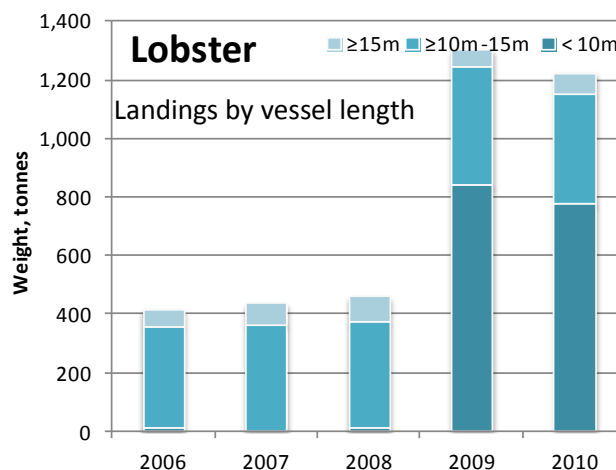
(●) Recorded

(●) Expected

Species biological attributes			
Species	Lobster	Average age at maturity	6-10 yr
Reproductive strategy	Broadcast spawners	Average maximum age	20 yr
Length of larvae phase	11-30 days	Fecundity (No of eggs)	100,000
Movement of adults	Mobile	Average size at maturity	7.5 cm
Sediment type	Bedrock, boulders, caves, crevices	Average maximum size	50 cm
Depth	Subtidal	Trophic level	3.71

Lobster landings

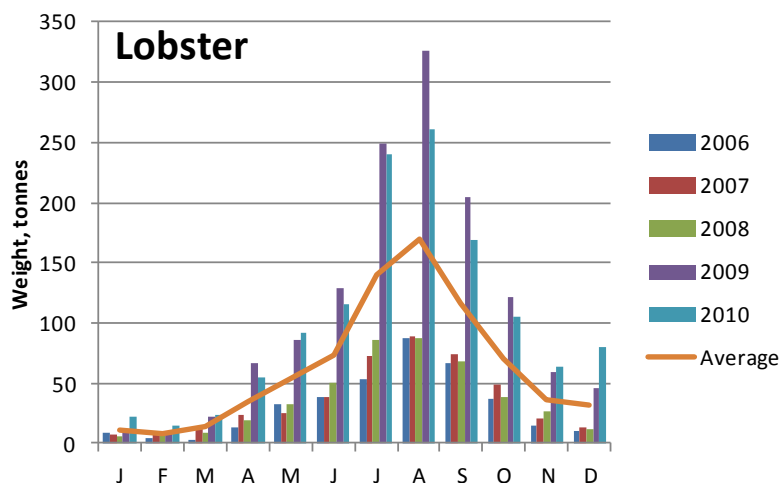
Total inshore landings		
Lobsters	Live weight, tonnes	Landed value
2006	438	£3,886,527
2007	477	£4,663,122
2008	473	£4,612,393
2009	1,341	£11,809,277
2010	1,252	£11,651,298



Lobster is the most commercial important shellfish species based on landings from ICES rectangles that overlap IFCA districts. A total value of over £11.6 million, and 1,252 tonnes was landed in 2010. Landings are made across a number of IFCAs, with North Eastern and Eastern areas being key.

Based on a five year average, landings are predominately made by pots/creels (99% by weight), with a small proportion (1%) taken as retained species in gillnets.

Landings occur throughout the year but with a pronounced peak during summer.



Key landing ports include:

- Bridlington
- Whitby
- Grimsby
- Scarborough
- Newlyn
- Ilfracombe
- Weymouth
- Selsey
- Seahouses
- Amble

3.3.7 Nephrops

Nephrops norvegicus



ICES stocks 2012 Nephrops in Subarea IV (North Sea)

2012 Nephrops in Subarea VII

MSC assessments

Assessed: Stornoway nephrops trawl

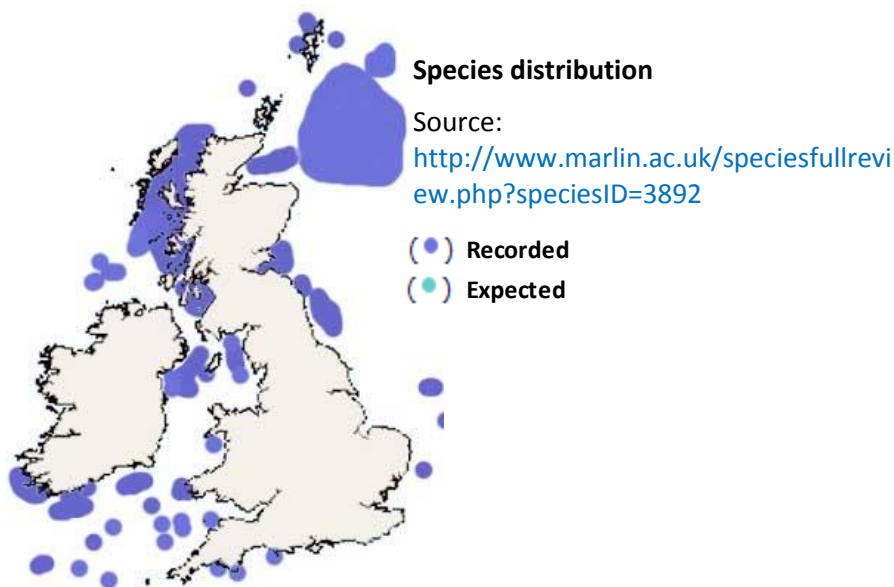
In Assessment: Clyde nephrops creel; Clyde nephrops trawl; Southern North Sea nephrops

Withdrawn: Loch Torridon nephrops creel fishery; Scottish Fisheries Sustainable Accreditation Group (SFSAG) North Sea nephrops

Nephrops (also known as langoustine or Norway lobster) are distributed throughout the north-east Atlantic Ocean, from Icelandic waters in the north-west to Norwegian waters in the north-east, and south to the coastal waters of Morocco. Found in water depths of 20 to 800 metres, the species lives in a muddy habitat in which it can create the burrows. Adult nephrops can grow as large as 24cm, but predominantly size of adult nephrops ranges between 10 and 20cm.

Nephrops burrows may be up to 10 cm in diameter, over a metre long and penetrate the sediment to a depth of 20-30 cm (Rice & Chapman, 1981). Although nephrops are capable of swimming, they are generally considered as crawlers more than it is a swimmers. Although nephrops are essentially solitary animals, multiple occupancy can occur in the burrows

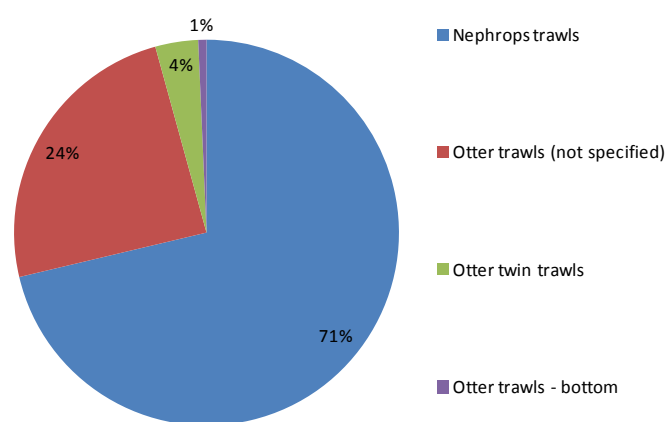
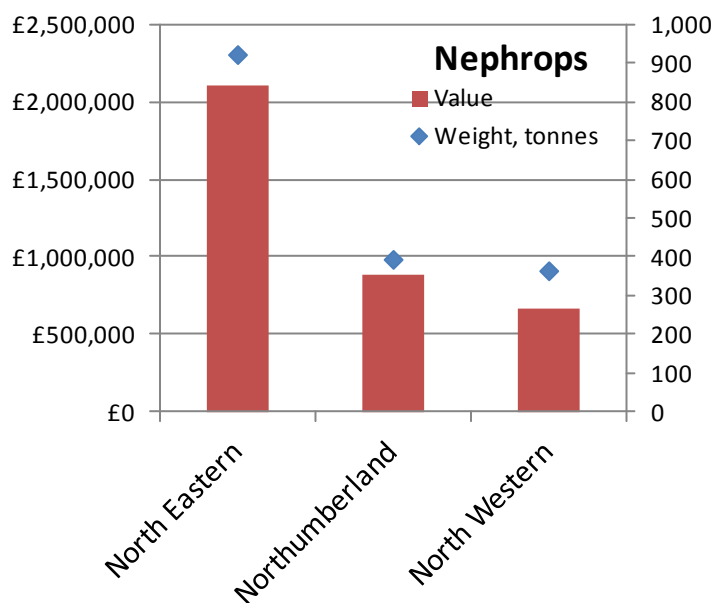
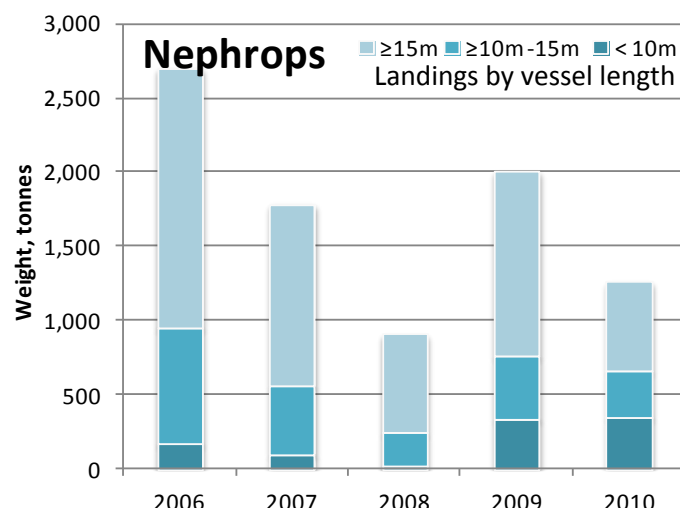
Most studies show that nephrops feeds primarily on crustaceans but also molluscs and to a lesser extent polychaetes and echinoderms (Parslow-Williams *et al.*, 2002).



Species biological attributes			
Species	Nephrops	Average age at maturity	3 yr
Reproductive strategy	Broadcast spawners	Average maximum age	6-10 yr
Length of larvae phase	1-2 months	Fecundity (No of eggs)	1,000
Movement of adults	Mobile	Average size at maturity	3 cm
Sediment type	Demersal, muddy habitats	Average maximum size	6 cm
Depth	Subtidal, 20-800m	Trophic level	3.51

Nephrops landings

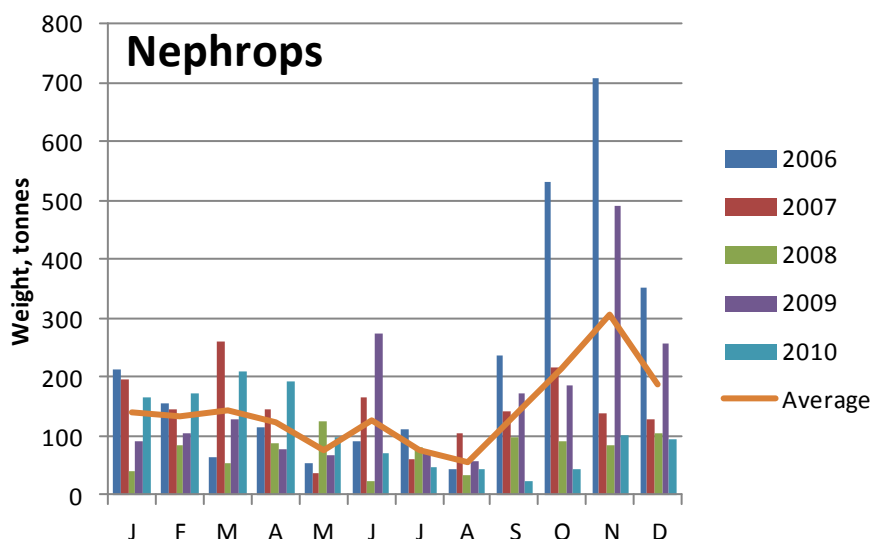
Total inshore landings		
Nephrops	Live weight, tonnes	Landed value
2006	2,719	£5,941,265
2007	1,794	£4,289,858
2008	937	£2,151,099
2009	2,028	£3,958,813
2010	1,292	£2,768,263



Nephrops landings from ICES rectangles that overlap IFCA districts have fluctuated over the past five years, with a total value of over £2.7 million, and 1,292 tonnes landed in 2010. Landings by over 15m dominate from 2006-2010, but landings from under 15m vessels have become more important in 2009 and 2010.

Based on a five year average, nephrops trawls (TR2, mesh size 80-100mm) land the majority of the catch (71% by weight) with the remainder being taken by other demersal otter trawls.

Landings occur throughout the year and on average peak during early winter.

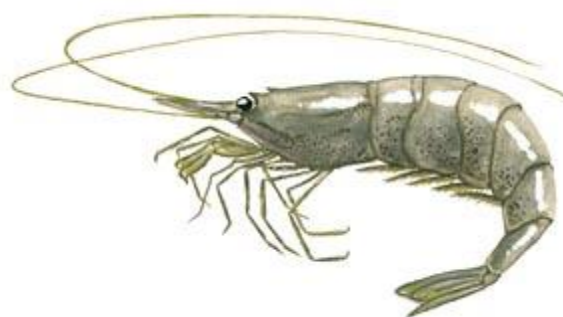


Key landing ports include:

- North Shields
- Whitehaven
- Blyth
- Amble
- Hartlepool
- Seahouses
- Whitby
- Maryport
- Fleetwood
- Sunderland

3.3.8 Shrimp, brown

Crangon crangon



ICES stocks Not assessed at ICES level

MSC assessments

Assessed: none

In Assessment: CVO Dutch North Sea brown shrimp; Germany North Sea brown shrimp

Withdrawn: none

The brown shrimp is a long thin animal, mottled brown in colour, narrowing from a wide anterior end to a fanned tail. It is up to 8.5 cm in length and can be distinguished from most other shrimps and prawns by the short blunt-ended rostrum between the eyes (Neal, 2008). Brown shrimp are found on sandy and muddy ground, and is often buried with only the eyes and antennae above the sediment surface (Pinn & Ansell, 1993).

The maximum age of brown shrimp was reported as 3.3 years with the large majority (70-90%) of the population in the 1st year class, 10-20% in the 2nd year class and the rest in their 3rd year (Oh *et al.*, 1999). Juvenile brown shrimp recruit to the benthos in May -July to exploit the annual calanoid copepod bloom that is the main food of the early benthic stages (Boddeke *et al.*, 1986). Small post-settlement brown shrimp migrate to inshore nursery areas for better foraging and predation protection, remaining in these areas for 2-3 weeks before heading back offshore (Cattrijsse *et al.*, 1997). Adults migrate offshore November to March to avoid low salinity water (Boddeke, 1989; Henderson & Holmes, 1987).



Species distribution

Source:

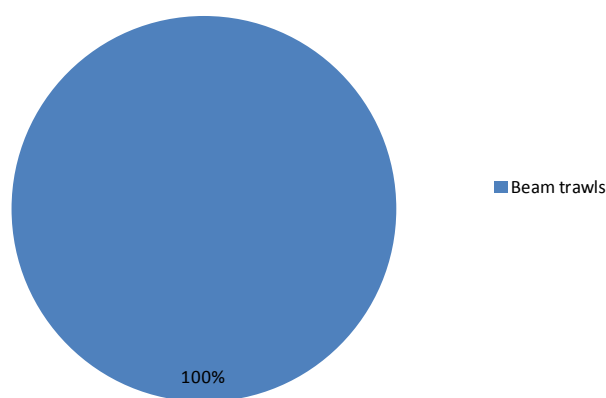
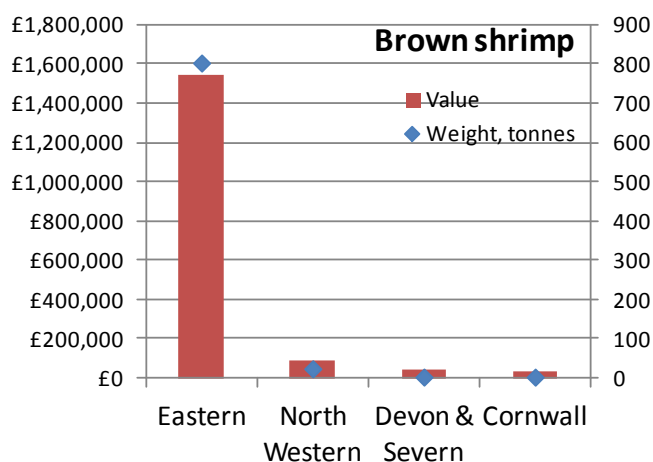
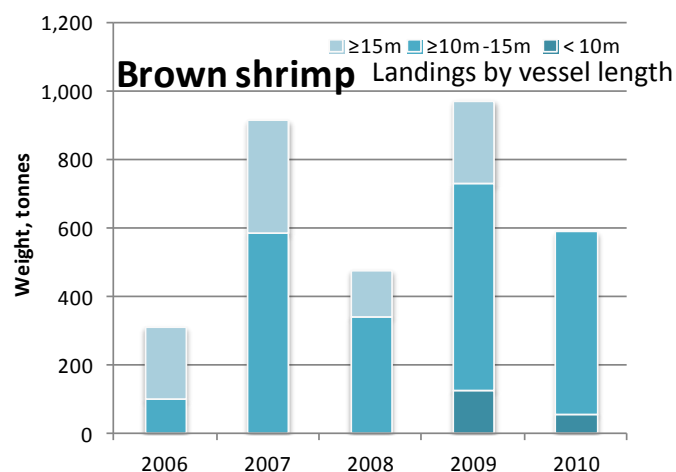
<http://www.marlin.ac.uk/speciesinformation.php?speciesID=4019>

- (●) Recorded
- (●) Expected

Species biological attributes			
Species	Shrimp, common	Average age at maturity	< 1 yr
Reproductive strategy	Broadcast spawners	Average maximum age	3.3 yr
Length of larvae phase	1-6 months	Fecundity (No of eggs)	2,800-4,500
Movement of adults	Migratory	Average size at maturity	2 cm
Sediment type	Sand, mud	Average maximum size	8 cm
Depth	Intertidal and subtidal	Trophic level	2.6

Brown shrimp landings

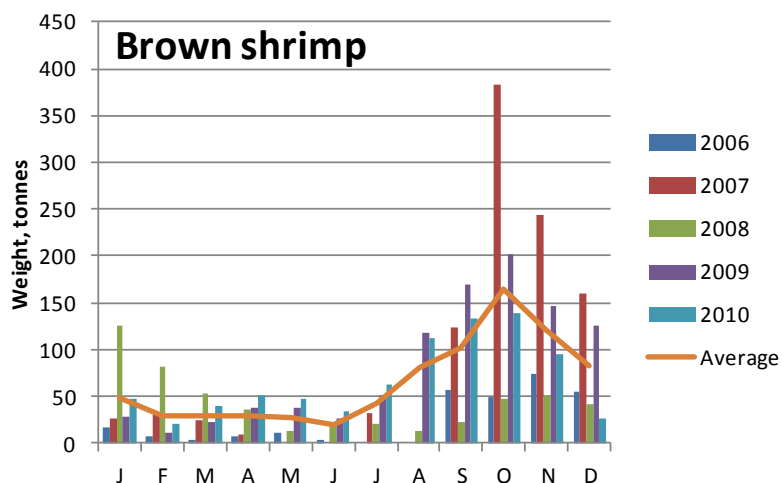
Total inshore landings		
Brown Shrimps	Live weight, tonnes	Landed value
2006	366	£620,918
2007	1,116	£2,833,341
2008	555	£1,792,708
2009	993	£1,794,869
2010	830	£1,675,431



Brown shrimp landings from ICES rectangles that overlap IFCA districts have fluctuated over the past five years, with peaks in 2008 and 2009 and a total value of over £1.6 million, and 830 tonnes landed in 2010. Landings are predominately made by vessels 10-15m in length; all landings are recorded to be made by beam trawls.

The majority of landings are into the Eastern IFCA.

Landings occur throughout the year and on average peak during autumn.



Key landing ports include:

- Kings Lynn
- Boston
- Grimsby
- Silloth
- Lytham St Annes
- Mylor

3.4 Gastropod

3.4.1 Periwinkle

Littorina littorea



ICES stocks Not assessed at ICES level

MSC

assessments

Assessed: none

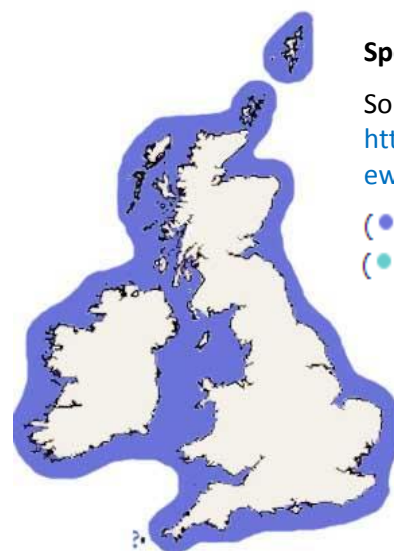
In Assessment: none

Withdrawn: none

The species is found most commonly on the lower shore and shallow subtidal but in ideal conditions may be found up to the high tide line. At least in northern Britain *Littorina littorea* migrates down shore as temperatures fall in autumn (to reduce exposure to sub-zero temperatures) and up shore as temperatures rise in spring; migration depends on local winter temperatures. When exposed to the air, the species usually remains inactive unless conditions are very moist.

The species tends to aggregate and form clusters in areas that are more favourable for them, such as rock pools, rather than drier areas.

They are found on all British coasts, though rare or absent in the Isles of Scilly and Channel Isles (Jackson, 2008).



Species distribution

Source:

<http://www.marlin.ac.uk/speciesfullreview.php?speciesID=3713>

(●) Recorded

(●) Expected

Species biological attributes			
Species	Periwinkle	Average age at maturity	2-3 years
Reproductive strategy	Broadcast spawners	Average maximum age	<10 years
Length of larvae phase	A week to two months	Fecundity (No of eggs)	10,000-100,000
Movement of adults	Migratory	Average size at maturity	10-20 mm
Sediment type	Bedrock, boulders, gravel, sand, mud	Average maximum size	30 mm
Depth	Intertidal and subtidal	Trophic level	<2.75

3.4.2 Whelk

Buccinum undatum



ICES stocks Not assessed at ICES level

MSC

assessments

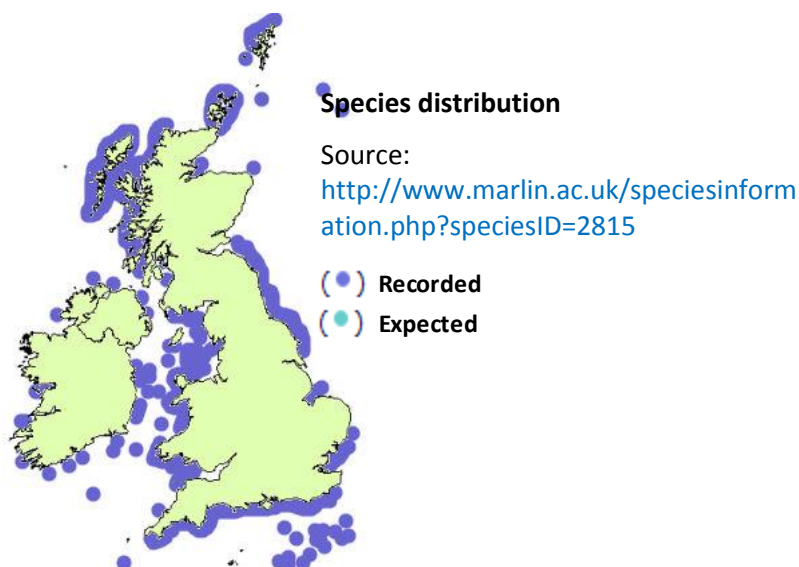
Assessed: none

In Assessment: none

Withdrawn: none

The common whelk is a relatively large gastropod mollusc growing up to 10 cm high and 6 cm wide with a tall spired shell. The shell is yellowish brown with irregular light and dark spiral areas. The aperture is broadly oval tapering to a point with a short wide siphonal canal leading from the base of aperture. Whelks are a popular sea food in countries around the Southern North Sea and it is common on all British coasts (Vause 2009).

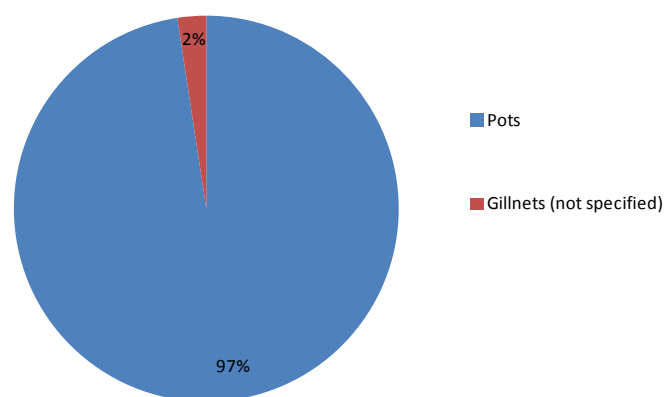
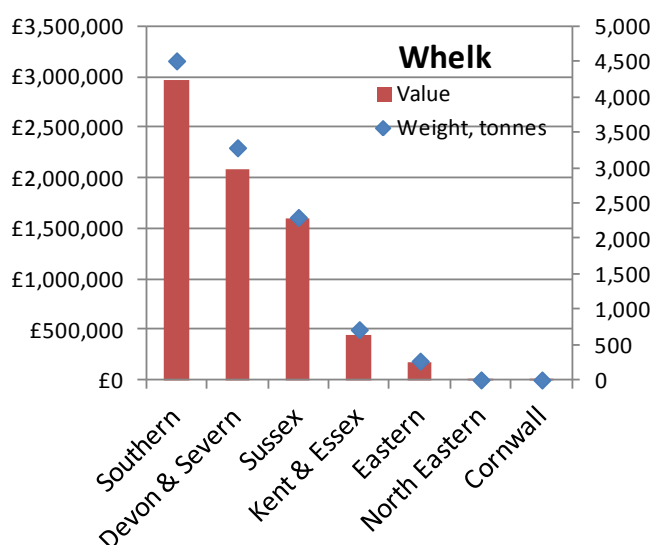
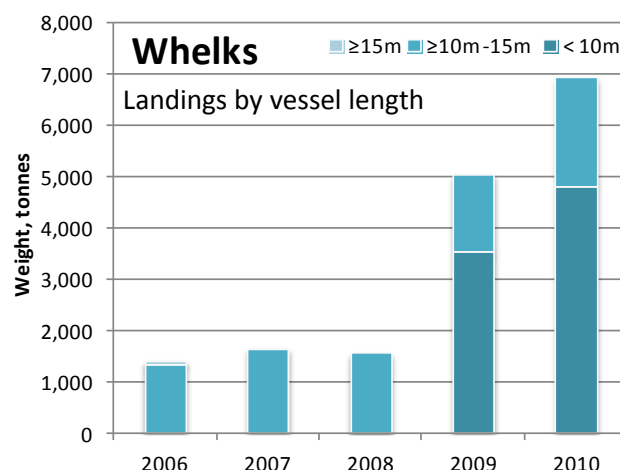
The sexes of the common whelk are separate and reproduction occurs by internal fertilization in late autumn (Hancock, 1967). When the water falls below 9°C, females begin to lay their eggs usually in November, this may continue until April (Vause, 2009). The females lay their eggs in lens-shaped capsules which are stuck together in a sponge-like mass. Only a small proportion of the eggs will develop, on average 13 to 14 individuals will hatch from each capsule, the remainder being used as a food source by the developing embryo's (Hancock, 1967). The juveniles hatch from the egg cluster as a fully formed whelk mostly during February and March and immediately take to the benthic environment (Hancock, 1967), there is no planktonic stage, and thus dispersal potential of this species is very low (Vause, 2009)



Species biological attributes			
Species	Whelk	Average age at maturity	2-3 yr
Reproductive strategy	Demersal egg layer	Average maximum age	11-20 yr
Length of larvae phase	Between a week and two months	Fecundity (No of eggs)	11,500
Movement of adults	Mobile	Average size at maturity	6 cm
Sediment type	Mud, sand, gravel, rock	Average maximum size	11 cm
Depth	Intertidal and subtidal	Trophic level	2.8

Whelk landings

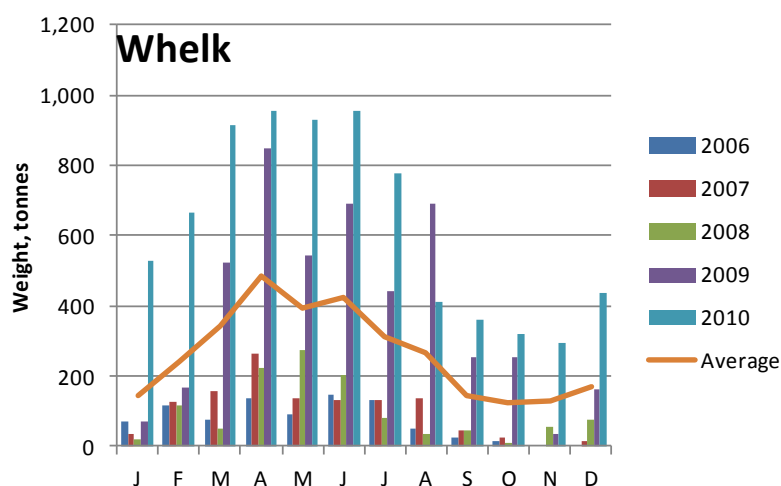
Total inshore landings		
Whelks	Live weight, tonnes	Landed value
2006	2,103	£1,165,911
2007	2,018	£1,202,917
2008	2,075	£1,353,468
2009	5,295	£2,782,786
2010	7,763	£5,041,052



Whelk landings from ICES rectangles that overlap IFCA districts have increased significantly since 2006, with a total value of over £5 million, and 7,763 tonnes landed in 2010. Landings by under 10m vessels dominate in 2009 and 2010, and are responsible for much of the observed increase since 2008.

Based on a five year average, pots land the majority of the catch (97% by weight), with a small quantity also taken as retained catch from gill nets (2%). Key IFCA districts are Southern, Devon and Severn and Sussex.

Landings occur throughout the year and on average peak during spring.



Key landing ports include:

- Selsey
- Portsmouth
- Poole
- Exmouth
- Ilfracombe
- Weymouth
- Shoreham
- Eastbourne
- West Bay
- Newhaven
- Lymington & Keyhaven
- Fleetwood
- Brixham
- Lyme Regis

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