

**REPORT OF THE
STUDY GROUP ON SEA BASS**

By Correspondence

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1 INTRODUCTION

1.1 Terms of reference

The Bass Study Group (SGBASS) was established by ICES at the Statutory Meeting in 2000 in order to respond to questions posed by the European Commission on the status of sea bass (*Dicentrarchus labrax*) stocks and management of their fisheries in Community waters of the North East Atlantic. The SGBASS Terms of Reference agreed by ACFM are to work by correspondence in 2001 to:

- a) compile information on European fisheries in which sea bass are taken;
- b) compile information pertinent for assessment of sea bass including information that can be used to identify unit stocks of sea bass;
- c) where possible, present assessments of sea bass stocks in European waters and identify their stock conservation requirements.

1.2 Participants

Dr Mike Pawson (CEFAS) was confirmed as chair of SGBASS and, though a formal membership list has not yet been provided, the following have contributed to this report to ACFM at its May meeting in 2001.

Mike Armstrong	Northern Ireland
Edward Fahy	Republic of Ireland
André Forest	France
Henk Heessen	Netherlands
Yvon Morizur	France
Mike Pawson	England, (Chair)
Graham Pickett	England

1.3 Background

There has been no previous attempt to compile information on sea bass for ICES, but a description of the European fisheries which take this species is available in Pickett and Pawson (1994) which provided a basis to answer to ACFM on TOR a). A summary of information and an interpretation of the stock identity in sea bass in Sub-areas IV and VII was prepared in a report to the Commission by scientists from IFREMER (France) and CEFAS (England) in 1993 (summarised in Pawson, 1995), which forms a basis to answer part of TOR b). For the first part of TOR b), the contributors named above were asked to identify the availability of data in relation to bass stock assessments and prepare an inventory of them (rather than a compilation of those data) by the end of April 2001.

This report attempts to provide an up-to-date good picture of the sea bass fisheries and of potential stock units, and to advise ACFM of the available data with which assessments of the status of these stocks might be carried out. It does not include bass (*D. labrax*) in the Mediterranean.

2 SEA BASS FISHERIES IN NW EUROPE

2.1 Data availability

In order to enable the SGBASS to report to the ACFM meeting in May 2001, national representatives were requested to provide data and information on fisheries that target bass or take bass as a significant by-catch. These included number and size of vessels involved, gear used (distinguishing commercial from recreational fishing) by area (ICES division) and season, and bass catch and associated effort data over as long a time period as possible. An inventory of the availability of the relevant fisheries data is presented in Annex 1, and summarised below.

2.1.1 France

France has effort data for 8 métiers, by groups of ICES Division (covering areas VIIId, e and VIIIa,b) for all years 1985 – 2001. Data quality is good for pelagic trawls since 1986 and for bottom trawls since 1993. For lines and nets the data are of poorer quality. Landings data are available for the above métiers for all years – price/grade data are good

throughout. Landed weight and value/Division are good for pelagic trawls since 1996 and other métiers since 1993. There are some data on discards of bass in French fisheries (Morizur, pers comm.): mid-water trawling targeting bass in the Bay of Biscay and English Channel; and some western bottom trawl and net fisheries.

2.1.2 UK

The UK has catch and effort data for 14 métiers, covering 3 groups of ICES Divisions – IVb,c/VIIId, VIIe,h and VIIa,f,g. These data, which include regional fleet census, cover 1985-2000 with the exception of angling for which there are no data for 1985. The effort data are recorded in ‘boat-days’ or ‘days on the ground’ and are classed as good for mid-water (pelagic) trawls from 1994, gill nets and longlines from 1985, angling and handlines from 1986. The rest of the data for trawling métiers is of poor quality.

The UK has good landings data by Division *and* rectangle for mid-water (pelagic) trawls and by Division for all other métiers. Other data by rectangle are poor quality and there are no data by rectangle for angling. Value per Division and price per grade data are poor for most métiers with no price data for commercial lines.

Limited discard data are available for angling and commercial handlines via the CEFAS voluntary bass logbook system (1985 onwards). Good quality data were obtained for 1986-93 as a result of two MAFF-sponsored economic studies by CEMARE, Portsmouth. There is no reliable data on discards for other métiers.

2.1.3 Ireland

Ireland has no legal commercial bass fishery at present and has no catch and effort data for the recreational fishery.

2.1.4 Other countries

No fisheries information has been supplied for other countries

2.2 Bass fisheries description

France has the largest bass fishery in Europe (around 3000t / year officially reported), and this operates in 3 distinct areas; the English Channel, Atlantic and Mediterranean. In many respects, the character of these fisheries is similar to that found in Britain: having inshore and offshore components, which, respectively, employ many of the methods used to catch bass in the UK. There is no collective description of these fisheries although studies of specific areas have been made on the French west and south coasts.

In 1996, 288 boats were recorded as targeting bass from French ports located in ICES Sub-area VII, and 683 boats were registered as fishing for bass from ports in Sub-area VIII. Some boats based in the Bay of Biscay also exploit bass in Sub-area VII during the spawning season. The official landings of bass in France from Biscay have fluctuated between 400 t and more than 1700 t, with around 1200 t in recent years.

Landings from Sub-area VII increased from 154 t in 1989 to 1487 t in 1996 and fell to 100 t in 1997.

Prior to 1982, there was little available in the way of reliable catch statistics for bass in the UK. By then the increase in the relative importance of small-boat fisheries of England and Wales had been recognised, and a description of the coastal fisheries was compiled (Pawson & Benford, 1983), based on visits and interviews with fishery officers covering every port around the coast. This formed the basis for follow-up investigations aimed specifically at bass and mullet fisheries (Pickett, 1990) which provided much of the information presented in Pickett and Pawson, (1994). Bass were included in an Anglo-French, EC- funded study to develop effective sampling for non-quota fish species in the Channel (ICES Divisions VIIId and VIIe) (Dunn *et al.*, 1996).

In 1996, it was estimated that 245 UK boats were involved in fishing for bass in Sub-area IV and 1494 in Sub-area VII. The *official* total bass landings in England and Wales rose from 103 t in 1986 to 675 t in 1996. As only a small proportion of this catch is landed through major ports, these figures are underestimates. A combination of the official UK statistics and figures derived from a voluntary logbook scheme run by CEFAS produced ‘best estimates, of 1428 t in 1995 and 1384 t in 1996 (Pickett, 1997). In France, a higher proportion of the bass catch is sold through markets that supply statistics to the national system.

For the purpose of this report, the following description of the bass fisheries is based on 8 ICES Divisions groupings that encompass the major differences in seasonality, exploitation patterns and stock characteristics of the bass fishery in NW Europe. Where data exist, numbers of vessels in fleets in these regions are given in the text (section 2.4).

2.3 Fishery components

It is possible to identify two principal components in the commercial bass fisheries of England, France, Spain and Portugal; a directed fishery, and one where bass are taken as a by-catch. The distinction between these categories is not always clear cut, as many fishermen may target up to 4-6 species on any fishing trip, and it is difficult to identify a by-catch as such. Bass are rarely exploited as the main target species throughout the whole year in any fishing area, and in some places the bass season lasts for only 2-3 months before the boats turn to other species, often by using different fishing methods.

The commercial bass fisheries may also contain two, usually distinguishable, elements which are characterised by the size of vessels involved and the catching gear used. These are the inshore fishery and the offshore fishery. The inshore fishery is comprised of small boats, which go out on daily trips and use a wide variety of fishing methods. This fishery persists throughout the year in some countries, but in the UK it is mainly a summer activity due, in part, to increased weather restrictions in winter. The offshore fishery is based mainly on mid-water trawling, often by two boats fishing as a pair, and takes place over the cooler half of the year (November-May). This fishery is sometimes directed solely at bass, but black bream and the small pelagic species, such as mackerel, pilchard and horse mackerel, are often the main target species, with bass a valuable by-catch.

The catches of bass taken by rod-and-line have comprised a substantial part of the overall landings into southern Britain and Ireland for many years, where the bass is widely regarded as the most important sea angling species. Recreational angling is becoming increasingly popular in many locations along the French coast, particularly between the Cherbourg Peninsula and southern Brittany.

2.3.1 Bottom-trawling - single boat

There are regional variations in the design of otter trawls used for bass from inshore boats, influenced largely by the nature of the sea bed over which the gear has to be towed. The basic requirements are that the trawl should be light, its footrope should fish on the sea bed, but not dig in, and its headline is as high off the bottom as is possible. Most measure 12-20 m along the footrope, compared to 30 m for those, which are used to catch cod or plaice. Some have a mesh funnel or 'floppe' in front of the cod-end, to prevent the bass swimming out after the tow is complete.

Bass are also caught incidentally in other types of trawl, including heavier otter trawls being used for gadoids or flatfish, beam trawls and eel pair trawls.

2.3.2 Pair Trawling

A single bottom or mid-water trawl towed between two boats is used for bass and a wide range of other species and has several advantages over single-boat trawling. The most important is that much larger nets (up to 1400 m circumference in the mouth and with an 80 mm or 100 mm cod-end mesh) can be towed at a greater speed with two vessels, and there is no need for otter boards to keep the trawl spread. The net is kept open by the tension on two sets of long bridles, which is a particular advantage that the bass are not scared by a boat passing over them.

Pair trawling developed in Portugal, where large nets were used to catch pelagic species such as mackerel and horse mackerel, and bass were taken as a by-catch. The method was adapted by French skippers, working out of ports in the Biscay coast for black bream and bass. In the early 1980's, the Lorient fleet found black bream scarce in the English Channel and also began to concentrate on bass. Since that time, a French fleet of 30-40 vessels has established a seasonal pattern of bass fishing, which begins in Biscay in the autumn and finishes in April near the Channel Islands. Bass have been targeted in this way by up to ten UK vessels each year since 1988.

2.3.3 Gill Nets

Fixed gill nets are rigged so that the net stands as a wall in the water, and they are usually set along the line of or diagonally across the tide to minimise their tendency to be flattened towards the seabed in strong tides. Individual lead weights or weighted-core ground-lines are used to prevent bass from swimming under the net, and to counteract the buoyancy of the floats on the headline. An anchor or other form of weight is attached to each end of the net, and at intervals along the footrope if long lengths of net are being set. One or two marker buoys complete the rig. Most gill

nets used for bass are constructed of monofilament nylon, which has a low visibility in water, and mesh sizes usually range from 80 to 110 mm (stretched mesh).

2.3.4 Drift Nets

Since the late 1970s, fishermen on the south east coast of England have used single-walled gill nets with meshes of 80-100 mm which are drifted with the tide in shallow water to catch bass and grey mullet. Drift nets are marked with tall dahn buoys at each end, usually fitted with a light when fishing at night. Some of the larger boats working in the outer Thames Estuary and off the Kent coast have shot fleets of up to 10 nets at a time, each of which may be 500 m long. In France, drift nets are mainly used in the Bay of Biscay.

2.3.5 Seine and Ring Nets

Seining and ring-netting involve encircling the fish with a curtain of netting is similar to that employed in fixed and drifted gill-nets. Seining always takes place in shallow water, often in estuaries and creeks, where the net is paid out in a semi-circle around a shoal of fish, using a small boat, rowed or propelled with an outboard motor. Ropes are used to draw the ends of the headline and leadline onto the shore, until the 'bag' of net and the fish contained within it are beached.

Ring netting for bass differs from seining in that a shoal of fish is completely encircled within a wall of net, sometimes using two boats, and the net is not drawn ashore. The intention is to enmesh the fish, so they are usually scared into the net by rowing one boat into the middle of the net circle and banging the oars on the boat bottom or splashing the water.

2.3.6 Trammel Nets

Trammel nets are constructed of 3 walls of netting: the two outer walls are formed of large mesh, usually 25 cm or more from knot to knot, whilst the inner wall is of much smaller mesh and is set very slack. The method of capture by the inner wall is similar to that of a gill net, but fish too large to become enmeshed will push the loose netting through the opposite wall of the net and will become pocketed. Trammels fished for sole and cod may take a by-catch of bass. These nets produce a wider size range of fish in the catch than single-walled gill nets.

2.3.7 Tangle Nets

Tangle nets are large-meshed gill nets, which are usually set in deep water for a variety of fish, particularly rays, monkfish, turbot and crawfish. They do not have floats on the headline and are set very loosely, and large bass may entangled in them when they are set inshore or around wrecks.

2.3.8 Long-lines

Long-lining has recently become widely adopted for catching bass, particularly in southern England and in France. In England, from 10 to 100 baited hooks on short 'snoods' are attached at intervals to a stronger main line, and each boat may fish 5-20 lines, which are hauled and shot up to 3 times a day. Long-lines may be set on the bottom or drifted near the sea surface. From Cherbourg to Brest, single-handed, inshore vessels of 6-8m long, work with up to 4 long-lines each with 80-140 hooks. The long-lines are set on the bottom except in winter (mainly south Brittany), when the water is less clear and the lines are set closer to the surface. Here the 7m long boats tend to work 25-30 long-lines of 30-60 hooks with a soak-time of 3 hours.

Baits vary from region to region and with the season, but are usually either sand eel (live or dead), cuttlefish, squid, whelk, shore crab, worm and fish pieces.

2.3.9 Hand lines

Handlining methods include trolling, when it is practised using hand winders and 'outriggers' or poles, jigging, in which feathered hooks or other lures on weighted lines are worked up and down in the water by hand, and mechanically operated lines which are wound onto large spools (or gurdy reels). In general, trolling is less effective compared to gill netting, for example and has, consequently, become less popular in Cornwall. In France, this method is used by a greater number of boats, probably because of the higher prices obtained for line-caught bass. The main difference between English and French trolling fisheries is that the English boats most commonly use 3 lines and the French boats 1 or 2 lines. Generally French liners have one line with 15-20 hooks.

2.3.9.1 Rod and Line (angling)

The techniques employed in commercial angling are often similar to those used in sport fishing. The principal exception is where deep or turbulent water such as that at the Portland Race in Dorset, UK is being fished. The tackle then used is more robust than that used by recreational anglers, i.e. a heavy duty rod, large multiplying reel, 20-30 kg breaking strain line and large leads of 0.5-1.0 kg to get the bait of a live sand eel or small mackerel down to the bass. In France this method is not used in the commercial fishery.

Shore angling is widely practised and in all areas covered in this report.

2.4 Description of the fisheries by region

2.4.1 North Sea - ICES Division IVa,b&c

Bass are caught intentionally by angling as far north in the UK near Cape Wrath and at Dunnet Bay in Scotland. These fish must be regarded as being towards the periphery of the species' normal range. Commercial rod and line fishing also takes place near warm water discharges from power stations on the Scottish east coast, particularly at Torness, and in north-east England at Blyth, Hartlepool and Teesmouth. Trawl-caught bass are occasionally landed into the Yorkshire ports of Scarborough and Whitby, and are also taken as a by-catch in nets set for cod and sea trout and occasionally by directed angling on the Yorkshire coast. Along the English coast in IVc, from Norfolk southwards, bass are often caught as part of a mixed fishery in drift nets (34 boats in 1996), fixed nets (71 boats), trawls (24 boats), longlines (6 boats) and rod and lines (22 boats). Bass may be specifically targeted in the local estuaries and around wrecks and offshore banks. The Thames Estuary is an important charter boat angling area for bass, although this sector has declined steadily in recent years (less than 10 boats in 1999). The bass fishing season in this area normally lasts from May until October or November.

Bass are caught by French boats operating from Dunkirk and Boulogne and using bottom trawls in the southern North Sea, particularly just outside the Kentish Knock and Goodwin Sand Banks.

In the last decade, both shore and boat angling for bass has become popular and worthwhile in the Netherlands, where the average size of bass caught appears larger than on the UK side of the North Sea.

2.4.2 The eastern English Channel - ICES Division VIIId

The inshore bass fishery on the English coast of the eastern English Channel is largely a part-time activity to the east of Selsey Bill in Sussex, prosecuted from a large fleet of beach-launched day-boats, which fish trammel and gill nets for a mixture of species including sole, plaice, cod and grey mullet (total of 86 boats in 1996). Both commercial and recreational rod and line fisheries for bass have existed for many years off Beachy Head in Sussex and, more recently, off Brighton and Selsey on the Owers Bank and around the Nab Tower. Boats from Littlehampton and Portsmouth fish these grounds in good weather in summer, using live sandeel and sometimes pout whiting or mackerel as bait for large bass (total 190 boats).

In 1989 and 1990, a mid-water trawl fishery for bass, black bream and other species developed in Sussex, based on 3 or 4 pairs of boats working mainly out of Shoreham and Newhaven, and these occasionally take large catches of bass in addition to those taken by single boats trawling out of the same ports.

Bass are caught as by-catch throughout the eastern English Channel by boats operating from Dunkirk, Dieppe and Boulogne using bottom trawls. According to IFREMER, little French effort is directed at bass in the eastern Channel, although there were reports of several big catches of bass made by vessels trawling 12 or more miles south-east of the Isle of Wight during the late 1980s.

Much of the bass fishing by part-time vessels using fixed gill nets and drift-nets, and long-lines and rod-and-line in the entrances to the many natural harbours found in the Solent area has been restricted since these were designated as bass nursery areas in 1990. Several small trawlers (around 28) from Newhaven to Poole have used locally designed, high-headline bottom trawls for bass fishing. In addition, a few charter boats take out groups of anglers specifically to catch bass, the larger vessels going offshore as far as the Channel Isles.

The bass fishing season in VIIId is generally April to November.

2.4.3 The western English Channel - ICES Division VIIe

A wide range of bass fisheries operate throughout VIIe, and there is much more effort by French boats on bass to the west of the Cherbourg Peninsula. This fishery occupies both part-time and full-time fishermen and concerns inshore, artisanal, boats all through the year and offshore trawlers in winter. For most métiers, bass is a by-catch species. The main inshore bass fishing method on the French side of the Channel is long-lining (103 boats in 1996), mainly working out of Paimpol, Cherbourg, Douarnenez and Brest. This tends to be a full-time activity for this fleet of small (6-8 m long) boats which work mainly in the spring and summer. Some boats move seasonally along the coast of Brittany.

The second main bass fishing method along the French coast of VIIe is handlining (95 boats in 1996), which encompasses all the variants described for the fishery on the south coast of England. The boats are mainly small (4 - 10 m long) and single-handed, a proportion of which work part-time only on bass. The main ports are Cherbourg, Brest and Audierne where some boats fish seasonally north up to Ouessant in VIIe. Recreational boat angling for bass takes place around north Brittany, and trolling with artificial sandeel baits is still widely practised.

Fixed gill nets are becoming more widely used in France, particularly in the Bay of Biscay. In some areas, bass and sole are caught together in nets with meshes of 110-140 mm, and in others, bass and pollack. This is usually a summer fishery, exploited by boats working out of Cherbourg, Paimpol and Morlaix. The average boat size is 10 m and this fleet has similar characteristics to the English inshore gill net fisheries in the Channel.

On the English coast, boats from Weymouth and Portland Harbour predominantly use rod and line offshore at the Portland Race, Shambles Bank, Lulworth Banks and St Albans' Ledge (10 – 12 boats). There is also some fixed gill netting inshore for both bass and grey mullet, and a few angling charter boats operating from Weymouth specialise in bass fishing.

There is a little commercial gill netting for bass between Portland Bill and the Exe Estuary in Devon. The once prolific bass fisheries in the estuary mouths of the rivers Exe, Dart and Teign, in south Devon, have declined in recent years - chiefly due to a reduction in netting under the Salmon Act of 1986 and the 1990 bass nursery area legislation. Commercial and charter rod and lining trips for bass use live sand-eels as bait off the estuary mouths and headlands such as Berry Head and Start Point.

In the early 1990s, traditional trolling/handlining fisheries for bass operated from Looe, Fowey, Mevagissey, Porthoustock and Coverack, fishing around offshore rocks and reefs. Despite attempts to increase efficiency, by using live sandeels or mackerel as bait rather than artificial lures, catches steadily declined in all areas, and by 2000 these fisheries had all but died out. There is relatively little gill netting for bass in south Cornwall, though some semi-commercial rod and lining takes place alongside a considerable recreational fishery. With the exception of February and March, bass are caught here all year round.

The largest catches of bass in the western English Channel are made with pair trawls. A few local French boats (mainly from Cherbourg) participate in this fishery, but up to 20 pair teams from ports in the Bay of Biscay fish mainly in VIIe from February until April for bass shoaling offshore prior to spawning, and return to fish in Biscay during the rest of the year. Catches of 20-30 tonnes (very large for a bass fishery) were occasionally reported. This fishery is thought to have started towards the end of the 1970s, when vessels previously targeting black bream encountered more profitable quantities of bass. The local boats prosecute the fishery for around 3 months of the year, landing mainly to the market at Cherbourg. Substantial landings of trawl-caught bass are sometimes made into Brixham, Plymouth and Newlyn by both local and visiting (in winter) boats. Recently these have included English, Scottish and, occasionally, Danish mid-water pair trawling teams, for which bass has become the main target as fishing for mackerel and pilchard has become less profitable.

Included in this region are the Channel Isles, where there is a small commercial bass fishery in the Alderney 'race' area by local and Guernsey-based boats, using drifting longlines baited with live sand eels. A bass angling festival is held in Guernsey almost every year. A commercial rod and line fishery also operates from Alderney, where many tide races and overfalls attract both charter and casual angling boats. Semi-commercial trolling and some gillnetting takes place around the rocky reefs on the south coast of Jersey. The rocky coasts of both Jersey and Guernsey attract local and visiting anglers, a sector that appears to have grown steadily in recent years.

2.4.4 The Celtic Sea and Bristol Channel - ICES Divisions VIII,f,g

Vessels in the Newlyn/Penzance/Land's End area work in a similar fishery to the rest of the fleet in the western English Channel, but some larger gill netting vessels out of Newlyn travel to St Ives Bay on the north Cornwall coast to catch bass close inshore in winter. This fishery appears to have declined over the last 15 years, as have the traditional small-

boat fisheries in this area, though one or two vessels still troll for bass in St Ives Bay. In recent years, the mainstay of the bass fishery along the north coasts of Cornwall and Devon has been netting and rod and lining in summer in the estuaries and tide rips, as part of a multi-species fishery. Occasional bass catches were still made in large seine nets near Land's End in the 1980's, though this traditional method is now rarely used.

Trawling by boats from Padstow, Bideford and South Wales ports (26 vessels in 1996) accounts for a by-catch of bass which is landed throughout the year, with occasional directed catches. In late winter, spawning bass are targeted by varying numbers of Scottish and French mid-water pair teams and by single bottom trawlers on the Trevoise Head Grounds, as in VIIIe.

On the northern, Welsh, side of the Bristol Channel, west of Cardiff, bass is one target species of part-time fishermen who use various netting methods, including drift netting, and of several angling charter boats. The coast from Swansea to Tenby, particularly along the Gower Peninsula and in Carmarthen Bay, is the main bass fishing area in South Wales for both commercial and recreational sectors. Most vessels are under 10m and all methods previously mentioned (though not pair trawl) are used, but with a move towards the commercial use of rod and line. A few boats in the Tenby area still troll for bass. Some of the larger boats from the Pembrokeshire fish for large bass using rod-and-line-fished lures on offshore reefs and areas of tidal overfalls. Gill nets and rod and line are used around the warm water outfall of Pembroke power station in Milford Haven, which attracts bass. The main bass fishing season throughout this region is usually from May to November.

In Division VIIIf there are often over 200 small boats using rod and line or handlines for bass, in summer and autumn. Most are part-time and many are unregistered.

2.4.5 Irish Sea - ICES Division VIIa

The bass fishery in Cardigan Bay is characterised by small boats operated mainly on a part-time basis and setting gill, trammel and stake nets close inshore. Catches taken by trawlers in this area have increasingly included bass, which are landed mainly into Milford Haven. Fishing opportunities in several, shallow sandy estuaries have been reduced by the introduction of NRA and national legislation to protect juvenile bass and migratory salmonids.

Commercial rod and line fishing tends to predominate along the Lleyn Peninsula and around the Anglesey coast, as strong, turbulent currents, rocks and abundant seaweed make netting difficult in many places. Bass shoals are sought by netters, commercial rod and liners and boat anglers on the broad sand banks at each end of the Menai Strait, working from Caernarfon, Beaumaris (Anglesey) and Bangor. From Bangor eastwards, along the North Wales' coast and into the Dee estuary, fixed netting (where permitted) and drifted trammels take bass (along with other species), but effort has decreased under strict NRA and SFC byelaw controls. A bass angling festival is held each year on the shores of Colwyn Bay.

There are a few boats using fixed and drifting nets in summer to catch bass along the Cheshire, Lancashire and Cumbrian coasts, and northwards from Morecambe Bay, bass are also caught in nets and lines set intertidally and rod and line. A popular sport fishery for bass near Walney Island, to the west of Barrow-in-Furness, has for several years attracted commercial fishing effort. Bass are taken as a by-catch in nets or traps set for flatfish or salmon throughout the Solway Firth, and for many years have been taken by rod and line in the Luce Bay area, in southwest Scotland (Niall, 1964). Scotland has no commercial bass fishing, although sport anglers are catching them with increasing frequency.

Most of the boats operating commercially for bass from English and Welsh ports in the Irish Sea use gill nets (146) or drifted gill or trammel nets (98). There are now fewer than 20 handlining boats, but over 150 recreational angling boats targeting bass.

2.4.6 Ireland – ICES Divisions VII a, b, g and j

A commercial bass fishery using rod and line and hand-lines, stake nets and ring nets developed in the Republic of Ireland in the 1960s (Fitzmaurice, 1978; Fahy, 1981; Fahy *et al.*, 2000) mainly on the south-east and to a lesser extent, south-western coasts. Bass were taken chiefly between May and October in estuaries and also on the open coast, and as a by-catch in the salmon beach seine and drift net fisheries and in the grey mullet gill net fishery. Occasional, incidental trawl catches of bass have been landed into various ports, in all months of the year. In 1990, commercial fishing for bass was banned and even recreational bass fishing became severely restricted by the Department of the Marine.

The best of the bass sport fishery in Ireland extends from the west of County Wexford around the southern coast to County Clare, where bass shoal in estuary mouths, off rocky headlands and reefs and along open storm beaches. The

Splough Rock, near Rosslare, County Wexford, Youghal Bay, County Cork, Dungarvan Bay, County Waterford and Rosscarberry, County Cork are internationally known venues. Few bass are caught to the north of the River Boyne in the east or north-east of the Moy Estuary in the north-west.

2.4.7 Bay of Biscay - ICES Divisions VIIa,b

Although the bass fisheries in this region have not been described collectively, studies of individual fisheries have been reported: fleets operating from ports in southern Brittany in the late 1970s (Le Masson, 1981); the Morbras region near Lorient (Bertignac, 1987); the lagoon fisheries of the Arcachon region (Barnabé, 1990); (Audoussert, 1978).

As on the north coast of Brittany, handlining, particularly trolling, is still carried out at Etel and Auray, and other fisheries exist near Audierne, le Guilvinec and Concarneau. However, catches have declined since the development of longlining and trawling in the early 1970s, and many fishermen have converted to the more profitable methods. Records for the fishery at Etel go back to 1963 and show that the trolling fishery continued to expand until 1973.

Long-liners (409 boats in 1996) are mainly located at Auray, Noirmoutier, La Rochelle, Les Sables d'Olonne, Oleron and Le Guilvinec. Gill-netters (329 boats) work mainly from Marennes, Noirmoutier, La Rochelle, Arcachon and Le Guilvinec. Drift netting is practised by some 38 coastal vessels, operating mainly from Marennes. Bass is also a by-catch in the sole gill-net fishery. Bottom trawlers (66 boats) work on bass mainly from Les Sables d'Olonne and Noirmoutier.

Pelagic trawlers 15-24 m long (61 vessels), working mainly in pairs, operate from St Nazaire, Lorient, La Turballe and Bayonne in VIIa and b, mainly in late summer and autumn: some move into VIIe during winter.

Sport angling using fish livebaits has produced some very big bass (>8 kg) in recent years on the Biscay coast. Generally, the bass caught by anglers from boats are larger than those taken from the shore, especially in estuaries.

In the south of this region, around Pertuis Charentais, the spotted bass (*D. punctatus*) is taken in commercial catches alongside *D. labrax* (Muyard, 1978). The two species are separated in French statistics and, in 1996, *D. punctatus* was not recorded north of Les Sables d'Olonne. The annual catch of bass in Biscay was around 77 t in 1996, with the highest percentage (22%) coming from Arcachon.

2.4.8 Biscay, Division VIIIc

The Spanish fishery for bass is concentrated mainly on the Biscay coast of northern Spain. As in France and the UK, the fleet seems to be divided into small boats which work inshore and in estuaries, and larger boats which work offshore. Many small (< 10 m) boats work in the Santander and La Coruna areas, prosecuting a mixed fishery using long lines and fine-meshed gillnets, seines and ring nets, mainly in summer. The winter fishery accounts for catches of large bass taken on long-lines and in mid-water trawls. Landings data are available by métier for the Basque region from 1996 onwards, when annual landings varied between approximately 50 and 75 t.

2.4.9 Portugal, Divisions IXa

Portugal has a large fleet of mid-water pair trawlers which sometimes target bass. In some areas, bass fry are trapped in inlets or creeks, where they are netted and exported to Italy for on growing. Sea-angling in Portugal was given considerable publicity in the 1960s, and bass of 4-6 kg were commonly caught from the surf beaches of Northern Portugal at Viara do Costelo, Póvoa de Varzim, Matozinhos, Miramar and Figueiri da Foz, and 8-11 kg fish were taken from boats.

3 STOCK IDENTITY

3.1 Sources of information

National representatives were requested to provide any information which can be used to identify stocks of bass in Community and adjacent waters in the North-east Atlantic; for example, the results of tagging studies, knowledge of seasonal fisheries taking bass, and genetic studies. The results are presented in Annex 2.

3.2 General distribution

Bass, *D. labrax*, are distributed in northeast Atlantic shelf waters from southern Norway, through the North Sea, the Irish Sea, the Bay of Biscay, the Mediterranean and the Black Sea to North-west Africa (Figure 3.2). The species is at the northern limits of its range around the British Isles and southern Scandinavia.

3.3 Spawning areas

The main source of information on the distribution and timing of spawning of bass around England and Wales is from egg and plankton surveys carried out over the spawning period (Feb-June) in IVc, VIId and VIIe by CEFAS in the early 1980s (Thompson and Harrop, 1987), in VII f and g in 1989, and 1990/91 (Jennings and Pawson, 1992), and in 1995 in the Irish Sea (CEFAS, unpublished data). Maturity staging of sampled adult bass has confirmed spawning periodicity in each area (Pawson and Pickett, 1996; Masski, 1998; Pawson *et al.*, 2001).

Bass spawn in the English Channel and eastern Celtic Sea from February to June, and their eggs were most abundant in the mid-western Channel during April, when the temperature range at spawning was 8.5-11°C. The area of spawning appeared to spread east as the surface water temperature exceeded 9°C and, by May, there were additional centres of spawning in coastal waters of the eastern Channel from the Isle of Wight to Beachy Head. In addition to the extensive spawning areas in the Channel, bass spawn off Trevoise Head in southwest England during February to April, and occasionally off the Isle of Man in the Irish Sea and in the southern North Sea during April - June.

Spawning areas in the Bay of Biscay have been located through catching spawning adult by pelagic trawling. There is one such area in the south of Division VIIIa and another close by in the north of Division VIIIb. However, other spawning grounds may exist in areas which are not sampled by pelagic trawling.

3.4 Larvae

Bass larvae resulting from offshore spawning in the English Channel and Bristol Channel move steadily inshore towards the coast as they grow (Jennings and Pawson, 1991). The larger larvae aggregate in inshore waters and, when they reach a specific developmental stage at around 11-15 mm in length (at 30 - 50 days old), it is thought that they respond to an environmental cue and actively swim into estuarine nursery habitats (Jennings, 1990).

3.5 Juveniles

From June onwards, 0-group bass in excess of 15 mm long are found almost exclusively in creeks, estuaries, backwaters and shallow bays. Studies on the south and west coasts of the UK have shown that bass remain in these nursery areas through their first and second years, after which they migrate to over-wintering areas in deeper water returning to the larger estuaries in summer. Tagging studies with juvenile bass (Pawson *et al.*, 1987, and Pickett, in prep) indicates emigration at the age of 4-6 (around 36 cm), often dispersing well outside the 'home' range, and not necessarily recruiting to their specific parent spawning stock.

Several studies indicate the existence of bass nursery areas in bays and estuaries on the French coasts of the Bay of Biscay, but there have been no studies that show the relative importance of the nurseries.

Figure 3.5 shows the distribution of known bass nursery areas UK and French coasts bordering the English Channel.

3.6 Adult migrations

After 4-7 years, or at approximate lengths of 35 cm for males and 42 cm for females, bass attain maturity and adopt the migratory movements of the adult fish. The distribution and seasonal movements of adult bass between spawning and feeding areas around the coasts of the UK and Ireland have been revealed by a number of tagging studies in the late 1970s and early 1980s (summarised, for the UK, in Pawson, Kelley and Pickett, 1987; for Ireland, in Kennedy and Fitzmaurice, 1972). Further information was obtained from egg and larval surveys and biological sampling, supported by observations on the seasonal patterns of the fisheries in England and Wales (Pawson and Pickett, 1996). The seasonal movements of adult bass, as shown by tagging in England and Wales in the 1980s are shown in Figure 3.6. The consistent seasonal pattern of the fisheries suggests that bass movements and migrations have changed little, although climatic warming may have lengthened the duration of residence in summer feeding areas. A programme of tagging adult bass in summer in England, Wales and Ireland is currently under way, following tagging in the French/UK offshore fishery early in 2000. An analysis of the returns will be made in 2002.

3.6.1 North Sea and English Channel

Many adult bass which were tagged on the south coast of England and around the Thames estuary during the summer appeared to migrate south and west as the water temperature decreases in late autumn to the winter pre-spawning areas in the western Channel. The spawning fish appear to move east through the Channel with the 9°C isotherm until, by June, the spent fish move into feeding grounds in the eastern Channel and southern North Sea. However, bass approaching first maturity and which originated in the Thames estuary, did not migrate so extensively, and some appeared on the south coast of England in the winter. Bass of a similar age, tagged on the south coast of England in summer, had very limited seasonal movements, and were usually recaptured within 50 miles of the tagging site.

3.6.2 Celtic Sea and Irish Sea

Many adult bass from the Irish Sea and Bristol Channel (VIIa, f & g) appear spend the winter off Cornwall (both to the north and south) and, as they become ripe in February and March, they aggregate on a spawning area located off Trevoise Head. From April onwards they begin to migrate to summer feeding areas from north Devon to north Wales and north - west England. As the water temperature decreases in autumn, the fish return towards their pre-spawning areas off Cornwall.

There have been no reports of bass tagged in Irish waters being recaptured in other areas, nor that is there evidence that bass tagged on the west coast of the UK mix with those from the east or south coasts of Ireland. Some fish tagged on the south and west coasts of the UK, however, have been observed to cross the English Channel and mix with those on the west coast of the European mainland in winter. For example, bass tagged in summer in the Thames Estuary, off Portland Bill and near the Channel Islands have been recaptured in winter in the Bay of Biscay, which suggests that bass which use spawning grounds there may move north into the English Channel out of the spawning season.

3.6.3 Bay of Biscay

There are no data with which to describe the movements of adult bass in the Bay of Biscay.

3.7 Biological parameters

The life history traits of bass vary across their environmental range, with fish at the cooler, northern extremes usually exhibiting slower growth, later maturity and longer maximum lifespans than those from warmer environments. Male bass mature at a length of 31-35 cm aged 4-7 years and females at 40-45 cm aged 5-8 years in British and Irish seas (Pawson and Pickett, 1996; Kennedy and Fitzmaurice, 1972), whereas, off the Tunisian coast, males mature at around 24 cm, aged 2-3 years, and females at around 32 cm, aged 4-5 years. The variability of these parameters in samples, and the extensive seasonal movements of adult bass, suggest that they cannot be used for stock discrimination.

3.8 Genetics

A study of polymorphic allozymes (Child, 1992) indicated that there are genetic differences between immature bass from the Irish Sea and elsewhere, which supports the hypothesis that the western Channel might be the boundary region for at least two bass stocks. More recent work by Tobin (Galway University, pers comm.), using samples of 0-groups from the Camel and Tamar Estuaries (SW England), the Scheldt Estuary in Belgium and two Irish samples, suggests that all groups exist at panmixia and that there is little, if any, sign of population structuring.

A recent French study carried out under EU funding (Durand, Bonhomme and Morizur, 2001) has used microsatellite analysis of 5 polymorphic loci typed on ~200 individual adult sea-bass captured at 3 main spawning grounds in VIIe (1995-96), VIIIf (2000), VIIIa (2001) and VIIIb (1993/95) to test for the existence of genetic differentiation which might indicate whether adults return to spawn on the site where they were born. The results show that between sample variance was extremely small (global F_{st} value of 0.0102); two of the 5 loci show a significant difference in the allelic distribution between sampling sites; and one locus showed a slight separation of the Channel samples from the rest. Multilocus assignment tests show that about 40 % of the individuals are assigned to their sample of origin, which may indicate a relative independence of the various spawning grounds. The preliminary conclusion is that the genetic differentiation between spawning grounds is very limited, suggesting that mixing between generations is sufficient to homogenise the genetic make up of each sub-population.

3.9 Conclusions

The results of tagging studies and the seasonal distribution of the fisheries taking bass suggest that it may be possible to identify, provisionally, four bass stocks for management/assessment purposes: a stock which moves between the English Channel and the southern North Sea; a stock which migrates along the west coast of Britain and into Cornish waters; a stock which remains largely within Irish waters; and a stock which moves between Biscay and the western English Channel (Figure 3.9). There is sufficient evidence from tagging that the level of interchange between these stocks may inhibit genetic differentiation, but the seasonal fisheries taking each of the stocks are quite discrete.

4 BIOLOGICAL DATA

4.1 France

Good biological sampling data (length, weight, age) for métiers in VIIe (except pelagic trawls) for 1989-90 and for all métiers in VIId and e for 1994-95. There are also good data for lines in VIIe in 2000/01. Sampling has also been carried out for the other métiers in all the above areas in 2000/01, but, with the exception of weight, the data are of poorer quality.

4.2 UK

Good biological data are available at combined métier level for three groups of ICES Divisions (IVb,c + VIIId; VIIe; VIIa,f,g). At individual Division/ métier level, the data are of variable quality over time, with VIIa having the poorest level of sampling. "Stock" files and VPA/XSA files have been compiled for the period 1985-94. Subsequent analysis of annual length and age data is nearly complete, and the three "stock" files will be updated over the next 12 months. Sex ratio and maturity data are largely derived from full biological sampling carried out between 1982 and 1990, and from sampling of the UK offshore fishery in 1999 and 2000.

4.3 Ireland

Data are available for the period 1981-2000 for length, weight, age and growth (from scale samples) of individual bass from 4 separate ICES Divisions (VIIa, b, g and j), though numbers of fish sampled and method of capture are not given.

There are no biological data for bass from other countries

5 RECRUITMENT

5.1 UK

Monitoring of pre-recruit bass abundance has been carried out by 3 methods. Monthly (autumn and winter) sampling of 0-group bass on power station cooling water intake screens took place from 1972-96 in Severn Estuary (VIIIf) and 1975-96 in the Thames Estuary (IVc). The latter time series has now been replaced by a dedicated trawl survey on 0-2 year-olds in November each year. CEFAS has conducted pre-recruit trawl surveys in the Solent (VIIId) on 2-4 year-olds, in spring and autumn from 1981 to present. The data from these surveys have been used to calculate a recruit index for each year-class since 1972. They represent valuable and robust time series that show good fits with subsequent UK fishery catch-at-age data. At this stage it is not known whether they are also representative of recruitment patterns in France or elsewhere.

In addition, seine net and rod and line surveys have taken place in two estuaries in SW England (VIIe and f) since the early 1980s (Kelley, in press).

5.2 Netherlands

Since 1972, 0-3 group bass have been recorded in 3m beam trawl surveys carried out in the Westerscheldt. Length frequency distributions show strong modality and permit age analysis. Numbers recorded have increased significantly since 1990.

There are no recruit series available for any other country.

The inventories of the available data are presented in Annex 3.

6 INFORMATION FOR ASSESSING THE STATUS OF SEABASS STOCKS

In order to enable the ACFM to judge whether there are sufficient data available to carry out analytical assessments or to show the historical and current state of the bass stocks identified, national representatives were requested to indicate on pro-forma the relevant biological data that are currently available. The inventories of these data are presented in Annex 4. These are summarised, along with fisheries data in Table 6. The quality of the data is patchy, but bass fisheries in the English Channel appear to be generally well sampled.

Table 6. Summary of availability and quality of data on sea bass by area (for all métiers) - quality relates to how well "stock" is sampled.

Data type	North Sea (IVb,c)		Channel (VII d,f,h)		Irish/Celtic Seas (VIIa,f,g,j)		Biscay (VIII)		
	quality	years pan	quality	years pan	quality	years pan	quality	years pan	
Effort	*	85-00	**	85-00	**	85-00	*	85-00	
Landings	wt/Div	*	85-00	**	85-00	**	85-00	*	85-00
	wt/Rect	*	85-00	*	85-00	*	85-00	*	85-00
	value/Div	**	85-00	**	85-00	*	85-00	**	85-00
	price/grade	*	85-00	*	85-00	*	85-00	**	85-00
Discards	any data	*	85-00	*	85-00	*	85-00	*	85-00
Biological	length	*	85-00	**	85-00	**	85-00	*	00-01
	comp'								
	age comp'	*	85-00	**	85-00	**	85-00	*	00-01
	fish wts	*	85-00	**	85-00	*	85-00	**	00-01
	sex ratio	*	82-93	**	82-93, 99,00	**	82-93		
	maturity	**	82-93	**	82-93, 99,00	**	82-93		
	condition	**	82-93	**	82-93, 99,00	**	82-93		
	growth	**	82-93	**	82-93	**	82-93		
	Recruit Index	**	75-00	**	77-99	**	72-00		
	Spawning	timing	**	81-84	**	81-84, 89	*	82-91(3yr)	
distribution		*	81-84,89	**	81-84, 89	*	82-91(3yr)		

Quality Key: ** = good quality data
 * = some data but poor quality
 blank = no data available

7 CURRENT CONSERVATION MEASURES

7.1 Protection of juvenile bass

An assessment of the bass fishery around the coasts of England and Wales in the early 1980's indicated that the potential yields from the were not being realised, and that a trend of increasing exploitation on each succeeding year class at an early age could be leading to a reduction in recruitment to the spawning stock (Pawson and Pickett, 1985). The UK Government called for precautionary action to ameliorate growth overfishing, for which the most effective strategy would be to increase the size at which bass recruited to the fishery. Whilst Y/R could, in theory, be maximised by raising the size at first capture to around 45 cm in IVc and VIIe (where adult bass were targeted), because exploitation was aimed at juvenile bass in many inshore fisheries, a minimum size at recruitment no higher than approximately 36 cm was indicated.

Using the relatively low levels of fishing actually observed in the period 1983-87 (F of around 0.25), to model the survivors in each age-group for different exploitation patterns, indicated that the number of recruits entering the adult stock would be similar, whether the fish were not caught before the age of 5 (as a result of stricter protection of juveniles), or maximally exploited between the ages of 4 and 8 inclusive, as occurred in many areas during the 1980s. In the latter case, there would be a lower mortality of adults and, theoretically, more large bass in the population, but this would result in the fishery forfeiting a potential doubling of the yield from the UK bass fishery. The decision was taken, therefore, to introduce a package of technical measures in the UK designed to reduce exploitation on juvenile bass and thus ameliorate growth overfishing. These comprised a 36 cm MLS (which was adopted by the EU), closure of 37 key bass nursery areas to fishing methods aimed at bass, and mesh size regulations for enmeshing nets which effectively banned meshes between 70 and 89 mm (i.e. those most selective for of 30 - 36 cm, a measure now reflected in Council Conservation Regulation 850/98 (Annex VI, Fixed gear, Regions 1 and 2).

7.2 Protection of adult bass

The main international fishery for adult bass takes place between December and early May in the English Channel (mainly in ICES Division VIIe) and on the Trevoise Head grounds (VIIIf). This fishery developed in the early 1980s and has steadily increased, with an average of 20 French, 3 Scottish and 3 English pelagic pair teams trawling in VIIId, e & f each year. These offshore catches are normally made up of mature bass (>40 cm), and is particularly intense when these fish are shoaled for spawning, which peaks in March or early April. This fishery is, essentially, uncontrolled. There are no direct effort or catch restrictions, other than a weekly market quota of 5 tonnes for individual vessels first implemented by France in 1996 and by the UK in 2000. The EC Minimum Size of 36 cm is aimed at protecting juvenile bass which occur predominantly inshore. Although there have recently been a number of above-average year-classes in UK waters, there is a strong association between recruitment and sea temperatures, and a favourable climate change may be masking the effect this exploitation of the spawning stock is likely to have on future recruitment. It has not yet been possible to propose biological reference points in relation to the precautionary approach to management.

7.3 Protection of the bass sport fishery

In Ireland, a decline in bass catches in the 1970s prompted the introduction of a number of conservation measures. Bye-law No. 577 of 1975 introduced a size limit of 35.6 cm fork length, a close time for fishing bass by net or weir and a restriction in the taking of bass by net in certain waters. S.I. No 128 – Bass (Conservation of Stocks) Order, 1990 - increased the size limit to 40 cm and forbade fishing from a boat for bass or the use of nets in their capture or to have the fish on board an Irish fishing vessel. A Bass (Restriction on Sale) Order (S.I. No 191 of 1991) prohibited the sale or offer for sale of bass; this S.I. would be renewed annually. The Bass Fishing Conservation Bye-law (N0. 673 of 1991) prohibited the taking or having in possession more than two bass in any 24 hour period, and specified a close season for angling for bass between 15 May 1992 and 15 June 1992.

The cumulative effect of these regulations has been to outlaw the commercial fishery for bass but, being an extremely valuable product, it is unlikely that trade in bass has been ended by these measures.

Over recent years fishing activity in inshore waters generally has become more intense (Fahy, 1992; Fahy, in prep.) and there has always been an interest in re-opening the commercial fishery for bass. Anglers are anxious that bass should be regarded administratively as primarily an anglers' fish. And there are other questions to be considered. During its early years bass is an inshore species. As it matures it moves offshore when it is potentially available for exploitation by various nations, notably the French who trawl bass in the Western English Channel. There is resentment that fish that originated in Irish waters should be available to other nationalities but not to the commercial fishermen in their country of provenance although there are no data which confirm such exploitation is taking place.

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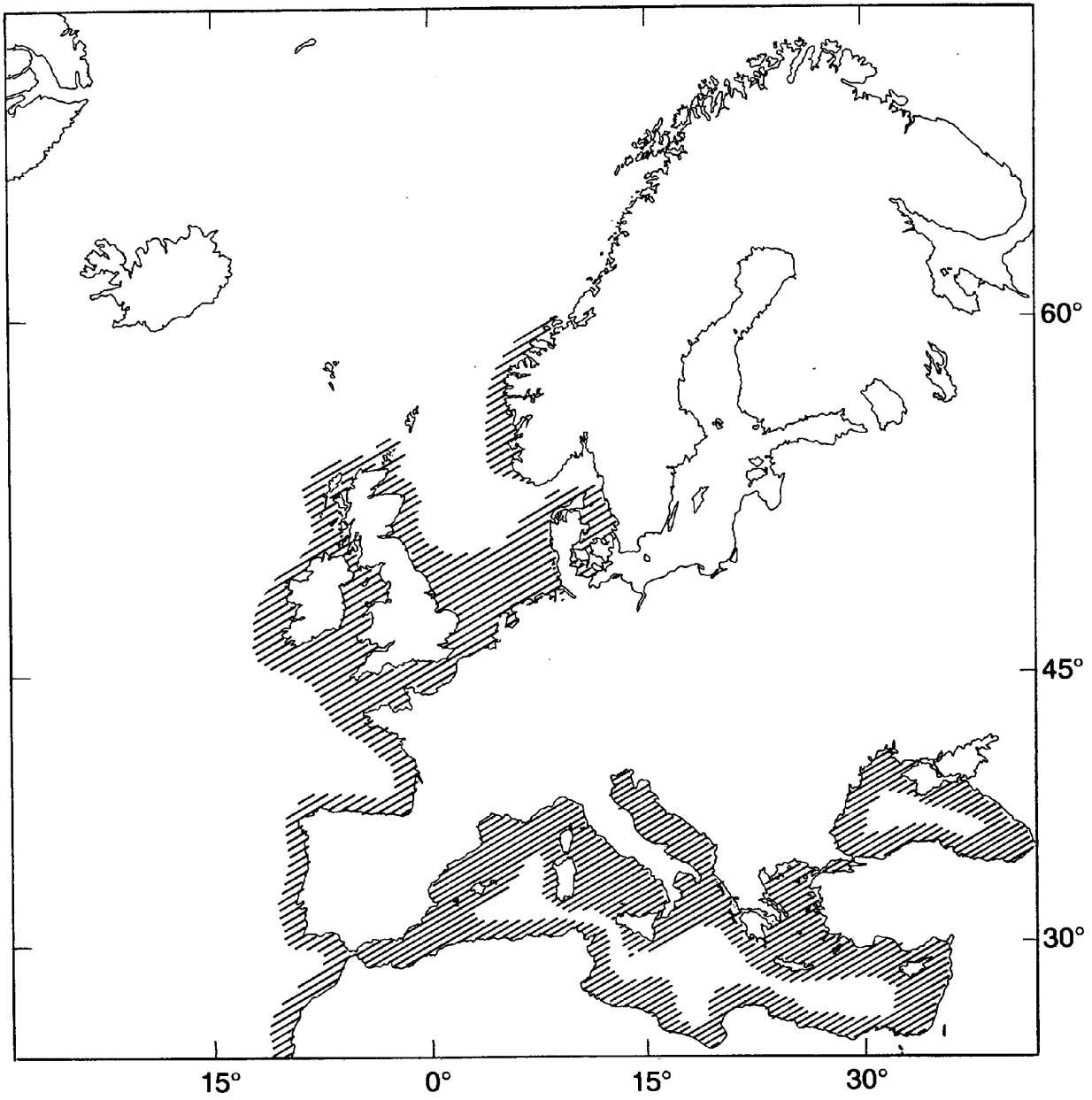


Figure 3.2 The distribution range of European Sea Bass (*D. labrax*).

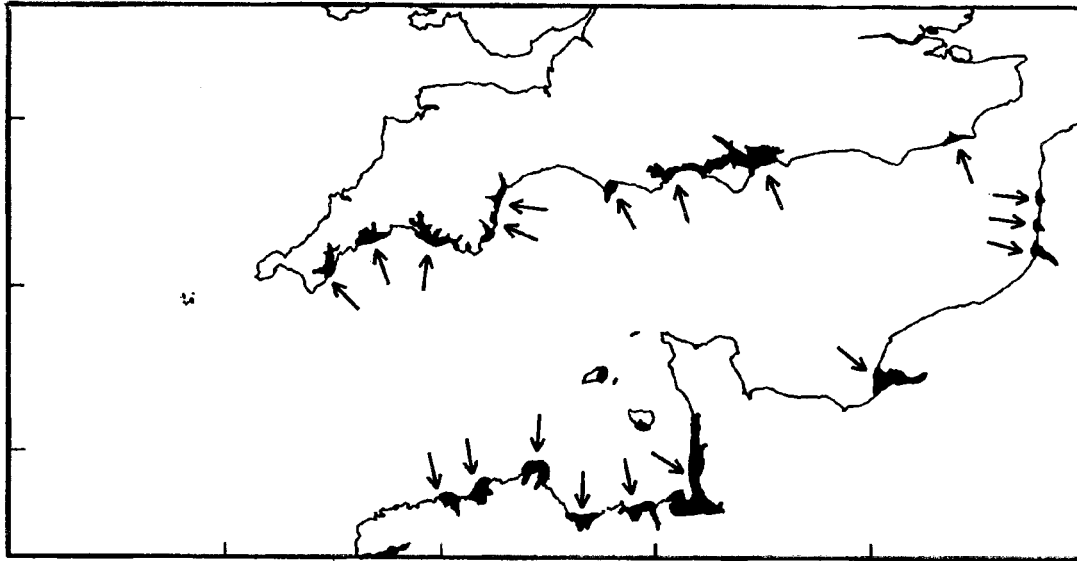


Figure 3.5 The distribution of known bass nursery areas on the UK and French coasts bordering the English Channel.

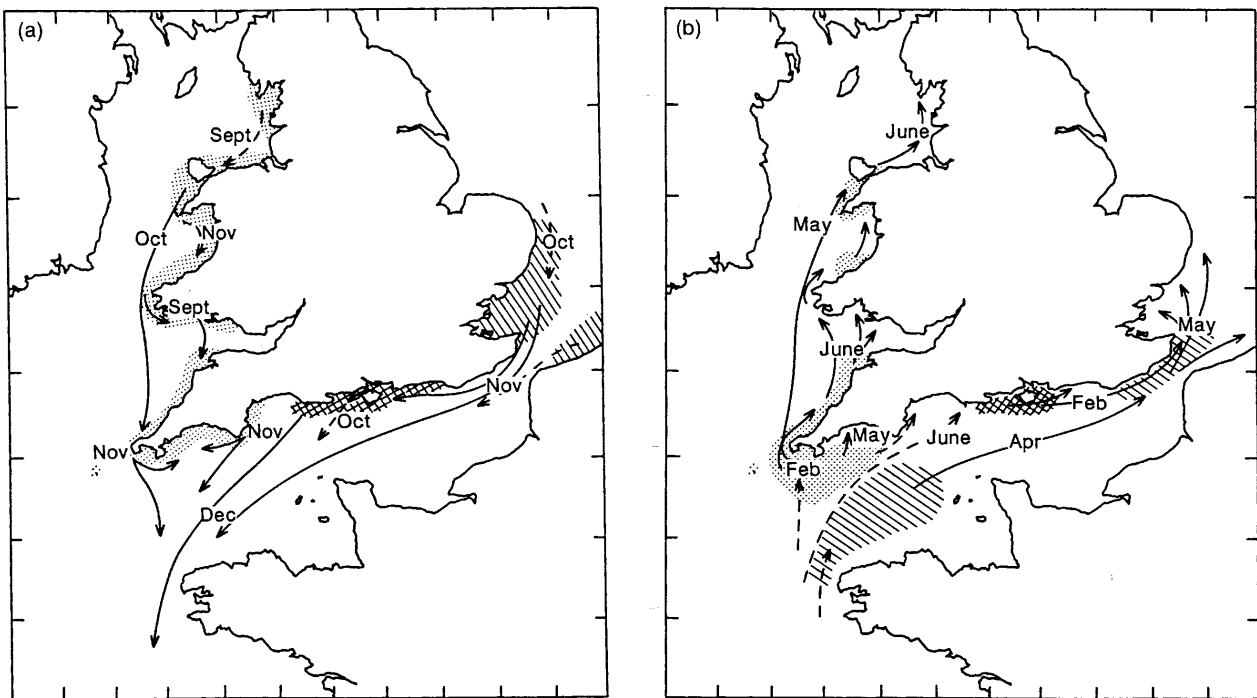


Figure 3.6 Seasonal movements and migrations of adult bass in the 3 main populations around England and Wales indicated by shaded areas: (a) autumn movements from summer feeding areas; (b) spring movements from spawning areas.

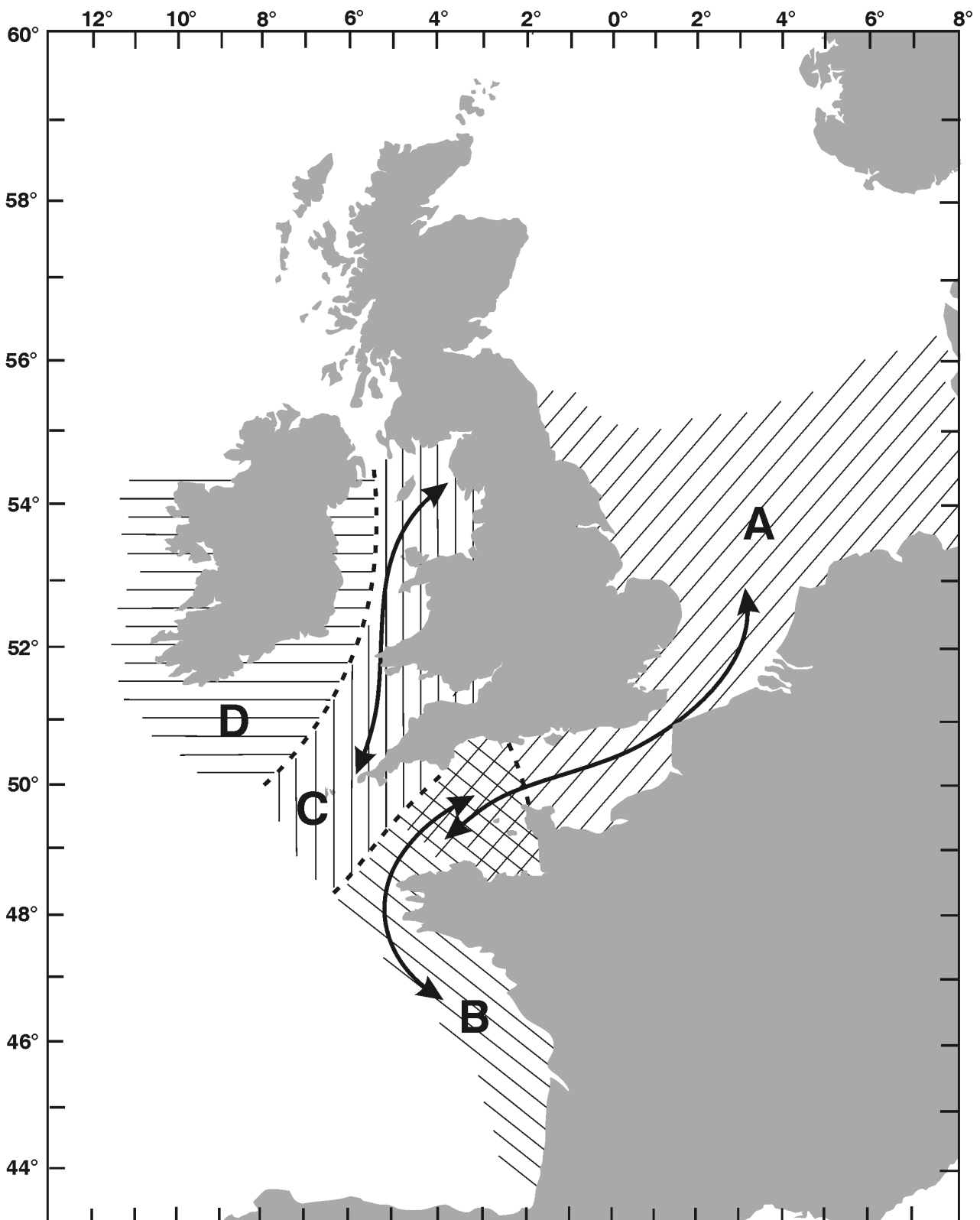


Figure 3.9 The sea areas in which four tentative stocks of bass are found, A) North Sea - Channel; B) Biscay - Western Channel; C) UK west coast and D) Ireland.

ANNEX 1

FISHERIES DATA BY MÉTIERS

FIRST REPORT OF THE STUDY GROUP ON SEABASS INVENTORY OF AVAILABILITY OF DATA FOR ASSESSMENTS

INVENTORY OF AVAILABILITY OF BASS DATA FOR ASSESSMENTS							COUNTRY:		France										
SHEET 1 FISHERY DATA - METIER SUMMARIES																			
Metier	Bottom trawl VII d,e	years																	
		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001+	
Effort	unit: e.g. boat-days	*	*	*	*	*	*	*	*	**	**	**	**	**	**	**	**	**	
	by ICES Div	*	*	*	*	*	*	*	*	**	**	**	**	**	**	**	**	**	
Landings	weight/Div	*	*	*	*	*	*	*	*	**	**	**	**	**	**	**	**	**	
	weight/Rect	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	value/Div	*	*	*	*	*	*	*	*	**	**	**	**	**	**	**	**	**	
	length comp	0	0	0	0	*	*	0	0	0	**	**	0	0	0	0	*	**	
	age comp	0	0	0	0	*	*	0	0	0	*	*	0	0	0	0	*	**	
	price/grade	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	
Discards	weight/Div	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	proportion by number	0	0	0	0	0	0	0	*	0	0	0	0	0	0	0	0	0	
	length	0	0	0	0	0	0	0	*	0	0	0	0	0	0	0	0	0	
	age	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
key																			
	0 = no data																		
	* = some data but poor quality																		
	** = good quality data																		

INVENTORY OF AVAILABILITY OF BASS DATA FOR ASSESSMENTS							COUNTRY:		France										
SHEET 1	FISHERY DATA - METIER SUMMARIES																		
Metier	Lines + Longlines VII d,e	years																	
		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001+	
Effort	unit: e.g. boat-days	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	by ICES Div	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
Landings	weight/Div	*	*	*	*	*	*	*	*	**	**	**	**	**	**	**	**	**	
	weight/Rect	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	value/Div	*	*	*	*	*	*	*	*	*	**	**	**	**	**	**	**	**	
	length comp	0	0	0	0	*	*	0	0	0	**	**	0	0	0	0	*	**	
	age comp	0	0	0	0	*	*	0	0	0	*	*	0	0	0	0	*	**	
	price/grade	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Discards	weight/Div	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	proportion by number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	length	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	age	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
key																			
0 = no data																			
* = some data but poor quality																			
** = good quality data																			

INVENTORY OF AVAILABILITY OF BASS DATA FOR ASSESSMENTS							COUNTRY:		France											
SHEET 1	FISHERY DATA - METIER SUMMARIES																			
Metier	Pelagic trawl VII d,e						years													
		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001+		
Effort	unit: <i>e.g. boat-days</i>	*	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
	by ICES Div	*	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Landings	weight/Div	*	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
	weight/Rect	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	**
	value/Div	*	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
	length comp	0	0	0	0	0	0	0	0	0	**	**	*	0	0	0	*	**	**	
	age comp	0	0	0	0	0	0	0	0	0	*	*	*	0	0	0	*	**	**	
	price/grade	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Discards	weight/Div	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	proportion by number	0	0	0	0	0	0	0	0	0	0	*	0	0	0	0	0	0	0	
	length	0	0	0	0	0	0	0	0	0	0	*	0	0	0	0	0	0	0	
	age	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
key																				
	0 = no data																			
	* = some data but poor quality																			
	** = good quality data																			

INVENTORY OF AVAILABILITY OF BASS DATA FOR ASSESSMENTS							COUNTRY:		France										
SHEET 1	FISHERY DATA - METIER SUMMARIES																		
Metier	Nets VII d,e	years																	
		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001+	
Effort	unit: e.g. boat-days	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	by ICES Div	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
Landings	weight/Div	*	*	*	*	*	*	*	*	**	**	**	**	**	**	**	**	**	
	weight/Rect	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	value/Div	*	*	*	*	*	*	*	*	**	**	**	**	**	**	**	**	**	
	length comp	0	0	0	0	*	*	0	0	0	**	**	0	0	0	0	*	**	
	age comp	0	0	0	0	*	*	0	0	0	*	*	0	0	0	0	*	**	
	price/grade	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	
Discards	weight/Div	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	proportion by number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	length	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	age	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
key																			
	0 = no data																		
	* = some data but poor quality																		
	** = good quality data																		

INVENTORY OF AVAILABILITY OF BASS DATA FOR ASSESSMENTS							COUNTRY:		France									
SHEET 1 FISHERY DATA - METIER SUMMARIES																		
Metier	Nets VIII a, b	years																
		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001+
Effort	unit: <i>e.g. boat-days</i>	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	by ICES Div	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Landings	weight/Div	*	*	*	*	*	*	*	*	*	*	*	*	*	**	**	**	**
	weight/Rect	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	value/Div	*	*	*	*	*	*	*	*	**	**	**	**	**	**	**	**	**
	length comp	*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	**
	age comp	*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	**
	price/grade	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Discards	weight/Div	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	proportion by number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	length	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	age	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
key																		
	0 = no data																	
	* = some data but poor quality																	
	** = good quality data																	

INVENTORY OF AVAILABILITY OF BASS DATA FOR ASSESSMENTS							COUNTRY:		France										
SHEET 1	FISHERY DATA - METIER SUMMARIES																		
Metier	Pelagic trawl VIII a,b	years																	
		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001+	
Effort	unit: e.g. boat-days	*	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
	by ICES Div	*	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Landings	weight/Div	*	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
	weight/Rect	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	**
	value/Div	*	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
	length comp	*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	**
	age comp	*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	**
	price/grade	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Discards	weight/Div	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	proportion by number	0	0	0	0	0	0	0	0	0	0	*	0	0	0	0	0	0	0
	length	0	0	0	0	0	0	0	0	0	0	*	0	0	0	0	0	0	0
	age	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
key																			
	0 = no data																		
	* = some data but poor quality																		
	** = good quality data																		

INVENTORY OF AVAILABILITY OF BASS DATA FOR ASSESSMENTS							COUNTRY: France												
SHEET 1 FISHERY DATA - METIER SUMMARIES																			
Metier	Lines VIII a,b	years																	
		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001+	
Effort	unit: e.g. boat-days	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	by ICES Div	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
Landings	weight/Div	*	*	*	*	*	*	*	*	**	**	**	**	**	**	**	**	**	
	weight/Rect	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	value/Div	*	*	*	*	*	*	*	*	**	**	**	**	**	**	**	**	**	
	length comp	*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	**	
	age comp	*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	**	
	price/grade	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	
Discards	weight/Div	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	proportion by number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	length	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	age	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
key																			
	0 = no data																		
	* = some data but poor quality																		
	** = good quality data																		

INVENTORY OF AVAILABILITY OF BASS DATA FOR ASSESSMENTS							COUNTRY:	France										
SHEET 1. FISHERY DATA - METIER SUMMARIES																		
Metier	Bottom trawl VIII a,b	years																
		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001+
Effort	unit: e.g. boat-days	*	*	*	*	*	*	*	*	**	**	**	**	**	**	**	**	**
	by ICES Div	*	*	*	*	*	*	*	*	**	**	**	**	**	**	**	**	**
Landings	weight/Div	*	*	*	*	*	*	*	*	**	**	**	**	**	**	**	**	**
	weight/Rect	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	value/Div	*	*	*	*	*	*	*	*	**	**	**	**	**	**	**	**	**
	length comp	*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	**
	age comp	*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	**
	price/grade	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Discards	weight/Div	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	proportion by number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	length	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	age	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
key																		
	0 = no data																	
	* = some data but poor quality																	
	** = good quality data																	

INVENTORY OF AVAILABILITY OF BASS DATA FOR ASSESSMENTS							COUNTRY:	Ireland											
SHEET 1 Fishery data - template for metier summaries																			
Metier	(see Fishery Description)	years																	
		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001+	
Effort	unit: <i>e.g. boat-days</i>	Not relevant - commercial fishing not permitted																	
	by ICES Div	Not relevant - commercial fishing not permitted																	
Landings	weight/Div	Not relevant - commercial fishing not permitted																	
	weight/Rect	Not relevant - commercial fishing not permitted																	
	value/Div	Not relevant - commercial fishing not permitted																	
	length comp	Not relevant - commercial fishing not permitted																	
	age comp	Not relevant - commercial fishing not permitted																	
	price/grade	Not relevant - commercial fishing not permitted																	
Discards	weight/Div	Not relevant - commercial fishing not permitted																	
	proportion by number	Not relevant - commercial fishing not permitted																	
	length	Not relevant - commercial fishing not permitted																	
	age	Not relevant - commercial fishing not permitted																	
key																			
	0 = no data																		
	* = some data but poor quality																		
	** = good quality data																		

INVENTORY OF AVAILABILITY OF BASS DATA FOR ASSESSMENTS							COUNTRY: UK										
SHEET 1 Fishery data - metier summaries																	
Metier	UK Trawl SE	years															
	Vllc/Vlld	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Effort	unit: days on ground by ICES Div	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Landings	weight/Div	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
	weight/Rect	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	value/Div	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	length comp	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
	age comp	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
	price/grade	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Discards	weight/Div	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	proportion by number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	length	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	age	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
key																	
0 = no data																	
* = some data but poor quality																	
** = good quality data																	

INVENTORY OF AVAILABILITY OF BASS DATA FOR ASSESSMENTS							COUNTRY: UK										
SHEET 1 Fishery data - metier summaries																	
Metier	UK Trawl SW	years															
	Vlle,h	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Effort	unit: boat-days	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	by ICES Div																
Landings	weight/Div	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
	weight/Rect	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	value/Div	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	length comp	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
	age comp	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
	price/grade	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Discards	weight/Div	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	proportion by number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	length	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	age	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
key																	
	0 = no data																
	* = some data but poor quality																
	** = good quality data																

INVENTORY OF AVAILABILITY OF BASS DATA FOR ASSESSMENTS							COUNTRY: UK											
SHEET 1 Fishery data - metier summaries																		
Metier	UK Longline	years																
	Vld,e,fga,IVc	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001+
Effort	unit: <i>boat-days</i>	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
	by ICES Div																	
Landings	weight/Div	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
	weight/Rect	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	value/Div	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	length comp	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
	age comp	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
	price/grade	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Discards	weight/Div	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	proportion by number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	length	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	age	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
key																		
	0 = no data																	
	* = some data but poor quality																	
	** = good quality data																	

INVENTORY OF AVAILABILITY OF BASS DATA FOR ASSESSMENTS							COUNTRY: UK											
SHEET 1 Fishery data - metier summaries																		
Metier	UKHandlinesSE	years																
	IVc/VIId	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001+
Effort	unit: <i>boat-days</i>	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
	by ICES Div																	
Landings	weight/Div	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
	weight/Rect	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	value/Div	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	length comp	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
	age comp	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
	price/grade	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Discards	weight/Div	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	proportion by number	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	length	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	age	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
key																		
	0 = no data																	
	* = some data but poor quality																	
	** = good quality data																	

INVENTORY OF AVAILABILITY OF BASS DATA FOR ASSESSMENTS							COUNTRY: UK											
SHEET 1 Fishery data - template for metier summaries																		
Metier	UKHandlinesSW	years																
	Ville	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001+
Effort	unit: <i>boat-days</i> by ICES Div	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Landings	weight/Div	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
	weight/Rect	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	value/Div	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	length comp	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
	age comp	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
	price/grade	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Discards	weight/Div	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	proportion by number	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	length	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	age	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
key																		
0 = no data																		
* = some data but poor quality																		
** = good quality data																		

INVENTORY OF AVAILABILITY OF BASS DATA FOR ASSESSMENTS							COUNTRY: UK												
SHEET 1 Fishery data - template for metier summaries																			
Metier	UKHandineWest	years																	
	Vllf,g,a	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001+	
Effort	unit: <i>boat-days</i> by ICES Div	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	
Landings	weight/Div	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	
	weight/Rect	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	value/Div	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	length comp	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	
	age comp	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	
	price/grade	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Discards	weight/Div	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	proportion by number	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	length	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	age	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
key	0 = no data																		
	* = some data but poor quality																		
	** = good quality data																		

INVENTORY OF AVAILABILITY OF BASS DATA FOR ASSESSMENTS							COUNTRY: UK											
SHEET 1 Fishery data - template for metier summaries																		
Metier	UKAnglingSW						years											
Vile		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001+
Effort	unit: <i>boat-days</i> by ICES Div		**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Landings	weight/Div		**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
	weight/Rect		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	value/Div		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	length comp		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	age comp		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	price/grade		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Discards	weight/Div		0	0	0	0	0	0	**	**	0	0	0	0	0	0	0	0
	proportion by number		**	**	**	**	**	**	**	**	*	*	*	*	*	*	*	*
	length		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	age		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
key																		
	0 = no data																	
	* = some data but poor quality																	
	** = good quality data																	

INVENTORY OF AVAILABILITY OF BASS DATA FOR ASSESSMENTS							COUNTRY: UK											
SHEET 1 Fishery data - template for metier summaries																		
Metier	UKAnglingWest	years																
VIlf,g,a		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001+
Effort	unit: <i>boat-days</i> by ICES Div		**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	
Landings	weight/Div		**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	
	weight/Rect		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	value/Div		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	length comp		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	age comp		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	price/grade		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Discards	weight/Div		0	0	0	0	0	0	**	**	0	0	0	0	0	0	0	
	proportion by number		**	**	**	**	**	**	**	**	*	*	*	*	*	*	*	
	length		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	age		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
key																		
	0 = no data																	
	* = some data but poor quality																	
	** = good quality data																	

INVENTORY OF AVAILABILITY OF BASS DATA FOR ASSESSMENTS							COUNTRY: UK											
SHEET 1 Fishery data - template for metier summaries																		
Metier	UKAnglingSouth-east	years																
	IVc/Vild	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001+
Effort	unit: <i>boat-days</i>		**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	
	by ICES Div																	
Landings	weight/Div		**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	
	weight/Rect		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	value/Div		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	length comp		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	age comp		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	price/grade		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Discards	weight/Div		0	0	0	0	0	0	**	**	0	0	0	0	0	0	0	
	proportion by number		**	**	**	**	**	**	**	**	*	*	*	*	*	*	*	
	length		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	age		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
key																		
	0 = no data																	
	* = some data but poor quality																	
	** = good quality data																	

ANNEX 2

STOCK IDENTITY AND SPAWNING

FIRST REPORT OF THE STUDY GROUP ON SEABASS

INVENTORY OF AVAILABILITY OF DATA FOR ASSESSMENTS

SGBASS INVENTORY OF EXISTING DATA				COUNTRY:		France			
SHEET 4 STOCK IDENTITY									
				Data type			Data source		
ICES DIV	year	tagging	genetics	seasonal fishery pattern	meristics	authors	publication	date	
VII f	2000		**	adult samples from spawning grounds		lfremer/CNRS			
VIII a	2001		**	adult samples from spawning grounds		lfremer/CNRS			
VII e	1995-96		**	adult samples from spawning grounds		lfremer/CNRS			
VIII b	1993, 1995			adult samples from spawning grounds		lfremer/CNRS			
VII f,e	2000	0							
Key (data type): 0 = no data									
* = some data but poor quality									
** = good quality data									

SGBASS INVENTORY OF EXISTING DATA				COUNTRY: UK					
SHEET 4 STOCK IDENTITY									
ICES DIV	Data type			meristics	authors	Data source		date	
	tagging	genetics	seasonal fishery pattern			publication			
IVc	**	*?	**	0	P,K&P	JMBA	1987	all areas	
					P&P	C&H	1994	all areas	
VIIId	**	*	**	0	Child (Genetics)	JMBA	1992	?	
VIIe	**	*	**	0					
VIIIf,g	**	*	**	0					
VIIa	**	*	**	0					
Key (data type): 0 = no data									
* = some data but poor quality									
** = good quality data									

ANNEX 3

RECRUITMENT

FIRST REPORT OF THE STUDY GROUP ON SEABASS

INVENTORY OF AVAILABILITY OF DATA FOR ASSESSMENTS

SGBASS INVENTORY OF AVAILABILITY OF BASS DATA				COUNTRY:	France	
SHEET 5	RECRUITMENT					
Year-class abundance / pre-recruit indices					nothing	
ICES Div	*Related population	**Sampling method	Ages sampled	Year classes		

SGBASS INVENTORY OF AVAILABILITY OF BASS DATA					COUNTRY:	Ireland
SHEET 5 RECRUITMENT						
Year-class abundance / pre-recruit indices						
ICES Div	*Related population	**Sampling method	Ages sampled	Year classes		
Year class abundance						
VIIa, VIIg, VIIj, VIIb	All divs combined	scales from anglers	Mainly 6-10 yo	1989 and 1990 most prominent		

SGBASS INVENTORY OF AVAILABILITY OF BASS DATA					COUNTRY:	Ireland
SHEET 6 SPAWNING						
Distribution and timing of spawning (from egg surveys or catches of ripe fish)						
ICES Div	Rectangles	years sampled	months sampled	egg survey?	bio sampling?	

SGBASS INVENTORY OF AVAILABILITY OF BASS DATA				COUNTRY: NETHERLANDS	
SHEET 5 RECRUITMENT					
Year-class abundance / pre-recruit indices					
ICES Div	*Related population	**Sampling method	Ages sampled	Year classes	
IVc	Eastern half of Div	3m beam tr survey Westerscheldt	0-3	1972-2000	

SGBASS INVENTORY OF AVAILABILITY OF BASS DATA				COUNTRY: Netherlands	
SHEET 6 SPAWNING					
Distribution and timing of spawning (from egg surveys or catches of ripe fish)					
ICES Div	Rectangles	years sampled	months sampled	egg survey?	bio sampling?

SGBASS INVENTORY OF AVAILABILITY OF BASS DATA				COUNTRY: UK	
SHEET 5 RECRUITMENT					
Year-class abundance / pre-recruit indices					
ICES Div	*Related population	**Sampling method	Ages sampled	Year classes	
VIIId	whole Div + e (f,g?)	Solent trawl survey	2-4	1977-99	
IVc	Westen half of Div + b?	Thames trawl survey	0-2	1997-00	
IVc	Westen half of Div + b?	Power station cwis	0	1975-96	
VIIIf	whole div + g (a?)	Power station cwis	0	1972-96	
VIIe	local?	Tamar seine	0	1985-00	
VIIe	local?	Tamar seine	1	1984-99	
VIIe	whole Div?	Tamar rod	4	1984-97	
VIIIf	local?	Camel seine	0	1981-00	
VIIf	local?	Camel rod	4	1981-96	

SGBASS INVENTORY OF AVAILABILITY OF BASS DATA				COUNTRY: UK	
SHEET 6 SPAWNING					
Distribution and timing of spawning (from egg surveys or catches of ripe fish)					
ICES Div	Rectangles	years sampled	months sampled	egg survey?	bio sampling?
VIIe	all	1981-84	Feb - June	yes	
	28-29, E5-E7	1999, 2000	Jan - Apl	no	yes
VIIId	all	1981-84, 89	Feb - June	yes	
VIIIf,g	all	1989,90,91	Feb - June	yes + larvae	yes
IVc	31-35F1, 35FO	1981-84, 89*	Apl - June (*May only)	yes	89 only
VIIa	36,37, E5, E6	1982,85, 87	Apl -May	yes + larvae	
" " "	" " " "	1995	March - June	yes	

ANNEX 4

BIOLOGICAL DATA

FIRST REPORT OF THE STUDY GROUP ON SEABASS

INVENTORY OF AVAILABILITY OF DATA FOR ASSESSMENTS

INVENTORY OF AVAILABILITY OF BASS DATA FOR ASSESSMENTS							COUNTRY:		France		
SHEET 2. Biological parameters - Summary											
ICES Div	year range	Remarks	Length comp	Weight	Sex ratio	Age	ALKs	Maturity ogive	Condition factors	Growth	
VIIe	1989-90	except pelag	**	**	0	**	**	0	0	**	
VIIe,VIIId	1994-95		**	**	0	**	**	0	0	**	
VIIe	2000		*	**	0	**	**	0	0	**	
VIIIa	2000		*	**	0	0	0	0	0	0	
VIIe	2001		**	**	0	**	**	0	0	**	
VIIId	2001		*	**	0	0	0	0	0	0	
VIIIa	2001		*	**	0	0	0	0	0	0	
Key:	0 = No data										
	* = sparse sampling										
	** = representative of catches										

INVENTORY OF AVAILABILITY OF BASS DATA FOR ASSESSMENTS					COUNTRY:			France
SHEET 3. Biological parameters - detail								
					enter number of bass sampled			
ICES Div	Metiers	year	Length comp	Weight	Sex ratio	Age comp	Maturity ogive	
	" " "	" "						
VIIe	lines, long lines	1989-90	*	?	0	**	0	
	gill nets	1989-90	*	?	0	**	0	
	bottom trawls	1989-90	**	?	0	**	0	
	pelagic trawl	1989-90	0	?	0		0	
	pelagic trawl	1994-95	0	?	0	*	0	
	gill nets	1994-95	**	?	0	*	0	
	bottom trawls	1994-95	**	?	0	*	0	
	long lines	1994-95	**	?	0	*	0	
	pelagic trawl	1996	**	?	0	*	0	
	bottom trawl	2000	*	?	0	*	0	
	gill nets	2000	*	?	0	*	0	
	pelagic trawl	2000	*	?	0	*	0	
	VIIe,d	bottom trawl	1994-95	**	?	0	*	0
		pelagic trawl	1994-95	**	?	0	*	0
gill nets		1994-95	**	?	0	*	0	
F others		1994-95	**	?	0	*	0	
bottom trawl		2001+	*	?	0	*	0	
gill nets		2001+	*	?	0	*	0	
pelagic trawl		2001+	*	?	0	*	0	
VIIe,VIII	pelagic trawl	1995	*	?	0	*	0	
	lines , long-lines	2000	**	?	0	*	0	
				?				
VIIIa	lines, long lines	2000	*	?	0	*	0	
	bottom trawl	2000	*	?	0	*	0	
	nets	2000	*	?	0	*	0	
	pelagic trawl	2000	*	?	0	*	0	
VIIIa,b	bottom trawl	2001+	*	?	0	*	0	
	lines , longlines	2001+	*	?	0	*	0	
	nets	2001+	*	?	0	*	0	
	pelagic trawl	2001+	0	?	0		0	

INVENTORY OF AVAILABILITY OF BASS DATA FOR ASSESSMENTS							COUNTRY:		France		
SHEET 2. Biological parameters - Summary											
ICES Div	year range	Remarks	Length comp	Weight	Sex ratio	Age	ALKs	Maturity ogive	Condition factors	Growth	
VIIe	1989-90	except pelagic	**	**	0	**	**	0	0	**	
VIIe,VIIId	1994-95		**	**	0	**	**	0	0	**	
VIIe	2000		*	**	0	**	**	0	0	**	
VIIIa	2000		*	**	0	0	0	0	0	0	
VIIe	2001		**	**	0	**	**	0	0	**	
VIIId	2001		*	**	0	0	0	0	0	0	
VIIIa	2001		*	**	0	0	0	0	0	0	
Key:	0 = No data										
	* = sparse sampling										
	** = representative of catches										

INVENTORY OF AVAILABILITY OF BASS DATA FOR ASSESSMENTS					COUNTRY:			Ireland		
SHEET 2. Biological parameters - Summary										
ICES Div	year range		Length comp	Weight	Sex ratio	Age	ALKs	Maturity ogive	Condition factors	Growth
VIIa, VIIg, VIIj, VIIb	1981 - 2000		**	**	0	**	0	0	**	**
Key:										
0 = No data										
* = sparse sampling										
** = representative of catches										

INVENTORY OF AVAILABILITY OF BASS DATA FOR ASSESSMENTS					COUNTRY: UK			
SHEET 3. Biological parameters - detail								
					enter number of bass sampled (av' /year)			
ICES Div	Metiers	years	Length comp	Weight	Sex ratio	Age comp	Maturity ogive	
	" " "	" "					Yes -details to follow	
IVc/VIIId	All trawls	1985-2000	900	400		500		
	Gill nets	1985-2000	1500	750		1000		
	Lines, longlines	1985-2000	1100	600		800		
	Combined/various	1982-93			550 total			
VIIe,h	All trawls	1985-2000	1000	250		300		
	Gill nets	1985-2000	500	150		200		
	All lines	1985-2000	400	200		250		
	Pelagic trawls	1987-1992	500	250		400		
		1995-2000	1000	500		800		
	Combined/various	1982-93			600 tot			
VIIIf,g,a	All trawls	1985-2000	200	40		50		
	Gill nets	1985-2000	350	50		100		
	All lines	1985-2000	500	100		200		
	Combined/various	1982-93			600 tot			

INVENTORY OF AVAILABILITY OF BASS DATA FOR ASSESSMENTS							COUNTRY: UK				
SHEET 2. Biological parameters - Summary											
ICES Div	year range		Length comp	Weight	Sex ratio	Age	ALKs	Maturity ogive	Condition factors	Growth	
IVc/VIId	1985-2000		**	**	*	**	**	*	**	**	
VIIe,h	1985-2000		**	**	*	**	**	*	**	**	
VIIIf,g,a	1985-2000		**	**	*	**	**	*	**	**	
Key:	0 = No data										
	* = sparse sampling										
	** = representative of catches										