



## HELFO RD RIVER SURVEY

# **A survey of the Pisces (Fish) of the Helford Estuary**

A Report to the  
Helford Voluntary Marine Conservation Area Group  
funded by the World Wide Fund for Nature U.K.  
and English Nature



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## **Summary**

The Helford Voluntary Marine Conservation Area (hereafter HVMCA) was designated in 1987 and since that time a series of surveys have been carried out to examine the flora and fauna present.

In this study no less than eighty species of fish have been identified within the confines of the HVMCA. Many of the more common fish were found to be present in large numbers. Several species have been designated as nationally scarce whilst others are nationally rare and receive protection at varying levels. The estuary is obviously an important nursery for several species which are of economic importance.

A full list of the fish species present and the protection some of them receive is given in the Appendices

Nine species of fish have been recorded as new to the HVMCA.

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Fig. 1 Map of the Helford Estuary showing the limit of the H.V.M.C.A.

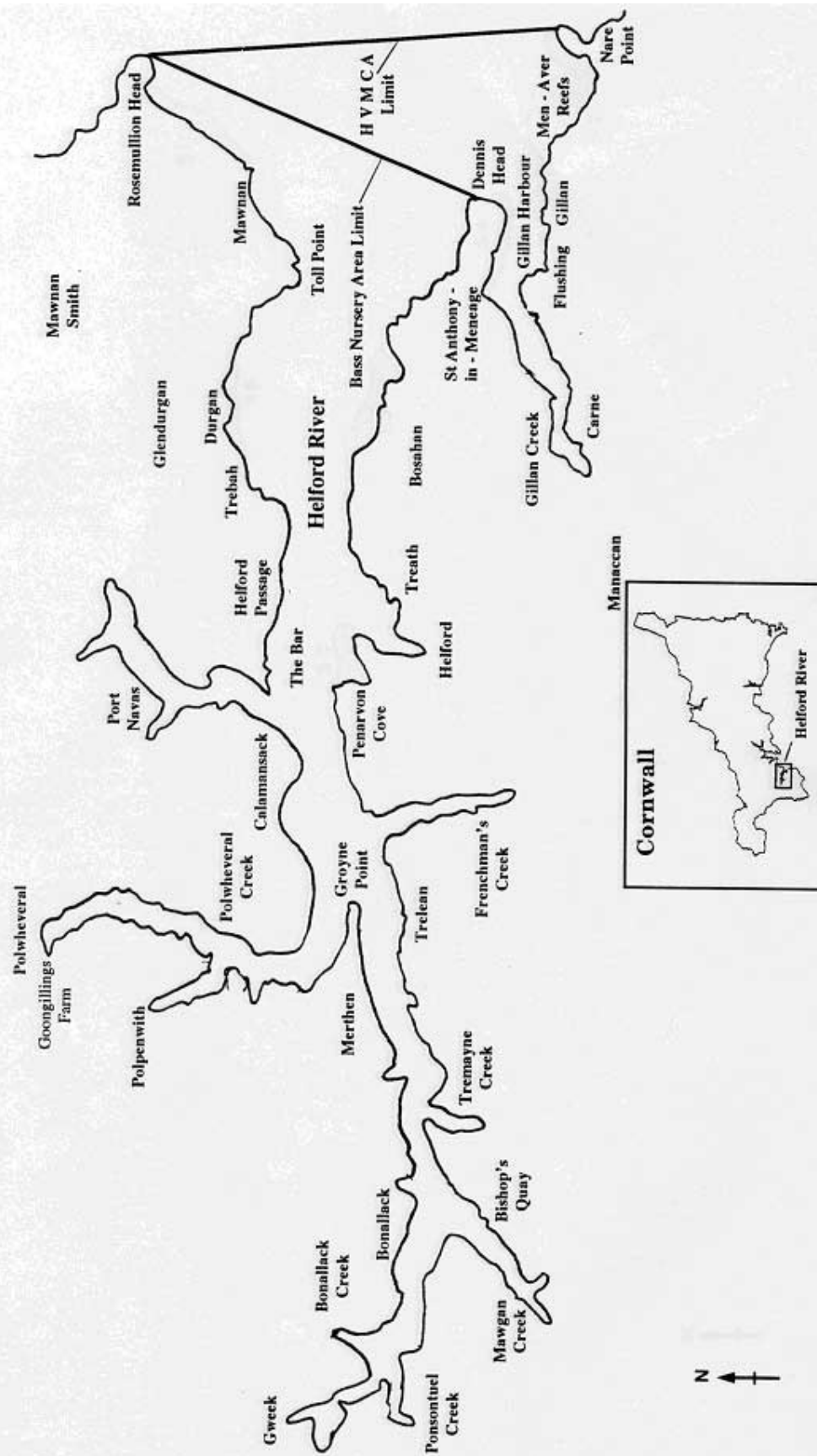




Fig. 2 Map of the Helford Estuary showing the locations of the inter-tidal survey sites

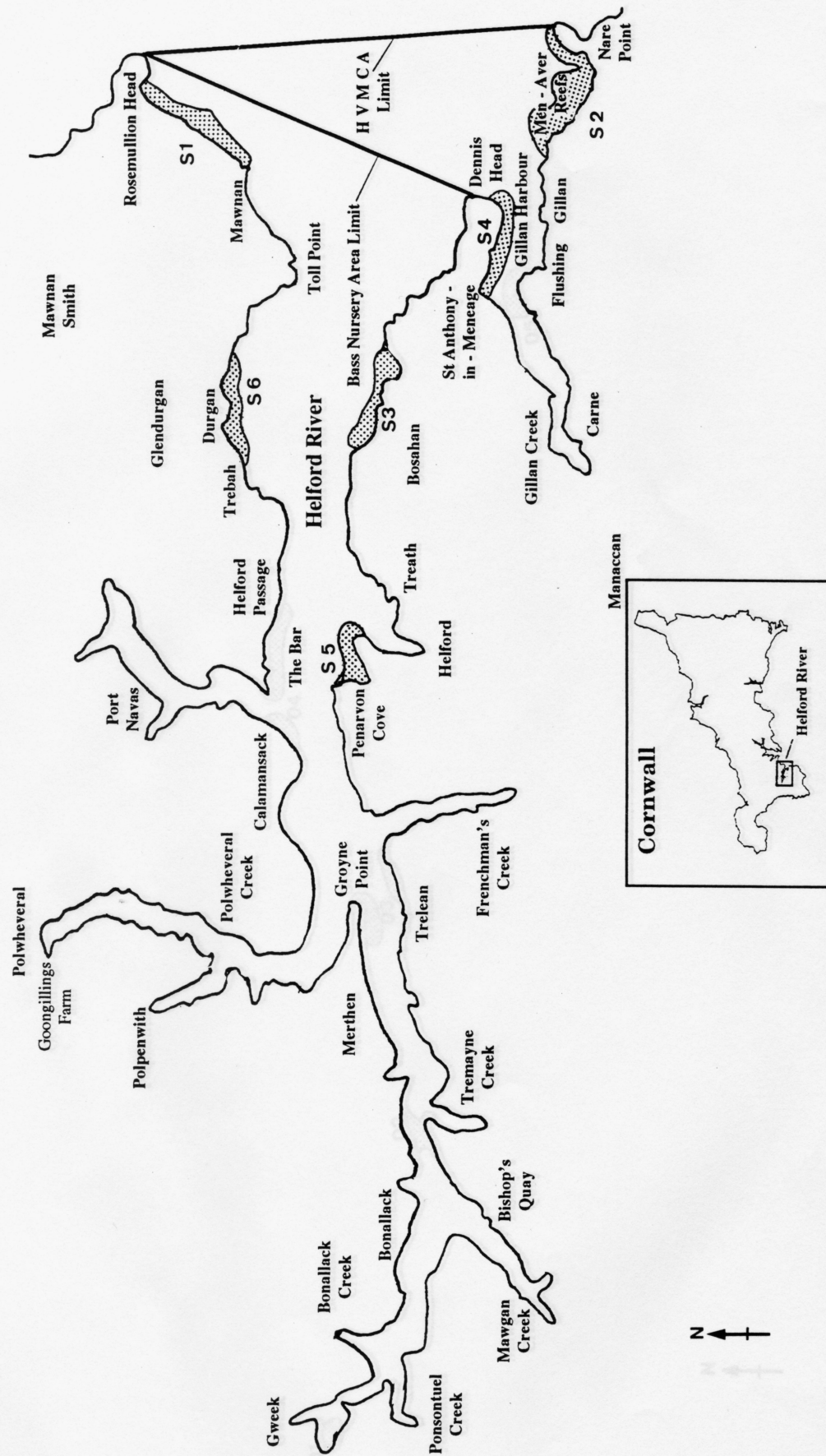
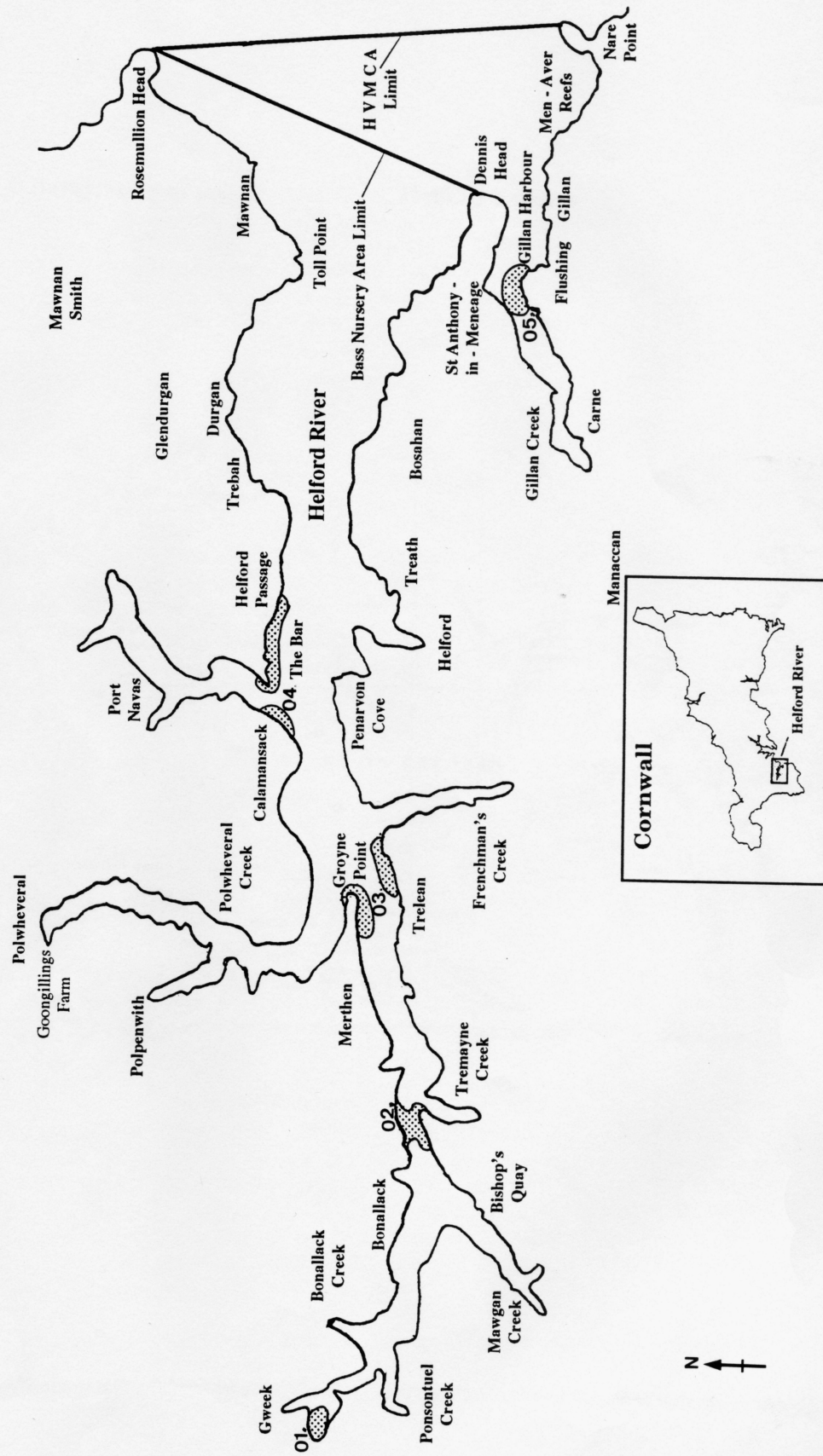
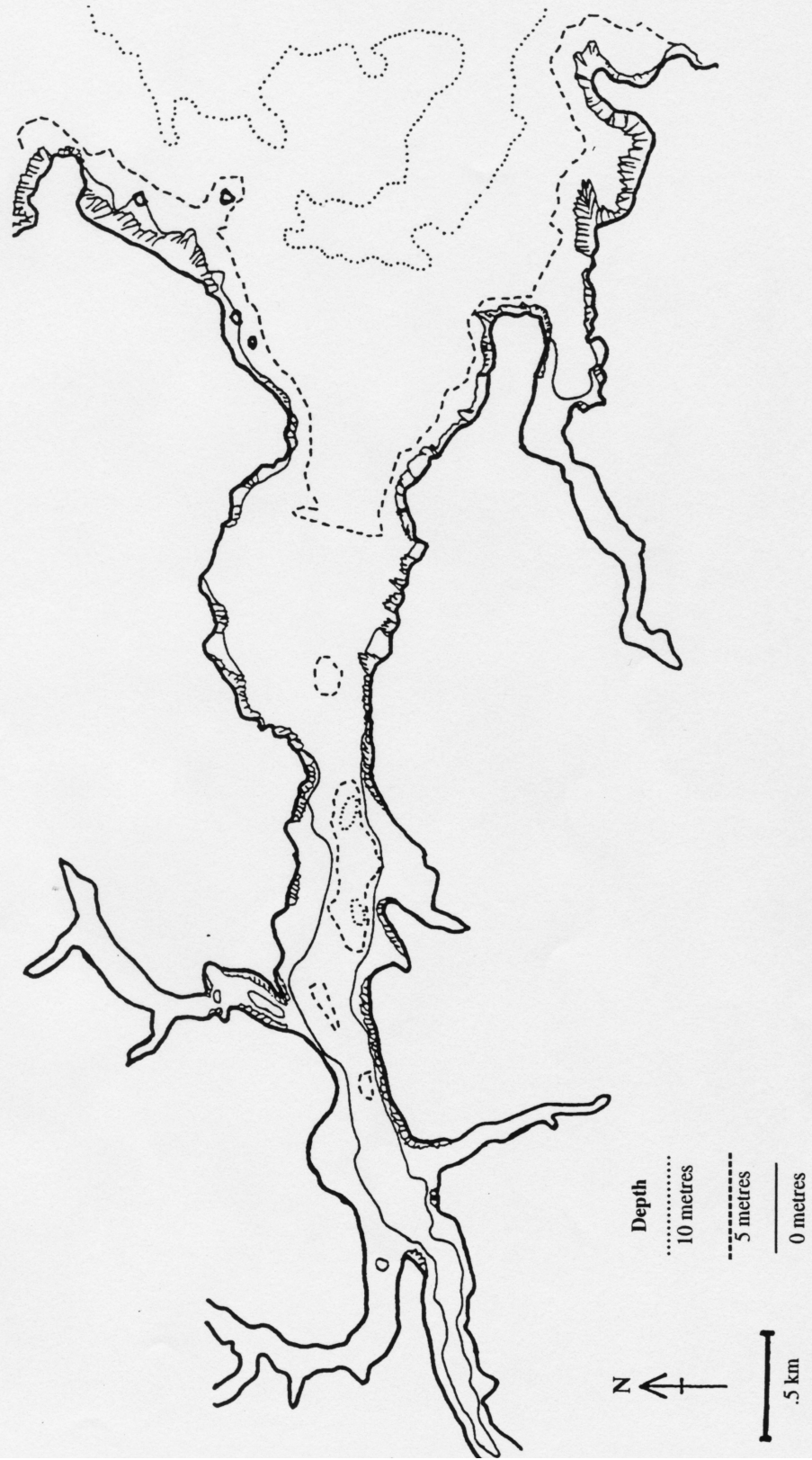


Fig. 3 Map of the Helford Estuary showing the locations of the sublittoral netting sites



**FIGURE 3**  
**BATHYMETRY OF THE MID**  
**AND LOWER HELFORD ESTUARY**  
From Admiralty Chart 147

**HELFORD**  
**VOLUNTARY MARINE**  
**CONSERVATION AREA**



## **1. INTRODUCTION**

### **1.1 Background**

The Helford estuary is a drowned valley system, or ria, on the northern edge of the Lizard Peninsula in south Cornwall. The mouth of the estuary lies at approximately 50°55'N and 5°5'W. The estuary extends some 10km inland from this seaward entrance to the former port of Gweek. Along its course there are a number of relatively short creeks which are steep sided and densely wooded. The salinity varies greatly from stenohaline levels of 25-30‰ at the mouth of the estuary to oligohaline conditions, 1-5‰, depending on the state of the tide, about the Gweek area.

The Helford estuary has long been recognised as having a high diversity of marine animal and plant life and records of the fauna and flora go back many years to the 19th century. Such diversity may be attributed to the numerous marine habitats, the warm, shallow, sheltered and unpolluted water together with a minimal freshwater input.

Following intertidal surveys of the British coastline which were commissioned by the Nature Conservancy Council, the Helford estuary was rated as an Internationally Important Site of Marine Interest (Powell *et al*, 1978).

In 1996 the importance of the Helford and Fal complex was recognised and highlighted when this area was proposed for designation as a marine Special Area of Conservation under the 1992 European Habitats Directive.

### **1.2 Previous Marine Biological Studies**

Records of the flora and fauna, including fish species, collected in the Helford estuary are mentioned by Cocks (1849) and also by Tregelles (1885). Between 1899 and 1906, Professor James Clark kept records of marine life, including some from the Helford estuary. These records were published in *The Victoria History of the Counties of England: Cornwall* (1906). Clark included further records in *The Zoologist* of 1907-1909.

More recently Holme and Turk (1986) have compiled a list of records of the fauna from the Helford derived from pre-1910 publications. During 1949 G M Spooner and N A Holme (Marine Biological Association, Plymouth) carried out intertidal and offshore surveys in the estuary (Spooner and Holme, 1986).

In 1986 Covey and Hocking (1987) carried out a survey of the Helford River for the Helford River Steering Group. Also at that time the Oil Pollution Research Unit (OPRU) surveyed the Helford estuary as part of the Survey of Harbours, Rias and Estuaries of Southern Britain (Rostron 1987). Although this latter was a fairly comprehensive report overall the fish group received only modest attention. Furthermore many potentially productive and important sites were missed during this rather brief and general survey. Turk and Tompsett (1993) have compiled lists of the invertebrate and fish species that have been recorded from the HVMCA during the past 250 years.

The present report gives a much more detailed, up-to-date and specific treatment of this group.

## **2. SURVEY DETAILS**

### **2.1 Dates**

#### **2.1.1 Intertidal survey**

The survey was conducted between August 1997 and December 1997 and consisted of six intertidal surveys which were carried out at times of extreme low water tides.

#### **2.1.2 Shallow sublittoral netting survey**

The survey was conducted between July 1997 and October 1997 and consisted of sublittoral netting at five sites throughout the estuary.

#### **2.1.3 Previous diving and dredging surveys**

Scuba diving and dredging surveys were carried out during the period 1985-1990 by the present author.

### **2.2 Sites**

#### **2.2.1 Table 1 - Intertidal survey sites 1997/1998**

<b>Site</b>	<b>Location</b>	<b>O S grid ref.</b>	<b>Date</b>
1	Rosemullion Head - Shag Rock	SW798278 - 790271	20/08/97
2	Nare Point - Men-aver Point	SW800251 - 791253	18/09/97
3	Ponsence Cove - Bosahan Cove	SW778262 - 772264	19/09/97
4	Gillan Harbour - Dennis Head	SW782256 - 789255	17/10/97
5	Penarvon Cove	SW760264 - 755265	14/11/97
6	Grebe Rock - Polgwidden Cove	SW775272 - 769270	16/10/97

### 2.2.2 Table 2 - Shallow sublittoral netting sites 1997

Site	Location	O S grid ref.	Date
1	Gweek Quay	SW704265	03/08/97
2	Southern and northern shorelines of the Helford River	SW727259	25/07/97
3	Groyne Point and opposite (southern) side of the River	SW741263 and SW743261	10/09/97
4	The Bar - Pedn Billy and below Calamansack Wood	SW761268-753268	03/10/97
5	Gillan Creek	SW782255	11/08/97

### 2.2.3 Scuba diving and dredging sites 1985-1990

Small scale investigations were carried out at many sites covering a range of habitats between Treath/Helford Passage Cove (SW767264/764268) and Rosemullion Head/Nare Point (SW797277/800253).

## 3. TECHNIQUES USED FOR INTERTIDAL AND SHALLOW SUBLITTORAL SURVEYS 1997/8

The intertidal survey involved examination of a variety of suitable microhabitats. Flattish, loose-lying stones were carefully turned over and any fish species lying below were recorded. The stone(s) were then very carefully replaced with minimal disturbance and damage.

Holdfasts of the larger kelp species were slit open with a sharp pen-knife and examined for the presence of fish species.

Promising rock crevices were carefully opened using a hammer and chisel.

For the shallow sublittoral surveys the present author accompanied Captain Derek Goodwin and associates during bass survey work in the estuary. One or more of three beach seine nets were used; a) 3mm mesh, 10 metres long, 2 metres deep, b) 5mm mesh, 18.3 metres by 1.8 metres or c) on occasion (e.g. Groyne Point) 20mm mesh, 55 metres by 4.6 metres.

Because of the large survey areas involved in the six intertidal sites the use of a quadrat, to quantify abundance of the various species present, was not deemed to be possible. Actual numbers of fish seen at each survey site on the survey day were therefore recorded.

The common and binomial Latin names for the various fish species in the following text are those given in Miller and Loates (1997).

## 4. RESULTS

### 4.1 Table 3 - Intertidal sites (S1 - S6)

SPECIES	S1	S2	S3	S4	S5	S6
	(20/08/97)	(18/09/97)	(19/09/97)	(17/10/97)	(14/11/97)	(16/10/97)
<i>Anguilla anguilla</i> (Common Eel)	-	12	17	12	5	-
<i>Apletodon microcephalus</i> (Small-headed Clingfish)	1	1	-	-	-	-
<i>Ciliata mustela</i> (Five-bearded Rockling)	9	7	4	3	1	-
<i>Conger conger</i> (Conger Eel)	3	1	-	-	-	1
<i>Coryphoblennius galerita</i> (Montagu's Blenny)	8	3	-	-	-	-
<i>Diplecogaster bimaculata</i> (Two-spotted Clingfish)	1	-	-	-	-	-
<i>Gaidropsarus mediterraneus</i> (Shore Rockling)	3	-	-	-	-	-
<i>Gaidropsarus vulgaris</i> (Three-bearded Rockling)	1	-	-	-	-	-
<i>Gobius cobitis</i> (Giant Goby)	2	2	-	-	-	-
<i>Gobius couchi</i> (Couch's Goby)	-	-	-	-	*0	-
<i>Gobius niger</i> (Black Goby)	-	-	2	-	1	-
<i>Gobius paganellus</i> (Rock Goby)	6	-	3	4	1	1
<i>Lepadogaster lepadogaster</i> (Cornish Sucker)	10	8	1	-	-	1
<i>Liparis montagui</i> (Montagu's Sea-snail)	3	3	-	-	-	-

\* = S5 area of type locality

### 4.1 Table 3 - Intertidal sites (S1 - S6) continued

SPECIES	S1	S2	S3	S4	S5	S6
	(20/08/97)	(18/09/97)	(19/09/97)	(17/10/97)	(14/11/97)	(16/10/97)
<i>Lipophrys pholis</i> (Shanny)	25	16	5	4	3	5
<i>Myoxocephalus scorpius</i> (Short-spined Seascorpion)	1	-	1	-	-	-
<i>Nerophis lumbriciformis</i> (Worm Pipefish)	3	4	1	3	15	4
<i>Parablennius gattorugine</i> (Tompot Blenny)	1	1	-	-	-	-
<i>Pholis gunnellus</i> (Butterfish)	5	9	4	4	16	8
<i>Pomatoschistus microps</i> (Common Goby)	6	6	19	8	6	12
<i>Pomatoschistus minutus</i> (Sand Goby)	5	13	11	15	5	1
<i>Syngnathus acus</i> (Greater Pipefish)	1	1	-	-	1	-
<i>Taurulus bubalis</i> (Long-spined Seascorpion)	2	1	1	-	-	-



#### 4.2 Table 4 – Shallow sublittoral sites (01 - 05)

SPECIES	01 (03/08/97)	02 (25/07/97)	03 (10/09/97)	04 (03/10/97)	05 (11/08/97)
<i>Anguilla anguilla</i> (Conger)	3	-	-	-	-
<i>Ammodytes tobianus</i> (Lesser Sandeel)	-	-	-	-	2
<i>Atherina presbyter</i> (Sandsmelt)	15	100+	100+	100+	500+
<i>Buglossidium luteum</i> (Solenette)	-	8	-	-	-
<i>Callionymus lyra</i> (Common Dragonette)	-	-	-	5	-
<i>Chelon labrosus</i> (Thick-lipped Grey Mullet)	-	100	100+	100+	10+
<i>Ciliata septentrionalis</i> (Northern Rockling)	-	-	-	1	-
<i>Clupea harengus</i> (Herring)	-	100	20	500+	-
<i>Crenilabrus melops</i> (Corkwing Wrasse)	-	-	10	30	10+
<i>Ctenolabrus rupestris</i> (Goldsinny)	-	-	-	1	-
<i>Dicentrarchus labrax</i> (Bass)	4	5	35+	20	5
<i>Engraulis encrasicolus</i> (Anchovy)	-	1	-	-	-
<i>Gobius paganellus</i> (Rock Goby)	-	-	-	4	-
<i>Gobius niger</i> (Black Goby)	-	-	-	1	-

#### 4.2 Table 4 continued – Shallow sublittoral sites (01 - 05)

SPECIES	01	02	03	04	05
	(03/08/97)	(25/07/97)	(10/09/97)	(03/10/97)	(11/08/97)
<i>Gobiusculus flavescens</i> (Two-spotted Goby)	-	-	-	20+	10+
<i>Labrus bergylta</i> (Ballan Wrasse)	-	-	-	6	-
<i>Limanda limanda</i> (Dab)	-	4	-	-	-
<i>Liza aurata</i> (Golden Grey Mullet)	-	100+	40+	-	6
<i>Mullus surmuletus</i> (Striped Red Mullet)	-	-	1	-	-
<i>Myoxocephalus scorpius</i> (Short-spined Seascorpion)	-	-	-	-	1
<i>Platichthys flesus</i> (Flounder)	-	-	-	2	-
<i>Pleuronectes platessa</i> (Plaice)	-	5	-	-	-
<i>Pollachius pollachius</i> (Pollack)	-	-	-	1	-
<i>Pomatoschistus microps</i> (Common Goby)	50+	500+	-	-	100+
<i>Pomatoschistus minutus</i> (Sand Goby)	-	100+	-	500+	100+
<i>Pomatoschistus pictus</i> (Painted Goby)	-	-	-	-	1
<i>Psetta maxiumus</i> (Turbot)	-	-	-	1	-
<i>Scophthalmus rhombus</i> (Brill)	-	-	-	-	2
<i>Solea solea</i> (Common Sole)	-	1	-	-	-

**4.2 Table 4 continued – Shallow sublittoral sites (01 - 05)**

SPECIES	01	02	03	04	05
	(03/08/97)	(25/07/97)	(10/09/97)	(03/10/97)	(11/08/97)
<i>Spinachia spinachia</i> (Fifteen-spined Stickleback)	-	-	-	8	1
<i>Spondyllosoma cantharus</i> (Black Sea Bream)	-	6	-	-	-
<i>Sprattus sprattus</i> (Sprat)	-	500+	20+	20+	-
<i>Syngnathus acus</i> (Greater Pipefish)	-	6	1	5	-
<i>Syngnathus rostellatus</i> (Lesser Pipefish)	-	20	-	-	-
<i>Taurulus bubalis</i> (Long-spined Seascorpion)	-	-	-	4	1
<i>Trigula lucerna</i> (Tub Gurnard)	-	3	6	6	-

## 5. DISCUSSION

Approximately 325 species of fish (marine and estuarine) have been recorded around the British coastline. In excess of 200 species have been recorded for Cornwall and those of particular significance are discussed in Gainey (1997). Approximately 80 species have been recorded, in recent years (post-1975) in the confines of the HVMCA.

The geographical position of the HVMCA, protected from the prevailing south-westerly winds by the bulk of the Lizard Peninsula, together with the warm, shallow, relatively unpolluted water and diversity of habitat ensures a large number of fish species. Many of these are, as might be expected, Lusitanian species, many of which are at the northern extremity of their distribution range.

During the survey a total of 9 new species were added to those listed in Turk and Tompsett (1993). Several of these species, Sand-smelt and Sprat, have been shown to be present in large numbers at various sampling points in the estuary.

Many species of economic importance were found; the estuary obviously has an important role as a "nursery". Whereas relatively small numbers of young Turbot, Striped Red Mullet, Flounder and Plaice etc. were found, vast numbers of Herring and Sprat occurred more especially, in the uppermost half of the estuary. Good numbers of two other important fish species, the Sea Bass and Grey Mullet (Thick-lipped and Golden-grey), of varying age groups, were also recorded.

Whilst Red Data Book (Nationally Rare) species occur in the estuary, none were recorded during the survey. Couch's Goby (*Gobius couchi*), originally found in 1967 and again in 1969 and 1973, was described as new to science from the Helford estuary as recently as 1974 (Miller, 1974). It was located at Helford Point living under stones on muddy sand. It is also reported to be found amongst green and red seaweeds at extreme low-tide level. At the present time it is known from 4 sites. Two of these are on the Irish coastline (Lough Ine, Co. Cork and Mulroy Bay, C. Donegal), and two are on the south coast of Cornwall - the Helford estuary and Turnaware Bar in the Fal estuary.

In recent years an exhaustive search of the original type locality in spring 1994 (28.03.94) revealed just one male (Tompsett *pers comm.*) and further searches in the spring of the following year were unproductive. Couch's Goby has not been re-found at its original site for several years, although a male fish has been found in the Fal at its Turnaware Bar site more recently (17.09.97) (Tompsett *pers comm.*).

Miller (*pers comm.*) has recorded the largest numbers of Couch's Goby during the springtime in the Helford River, whilst searches by the present author and others have been carried out during the autumn. Perhaps the Couch's Goby migrates further offshore during the autumn/winter months, returning to the low tide mark in the spring/early summer for the purpose of breeding. There is obviously an urgent need to determine if Couch's Goby is still extant in the estuary, if so then what is its population size, and furthermore possible on-shore/off-shore movements at different times of the year need to be investigated. Couch's Goby is listed (Long List) as a globally threatened/declining species (UK BSGR, 1995).

The Twaite Shad (*Alosa fallax*) is the more common of the two Shad species in northern European waters. It is a migratory fish, making a spawning migration into the tidal reaches

of rivers, in which it breeds, during spring-time/early summer. This species has been in decline since the mid-nineteenth century, due to interruption of its spawning migration resulting from obstruction along the various river courses. Deterioration of water quality as a result of agricultural and industrial pollution has also played a part. Rashleigh (1894) states that "shad" is in prime condition from July to September in the Helford estuary; however, whether it was the Twaite or the Allis Shad, or both, will remain a mystery. At the present time only the Twaite Shad has been recorded post-1975. It is, however, the considered opinion of the author that should the right fishing techniques be employed at the appropriate time of year then the Twaite and possibly even the Allis Shad would be demonstrated as being present in the HVMCA.

The Giant Goby (*Gobius cobitis*), although not as yet designated as a R.D.B. species, is a rare fish in the British Isles and is protected under the Wildlife and Countryside Act. This species, the largest European goby, is found in pools between mid and high tide levels. These pools typically contain standing water, large stones or boulders and a reasonable growth of green algae. In many cases the water in the pools is of reduced salinity due to a fresh-water input. This goby, a Lusitanian species, has a markedly restricted distribution range in the British Isles being confined to the extreme south-west (Wheeler, 1993). Most records come from the south coast of Cornwall and the Isles of Scilly, with an isolated record (at Godrevy) on the north coast. Potts and Swaby (1993) have surveyed, and more recently re-surveyed, populations of this fish on the south coast of Cornwall and in the Isles of Scilly. The HVMCA has two populations, Nare Point/Mên-aver Point and Prisk Cove/Mawnan Shear. The population at Prisk Cove is large and must represent one of the best populations of this rare fish in the British Isles.

The Nare Point/Mên-aver Point and Prisk Cove/Mawnan Shear intertidal sites at the mouth of the estuary also contain suitable habitats for another two rare fish species. Examination of kelp holdfasts and the undersides of stones at the extreme low tide mark occasionally reveals the Connemara clingfish, *Lepadogaster candollei*. Although it occurs all along the eastern sea-board of Europe from north Africa to north-west Scotland, no-where is it common. Another fish, Montagu's blenny *Coryphoblennius galerita* is a Mediterranean (Lusitanian) species which is at the northern extremity of its range in Cornish waters and those of south-western Ireland. Here it can be found in rock crevices and pools about the mid-tide level. Rocky shores on both sides of the mouth of the estuary have large populations.

The Northern rockling *Ciliata septentrionalis* is, as its name suggests, a more boreal (northern species). It is a little-known rockling species which is widely distributed, albeit rather thinly, around the whole coastline of the British Isles. The rather unexpected record for the Helford (sublittoral station 4) represents only the second or third record for Cornwall.

Three 'provisional Nationally Scarce' species not encountered during this survey, but on previous, recent, surveys by the present author, are Yarrell's blenny *Chirolophis ascanii*, Topknot *Zeugopterus punctatus* and Long-snouted seahorse *Hippocampus ramulosus*. Yarrell's blenny has a localised distribution around the British Isles and never appears to be common anywhere in its range where it is to be found on rougher ground with algal cover. The Topknot is most commonly found on south-western and west coasts of the British Isles. Like Yarrell's Blenny there are good populations in the rockier areas at the mouth of the estuary. Here the Topknot seems to prefer rock crevices and fissures in shallow sublittoral zone. The Long-snouted Seahorse is a much scarcer fish and seems to be more commonly

recorded in the late summer/autumn especially in warmer years. It is normally associated with sublittoral Eelgrass *Zostera marina* beds and is less commonly found amongst seaweeds in rock pools. Whether there is an indigenous breeding population or whether the fish are summer visitors is not known at the present time.

A wide variety of economically important fish viz. Bass, Thick-lipped Mullet, Striped Red Mullet, Flounder, Plaice, Herring, Sprat, Turbot, Brill and Common Sole, were found to be present during the sublittoral netting surveys. Some of these fish were found to be present in large numbers (e.g. Herring), whilst others appeared to be present in much smaller numbers, for example, Brill and Turbot and various other flat fish. This is almost certainly due to the fact that such flatfish escape more easily from beneath the incoming net on account of their shape. The number of young fish in the river is obviously a reflection on the abundance of food, such as mysid crustaceans seen to be present throughout the survey period. The estuary is without doubt a very important 'nursery' area for these economically important fish.

The occurrence of such a large number of fish species, namely 80, in the Helford estuary is an indicator of the overall richness of the estuary. Few, if any, of the estuaries in the British Isles, of comparable size, are able to support such a diversity. As has been stated elsewhere in this report, this is due to the sheltered, warm, clear and still relatively unpolluted water present in the estuary together with a numerous habitat and microhabitat types.

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## APPENDIX I      List of other fish species recorded in the HVMCA 1985 – 1998

Records are those of the present author and were obtained during previous shore, offshore diving and dredging surveys. Other records are from information and specimens provided by local fishermen, both amateur and professional.

*Agonus cataphractus* (Hook-nose or Pogge)  
*Ammodytes marinus* (Raitt's Sandeel)  
*Aphia minuta* (Transparent Goby)  
*Aspitrigla cuculus* (Red Gurnard)  
*Balistes capriscus* (Grey Triggerfish)  
*Centrolabrus exoletus* (Rock Cook)  
*Chirolophis ascanii* (Yarell's Blenny)  
*Cyclopterus lumpus* (Lumpsucker)  
*Echichthys vipera* (Lesser Weever)  
*Gobius couchi* (Couch's Goby)  
*Hippocampus ramulosus* (Long-snouted Seahorse)  
*Labrus mixlus* (Cuckoo Wrasse)  
*Lepadogaster candollei* (Connemara Sucker)  
*Lophius piscatorius* (Angler)  
*Neophis ophidon* (Stright-nosed Pipefish)  
*Pollachius virens* (Saithe)  
*Raja clavata* (Roker or Thornback Ray)  
*Raja micro-ocellata* (Small-eyed Ray)  
*Raniceps raninus* (Tadpole Fish)  
*Salmo salar* (Atlantic Salmon)  
*Salmo trutta* (Brown or Sea Trout)  
*Scyliorhinus canicula* (Lesser-spotted Dogfish)  
*Scyliorhinus stellaris* (Greater-spotted Dogfish)  
*Squalus acanthias* (Spurdog)  
*Syngnathus typhle* (Deep-snouted Pipefish)  
*Thorogobius ephippiatus* (Leopard-spotted Goby)  
*Trachinus draco* (Greater Weever)  
*Trisopterus luscus* (Bib)  
*Zeugopterus punctatus* (Topknot)

\*In addition to the above records *Alosa fallax* (Twaiite Shad) is mentioned as having been recorded post-1975 (Turk and Tompsett, 1993)

## APPENDIX II Fish species of high scientific interest recorded in the HVMCA post-1975

SPECIES	NOTES	SUGGESTED IMPORTANCE
<i>Gobius couchi</i> (Couch's Goby)	Known only from four sites. Two of these are on the Irish coastline and two on the south coast of Cornwall (Helford and Falmouth estuaries). Listed (Long List) as a globally threatened/declining species (UK BSGR, 1995) also listed under the Wildlife & Countryside Act 1981	Red Data Book species. (Nationally Important)
<i>Alosa fallax</i> (Twaite Shad)	Not recorded in the present survey, however, there are post-1975 records. Enters estuaries/rivers in springtime. Listed under Appendix III of the Berne Convention; listed under Annex IIa of Va in the EC Habitats Directive. Listed under Schedule 5 of the Wildlife and Countryside Act 1981. Listed (short list) as a globally threatened/declining species (UK BSGR, 1995), with a prepared action plan.	Red Data Book species. (Nationally Important)
<i>Gobius cobitis</i> (Giant Goby)	This species has markedly restricted distribution range in the British Isles, being confined to the extreme south-west. Most records come from the south coast of Cornwall and the Isles of Scilly. The HVMCA has two large populations of this Lusitanian species.	Provisional Red Data Book/Provisional Nationally Scarce
<i>Chirolophis ascanii</i> (Yarrell's Blenny)	Relatively common in the Falmouth Bay area but with a localised distribution around the rest of the British Isles. The HVMCA supports a relatively large population.	Provisional Nationally Scarce.
<i>Coryphoblennius galerita</i> (Montagu's Blenny)	A Mediterranean/Lusitanian species at the northern extremity of its range. The mouth of the HVMCA supports large populations of this fish.	Provisional Nationally Scarce.
<i>Hippocampus ramulosus</i> (Long-snouted Seahorse)	A species at the northern extremity of its distribution range. Often present in small numbers in late summer/autumn, especially in warmer years.	Provisional Nationally Scarce.

APPENDIX II continued

**Fish species of high scientific interest recorded in the HVMCA post-1975 continued**

<b>SPECIES</b>	<b>NOTES</b>	<b>SUGGESTED IMPORTANCE</b>
<i>Lepadogaster candollei</i> (Connemara Sucker)	Occurs all along the western sea-board of Europe. This species is rarely seen and nowhere is it common.	Provisional Nationally Scarce.
<i>Zeugopterus punctatus</i> (Topknot)	Most commonly found on south-western and west coast of the British Isles. Although relatively uncommon nationally there are good sub-littoral populations around the mouth of the estuary.	Provisional Nationally Scarce.
<i>Ciliata septentrionalis</i> (Northern Rockling)	This little-known rockling species is widely distributed around the whole coastline of the British Isles. Predominantly a boreal species with just two or three records for Cornwall.	Provisional Locally Scarce.

### **APPENDIX III      List of all the fish species recorded in the HVMCA post-1975**

*Agonus cataphractus* (Hooknose or Pogge)  
*Alosa fallax* (Twaite Shad) RDB  
*Ammodytes marinus* (Raitt's Sandeel)  
*Ammodytes tobianus* (Lesser Sandeel)  
*Anguilla anguilla* (Common Eel)  
*Aphia minuta* (Transparent Goby)  
*Apletodon microcephalus (dentatus)* (Small-headed Cling fish or sucker)  
*Aspitrigula cuculus* (Red Gurnard)  
*Atherina presbyter* (Sand-smelt)\*  
*Balistes capriscus* (Grey Triggerfish)  
*Buglossidium luteum* (Solenette)  
*Callionymus lyra* (Common Dragonette)  
*Centrolabrus exoletus* (Rock Cook)  
*Chelon labrosus* (Thick-lipped Grey Mullet)  
*Chirolophis ascanii* (Yarell's Blenny) pNS  
*Ciliata mustela* (Five-bearded Rockling)\*  
*Ciliata septentrionalis* (Northern Rockling)\* pLS  
*Clupea harengus* (Herring)  
*Conger conger* (Conger Eel)  
*Coryphoblennius galerita* (Montagu's Blenny) pNS  
*Crenilabrus melops* (Corkwing Wrasse)  
*Ctenolabrus rupestris* (Goldsinny)  
*Cyclopterus lumpus* (Lumpsucker)  
*Dicentrarchus labrax* (Bass)  
*Diplecogaster bimaculatus* (Two-spotted Cling fish)  
*Echichthys vipera* (Lesser Weever)  
*Engraulis encrasicolus* (Anchovy)\*  
*Gaidropsarus mediterraneus* (Shore Rockling)  
*Gaidropsarus vulgaris* (Three-bearded Rockling)\*  
*Gobius cobitis* (Giant Goby) pRDB  
*Gobius couchi* (Couch's Goby) RDB  
*Gobius niger* (Black Goby)  
*Gobius paganellus* (Rock Goby)  
*Gobiusculus flavescens* (Two-spotted Goby)  
*Hippocampus ramulosus* (Long-snouted Seahorse) pNS  
*Labrus bergylta* (Ballan Wrasse)  
*Labrus mixtus* (Cuckoo Wrasse)  
*Lepadogaster candollei* (Connemara Sucker) pNS  
*Lepadogaster leadogaster ssp. purpurea* (Cornish Sucker)  
*Limanda limanda* (Dab)  
*Liparis montagui* (Montagu's Sea-snail)  
*Lipophrys pholis* (Shanny)  
*Liza aurata* (Golden Grey Mullet)  
*Lophuis piscatorius* (Angler Fish)  
*Mullus surmuletus* (Striped Red Mullet)  
*Myoxocephalus scorpius* (Short-spined Sea-scorpion)  
*Nerophis lumbriciformis* (Worm Pipefish)

**APPENDIX III continued**

**List of all the fish species recorded in the HVMCA post-1975**

*Nerophis ophidion* Striaht-nosed Pipefish)  
*Parablennius gattorugine* (Tompot Blenny)  
*Pholis gunnellus* (Butterfish)  
*Platichthys flesus* (Flounder)  
*Pleuronectes platessa* (Plaice)  
*Pollachius pollachius* (Pollack)  
*Pollachius virens* (Saithe)  
*Pomatoschistus microps* (Common Goby)  
*Pomatoschistus minutus* (Sand Goby)  
*Pomatoschistus pictus* (Painted Goby)  
*Psetta maxima* (Turbot)\*  
*Raja clavata* (Roker or Thornback Ray)  
*Raja microcellata* (Small-eyed Ray)  
*Raniceps raninus* (Tadpole Fish)  
*Salmo salar* (Atlantic Salmon)\*  
*Salmo trutta* (Brown or Sea Trout)  
*Scophthalmus rhombus* (Brill)  
*Scyliorhinus canicula* (Lesser-spotted Dogfish)  
*Scyliorhinus stellaris* (Greater-spotted Dogfish)  
*Solea solea* (Common Sole)  
*Spinachia spinachia* (Fifteen-spined Stickleback)  
*Spondylusoma cantharus* (Black Sea Bream)  
*Sprattus sprattus* (Sprat)\*  
*Squalus acanthias* (Spurdog)  
*Syngnathus acus* (Greater Pipefish)  
*Syngnathus rostellatus*\* (Lesser Pipefish)  
*Syngnathus typhle* (Deep-snouted Pipefish)  
*Taurulus bubalis* (Long-spined Scorpionfish)  
*Thorogobius ephippiatus* (Leopard-spotted Goby)  
*Trachinus draco* (Greater Weever)  
*Trigula lucerna*\* (Tub Gurnard)  
*Trisopterus luscus* (Bib)  
*Zeugopterus punctatus* (Topknot) pNS

Total number of species = 80

Shallow sub-littoral netting survey = 38 species

Intertidal survey = 23 species

**\* New species recorded in the HVMCA (9 species)**

RDB = Red Data Book species  
pRDB = Provisional Red Data Book species  
pNS = Provisional Nationally Scarce species  
pLS = Provisional Locally Scarce species

**ADDENDA** *Pagrus pagrus* Couch's sea bream

*Sparus auratus* Gilt hed bream

Caught by Roy Webber fishing from Trebah beach SW 768 269 on 15<sup>th</sup> Sept. 2002



No.1 Netting on the Helford River just below Pedn Billy (shallow sublittoral site 4).  
Opposite is Calamansack Wood.



No. 2 Part of a catch showing (from top to bottom) Sprat *Sprattus sprattus*,  
Sandsmelt *Atherina presbyter* and Herring *Clupea harengus* (shallow sublittoral site 2).





No. 3 Striped Red Mullet *Mullus surmuletus*  
(shallow sublittoral site 3)



No. 4 Ballan Wrasse *Labrus bergylta*. Older specimen above and young (green) specimen below.  
(shallow sublittoral site 4)





No.5 Golden Grey Mullet *Liza aurata*  
(shallow sublittoral site 2)



No. 6 Bass *Dicentrarchus labrax*  
(shallow sublittoral site 2)





No. 7 Fifteen-spined Stickleback *Spinachia spinachia*  
(shallow sublittoral site 4)



No. 8 Thick-lipped Mullet *Chelon labrosus*  
(shallow sublittoral site 5)





No. 9 Couch's Goby *Gobius couchi* - first described as new to science from the Helford estuary as recently as 1974.  
(not found during the present survey)



No. 10 Tub Gurnard *Trigla lucerna*  
(shallow sublittoral sites 2, 3 and 4)

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