HELFORD
VOLUNTARY MARINE
CONSERVATION AREA

Strategic Guidelines 2010

and

Work programme 2010 – 2015

2010

Acknowledgements

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The whole concept and implementation of the HVMCA would not have taken shape without the combined efforts of all of these people and organisations.

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CONTENTS

EXECUTIVE SUMMARY

- This report constitutes the third revision of the Strategic Guidelines and Work Programme of the Helford Marine Conservation Group (HMCG) and sets out the Group's aspirations for 2010-2015

- The Helford Estuary has long been recognised as an important site for marine wildlife and as a treasured resource for work and recreation. This led to the Helford Voluntary Marine Conservation Area (HVMCA) being designated in 1987

- As well as outlining the evolution of the HMCG over recent years, much of the Introduction is given over to describing the significant developments in marine conservation since the last Strategic Guidelines review. During this period, the international conservation value of the Helford was formally recognised by its designation as part of the 'Fal/Helford Estuaries Special Area of Conservation'. This has conferred the highest level of statutory protection on the Estuary, but also places great responsibilities on all parties involved in its management. In late 2009, further legislation was passed in the form of the Marine and Coastal Access Act: HMCG is as yet unclear how this will influence its future work. However this new legislation is likely to increase the need for Groups role still further.

- Sections 2-3 describe the various designations and environmental features as well as relevant environmental regulations. Useful descriptions of the area's geography, geology, climate and hydrography are included, along with slightly more in-depth descriptions of the Helford's marine wildlife

- The human use, both commercial and recreational, of the Helford are described in section 4, along with related aspects such as water quality, pollution, litter and housing pressures

- The aims and structure of HMCG are outlined in Section 5. HMCG continues to function through an Advisory Group and a Members Group – this latter group is open to public and commercial subscription.

- The original seven Objectives of HMCG are unchanged. Essentially, HMCG continues to focus on the non-statutory aspects of marine conservation affecting the Helford. Therefore many of the 50 actions described in section 7 are concerned with education, research and with promoting the Helford to a wide audience through a range of activities and media

- Finally, Section 8 comprises an extensive, current list of the members and associates of HMCG. This continues to represent a wide cross-section of local and national organisations and local people. Combined with around 250 public members and about 10 corporate sponsors, this demonstrates that HMCG has wide support and is well-placed to meet the challenges over the next five years.

TIMELINE OF KEY EVENTS IN HELFORD ESTUARY CONSERVATION

- 1983 Concern about Helford's declining environmental quality first expressed
- 1986 Baseline ecological surveys carried out
- 1987 HVMCA established – the 9th Voluntary Marine site in UK
- 1989 First Strategic Guidelines and Work Plan produced
- 1990 First 'Helford River Day' – public event
- 1992 Public events programme extended to include indoor and outdoor events
- 1994 First Helford Conservation Cruise – annual since then
- 1997 Helford Estuary receives national conservation protection with the designation of 'Lower Fal and Helford Intertidal Site of Special Scientific Interest' (SSSI)
- 2000-02 Educational Ranger in post via Heritage Lottery Fund (HLF) – schools and public education work significantly enhanced
- 2001 Members Section formed – Group now has a public subscription element
- 2005 Helford Estuary receives international conservation protection with the designation of 'Fal/Helford Estuaries Special Area of Conservation' (SAC)
- 2006 Both HVMCA sections amalgamated to form 'Helford Marine Conservation Group' (HMCG)
- 2008 HVMCA celebrates 20th anniversary
- 2009 Marine and Coastal Access Act passed

1.0 INTRODUCTION

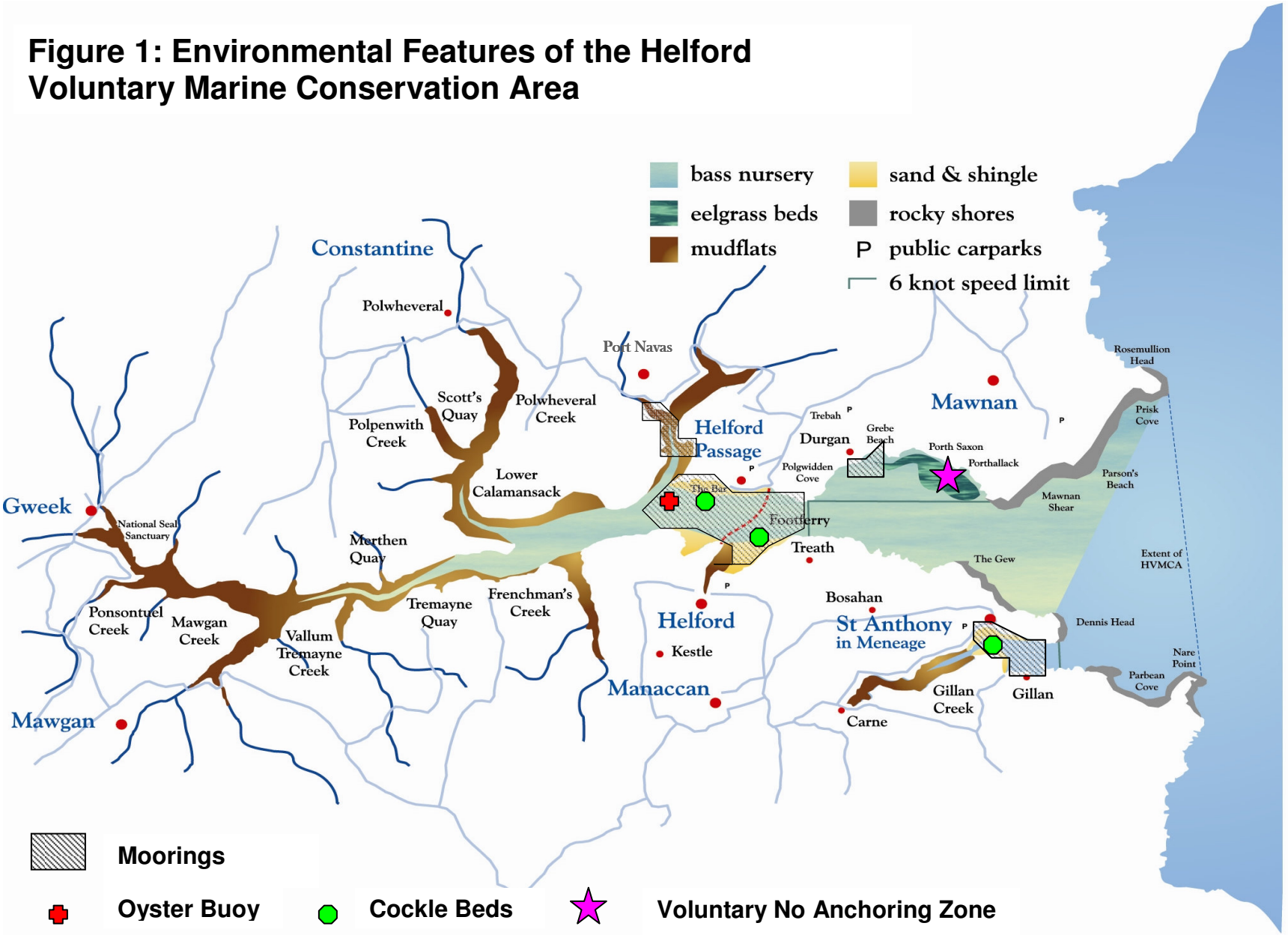
Marine conservation is currently the focus of considerable interest at local, national and international levels. The importance of the marine environment in climatic regulation, the recognition of dwindling fish stocks, the role of estuaries as nursery areas in the early life of fish and the close media coverage of serious pollution incidents, all bring greater awareness of the fragility of the open coast and its estuaries and a greater desire to see the marine environment properly managed to ensure its sustainability for all its functions.

The European Community's Habitats and Birds Directives result from international agreements which set out a number of actions to be taken for nature conservation and the protection of natural habitats. They are commonly known as the 'Habitats Directive' (CEC, 1992) and 'Birds Directive' (CEC, 1979). The Habitats Directive promotes the maintenance of biodiversity, in other words a wide range of different species and the habitats in which they live. The Birds Directive is simpler and is specifically aimed at enhancing the protection of birds and their habitats or whilst on migration. The European and national concepts in marine conservation are under constant review. Management plans are therefore continuously evolving and there is a readiness to update policies in response to current directives and best practice.

The Habitats Directive includes marine sites which are covered continuously or intermittently by tidal waters (CEC, 1992). The Conservation (Natural Habitats, etc.) Regulations, 1994, translate the Habitats Directive into law in Great Britain. It is Natural England's statutory responsibility to advise the many relevant authorities on the conservation aspects for which sites have been designated.

In a European context, the Fal and Helford complex is now a designated Special Area of Conservation (SAC) for the following Annex I habitats as listed in the EU Habitats Directive: 1) Large shallow inlets and bays, 2) Atlantic salt meadows (Fal rather than Helford), 3) Mudflats and sandflats not covered by water at low tide, 4) Sandbanks which are slightly covered by seawater all the time, 5) Reefs, and 6) Estuaries. The landward boundary is the high water mark except for intertidal areas that are not SSSIs where it is the mean low water mark (Natural England, 2002). The establishment of a European network of important high-quality conservation sites, of which the Fal and Helford are vital links, will make a significant contribution to the conservation of the important habitats and species it covers. In regard to the Fal and Helford complex, the designation of the Special Area of Conservation is one of the most significant things to happen for nature conservation of the area in that it gives authorities more responsibilities to safeguard the conservation features of the site. Such authorities include Cornwall Council, Cornwall Sea Fisheries Committee, Duchy of Cornwall, Environment Agency, Falmouth Harbour, Falmouth and Truro Port Health Commissioners, Natural England, Ports of Truro and Penryn and South West Water Ltd. These organisations have worked together to produce the Management Scheme, which lists the wildlife features and identifies any activities which have the potential to damage the features of the area. The scheme also identifies actions which need to be accomplished by all the relevant authorities to ensure the importance of the site is sustained for future generations. An essential part of the scheme is the involvement of all interested bodies and user groups. To ensure this, an Advisory Group has been established to ensure local communities and groups have a voice and a direct link to the management of the site. The Helford Marine Conservation Group (HMCG) fell naturally into the list of organisations that together form the Fal and Helford SAC Advisory Group which feeds back to the controlling SAC Management Group. Thus local people have an input through the HMCG representative and vice versa. It is intended that the first contact on issues impacting on the Helford

Figure 1: Environmental Features of the Helford Voluntary Marine Conservation Area



River or adjacent land will be through the Helford Marine Conservation Group using the existing network and local knowledge of area. The two designations should support and complement each other.

The Helford River, often referred to as the Helford estuary, is one of the few locations where the fan mussel *Atrina fragilis* survives in Britain. The whole Fal-Helford complex is a statutory bass *Dicentrarchus labrax* nursery area and the native oyster *Ostrea edulis* fishery is important (See Figure 1). The rarely recorded Couch's goby *Gobius couchi* (Miller & El-Tawil, 1974) can be found and there is a wide diversity of marine species associated with calcified seaweed or maerl beds (*Phymatolithon calcareum* and *Lithothamnion corallioides*), and eelgrass *Zostera* sp. (a rich algal flora and mainly south-westerly species). National and local Biodiversity Action Plans – BAPs (CBI, 1997) are now in place to support various vulnerable habitats and species.

Recognition of the richness of the marine wildlife of the Fal and Helford estuaries has resulted in a very large volume of literature detailing habitats, listing species and reporting scientific studies (Spooner & Holme, 1986; Cordrey, 1996; CBI, 1997 and extensive reference lists in Holme & Turk, 1986; Tompsett, 1994; Turk, 1996). These highlight the need for protective designations and integrated catchment management as the whole area is subject to the increased demands of recreational activities, commercial operations, adjacent land-use and development. Current environmental features and legislation applying to the Helford VMCA can be viewed in Figure 1 and Table 1.

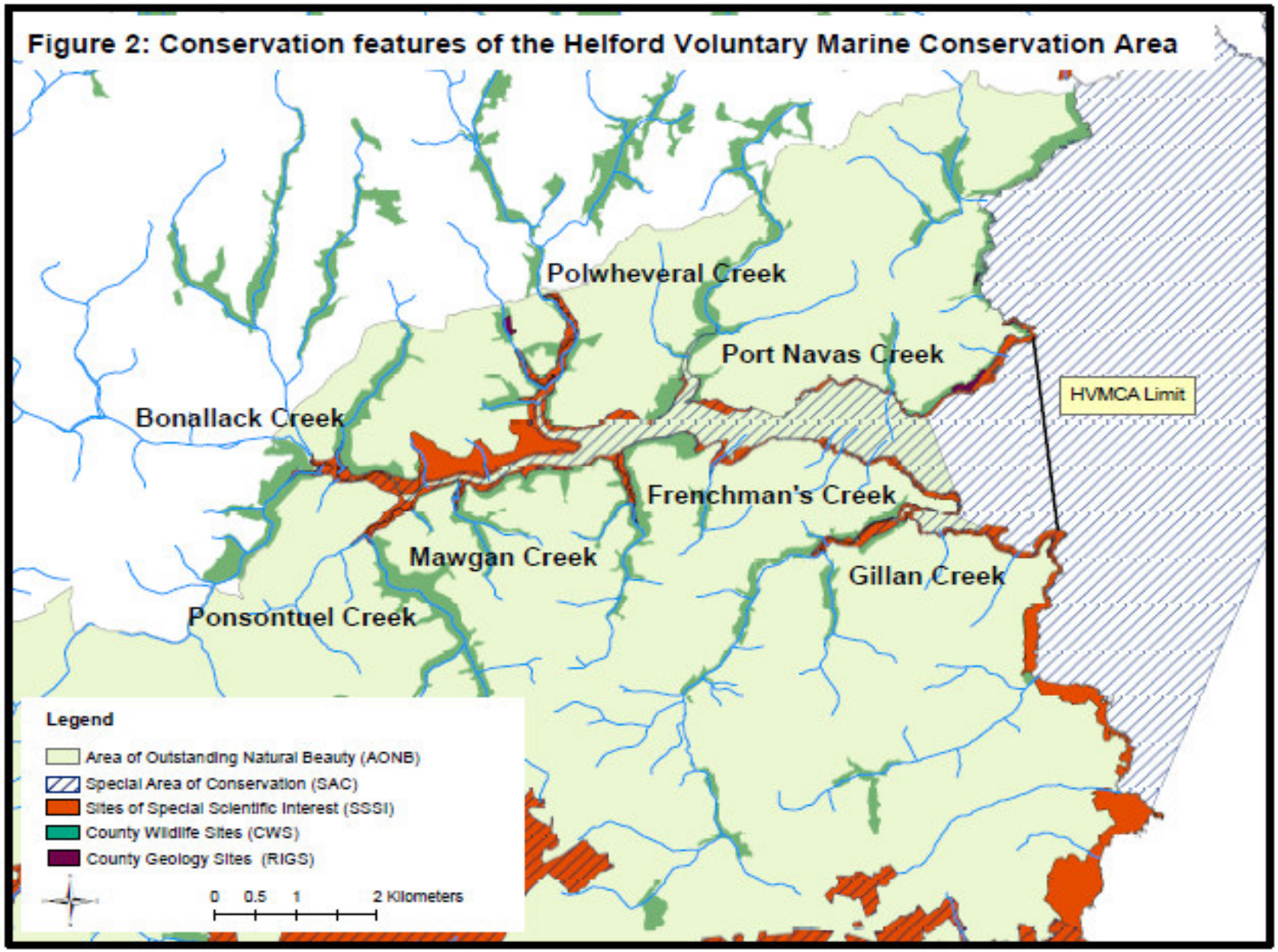
Historically the national statutory protection offered by the Site of Special Scientific Interest (SSSI) designation has applied to terrestrial sites and a number of these are immediately adjacent to the Fal and Helford estuary complex. Under the European SAC designation, however, the protection has been extended to include the marine environment, in particular much of the intertidal area. The two estuaries also fall into the national terrestrial designation of an Area of Outstanding Natural Beauty (AONB) and in addition the Helford River is adjacent to the Lizard Area of Great Scientific Value (AGSV). Adjacent local terrestrial designations include County Wildlife Sites (CWS) and a County Geology Sites (RIGS) at Parson's Beach, Helford River.

Conservation Feature	Area	Status	Governing Body/bodies
Special Area of Conservation (SAC)	6387.8 ha	European	Natural England
Site of Specific Scientific Interest	431.1 ha	National	Natural England
Area of Outstanding Natural Beauty (AONB)	958 km2	National	The Cornwall AONB Partnership
County Geology Sites (RIGS)	10.1 ha	Regional	The Cornwall RIGS Group
County Wildlife Sites (CWS)	494.9 ha	Regional	Cornwall Wildlife Trust
Voluntary Marine Conservation Area (VMCA)	-	Local	Helford Marine Conservation Group
Area Great Scientific Value (AGSV)	-	Local	Cornwall Council
Biodiversity Action Plans	-	Local	The UK Biodiversity Partnership

Table 1: Conservation Features of the Helford VMCA.

The importance of the Fal-Helford complex was highlighted in the Falmouth Bay & Estuaries Initiative Area (Lizard Point to Dodman Point) project. In order to improve protection for the marine

Figure 2: Conservation features of the Helford Voluntary Marine Conservation Area



environment, wide-ranging local, national and international designations have been applied through statutory bodies such as the Cornwall (County) Council, Natural England and others, which rely heavily on an advisory and co-operative approach to management and use. The extensive and more recently designated Fal & Helford SAC lies within a boundary from Zone Point, St Anthony, to Manacle Point, Lizard, and includes two Voluntary Marine Conservation Areas (VMCAs) - Helford and Roseland. Table 1 features the various conservation features applying to the Fal and Helford complex. The major conservation features highlighted in yellow in Table 1 are displayed on the map in Figure 2.

In 1987 the non-statutory Helford Voluntary Marine Conservation Area was established with an associated group actively promoting the sustainable use of the Helford River and the adjacent land through the co-operation of all users using programmes of public education together with data-collection and presentation. These Strategic Guidelines and Work Programme set out the on-going objectives and their implementation. A comparable Roseland Voluntary Marine Conservation Area was designated in the Fal in 1982 encompassing the whole St Mawes Bank and adjacent estuary from Messack Point to St Anthony Head but this has not developed in the same way as the Helford VMCA Group.

Since 1987 the Helford Voluntary Marine Conservation Area has developed into one of the foremost areas of this type in the country. By promoting the sustainable use of this fascinating marine site in an outstandingly beautiful area that is largely unspoilt by development or commercial enterprises, the environmental quality of the area should remain high and there is a strong determination by all concerned that this state will endure.

Whilst statutory powers now exist for the conservation of key* marine species and habitats, emphasis is still on the voluntary approach which is seen as important to achieve success in maintaining the area's outstanding environmental quality through the co-operation of the river users. The voluntary handling of the conservation of the Helford River has been upheld by the Helford Marine Conservation Group (HMCG). This Group is made up of two sub groups – the Advisory Group and the Member Section. The Advisory Group, which meets quarterly and includes members who have a vested interest in the waterway, has the intention to encompass the interests of all landowners, users and visitors that underpins the VMCA's approach, together with rigorous standards of data-collection and presentation. In addition to this group and its aims, the Helford Marine Conservation Group Members Section was formed in 2001 as a public membership body to closely support the Advisory Group by encouraging all who know and care about this special place to help protect it for future generations.

The HMCG has developed significantly since its launch in 1987, but the central theme of 'Community, Commerce and Conservation' aimed at improving and protecting the sensitive marine wildlife of the Helford River is as relevant as ever. Thematic Advisory Group meetings throughout the years have provided a forum in which to exchange ideas on a plethora of topics such as the implementations of the AONB designation, Cornwall Biodiversity Action Plan updates, oil spills, shellfish culture, netting methods used for fishing and other private proposals such as planning applications which could have an impact on the marine environment of the river. Representatives of statutory and related organisations welcome the opportunity to seek the views of local river users

and focus on areas of mutual concern. Contact with the Cornwall Council, Natural England, Environment Agency, South West Water, WWF (UK), The National Trust, Cornwall Wildlife Trust, Duchy Oyster Farm, Helford Moorings Officer and other river users has involved HMCG members in marine conservation issues on a wide front both locally and nationally. A list of members and associates of the HMCG can be found on page 45. Through these partnerships there has been the opportunity to comment on planning issues ranging from small jetties and foreshore changes to a new quay for fishermen or excessive foreshore in-fill highlighting the importance of the sensitive use of the river and its shores. The Advisory Group meeting also provides a platform in which to communicate findings on the various on-going monitoring projects and scientific studies that the group continue to work on. In 1994 the Helford Bass Project was established by Derek C Goodwin, with the aim of monitoring the sea bass status within the Helford Bass Nursery Area. Observations of the eelgrass beds by volunteer divers have led to Natural England producing warning buoys advertising against anchoring because of damage to eelgrass rhizomes. Links with other marine projects continue to be forged, in particular the Cornwall Wildlife Trust Cetacean Strandings Project and Seasearch dives recording scheme. Circulation of detailed reports of the HMCG meetings and the discussions held there keeps the 55+ members in contact giving them the opportunity to respond when unable to attend the meetings regularly.

Aside from these quarterly Advisory Group meetings, the closely linked Members Section provides the education and awareness output of the Helford VMCA. Events and public awareness activities ensure that people, either the local community or visiting tourists, can develop an understanding of the local marine environment. This, in turn, helps to develop a sense of responsibility for the well being of the Helford River and its shores and an appreciation of its importance as a wildlife and an economic resource. To do this the Members Section organises a series of well attended events such as talks, shore exploration, bird walks, botanical training session, bat detecting, snorkel safaris, beach cleans, film showings, barbecues and the annual conservation cruise. Events are publicised via the regularly updated website, and with an attractive annual leaflet distributed to members and available on land through local outlets, schools, the moorings and harbour offices and local boat clubs.

Over the past 21 years the HMCG has developed into an independent organisation with integrity, trust and respect. Due to its success the HMCG has become a role model for other voluntary marine conservation initiatives. However, the Group continues to evolve in parallel with the ever-changing maritime environment. Pressures such as commercial fishing practices, diffuse pollution, coastal development and the lack of comprehensive marine management as well as the larger issues of climate change and sea level rise continue to threaten our seas and coastal landscapes. The HMCG will continue to tackle such challenges by informing, educating and assisting all sectors of the river user community to ensure the protection of the rich and diverse wildlife.

**key is defined as habitats/species listed in the Habitats Directive*

2.0 PHYSICAL FEATURES

2.1 GEOGRAPHY and GEOMORPHOLOGY

The Helford River is situated on the east side of the Lizard Peninsula in south-west Cornwall. It is a drowned river valley or ria which was formed when the sea level rose at the end of the last ice age approximately 10,000 years ago. The main river, which is some 9.2km long, has many creeks running off it, most of which dry to mud at low tide. The tidal area is 568ha, intertidal area 186ha, and the shoreline is 44.3km at extreme high water spring level (Davidson *et al*, 1991).

The river is well sheltered from all westerly winds, but is open to winds from the east. The nearby harbour at Falmouth is larger, more sheltered and easier for access by land and sea and therefore attracts larger numbers of visitors.

2.1.1 GEOLOGY

The oldest rocks of the Helford River are the outcrops on both banks of the lower estuary composed of greywackes, slates and conglomerates which are formed from the sediments of the Middle Devonian Period. Sedimentation continued until the end of the Carboniferous Period when a large mass of granite intruded under the southwest peninsula, the southern limit of which is beneath Constantine. Associated with this granite are two series of igneous dyke intrusions, which cross the river. One set consists of Elvans and occurs near Port Navas, Bonallack and on the eastern shore of Polwheveral Creek. The other set are Lamprophyres – one dyke can be seen in the cliffs near Mawnan, one at the Gew and another west of Helford Passage.

The Lizard Platform was formed during the Pliocene incursion about 5 million years ago. The Helford River was probably a channel in existence before this time and was filled with Pliocene marine deposits, since eroded away. Subsequent rises in sea level due to the retreat of the ice caps flooded the valley to form the ria that is in existence today.

2.1.2 HUMAN USE

Historically there have been no extensive mining complexes in the immediate vicinity of the Helford River area but the presence of numerous adits indicates a number of small ventures. Small copper, silver and tin mines at Wheal Vyvyan, Wheal Inow and Wheal Anna Maria, located off Port Navas Creek are the best documented (Dines, 1956). It is probable that tin streaming took place in the locality and in the 19th Century together with the expansion of larger mines contributed to a silting of the upper reaches of the waterway. Sediments would wash down the creeks and be redistributed along the main channel affecting the navigability of the upper river. These sediments could well have an appreciable tin content but are not likely to be worked as disturbance would be environmentally and aesthetically damaging.

These factors, and the geographical isolation of the river, mean that there is no large centre of population on the river and very little industrial development. Most of the riverside commercial interests are at Gweek, which is the lowest bridging point and was once a trading port serving Helston and the surrounding area. The lack of development elsewhere within the catchment has enabled much of the local history and archaeology to survive intact. In recent years there has, however, been a marked increase in the use of the river for leisure purposes, in particular during the summer months. The modern infrastructure has enabled people to travel to the river from further afield than in the past, not only on a day to day basis, but also for holidays. The modern lifestyle

often also allows longer holidays. All this means that the river is accessible to a far greater number of people than ever before.

2.1.3 GEOGRAPHY OF THE HELFORD RIVER

The Helford VMCA includes all tidal waters to the west of a line between Rosemullion Head and Nare Point. However, as there is considerable interaction between the river and the adjacent coastal area, close attention is also paid both to the land surrounding the River and the effects of activities in Falmouth Bay. The statutory designations have been described in Section 1 and include the Fal & Helford SAC and well established Sites of Special Scientific Interest such as Merthen Woods, an example of ancient coppiced woodland at the intertidal coastal fringe south of Rosemullion Head, where many rare species exist in the rockpools. More recent SSSIs were also identified in the intertidal areas of the main river.

On the north bank of the mouth of the River are the rocky cliffs of Mawnan Shear stretching north towards Rosemullion Head. Just above Parson's Beach the lamprophyre dyke outcrop is designated as a Regionally Important Geological/geomorphological Site (RIGS). Offshore between Rosemullion Head and Mawnan Shear are the Gedges, also known as the August Rock, which dry at Low Water Springs. Nare Point forms the southern side of the entrance.

Dennis Head, on which are the remains of a Civil War fort, is opposite Mawnan Shear, and between The Dennis and Nare are the extensive Men-aver reefs. Gillan Creek lies to the south of The Dennis, with its ancient church at St Anthony. At the head of Gillian Creek there is also the site of an Iron Age settlement, whilst at its entrance is a rock called Car Croc.

Proceeding upriver, the waters become more sheltered and on the northern bank is the hamlet of Durgan. There are several beaches on both sides of the river that are always popular in the summer. There are yacht moorings off Durgan. The river then narrows and becomes shallower, before becoming deeper again and widening with Helford village and Treath to the south and Helford Passage to the north. There are many yacht and some fishing boat moorings in this area.

Up through the moorings the river changes character again. To the north is Port Navas creek, with many moorings in its deep water lower reaches, with drying mud above the village and oyster farm. Up the main river are the oyster beds, the eastern limit of which is the western limit of the moorings. On the more sheltered southern bank, trees grow down to the waters edge and fringe the narrow Frenchman's Creek, familiar for its literary connections with Daphne Du Maurier.

At Groyne Point, the waters divide and the northern arm is Polwheveral Creek with its large areas of drying mud. The main river heads on west towards Gweek, passing Tremayne Creek, Mawgan Creek, and Bonallack Creek. The river in this area is almost entirely fringed by ancient oak woodlands, including the Merthen Woods SSSI. The upper tidal limit is at Gweek where there are several quays and boatyards, sheltered from strong winds.

2.2 HYDROGRAPHY

2.2.1 TIDAL RANGE

The Helford River is situated where the Atlantic water meets the English Channel and benefits from both. The tides are semi-diurnal with a mean range at springs of 4.7m and at neaps of 2.2m. Mean

sea level is 3.0m above chart datum (LAT). Mean High Water Spring is 5.5m, and low water springs occur during the middle of the day.

At the mouth of the river the tidal currents on the flood flow both into the river and northwards across the entrance and Falmouth Bay. On the ebb the flow is both southwards from Falmouth Bay and out of the river. Thus the River, particularly at its mouth, can be affected by the waters of Falmouth Bay. Within the river the tidal streams are generally weak except within the narrows where rates may achieve 2 knots at springs.

2.2.2 WATER TEMPERATURES

Sea surface temperatures in the adjacent English Channel average 9-10°C in winter (February) and 16-17°C in summer (August). Water temperatures within the river vary considerably from this, benefiting from increased heating in summer and subjected to frost exposure in winter. In localised areas of the river, particularly the creeks, the water may freeze in winter and achieve temperatures in excess of 25°C in summer.

2.2.3 SALINITY

There is very little freshwater input relative to the total volume of water within the river. Mixing would appear to be generally good. The salinity varies little within the tidal waters except in the upper reaches and creeks after very heavy rain. The river may therefore be considered to be an arm of the sea. Salinity within the river has been measured giving a surface water range of 33 to 33.6 ppt and a pH range of 8.0 to 8.2 was also found (Boyden *et al*, 1979). Upriver, measurements taken during bass surveys have shown salinity to vary from fresh at the head of the creeks, to 31 ppt, dependent on tidal state and distance upstream (Goodwin, 1996).

2.2.4 TURBIDITY

Turbidity is generally low in the lower reaches of the river. The exceptions occur during the spring and autumn algal blooms, and after heavy rain when the run-off from fields and fluvial input are maximised. During these periods the turbidity can be greatly increased. In the upper reaches the turbidity is increased by the re-suspension of sediments caused by tidal flow over the mud flats and can at times be high.

2.3 CLIMATE AND EXPOSURE

2.3.1 TEMPERAURE

The climate is maritime and although the prevailing south-westerly wind may be very strong in winter, the river is sheltered from winds of that direction. The maritime element means that there are no extreme temperatures and average winters are mild. Hot weather is rare in summer, and very cold weather in winter occurs only when there is a blocking high pressure system over Scandinavia which feeds very cold dry air across the country from Siberia.

2.3.2 EXPOSURE

The river is well sheltered except from easterly winds. Easterly gales are rare and severe gales very rare. When easterly gales do occur, they do not generate as large a swell as is generated in the Atlantic by westerly gales. However, circumstantial evidence would indicate that during very severe easterly gales surges of unpredictable current occur within the river which might cause movement and changes of the river bed. Thus the entrance to the river can be described as semi-exposed, but

the narrowing of the river between Toll Point and the Gew reduces the size and therefore speed of the waves considerably, and wave action above this point is generally slight. The entrance to Gillan Creek can also be described as semi-exposed, but the narrow entrance and shallow water soon dissipate the power of the waves as they pass up the creek.

3.0 BIOLOGICAL FEATURES

3.1 GENERAL

As the Helford River is the most south-westerly site in the British Isles for species which need a modicum of shelter, it is necessarily a meeting point for those at the northern as well as the southern limits of their range. Coupled with a variety of habitats (reefs, rock pools, overhangs, eelgrass beds and maerl, as well as a range of soft substrates on and offshore) this factor ensures that there is a wide range of species diversity within the Helford VMCA.

An inventory of invertebrates and fish to be found in the River was prepared by Turk and Tompsett in 1993; this shows something of the biodiversity of the Estuary. Examples of rare and uncommon species occur in all the major groups, similar to the fish mentioned in a later paragraph.

3.2 HABITATS

3.2.1 ROCKY REEFS

The River is rated of National Importance for its rocky shores particularly the semi-exposed stretches at the mouth of the estuary. On the inshore side in Prisk Cove there are many large rock-pools and a rocky beach which form part of one of the first marine SSSIs designated in the UK. On the north shore to the south of Rosemullion Head there is a rocky reef called the Gedges which extends some 0.5km offshore and dries at low water springs. Offshore the seabed is composed of sand and stones.

3.2.2 MAERL

Divers have reported seeing maerl, calcified seaweed, on the seabed at the mouth of the estuary, particularly in the vicinity of the wreck of the 'Rock Island Bridge'. Maerl beds are a sub feature of the Fal & Helford SAC. The larger maerl beds, within the Roseland VMCA in the adjacent Fal estuary have been dated as approximately 7,000 years old and are well known for their marine wildlife as the interstices of the very slow growing maerl provide shelter and security for a wide range of invertebrates and fish. Dead maerl which has accumulated in substantial quantities in various parts of Falmouth Bay not far from the Helford River also provides an interesting although more mobile habitat.

3.2.3 EELGRASS

Eelgrass represents a marine flowering plant and acts as an important nursery area for many species of fish and shellfish. Shallow subtidal eelgrass beds flourish in the sandy mud off Grebe Beach. This particular Helford River habitat has been identified as sensitive at a European level – subtidal sandbanks with an eelgrass sub-feature form one of the criteria for which the Fal & Helford Special Area of Conservation has been identified. It is also a priority habitat of the Cornwall and UK Biodiversity Action Plans.

3.2.4 LOWER RIVER HABITATS

Within the mouth of the Helford River away from the sheltering influence of the reefs, are the steep cliffs of Mawnan Shear. On the south shore of the river, which is more sheltered from wave action, there are rocky reefs and some sandy beaches. South east of the steep, rocky headland Dennis Head is the notable Men-aver Reef.

Gillan Creek is a small version of the main river, with a wide range of habitats within a short distance, varying from semi-exposed rocky shore with a sandy bottom at the entrance, through to mud under overhanging trees at the head of the creek. The creek substrate changes steadily from sand to mud with increased distance from the sea. The upper shore is rocky throughout.

Just upriver of Toll Point the effect of wave action is less and the shore is generally rocky, interspersed with sandy beaches. The river bed is mainly sand with rocks allowing algae to settle, grow and provide shelter for other flora and fauna.

3.2.5 UPPER RIVER HABITATS

Above the narrows the Helford Creek on the south side starts fairly sandy, but as the waters become more sheltered and the tidal streams diminish, it changes to mud. On the north side of the river is Bar Beach, which consists of sand, sand/mud, and gravel/clitter mixtures. This beach dries at low water springs but benefits from a good tidal flow across it on either side of high water. The sediment shores of the river are rated of International Importance (Section 1.0). The midstream riverbed is sand with rocks.

Above Port Navas creek the tidal streams are weaker and the waters more sheltered and the substrate becomes increasingly muddy with distance from the sea. The upper shores gradually change from steep rocky edges to grass covered mud banks, many of which have been invaded by beds of Cord-Grass (*Spartina anglica*).

3.3 FISH and FISHERIES

The Helford River, being in effect an offshoot of the sea, is home to a wide variety of fish and over 80 species have been recorded (Gainey, 1999).

3.3.1 ENVIRONMENTAL LEGISLATION

Many of the species which are normally resident offshore can be found in the lower reaches of the estuary and the whole Helford River is also an important nursery area for many of these fish. It is a designated bass nursery area and fishing for this species is controlled (See Figure 1).

Commercial fishing generally within the Helford VMCA is controlled. There is a total ban on the use of fixed nets upriver of an imaginary line between Mawnan Shear and the Gew, although sporadic episodes of illegal netting are still observed. In particular, there is a ban on fishing for bass from boats within the Helford VMCA upriver of an imaginary line between Rosemullion Head and Dennis Head from the 1st May until 31st December inclusive. The use of towed gear for trawling and scalloping are currently prohibited and cockle harvesting is subject to minimum size restrictions.

3.3.2 FISHING METHODS

Some commercial fishermen use the river as the base for their vessels. These are mostly tangle net vessels which fish off Lizard Point and vessels working crab and lobster pots in the Falmouth Bay area. These boats also leave store-pots within the river, mostly downstream from Golden Gear.

There is also a small crab fishery within the Helford VMCA which is currently concentrating on the Green or Shore Crab (*Carcinus maenas*). Depending on availability and market requirements the Velvet Swimming crab (*Necora puber*) is also targeted. These crabs are exported, and at the present level this fishery seems to be sustainable. The crabs collected are generally large, as preferred by the buyers and required under the minimum landing size regulations.

Commercial diving for scallops is in practise although boats are restricted in number under the management of the Duchy Oyster Farm's private fishery lease on the river.

3.3.3 NON COMMERCIAL FISH SPECIES OF INTEREST

The majority of the fish species in the River are small non-commercial ones, many of them, like the Butterfish (*Pholis gunnellus*) coming into very shallow water or on the lower shore to breed. A rare "southern" species is the Giant Goby (*Gobius cobitis*) which in Britain is known only from Cornwall, the Isles of Scilly and Wales and is probably more numerous in the upper shore rock pools in the Rosemullion area than anywhere else (Potts & Swaby 1991, 1993).

3.3.4 OYSTERS

There has for many centuries been an important oyster fishery on the river. Oysters were certainly collected in Roman times. The beds were originally natural, but have in more recent times been farmed by the Duchy Oyster Farm, based at Port Navas. Native flat oyster (*Ostrea edulis)* may be brought in from the adjacent Fal to be fattened and cleansed here (Section 4.3) or the faster growing Pacific/Portuguese oyster (*Crassostrea gigas*) may be cultivated. The oyster beds are to be found in the main river above Port Navas creek (see Figure 1). Mussels, *Mytilus edulis,* and *Mytilus galloprovincialis* also form a large part of the shellfish trade (Masters 1994).

3.3.5 COCKLES

The Helford River is well known for its cockle beds at Bar Beach, Treath and Gillan. Whilst the licence to collect molluscs rests with the Duchy Oyster Farm, unlicensed cockle gatherers can be seen throughout the year but the extent of any such collections or their destination is not known.

A shellfish licence is required before collecting shellfish for public sale over 25kg. Bye-laws were introduced in all Cornish estuaries which prohibit the retention of cockles under 20mm in size but the quantities present are generally not sufficient to support commercial gathering. This should help in the protection of the breeding stock. On Good Friday there is a tradition of cockle collection and picnicking on the shores. This 'trigging' involves gatherings of families from various parts of West Cornwall with many family members returning from 'upcountry' at this holiday period (Turk & Tompsett, 1994).

3.4 SUBTIDAL and SAC FEATURES

Subtidal sandbanks have been identified as an interest feature for which the SAC has been selected. Two subfeatures of subtidal sandbanks are found within the Helford VMCA: eelgrass beds and maerl. Both are included in "Cornwall's Biodiversity Volume II: Action Plans" as priority species within the Estuaries and Research Action Plans (published in 1998). "Cornwall's Biodiversity Volume III: Action Plans 2004" includes a specific action plan for Maerl beds.

Eelgrass (*Zostera marina*) is different from other sea plants in that it is a delicate flowering plant, similar to a grass and not an alga or seaweed. Eelgrass beds provide shelter for a large number of other species, sea anemones, bristle worms, molluscs and many fish. Pipefish abound and, hopefully, their close relative the seahorse will be found again one day. The beds are a safe breeding ground for cuttlefish and sea hares. Eelgrass meadows once flourished on the shores of Helford, Helford Passage and Gillan Harbour, but this species is now only to be found in a subtidal area offshore between Durgan and Toll Point and has spread to scattered patches off Helford Passage and Bosahan.

The second important species is maerl, which consists of non-attached nodules of calcareous red seaweed. Maerl (*Lithothamnion corallioides* and *Phymatolithon calcareum*) is rare and it supports, in its interstices, a diversity of other life including the young stages of animals that later colonise other areas of the seabed. A few years ago a small subtidal bed of maerl was reported in the Helford River (Rostron, 1987, and Covey *pers. comm.*) between Durgan and Bosahan. More recently, divers have reported seeing maerl (calcified seaweed) on the seabed at the mouth of the estuary, particularly in the vicinity of the wreck of the 'Rock Island Bridge'. And again offshore near Durgan.

3.5 SHORE LIFE

The sheltered and varied habitats that the river provides are home to populations of shore life that are considered to be of great marine biological importance. Research and observations are being undertaken by marine biologists but it is becoming very clear that much more work needs to be carried out on the shore ecosystems. Bar Beach and the Treath areas used to support large areas of intertidal eelgrass but whereas this has now disappeared, other fauna, including the peacock worm population which had declined, are now recovering. Occasional toxic algal blooms have impacted adversely on the invertebrate fauna. However, providing these are fairly localised and of short duration, most faunal populations can recover within two or three years.

At the mouth of the river, at Prisk Cove, are the rich and colourful rock pools, which are to be found within the Rosemullion Site of Special Scientific Interest. Amongst the notable seaweeds present are species of *Cystoseira,* one of which is conspicuous by its iridescence. Rock pools occur within the river up as far as Helford Passage and Treath, but these are generally smaller and less diverse in their flora and fauna. Besides Prisk Cove other good examples of rocky shore are Men-aver reef just inside Nare Point and the Voose reef, the latter being the more sheltered. These areas are rich in marine life, and show a greater diversity than the more exposed boulder areas of Parsons Beach and Nare Point itself. For example, the undersides of the stones which are only rarely moved by wave

action are home to such creatures as porcelain crabs, anemones, starfish and chitons and provide shelter for fish which would be vulnerable to crushing amongst more mobile substrates.

The rocky shores of Bosahan and Durgan have many overhangs and being fully saline and sheltered these areas are home to many species, such as sea-squirts and sponges.

Twenty species of sea anemone have been found in the Helford River since 1985 (Gainey, 1997). Among these are two nationally scarce species, the Trumpet Anemone (*Aiptasia mutabilis*) and the Ginger Tiny (*Isozoanthus sulcatus*).

Above the narrows at Helford Passage, the river is more sheltered and some sedimentation occurs. The shores of Treath, south side and Bar Beach, Helford Passage, north side, are a mixture of sand and mud and have a rich infauna. Of particular interest are the worm populations, especially the Peacock Worm (*Sabella pavonina*) which, when the water is shallow, can be seen by the casual observer spreading its fan-like tentacles to catch food and tube-building particles from the passing water (Tompsett, 1998, 2003).

Further up the river the creeks dry, with extensive areas of mud exposed at low tide. These areas are home to several invertebrate species which occur in large numbers and provide a useful source of food for birdlife. In the upper reaches are several beds of cord-grass, or spartina (*Spartina anglica*), which was introduced originally by a landowner at Gweek in the 1940s, but they have proved during recent surveys of the bass population to be the favourite haunt of juvenile bass. These beds which encourage sediment settlement could in time reduce the open water surface area of the river, but currently this is not seen as a significant problem.

3.6 BIRDS

From an ornithological point of view the Helford River can be broadly divided into two main habitats; the intertidal mudflats, and the relatively sheltered area of open water eastwards from Groyne Point to the mouth of the river.

3.6.1 MUDFLAT SPECIES

The main areas of mudflat are in the creeks of Polwheveral, Gillan and Mawgan, and the main channel up to Gweek. Outside the breeding season these support moderate numbers of waders and gulls, with smaller numbers of Grey Herons, Little Egrets and a few Kingfishers. Peak counts of over 145 Shelduck, 300 Curlew and over 100 Redshank give these areas high local value. The mild winters and sheltered aspect of the river also allow a few species that are normally only summer visitors to over-winter, such as Whimbrel and Common Sandpiper.

For much of their length these muddy creeks are bordered by sessile oak woods in which there is currently one heronry at Polwheveral. This contains at least 10% of the county's breeding population. Other breeding species also include a few pairs of Shelduck. After several unconfirmed reports, Little Egrets were confirmed as breeding in the Polwheveral heronry in 1997. This constituted the second site in the UK. Breeding pairs have steadily increased to 7 pairs between 2007 - 2009. The Grey heron population appears stable at around 12 breeding pairs per year. Numbers of Little egret in the Helford VMCA peak in July/August – for example there was a

maximum of 47 in July 2002. A Species Action Plan was included within the Cornwall Biodiversity Initiative Volume II, 1998.

3.6.2 OPEN WATER SPECIES

The permanent open waters of the Helford River support small numbers of divers, grebes and sea duck during the winter months and early spring. All regular British species of diver and grebe are recorded. There are always a few Great Northern Divers with small but variable numbers of Black-throated Divers; Red-throated Divers are the least common. Little Grebes can be found in moderate numbers (10-20) mainly from Helford Passage to Groyne Point with the occasional Great Crested Grebe. Most of the Slavonian Grebes occur eastwards of Helford Passage where there is also the best chance of finding a Red-necked Grebe. Recent studies have shown that the South Cornish Coast may hold up to 25% of the National wintering population of Red-necked Grebe. In past winters sea duck have been represented by small numbers of Eiders, Common and Velvet scoters with the occasional Long-tailed Duck. Eiders now seem to be the most regular visitors and can even be seen occasionally amongst the moorings at Helford Passage. A few Red-breasted Mergansers and Goldeneye can often be found off Calamansack/Groyne Point although the numbers are always small in comparison with those present in the Carrick Roads.

3.6.3 WOODLAND AND FARMLAND SPECIES

The ancient woodlands, plantations, scrub and farmland bordering the river become filled with breeding songbirds in the spring and summer. Most typical woodland species are present including the Great, Blue, Coal, Long-tailed and Marsh tits, a range of warblers, Green and Greater spotted woodpecker, Nuthatch, Treecreeper and Tawny owl. The extent of the woodland cover and its variable age structure probably hold significant populations of some species in a county context. The surrounding farmland, particularly the relatively intact hedgerow network holds locally significant populations of declining species such as Linnet, Dunnock, Yellowhammer, Skylark, Bullfinch and Song thrush.

3.6.4 CLIFF NESTING SPECIES

In summer the steep cliffs of Dennis Head hold breeding pairs of Fulmars, Herring Gulls and Raven.

3.6.5 MONITORING

The Helford is included in the Wetland Birds Survey (WeBS) network of the British Trust for Ornithology (BTO). All WeBS sites are monitored monthly throughout the year. All species of wetland bird including wildfowl, waders, grebes, divers and gulls are counted. Therefore all WeBS sites in the UK can be compared and those with populations of international or national importance may receive additional protection through SPA or SSSI designation. Currently the Helford does not meet these criteria for any species, but does support certain species at locally or regionally significant levels, and becomes even more valuable during extreme cold weather elsewhere in the UK and Europe.

From 2000, the Cornwall Birdwatching and Preservation Society (CBWPS) has been surveying the whole of Cornwall in both breeding and winter seasons. This will enable more accurate assessments of bird populations and densities to be made than ever before. The Helford area has been included in this work. A Cornwall Bird Atlas will be published soon after 2010.

There remains much scope for additional survey work here, for example, focusing on particular species or geographic areas. HVMCA could seek to obtain various data - such as WeBS counts - to publish on the website to promote the available information to a wider audience.

4.0 HUMAN USE

4.1 COMMERCIAL ACTIVITIES

The use of the river as a commercial waterway is now very limited. The sailing barges that used to ply the local waters have disappeared and all transport is by road. The last colliers to land at Gweek ceased using the port during the 1980s. Commercial shipping still sometimes uses the lower reaches as a sheltered anchorage.

A foot ferry operates between Helford Passage and Helford Point at suitable states of the tide and has a schedule geared to seasonal demand. Apart from fishermen, most of the businesses operating on or near the river are leisure orientated. The picturesque setting is also used to advantage by local hotels, pubs and restaurants.

An international offshore construction and drilling company originally based at Gweek, now in Falmouth, has retained its site on the Gweek waterfront, but this multi-million pound company no longer takes its larger drilling rigs and associated vessels up the narrow channels. It occasionally takes small rigs and similar vessels up the river to be repaired alongside, but the size of vessel is limited by the width of the channel and the depth of water. At the head of the river the Gweek Boatyard offers servicing, substantial repairs, winter layingup and other boating related activities which are now being intensified. In recent years there have been some developments within the boatyard which have involved the regulatory authorities.

A centre attracting large numbers of tourists is the National Seal Sanctuary high on the banks of the river at Gweek. Seawater pools, replenished from the river, house a mixture of seals and sea lions.

Each year a number of rescued juvenile seals are revived and returned to the wild. The site has most of the other facilities associated with family visitors such as interpretation centre, nature walks, cafes, shops, kiosks and mobility coaches. A map of the Helford River and associated business can be viewed in Figure 3.

4.2 RECREATIONAL ACTIVITIES

4.2.1 WATERSPORTS

The increased access to the river and extension of leisure time available has meant a sharp increase in the use of the river for recreation in recent years. All types of watersports are enjoyed to varying extents in what is a comparatively small area of open water. Areas for moorings and anchorage are clearly defined under the Duchy of Cornwall lease overseen by the Helford Moorings Officer and the SAC status of the river means management criteria have to be considered in the laying of additional/new moorings (See Figure 2). Sectors designated as oyster lays on charts and with buoys are also protected but careless wind-surfers and speeding motorboats can be a problem in the narrow waterway

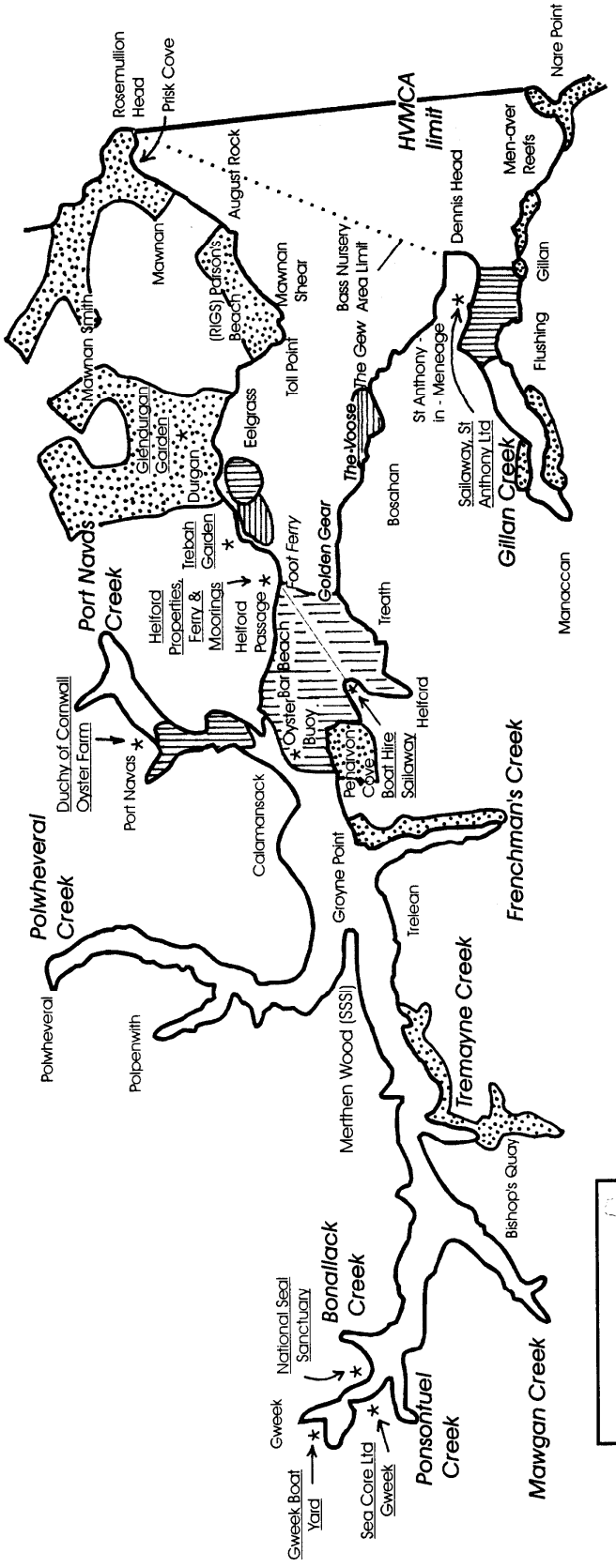


Fig. 3
Helford Voluntary Marine Conservation Area
part of the Fal-Helford SAC
Sketch map showing National Trust owned land, moorings, anchorages and local businesses associated with the Helford River

Obviously pleasure boating is the most significant pastime and there are now in the region of 750 deepwater and intertidal moorings. There are two sailing clubs on the river, one at Helford and the other at Port Navas, with a combined membership approaching 2,000. The river is well known as an attractive anchorage which encourages yachts from other ports to visit the river during summer, and the better the weather, the greater the number of visitors.

Concern that the sub-tidal eelgrass beds off Grebe Beach were being eroded by anchoring has resulted in the installation of labelled buoys warning boats to keep clear of the main bed. Linked with a wide-ranging publicity campaign including distribution of colourful postcards the numbers of vessels mooring in the sensitive area has been reduced.

The Helford River Children's Sailing Trust operates from Calamansack and provides tuition and boating experience for small groups of young people using mainly volunteer personnel.

Water-skiing is popular in Cornwall during the summer, but in the Helford River the extent is limited by a 6-knot speed limit which covers the whole area upriver of the narrows at Golden Gear, and the mooring and anchoring area off Durgan. Gillan Creek is also covered. This speed limit is policed on a part-time basis by a Water Bailiff currently supported by Cornwall Council and only applies to pleasure vessels.

Divers occasionally use the river in adverse weather conditions or for training dives mainly near the mouth where the water is less turbid. There is only one wreck of note within the River namely the 'Rock Island Bridge' in 7m CD just north of Dennis Head. The Manacle Rocks about 5 km south of the HVMCA is usually a more attractive dive site but the Rock Island Bridge is popular when conditions on the Manacles are too demanding.

4.2.2 COASTAL ACTIVITIES

Significant areas of ancient woodland, farmland, creeks, clifftops with impressive views and interesting shorelines are owned by The National Trust. These are managed in an environmentally sensitive way whilst allowing public access. The National Trust property at Glendurgan has a beautiful valley garden matched by the adjacent spectacular Trebah Garden which is managed as a private trust with links to the Royal Horticultural Society.

The South West Coastal Path runs along the banks of the lower estuary and is popular with walkers. Several beaches are accessible from this path. Anglers can also gain access to the banks and this sport is as popular on this river as anywhere else.

The creeks of the river are frequented to varying degrees by bait-diggers. This activity is a cause for concern if excessive digging takes place. Most bait digging is for individual need, but some is undertaken for sale. Effort tends to become concentrated on the unprotected areas in Cornwall such as the Helford River, as more sites, for example the Hayle Estuary, impose restrictions.

Voluntary control measures concentrate on the involvement of angling clubs, bait sellers, adjacent landowners and a public awareness programme. Not surprisingly when the fishing success declines bait-digging is less of a problem. Spasmodic episodes associated with maverick individuals or groups have not been resolved.

On Good Friday each year local people descend to the shores of the river, in particular at St Anthony-in-Meneage, Treath or Bar Beach to collect cockles and other shellfish. This tradition is known as "trigging" (Section 3.3.5). If the tide is favourable and the weather is good, a few hundred people take part. The numbers involved and the areas exploited have been monitored and research into the cockle population has been instituted by the Helford Marine Conservation Group. These surveys have shown that the numbers of triggers have remained reasonably stable since monitoring began in 1996.

Following problems arising from extensive commercial collection of cockles in other Cornish estuaries byelaws are now in place to control it. The Environment Agency byelaw governs the method of collection – hand collection only may be used and lays down a statutory Minimum Landing size for cockles – 20mm width. Thus traditional collection has not been threatened but a greater emphasis is placed on leaving the smaller future breeding stock.

4.3 WATER QUALITY

The waters of the Helford River are considered to be amongst the cleanest in Western Europe. The water quality is regularly monitored for a limited range of parameters by the Environment Agency through its statutory responsibilities and focuses particularly on shellfish waters. Shellfish-related regulation and licensing is undertaken by the Falmouth and Truro Port Health Authority.

Water Quality Categorisation can be summarised as follows:
Category A = bivalves can be collected and sold direct for human consumption.
Category B = cleansing for 42 hrs in DEFRA approved tanks required before sale.
Category C = shellfish, mainly oysters needed to be relayed in clean waters for at least two months before sale.
Category D = shellfish unsuitable for human consumption though they may still grow very well. **(Prohibited)**

Traceability through Movement Orders linked to specific batches help in ensuring a healthy product and full documentation is required for all commercial transactions from river to restaurant. Since 1998, Movement Orders apply not only to bivalves but all shellfish, including whelks and winkles.

4.3.1 SEWAGE

Pollution of the river is generally slight although there can be concern where creekside properties have unsatisfactory private sewage containment arrangements. In addition to this, the Helford experiences a number of individuals who utilise unofficial moorings for their house boats and therefore do not have access to facilities that enable appropriate disposal of sewage or litter. Finally there can be some input of raw sewage from yachts, most of which comes from visiting yachts on which people are sleeping at night. Advice and regulation enforcement is the responsibility of the Environment Agency. This problem is greatest during the summer when both the population of the villages and the number of visitors are at their peak, and fluvial input and general water mixing are at a minimum.

Local South West Water Ltd sewage treatment works at Constantine and Gweek have strict monitoring arrangements including UV disinfection for the protection of water quality with

particular reference to shellfish. A further improvement was the additional storm water storage which was added in 2002. In 2007 South West Water completed works on the Helford Village sewage system, which involved the closure of seven crude sewage outfalls and 38 properties connected to new sewers as part of the project. Sewage is now pumped to a site works for treatment which provides secondary level or biological treatment, removing bacteria in the effluent before it enters the watercourse.

4.3.2 WATER QUALITY AND AGRICULTURE

59% of the Fal and Helford River complex area is utilised for agricultural purposes, with approximately 44,185 ha used for livestock (Cycleau Project data, 2000). The potential compaction on heavily stocked livestock fields adjacent to the Helford River could result in adverse effects on the water quality, with the steep land around the Helford making many areas vulnerable. However, the change of farming practices in recent years from intensive dairying to more arable production often adjacent to the River, particularly early potatoes and bulbs, has resulted in additional concerns relating to runoff. As well as carrying a high sediment load, run-off from this adjacent arable farmland in wet weather may contain pesticides, fungicides, herbicides, residual nitrates and phosphates from fertilisers or be a potential bacteriological source which might affect shellfish water quality. Under the European Water Framework Directive more catchment-based management of diffuse inputs should follow the recommendations pioneered through the Cycleau project.

In recent years the moves towards organic, less intensive agriculture with more herb rich meadows under various land Stewardship schemes should also bring gradual but welcome improvements.

4.3.3 BOAT-RELATED POLLUTION

Anti-fouling paint on boats is a source of toxic substances, although modern copper based paints are advocated as causing less damage than the TBT (organo-tin compounds) based paints used prior to its ban on vessels under 25 metres in 1987. The scrubbing of yachts increases the amount of potentially toxic substances released into the river. In the past, the nearby docks and shipyard at Falmouth have been the predominant source for the varying levels of TBT in the Fal and Helford Rivers through the discharge of contaminated waste and resuspension of contaminated sediments. In November 1998, the IMO made the decision to introduce a world-wide ban in the use of TBT in antifouling paints for most ships from January 2003. An EU ban on the presence of TBT-based antifoulants on ships hulls in EU ports came into effect on 1st January 2008.

Oil products spilled from boats causes some damage. Potentially a much greater threat is that of an oil spillage in Falmouth Bay. A protective boom is available for such an emergency as part of an emergency oil spill plan, and it has been deployed on a trial basis between Helford Passage and Treath. In the light of experience other boom deployment options such as those used in the Percuil River are under consideration.

4.3.4 NOISE POLLUTION

Noise pollution is a recent concept and this may be a problem on the River. However, several owners of landing sites discourage noisy pastimes such as personal water-craft by not allowing them to launch. Excess noise may disturb both underwater life and birds.

The proximity of the busy helicopter station at Culdrose adds another dimension to noise pollution. There is also an increasing interest in the extent of air-borne particulate matter production from fuel.

4.3.5 LITTER

The Helford River receives marine litter from a number of sources, from land, from boats using the waterway and from larger vessels at sea particularly during easterly gales. Substantial amounts of litter have been collected by local volunteer groups from the main beaches and the less accessible shores which may be reached only by boat during occasional 'clear-up exercises'. The Helford MC Group encourages the collection of marine litter at source and the safe disposal of rubbish ashore and, with an increase in visiting boats, strongly supports development of shore side reception facilities.

4.4 HOUSING

Contamination of water sources through surface water run-off, for example the oils and heavy metal contaminants that get deposited on roads and hard standings, may dramatically alter the natural hydrology of an area. Increased impervious cover decreases the amount of rainwater that can naturally infiltrate into the soil and increases the volume and rate of storm water runoff inputted into the waterways around the VMCA. This issue has now become more widespread around farms, private and commercial properties following the increase in the number of cars per household and the use of many of the local properties for holiday accommodation.

Most of the immediately adjacent housing has developed in the villages of Helford, Manaccan, Helford Passage, Port Navas and Gweek whilst farms and large houses are more widely spread. There is a concentration of housing in the Budock Vean estate, which is a legacy of former times prior to current planning regulations. Areas of new housing in Helston drain into the Helford headwaters, although some distance from the VMCA. While there is pressure for housing development it is contained within the villages. In the countryside, proposals for development are contrary to policies in the Development Plan for the protection of the Area of Outstanding Natural Beauty.

Planning proposals that may have either a direct or an indirect impact on the marine wildlife are normally sent to the Helford MC Group for comment. It is important that all the Local Authorities give consideration to the impact in respect of the SAC and AONB designations.

4.5 EDUCATION

The richness of the marine life of the Helford River makes the area suitable for educational purposes at all levels, from primary school outings to university projects. The River is visited about twenty times a year by educational groups and individuals, and the HMCG is approached often by students from elsewhere in the country requesting information. This can be a simple request for species information or assistance with more complex projects on Coastal Zone Management, the Effectiveness of Voluntary Initiatives or Marine Pollution Sources and Control.

Local schools are keen to focus in-school projects on wide ranging marine issues as addressed by the HMCG as well as looking at the biological aspects. The importance of marine ecology and sensitive human use are subjects for wider public and educational development which the Group enhances whenever possible.

In the year 2000, a detailed grant bid for such support was put forward to the Heritage Lottery Fund and was successful. The appointment of an Educational Ranger working closely with schools and

colleges for two years enabled large numbers of young people to take part in very popular marine awareness projects both in the classroom and on the shore. The production of an imaginative and informative CD-ROM linked to the appropriate key stages was welcomed and free copies were distributed to all schools in Cornwall. This useful and entertaining aid is available at cost on request.

At the time of publication, Cornwall Wildlife Trust has been successful in receiving a grant, once again from Heritage Lottery Fund, to support education and awareness events and activities within all VMCAs in Cornwall, including Helford. The three year project, starting in Spring 2010, aims to enable communities and visitors to learn about and develop an understanding and appreciation of Cornwall's marine environment by increasing access to the VMCAs through education and active participation such as school group visits, community workshops and volunteering opportunities, rock pool rambles and similar events based around the VMCA.

4.6 ARCHAEOLOGY

Whilst the HVMCA remit is directed to the intertidal area, land use both in the present and in the past has a direct impact and with this in mind an HVMCA sponsored historic audit has been carried out by the Cornwall Archaeology Unit. This follows the pattern of that carried out on the Fal and Fowey and covers everything from pre-Neolithic up to and including the Second World War. Nearly 400 sites have been identified, many for the first time (Reynolds, 2000).

5.0 THE AIM AND THE CURRENT STRUCTURE OF THE HMCG

5.1 AIM

The aim of the Helford Marine Conservation Group is to achieve, by both voluntary means and through supporting statutory control mechanisms, the sustainable use of the river and to monitor the quality of the marine environment, drawing attention to the biological importance of the area. In doing so, it will promote the importance and value of the Helford's natural assets and bring together organisations and people who can positively influence the river's wellbeing and protection.

5.2 ORGANISATION

The HMCG comprises representatives of all organisations, local authorities, statutory bodies, societies and businesses who have a vested interest in the waterway, interested individuals, marine biologists and scientific advisers. The members of the Group organise or undertake the work involved in the running of the Helford VMCA.

The HMCG consists of an Advisory and a Members section. The Advisory Group meets quarterly, and invites guests with an interest in the river to these meetings to both advise and express their points of view. The Chairman, Co-ordinator/Secretary and Treasurer are elected annually. Smaller working groups are formed from time to time for specific projects.

Helford Marine Conservation Group Members Section was formed in 2001 as a public membership body to support the Helford Voluntary Marine Conservation Area by encouraging all who know and care about this special place to help protect it for future generations. The group runs a wide range of fun and informative activities around the Helford, as well as hands on conservation action, and hopes to raise awareness of the wealth of marine life living there, its importance and how everyone can work together to help protect it. Membership is open to everyone - local residents, visitors, sailors, fishermen, and anyone who is interested in the care and conservation of the Helford Estuary.

5.3 THE HELFORD VMCA WITHIN A NATIONAL CONTEXT

At the present time, Cornwall Council Planning AuthoritY have jurisdiction over the use of land down to the low water mark. The HMCG is consulted by the Authority representative when any planning applications are received which may impact on the river ecosystem. The Planning Authority has no direct jurisdiction below the low water mark, but can control development where the effects of work above causes harm below. Section 40 of the Natural Environment and Rural Communities (NERC) Act in 2006 states that: 'Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity. Where conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat'. In essence this 'Biodiversity Duty' places responsibility on all sections of public authorities to help conserve biodiversity. In practice the Duty is very broad in its requirements and so far this has limited its effectiveness.

Sites of Special Scientific Interest designations are used to protect habitats, but again only down as far as the low water mark. Natural England has designated two such sites on the river, Rosemullion SSSI on the northern side of the mouth of the river, and Merthen Woods SSSI within the river complex. More recently much of the intertidal area within the estuary has been notified as SSSI.

An original aim of the HMCG was to consider the creation of a Marine Nature Reserve providing statutory protection for both a habitat and the species within the designated reserve to include sub-tidal areas. The processes involved in setting up a MNR are, however, long and involved to the extent that there are only three in the UK and this aim has to a large extent been superseded by the SAC designation. (Section 1.0)

The 1992 European Habitats Directive was implemented by the UK in 1994. The Directive is concerned with the conservation of both species and habitats recognising the designation of Special Protection Areas (SPAs) under the Wild Birds Directive and requiring the designation of Special Areas of Conservation (SACs) in a series of sites known, in a European context, as the Natura 2000 series.

The Helford River is part of the designated Fal & Helford Special Area of Conservation. Initially only subtidal areas of the Helford were proposed for inclusion but this now includes much of the intertidal area following the notification of the Lower Fal & Helford Intertidal Site of Special Scientific Interest. (See Figure 2 for SAC boundary) Marine Special Areas of Conservation provide increased protection of both sensitive species and habitats.

The designation of the Fal and Helford as a Special Area of Conservation has created a management structure consisting of a management forum and an advisory group. The management forum brings together all those organisations with statutory powers and responsibilities to encourage sustainable management of the estuary. The advisory group is made up of representatives of users, conservation groups, local landowners etc, who provide input to the Management forum. The Helford MC Group has a substantial input to the overseeing Advisory Group which feeds into the Management Groups.

The whole of the Helford River falls within an Area of Outstanding Natural Beauty. Such Areas are landscapes of national significance second only to National Parks. The Countryside and Rights of Way Act 2000 made it a statutory requirement that the Cornwall AONB Management Plan be produced, but the Management Plan is not a statutory document. It is a guidance document that planners, land managers and others are encouraged to use when carrying out their duties and responsibilities.

The whole of the Helford River system is also identified as a Cornwall Nature Conservation Site within Cornwall Council West (1994) by the Cornwall Wildlife Trust.

In 2009, the Marine and Coastal Access Bill entered Parliament, and became an Act on the 17th November. The Marine and Coastal Access Act will ensure clean healthy, safe, productive and biologically diverse oceans and seas, by putting in place better systems for delivering sustainable development of marine and coastal environments. To deliver these objectives, there will be the creation of the Marine Management Organisation (MMO) in April 2010, which will have responsibility for spatial planning and licensing activities on the coast, in ports and inshore seas out to 12 nautical miles. Work is also underway to identify and designate Marine Conservation Zones (MCZs) through wide stakeholder input facilitated by the 'Finding Sanctuary' regional seas project. MCZs are a new type of Marine Protected Area and aim to protect both nationally important and common place marine wildlife, habitats, geology and geomorphology. Combined with current marine SACs, SPAs, and SSSIs, these will form an ecologically coherent and well managed network of Marine Protected Areas by 2012. The HMCG will continue to work with Natural England and in

the future the MMO and Inshore Fishery and Conservation Authorities (IFCAs) to ensure that such objectives are delivered with local perspective and input.

5.4 POLICY

The HMCG places particular emphasis on the inclusion of all river users to encourage the voluntary and sustainable use of the river. For example, commercial interests and conservationists can often have conflicts of interest, but by including both in discussions, an equitable and positive understanding can often be reached. The well-being of the river is, after all, of interest to all who use the river.

Initially the HMCG produced its own strategic guidelines for its aims with regard to marine conservation within the River and these were updated following the more recent wider objectives as identified by the Falmouth Bay and Helford Initiative, SAC aims and County and Local District Strategic Plans renewed annually. The HMCG objectives and the rationale behind them are set out in the next section of this document.

It is the HMCG policy to apply rigorous scientific principles to its survey and monitoring functions. Habitat descriptions, species identifications and monitoring programmes adhere to a strict code of good practice to ensure that the results are acceptable to other databases, both local and national.

The following addition to the HMCG aims and objectives was adopted in 2000 at the AGM:-

'Any profits arising from the activities of the HMCG will be applied to the continuation or improvement of research and education within the Helford VMCA and will not be distributed in any other way. Should the Group cease to exist, any unused funds or goods should be distributed to appropriate like-minded bodies at the discretion of the remaining Group members.'

5.5 PROJECTS

Monitoring of the Helford estuary by the Environment Agency and Natural England has been investigated at the time of publication so that gaps in research can be identified and assessed.

Currently there is no ecological monitoring within the Helford estuary and none scheduled for the immediate future by either the Environment Agency or Natural England. With regard to freshwater monitoring within the Helford catchment, the EA do hold 2009 fisheries and macro invertebrates data for the Manaccan River. The Manaccan is and will continue to be routinely monitored under Catchment Abstraction Management Strategies (CAMS) which is currently every 5 years but this may change to more regular monitoring.

Natural England has duties to monitor the interest features of the SAC which would include habitats and species found within the HVMCA area. The HMCG will provide support and knowledge to ecological surveying within the Helford Estuary. Whenever resources and personnel become available, the HMCG undertakes long and short-term projects to assess the status of the wildlife, surveys the uses of the river, and produces publicity for educational purposes.

Site name	NGR	Reason for monitoring
Helford River - Mouth	SW7752026680	Urban Waste Water Treatment Directive
Helford Estuary Mouth	SW7985026000	Urban Waste Water Treatment Directive
Polwheveral Creek	SW7390027300	Urban Waste Water Treatment Directive
Helford off Groyne Point	SW7400026180	Urban Waste Water Treatment Directive
Portnavas Creek	SW7558027640	Urban Waste Water Treatment Directive
Helford at Bonallack Barton	SW7145025900	Urban Waste Water Treatment Directive
Helford River Shellfish Site	SW7433626373	Shellfish Waters Directive
Helford River above Gweek Mill	SW7039026490	Urban Waste Water Treatment Directive
Rosevear River at road crossing	SW7041325662	Urban Waste Water Treatment Directive
Gweek River above Gweek	SW7061127093	Local catchment investigation
Gweek River at Gweek Bridge	SW7063926745	Urban Waste Water Treatment Directive
Bonallack Stream at Bonallack Lane	SW7142626756	Urban Waste Water Treatment Directive
Trib of Mawgan Creek at Bridge Farm	SW7139225045	Urban Waste Water Treatment Directive
Mawgan Creek at Trelowarren Mill Bridge	SW7166825036	Urban Waste Water Treatment Directive
Caervallack Stream above Mudgeon Vean	SW7313624824	Urban Waste Water Treatment Directive
Frechmans Pill above Carnbarges Bridge	SW7473724518	Urban Waste Water Treatment Directive
Manaccan River above Gillan Creek	SW7690024925	Urban Waste Water Treatment Directive
Carne Stream below Bridge	SW7723824934	Urban Waste Water Treatment Directive
Helford Stream at Helford Ford	SW7581425967	Urban Waste Water Treatment Directive
Cavedras Stream at Nancenoy	SW7324528290	Urban Waste Water Treatment Directive
Lestraines River at Polwheveral Bridge	SW7370528447	Urban Waste Water Treatment Directive
Trewince Stream at Portnavas Bridge	SW7523227747	Urban Waste Water Treatment Directive
Porthnavas Stream at Roskellan Bridge	SW7575028203	Urban Waste Water Treatment Directive
Mawnan Smith Brook at Lower Penpol	SW7630628060	Urban Waste Water Treatment Directive

Table 2 displays the current 2009 EA Chemical Monitoring Programme, showing the monitoring points and the reason for sampling there.

Evaluation of set transects at intervals highlights changes over the longer term. Other short and medium term evaluation projects are undertaken by researchers investigating individual species, often as a thesis project, and sometimes in response to actual or perceived pressure on a habitat or species. Surveys are undertaken to assess and evaluate the commercial and recreational use of the river.

5.5.1 INTERPRETATION PROJECTS

The Group publishes promotional literature, produces interpretative signs and posters and has produced an educational CD-ROM, a video and regularly updated website, www.**helford**marineconservation.co.uk, in order to emphasise the value of the area to as many people as possible. It is hoped that the more that people know about the river, the greater the respect they will have for its ecology, landscape and history.

5.5.2 CORNWALL WILDLIFE TRUST 'YOUR SHORE' PROJECT

In addition to the above awareness work, Cornwall Wildlife Trust has recently (December 2009) been successful in an application to the Heritage Lottery Fund for a grant to carry out a 3-year project aiming to enable communities and visitors to learn about and develop an understanding and appreciation of Cornwall's marine environment by increasing access to the VMCAs through education and active participation. The 'Your Shore' project will deliver a programme of school group visits, community workshops for volunteers, rock pool rambles and similar events based around the VMCAs to inform local residents about the local marine environment, its importance locally and the associated global issues, and the steps that can be taken to protect and enhance it. In relation to the Helford VMCA, this project will provide support to the education and awareness programme delivered by the HMCG, specifically by increasing access to the VMCA for local schools by providing opportunities of field trips and workshops run by a the project marine education officer. This officer will also work with the HMCG coordinator to help facilitate and promote the work of the HMCG within the local community and encourage active participation in the form of a volunteer group that the coordinator would in turn manage past the end of the project. In addition to this, the project will also provide a link between VMCAs so each can support and provide resources to the others, if required, to go from strength to strength.

6.0 THE OBJECTIVES

GENERAL

The national and international situation with regard to marine conservation is currently moving forward with the identification of both species and habitats worthy of international statutory protection. However statutory designation without local involvement at a 'grass roots' level is less likely to result in sustainable use and proactive conservation. As such it is important that the HMCG remains involved in any future management structures.

The HMCG currently contributes positively to such management structures. The success of the voluntary management approach taken in the Helford VMCA may be of help elsewhere in the country. Research or observations can be made available to other VMCAs.

It is the intention of the members of the Group to build on the voluntary co-operation and goodwill that has been generated during the first twenty two years of the Helford VMCA. The Group will strive to collect appropriate, accurate scientific data, to produce high quality information and literature for the public and to encourage the active participation of all who have an interest in the river, whatever their opinions and point of view.

Objective 1.

To promote and encourage the sustained improvement of the water quality of the Helford River.

The water quality within the Helford River is generally good due to the lack of urban populations and limited industry. There is, however, concern about the discharge into the river of either treated or untreated sewage effluent from both riverside properties and the public sewage system, particularly in the area of Helford village. There is also concern about the discharge into the river of untreated sewage from yachts and unlicensed house boats, oil spills, and the effect of anti-fouling paint on the water and shellfish quality.

The hydrological catchment area of the River is largely agricultural. There is concern regarding changes in agricultural practices and the resultant impact of diffuse pollution due to the run-off of soil and chemicals from the adjacent arable fields, and the escape of slurry and silage effluent.

The water quality within the River and its catchment area is currently monitored by both the Environment Agency and Falmouth & Truro Port Health Authority for particular statutory functions. Any issues arising will be addressed through both the Environment Agency statutory responsibilities and the non-statutory Local Environment Agency Plan. A three-year project (2003-2006) under the European Water Framework Directive 'Cycleau' investigated catchment-based management of diffuse inputs, water quality and sediment transport within the HVMCA.

It is the desire of the HMCG to encourage compliance with all regulations and guidance concerning discharges to the River and their impact on conservation.

Objective 2.

To encourage the improvement of the conditions and habitats of species and communities within the Helford River.

The designation of the Fal and Helford European Special Area of Conservation means that the Helford River has now been recognised in a European context as being important for specific marine interest features. This offers a framework for future protection of the marine environment but relies heavily upon a local input.

In co-operation with other agencies, the HMCG hopes to use existing data to indicate a baseline, by species lists and idealised distribution plans, to assist in any future activities aimed at the restoration to an identified former status. From the information so obtained it would then be possible to establish the factors (for example substrate deficiency, physical damage, disease such as that of eelgrass) that may constrain recovery.

It will also be necessary to be alert to proposals for development that may damage the ecology of the river, and to make representations to the appropriate authority in such cases. All habitats and species that are suspected of being under pressure should be observed and, if necessary, suitable conservation measures proposed to promote and encourage their protection.

Objective 3.

To integrate commercial activities and amenities to ensure the sustainability of the natural assets referred to in 1 & 2 above.

The Helford River is situated in a somewhat remote, essentially rural area and there is therefore relatively little industry. Concern has been expressed regarding the run off and pollutants from boatyards, in particular anti-fouling paint, and oil spillages from commercial vessels. It is also necessary to encourage and ensure compliance with the regulations regarding commercial fisheries within the estuary.

The HMCG aims to maintain or raise awareness amongst commercial operators of the high quality of their environment and which activities and substances pose threats to that environment. It should be feasible to achieve through voluntary measures management of ill-advised activities that lead to damage and pollution, and minimise accidental damage. The need for statutory authorities to enforce regulations would thus be reduced.

Objective 4.

To integrate recreational activities and amenities to ensure the sustainability of the natural assets and commercial activities referred to in 1-3 above.

A wide range of recreational activities takes place on and around the river, particularly during the summer. It is important that these activities are monitored in order to assess their potential impacts on the marine habitats and species. The increase in the use of the river by people for leisure must be co-ordinated in order not to jeopardise the area's natural sustainability, i.e. it must not be to the detriment of the natural assets of the environment.

Natural England recently produced a study that would complement this objective of the HMCG. The recreational boating study aimed to provide an inventory of boating infrastructure in the Fal & Helford SAC and identify its location in relation to the interest features of the site, as well as conducting an extensive literature search of the potential environmental impacts of recreational boating infrastructure. As resources allow, the HMCG aims to compile and maintain an up-to-date register of all recreational activities on the river, and assess their potential and actual impact on the ecosystem.

Concern has been expressed, for example, at the level of bait-digging, the anchoring of vessels on the eelgrass beds, the possible impact of damage to intertidal habitats by trigging at Easter, general trampling throughout the year, the erosion of riverbanks by the wash from boats and the effect of yacht moorings on the river bed. Specific actions are in hand to assess and propose voluntary controls on some of the above issues.

It is considered important to encourage compliance with such statutes as are relevant and to discourage activities that could adversely affect the River by physical damage, pollution or noise.

Objective 5.

To promote and encourage a programme of scientific research and monitoring which will assist in the achievement of 1-4 above.

In order to create and maintain an accurate picture of the biological and ecological condition of the river, it is necessary to undertake both research projects and monitoring programmes. It is hoped that projects involving the Helford River will be integrated into legal requirements for monitoring of the condition of the SAC.

The HMCG will encourage sympathetic research projects that will increase knowledge of the habitats and species within the river. It is desirable that such projects may also be used in base-line surveys for future monitoring programmes intended to determine change. It may also be necessary to undertake defined research projects in response to actual or perceived pressure on a habitat or species that has come to the attention of the Group.

It is the Group's intention that future initiatives should build on the earlier programmes of monitoring permanent shore transects, eelgrass beds, bass populations and dog whelk populations by knowledgeable volunteers: that the current bird survey be repeated and that underwater observations be continued as resources and volunteer personnel become available.

In a response to the Convention on Biological Diversity (CBD) signed in 1992, the UK government launched the UK Biodiversity Action Plan (BAP) in 1994. The Cornwall Biodiversity Initiative has since published action plans targeting potentially vulnerable species and habitats in the county for evaluation and action aimed at improving the situation where possible. The HMCG is particularly linked to the Couch's goby *Gobius couchi,* maerl and Eelgrass *Zostera* spp investigations (Sutton & Tompsett, 2000).

Objective 6.

To promote and encourage the sustainable use of the river for education and interpretation, with particular regard to river users and visitors.

The Helford River continues to be of great value to both local people and visitors alike, and many wish to learn more about the marine environment at all educational levels.

The HMCG will encourage the sympathetic use of the river by local schools and other educational establishments. It will also help to provide information to the general public so that unintentional damage may be minimised. The provision of simple library facilities, the collection and collation of research papers and other relevant published material is part of the process.

The Group will continue to produce and distribute interpretation literature and encourage increased knowledge of the river ecosystem by the distribution of the educational CD-ROM, the maintenance of information boards and the website, and through talks by members of the Group. The HMCG Members Group will continue to organise and run public events and in turn encourage membership of the HMCG Membership Group with support of the Your Shore Project. The project builds on the success of the 2000-2002 Educational Ranger project which emphasised and communicated the importance of marine ecology to the public and educational providers. Objective 6 can also be linked to the appointment of Ruth Williams, formerly HVMCA Educational Ranger, as a Marine Conservation Officer for the Cornwall Wildlife Trust and Abigail Crosby, formerly the Looe VMCA officer as Marine Education Officer for the Cornwall Wildlife Trust.

Objective 7

To maintain and develop an administrative structure capable of monitoring and achieving the above objectives, including employment of personnel, fund raising activities, liaison with all users and interested bodies both statutory and non-statutory, to report annually on progress and to review these strategic guidelines regularly.

To ensure the success of Objectives 1-6 above it is necessary to have a management structure that is both effective and efficient.

The current management structure has proved effective to date. It will be necessary in the future to encourage volunteers, and at times employ professional help in order to achieve the objectives of the HMCG. The formation of the HMCG Membership Section has been of particular value in public awareness activities. It will be necessary to review the objectives regularly to remain an effective force in the protection of marine life in the Helford River while sympathetically addressing the requirements of those who enjoy the area's natural assets.

It is essential for the future success of the Helford VMCA that all the members of the Group work together and assist in the management structure as far as their field of expertise will allow, whether it be by financial support, logistical support or by making available expertise, knowledge or other resources.

Any profits arising from the activities of the Helford Marine Conservation Group will be applied to the continuation or improvement of research and education within the Helford VMCA and will not be distributed in any other way. Should the Group cease to exist, any unused funds or goods should be distributed to appropriate, like-minded bodies at the discretion of the remaining Group members.

7.0 STRATEGIC GUIDELINES & WORK PROGRAMME 2010 - 2015

Objective 1 – To promote and encourage the sustained improvement of the water quality of the Helford Estuary.							
Action	**Lead organ-isations**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
1.1.1 Encourage the safe disposal of sewage effluent and flood overflow – inform boat owners and liaise with the Environment Agency and other relevant bodies.	EA	✍	✍	✍	✍	✍	✍
1.1.2 Encourage compliance with regulations pertaining to pollution from septic tanks within the catchment	EA	✍	✍	✍	✍	✍	✍
1.1.3 Raise awareness of diffuse input issues within the catchment and liaise with relevant project officers	EA	✍	✍	✍	✍	✍	✍
1.1.4 Liaise with Trading Standards Officers and boat owners to ensure that pollution from anti-fouling is minimised	EA	✍	✍	✍	✍	✍	✍
1.2 Liaise with the appropriate authorities (Cornwall Council's Emergencies Officer, petroleum companies, etc.) to ensure contingency protection against oil pollution.	CC, NE	✍	✍	✍	✍	✍	✍
1.3 Encourage regular monitoring of water quality within the river and catchment area by the Environment Agency.	EA	✍	✍	✍	✍	✍	✍

CC Cornwall Council; EA Environment Agency; NE Natural England
✍ Lobby as necessary; ✍ watching brief; ☑ project; ✓ ongoing

Objective 2 – To encourage the improvement of the conditions and habitats of species and communities within the Helford Estuary.							
Action	**Lead organ-isations**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
2.1.1 Be alert to proposals for development (reclamation, dredging, construction etc.) which might be damaging to the ecology of the river.	CC	👁	👁	👁	👁	👁	👁
2.1.2 Where proposals (2.1.1) are potentially damaging, make representations to appropriate authorities (District or County Council, DEFRA, Environment Agency, etc.).	CC	✍	✍	✍	✍	✍	✍
2.2.1 Maintain awareness of disease threat e.g. in eelgrass, to the ecology of the Helford River.	HMCG	👁	👁	👁	👁	👁	👁
2.2.2 Maintain awareness of the threat from non indigenous invasive species (e.g. *Spartina* grass, Japweed, slipper limpets).	HMCG, NE	👁	👁	👁	👁	👁	👁
2.2.3 Maintain awareness of the potential causes of physical damage to habitats and implement management with relevant partners where necessary (e.g. anchoring on eelgrass beds).	HMCG, NE	👁	👁	👁	👁	👁	👁
2.2.4 Implement, as may be agreed, any appropriate proposals for maintaining or restoring a desired state (e.g.litter collection).	HMCG	✓	✓	✓	✓	✓	✓

CC Cornwall Council; HMCG Helford Marine Conservation Group; NE Natural England
✍ Lobby as necessary; 👁 watching brief; ☑ project; ✓ ongoing

Objective 3 - To integrate commercial activities and amenities to ensure the sustainability of the natural assets of 1 & 2 above.							
Action	**Lead organ-isations**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
3.1 Maintain a list of all the commercial uses of the river with some assessment of likely impacts of activities	HRAMC	👓	👓	👓	👓	👓	👓
3.2.1 Discourage commercial collection of cockles, mussels, oysters, razor-fish and of all bait by means of publicity and a voluntary code of conduct.	HMCG, Duchy Oyster Farm	✓	✓	✓	✓	✓	✓
3.2.2 Encourage enforcement of existing statutes, bylaws, etc., relating to net mesh size, minimum landing size of catch, etc.	EA, CSFC/IFCA	✍	✍	✍	✍	✍	✍
3.2.3 Discourage the use of environmentally damaging fishing gear.	CSFC/IFCA	✓	✓	✓	✓	✓	✓
3.2.4 Continue with the involvement of monitoring the VMCA area for commercially important species e.g. bass.	HMCG to liaise with Derek Goodwin	✓	✓	✓	✓	✓	✓
3.2.5 Seek to ensure that commercial fishing is conducted in a sustainable manner.	CSFC/IFCA (EA until 2011)	✓	✓	✓	✓	✓	✓

CSFC Cornwall Sea Fisheries Committee; IFCA Inshore Fisheries and Conservation Authorities; EA Environment Agency; HRAMC Helford River Advisory and Management Committee; HMCG Helford Marine Conservation Group

✍ Lobby as necessary; 👓 watching brief; ☑ project; ✓ ongoing

Objective 4 - To integrate recreational activities and amenities to ensure the sustainability of the natural assets and commercial activities of 1-3 above.							
Action	**Lead organ-isations**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
4.1 Aim to prepare and maintain an up to date register of recreational use, being alert to potential damage of current & proposed activities.	SAC Management Group	✓	☑	✓	✓	✓	✓
4.2.1 In general, discourage activities that disturb the life of the river by noise, exhaust fumes, erosion effects, etc.	HMCG	✓	✓	✓	✓	✓	✓
4.2.2 Encourage the enforcement of statutes and byelaws e.g. speed limits.	CC	✓	✓	✓	✓	✓	✓
4.2.3 Lobby as necessary to seek new legislation to limit damaging recreational use.	CC	✍	✍	✍	✍	✍	✍

CC Cornwall Council; HMCG Helford Marine Conservation Group; SAC Special Area of Conservation.
✍ Lobby as necessary; ✍ watching brief; ☑ project; ✓ ongoing

Objective 5 - To promote and encourage a programme of scientific research and monitoring which will assist in the achievement of 1-4 above.							
Action	**Lead organ-isations**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
5.1 Compile and maintain a list of potential research projects and an action plan to do as well as communicate them.	HMCG	☑	✓	✓	✓	✓	✓
5.2 Maintain close links with CWT, CUC and others in the collection, collation and dissemination of data and ensure research results are collated through ERCCIS for collation.	HMCG	✓	✓	✓	✓	✓	✓
5.3.1 Aim to repeat monitoring of permanent shore transects with fixed point photographs established in 1986 and 1988 at intervals as resources allow	HMCG, NE	-	☑	-	-	-	-
5.3.2 Aim to repeat dog-whelk census	HMCG	-	-	☑	-	-	-
5.4.1 Liaise with volunteer bass population survey teams and analysis	HMCG	☑	☑	☑	☑	☑	☑
5.4.2 Liaise with Zostera bed survey teams and analysis	HMCG	✓	✓	✓	✓	✓	✓
5.5.1 Encourage research into conditions required for the good health of species or posing threats (e.g. Zostera, Couch's Goby, invasion by Japweed)	HMCG	✓	✓	✓	✓	✓	✓
5.5.2 Encourage the collection of physical data within the river (weather data, water temp.)	HMCG	✓	✓	✓	✓	✓	✓
5.6 Continue with and update the Bird Population Survey as resources allow	HMCG	-	-	✓	☑	-	-
5.7 Discourage the collection of marine organisms, except in a limited way when appropriate as part of a scientific research project.	HMCG	✓	✓	✓	✓	✓	✓

HMCG Helford Marine Conservation Group; NE Natural England
✍ Lobby as necessary; 〰 watching brief; ☑ project; ✓ ongoing

Objective 6 - To promote and encourage the sustainable use of the estuary for education and interpretation, with particular regard to river users and visitors.							
Action	**Lead organ-isations**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
6.1.1 Maintain contact with educational research establishments.	HMCG	✓	✓	✓	✓	✓	✓
6.1.2 Maintain liaison with schools, colleges and other bodies involved with education and wildlife, e.g. CWT, NT, other VMCAs through the Your Shore project.	CWT	☑	☑	☑	☑	✓	✓
6.2.1 Continue, with periodic review, to publish information leaflet.	HMCG	☑	✓	✓	✓	☑	✓
6.2.2 Continue to maintain interpretative boards and posters.	HMCG	✓	✓	✓	✓	☑	✓
6.2.3 Continue to distribute as appropriate the educational CD-ROM.	HMCG	✓	✓	✓	✓	✓	✓
6.3.1 Maintain press contacts and prepare press releases to mark initiatives and events.	HMCG	✓	✓	✓	✓	✓	✓
6.3.2 Arrange and mount publicity events as appropriate	HMCG	✓	✓	✓	✓	✓	✓
6.3.3 Assist and encourage members of the Membership Section and support the organisation of awareness events within the Helford VMCA.	HMCG	✓	✓	✓	✓	✓	✓
6.3.4 Develop electronic communications with members and the general public via website and email to improve information flow and efficiency.	HMCG	✓	✓	✓	✓	✓	✓

CWT Cornwall Wildlife Trust; HMCG Helford Marine Conservation Group; NT National Trust; VMCA Voluntary Marine Conservation Area
✍ Lobby as necessary; 〰 watching brief; ☑ project; ✓ ongoing

Objective 7 - To maintain and develop an administrative structure capable of monitoring and achieving the above objectives.							
Action	**Lead organ-isations**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
7.1 Continue to operate a broadly based Group to oversee operations of HVMCA	HMCG	✓	✓	✓	✓	✓	✓
7.2.1 Elect / appoint members of the Group to carry out/oversee projects.	HMCG	✓	✓	✓	✓	✓	✓
7.2.2 Consider and undertake as agreed the appointment of contracted or salaried staff to carry out any projects.	HMCG	✓	✓	✓	✓	✓	✓
7.2.3 Maintain a self-financing members section to organise and participate in public awareness activities.	HMCG	✓	✓	✓	✓	✓	✓
7.3.1 Seek grant aid submitting applications as necessary and appropriate.	HMCG	✓	✓	✓	✓	✓	✓
7.3.2 Attempt to secure long term internal financial viability, e.g. through gift aid and corporate memberships and sponsorship, endowment, investment income.	HMCG	✓	✓	✓	✓	✓	✓
7.3.3 Raise money for projects outside core funding by various means e.g. appeals, talks, raffles.	HMCG	✓	✓	✓	✓	✓	✓
7.4 To periodically discuss and review these objectives and strategic guidelines at the group meetings.	HMCG	✓	✓	✓	✓	☑	✓
7.5 To incorporate a general review in a progress report for the Annual General Meeting of the Group	HMCG	✓	✓	✓	✓	✓	✓

HMCG Helford Marine Conservation Group
✍ Lobby as necessary; ✍ watching brief; ☑ project; ✓ ongoing

8.0 MEMBERS & ASSOCIATES OF THE HMCG

(September 2009)

Advisory Group

D. Muirhead MBE, CHAIRMAN.

W. L. Collins, VICE-CHAIRMAN

R. Hewett, TREASURER

Miss A. Crosby, SECRETARY

Membership Group

D. Thomson, CHAIRMAN

M. Rule, SECRETARY

P. Garrard, EVENTS COORDINATOR

J. Gendall, PUBLICITY

I. Jakeways, TREASURER

C. Richardson, FUNDING

C. Bean, local Helford fisherman 'Lady Hamilton'

Miss F. Beale, Fundus owner and experienced yachtswoman

Prof. T. Bligh, Pedn Billy

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Carwinnion Gardens

Conchological Society of Great Britain and Ireland; Dr J. Light

Constantine Parish Council

Cornish Federation of Sea Anglers; Capt. D. Goodwin & Bass Project Leader K. Bennetts

Cornwall Biodiversity Initiative; C. Marriott (c/o CWT)

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- **Maritime Section,** Capt. A. Brigden
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- **Councillor**, N. Hatton.

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- **Development Management Group Leader (Planning);** M. Broomhead
- **Water Bailiff**, N. Knight.
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Fal-Helford SAC Advisory Group; Mr H. Jackson

Fal Oil Services; P. Denmead , Terminal Manager

Falmouth & Truro Port Health Authority; G. Cooper

Falmouth Diving Club

Fowey Harbour Commissioners; Environment Officer Miss C. Hoddinott

Dr P. Gainey, Marine Biologist.

J. Green, Calamansack landowner and HRCST

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Helford Properties; S. Walker.

Helford River Association; Mr E. W. Morris

Helford River Moorings; N. Bailey (Mrs S. Stephens)

Helford River Expeditions; Mr H. Jackson

Helford River Sailing Club

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J. Lyall, Bonallack Farm

P. Lockley, journalist 'Fishing News'

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Marine Biological Association.; Mr Mitchell Neilly

Marine Fisheries Agency (DEFRA); A. Banks

Mawgan-in-Meneage Parish Council.

Mawnan Parish Council

Merthen Manor; A. M. Vyvyan

National Trust; A. Cameron, M. Hardy & J. Whitehouse

Natural England; K. Cook

Plymouth Marine Laboratory

Port Navas Yacht Club

G. Powlesland, local resident Tremurlon

Sailaway St Anthony; A. Jenkin

St Anthony–in-Meneage Parish Meeting

St Keverne Parish Council

St Martin Parish Council

South West Water plc; P. McNie

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Trebah Garden Trust; Major A. Hibbert & Dr. C. Hibbert

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R. F. Winfrey local resident

Welton Associates; Mrs S. Welton

World Wide Fund for Nature

References

Boyden, *et al*, 1979. "Tidal and Seasonal Variations of Trace Elements in two Cornish Estuaries." *Estuarine and Coastal Marine Science,* **8**. 303-317.

CEC (Council of the European Communities), 1979. Council Directive 79/409/EEC on the conservation of wild birds (EEC 1979) *Official Journal of the European Communities:* L103.

CEC (Council of the European Communities), 1992. Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora. *Official Journal of the European Communities:* L206.

Cordrey, L. (Ed.), 1996. *The Biodiversity of the South-West.* An audit of the South-West biological resource. RSPB, Exeter.

Cornwall Biodiversity Initiative (CBI), 1997. *Cornwall's Biodiversity Volume I: Audit and Priorities.* Cornwall Wildlife Trust, UK.

Cornwall Biodiversity Initiative (CBI), 1998. *Cornwall's Biodiversity Volume II: Action Plans.* Cornwall Wildlife Trust, UK.

Cornwall Biodiversity Initiative (CBI), 2004. *Cornwall's Biodiversity Volume III: Action Plans update.* Cornwall Wildlife Trust, UK.

Covey, R. & Hocking, S., 1987. *Helford River Survey.* Helford VMCA Group.

Davidson et al, 1991. *Nature Conservation and Estuaries in Great Britain.* Estuaries Review, Nature Conservancy Council.

Dines, H.G., 1956. *Details of mines in west Cornwall: Helford-Falmouth.* The metalliferous mining region of south-west England. British Geological Survey, **1**, 270-275.

English Nature, 2002. *Register entry UK0013112* under Regulation 11 of the Conservation (Natural Habitats etc) Regulations 1994.

Fal & Helford candidate Special Area of Conservation 2000. *Fal & Helford Draft Management Scheme.* FHMG.

Gainey, P.A., 1997. *A Survey of the Hexacoralline Anthozoans (Sea Anemones and Corals) of the Helford Estuary.* Helford River Survey, Helford VMCA Group.

Gainey, P.A., 1999. *A Survey of the Pisces (Fish) of the Helford Estuary.* Helford River Survey, Helford VMCA Group.

Goodwin, D.C., 1996. *Helford River Bass Project 1995.* Helford VMCA Group.

Hill, P., 1995. *Looe Voluntary Marine Conservation Area, Draft Document for Consultation.* South East Cornwall Project Explore.

Holme, N. A. & Turk, S. M., 1986. Studies on the marine life of the Helford River: fauna records up to 1910. *Cornish Biological Records,* No.9. (N.B. This study includes a bibliography of pre-1910 references not included in this list.)

Masters, J., 1994. *The Helford Oysterage.* Helford VMCA Group.

Miller, P.J., & El-Tawil, M.Y., 1974. A multi disciplinary approach to a new species of *Gobius* (Teleostei: Gobiidea) from southern Cornwall. *J.Zool., Lond. (1974)* **174**. 539-574.

Potts, G.W., & Swaby, S.E., 1991. *Evaluation of the conservation requirement of rarer British marine fishes.* Final report to the Nature Conservancy Council, **1228.**

Potts, G.W., & Swaby, S.E., 1993. *Review of the status of estuarine fishes. English Nature research report 34* Marine Biological Association/English Nature.

Reynolds, A. 2000. *Helford Estuary Historic Audit,* Cornwall Archaeological Unit, Cornwall County Council.

Rostron, D. et al, 1987. *Surveys of Harbours, Rias and Estuaries in Southern Britain; The Helford River*. Nature Conservancy Council/Field Studies Council.

Spooner, G.M. & Holme, N.A. 1986 Studies on the marine life of the Helford River. No. 2. Results of a survey in Sept. 1949. *Cornish Biological Records,* 10, 1-29.

Sutton, A. & Tompsett, P.E., 2000. *Eelgrass (**Zostera** spp.) Project 1995-1998***.*** Helford River Survey, Helford VMCA Group.

Tompsett, P.E., 1994. *Helford River Survey, Monitoring Report No. 4.* Helford Voluntary Marine Conservation Area Group. N.B. This report includes a list of reference works relating to the Helford River post-1910

Tompsett, P.E., 1998. *Studies of the sedentary polychaete **Sabella pavonina** Savigny 1820 (Peacock Worm) with particular reference to the Helford River intertidal population.* Helford VMCA Group.

Tompsett, P.E., 2003. *Environmental factors relating to the ecology and distribution of some intertidal populations of the sedentary polychaete **Sabella pavonina** Savigny, 1820.* PhD thesis, Dept. of Biological Sciences, University of Exeter.

Turk, S. M., 1996. *Marine life between Dodman Point and Lizard Point.* Unpublished notes on the marine ecology and noteworthy elements of the flora and fauna with extensive bibliography of sources. N.B. This CBRU 'working document' is on the ERCCIS file, Allet, Truro, Cornwall.

Turk, S. M. & Tompsett P. E. 1994.*Trigging: a summary of the knowledge.* Helford VMCA Group.

Turk, S.M., & Tompsett, P.E., 1993. *A list of invertebrates and fishes recorded from the Helford River*. Helford VMCA Group.

Wilson, I. (Ed.), 2002. *Systematic List for 2002*. Birds in Cornwall. Annual Report of the Cornwall Bird Watching and Preservation Society.

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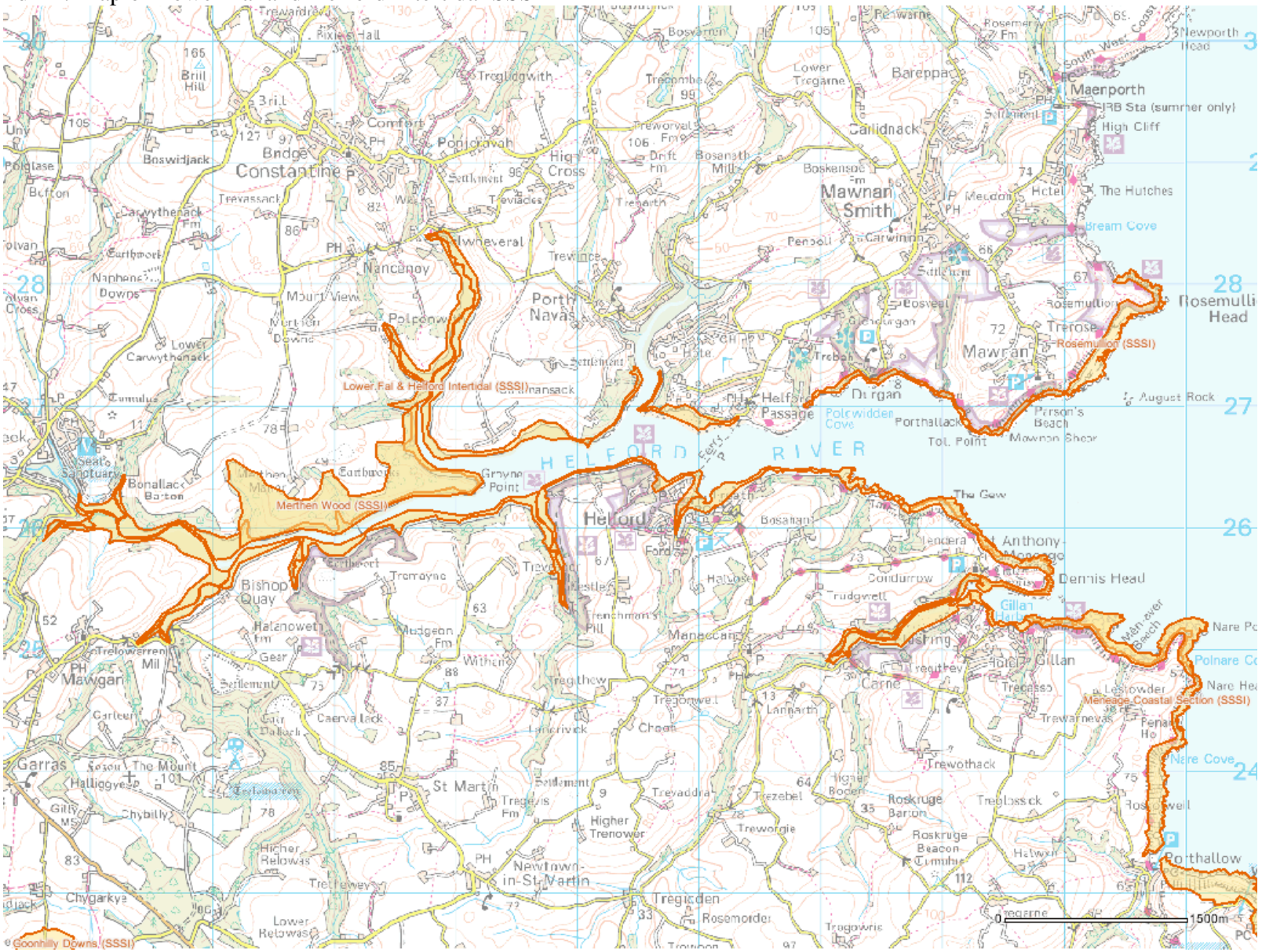
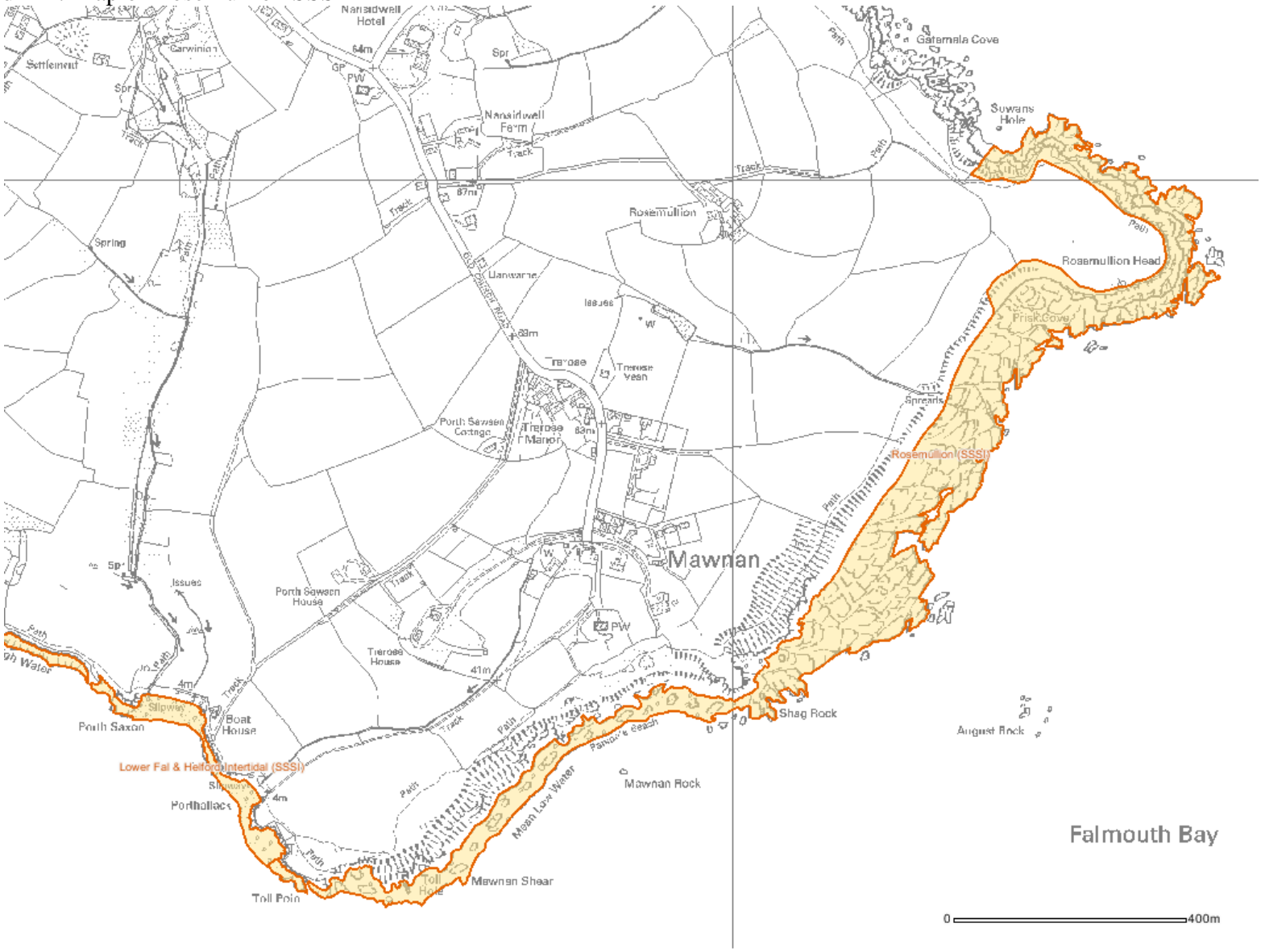
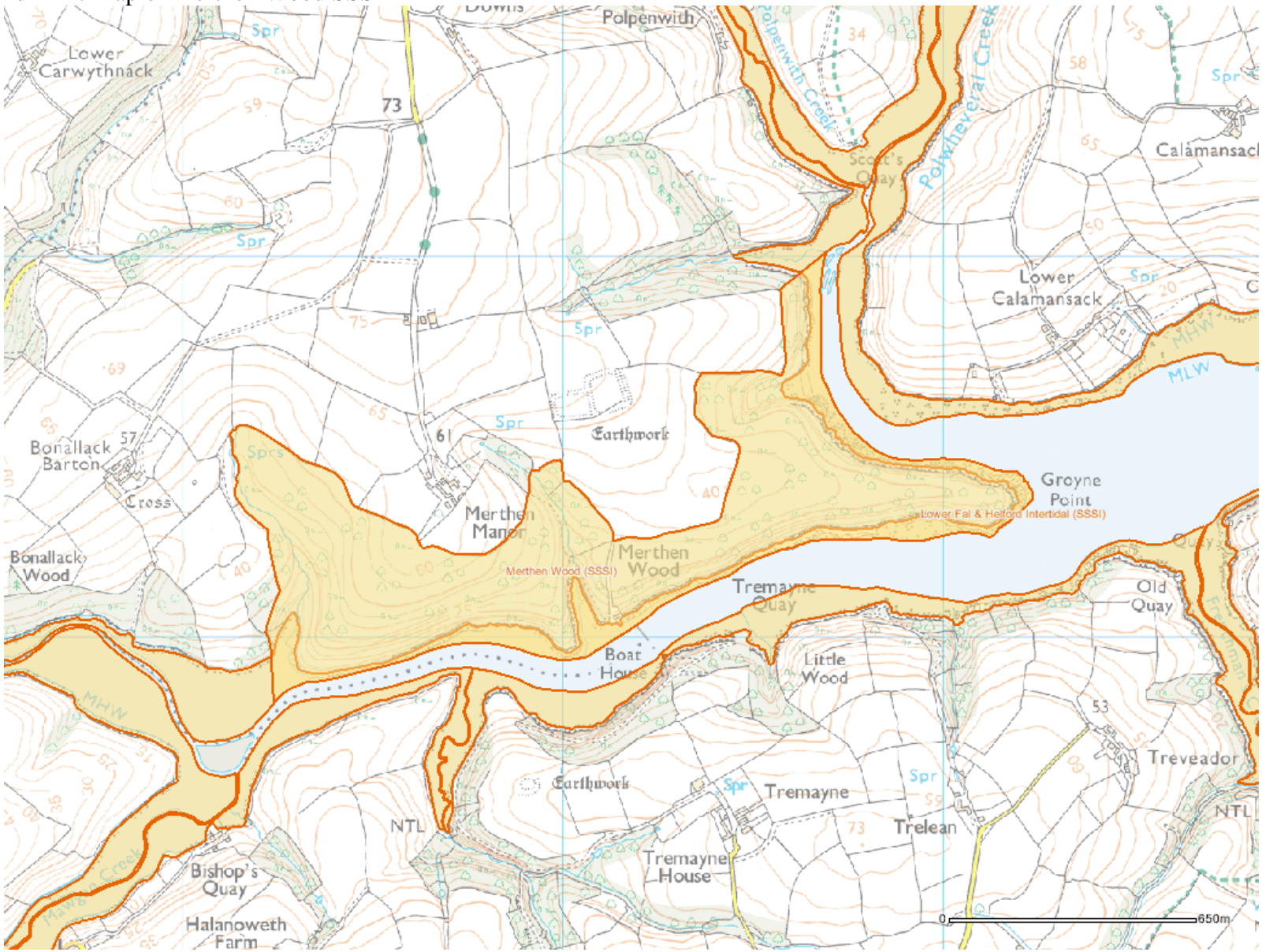
Appendix I: Map of Lower Fal and Helford Intertidal SSSI



Appendix II: Map of Rosemullion SSSI

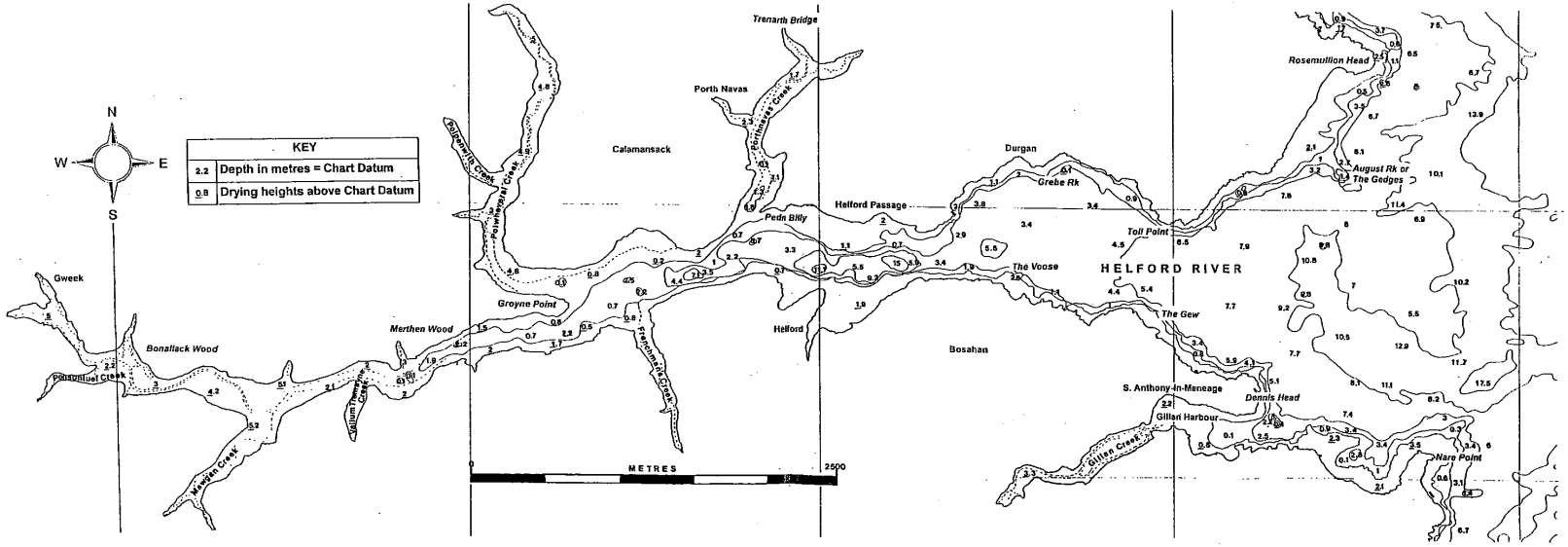


Appendix III: Map of Merthen Wood SSSI



Appendix IV: Bathymetry of the Helford River

Bathymetry of the Helford River



Reproduced from Admiralty chart 147 by permission of the Controller of Her Majesty's Stationery Office and the UK Hydrographic Office

"Not to be used for Navigation"

Appendix V: Fisheries Regulation and Minimum Catch Size Limits

CORNWALL SEA FISHERIES DISTRICT

MINIMUM FISH SIZES (CM)

Bass	37.5
Black Seabream	23
Blue Ling	70
Brill	30
Cod	35
Conger Eel	58
Dab	15
Flounder	25
Grey Mullet	20
Haddock	30
Hake	30
Herring	20
Horse Mackerel	15
Lemon Sole	25
Ling	63
Mackerel	20
Megrim	25
Plaice	27
Pollack	30
Red Mullet	15
Red Seabream	25
Saithe (Coley)	35
Sardine (Pilchard)	11
Sole (Dover)	24
Turbot	30
Whiting	27
Witch Flounder	28

Fish to be measured from the tip of the nose to the furthest end of the tail.

MINIMUM SHELLFISH SIZES (MM)

(See measuring methods overleaf)

Edible Crab - Male	160
- Female	150
Spider Crab - Male	130
- Female	120
Velvet Crab	65
Lobster (Carapace)	90
Crawfish (Carapace)	110
Scallop	100
Queen Scallop	40
Whelk	45
Razor Clam	100
Surf Clam	25

Note: There are numerous species (mainly bi-valve molluscs) for which minimum sizes exist that are not listed here.

Shellfish Measuring Gauge

A stainless steel gauge can be supplied to any fisherman holding a valid CSFC shellfish permit.

The CSFC District

The sea within the six mile limit drawn from baselines (including Eddystone Rocks), with seaward boundaries at Marsland Mouth in the north and Rame Head in the south.

Shellfish Permit

An annually renewable permit is required for any person fishing from a boat and removing more than two animals from the species of lobster, crawfish, edible or spider crab.

Nets

A variety of mesh sizes are regulated for fixed and towed nets, depending on the species being targeted.
For gill and other specified nets it is prohibited to use a mesh size between 71mm and 89 mm.
The use of fixed nets with a headline set less than 3 metres from the surface is banned in numerous areas around the coast.
Any net less than 250 mm is banned from two defined areas around the Manacles and Runnelstone.

Lobsters/Crawfish

It is prohibited to remove berried lobsters and crawfish.
V-notched lobsters and crawfish must be returned, plus any with a tail flap which is missing or mutilated, such that a v-notch could not be observed.

Shellfish Boats

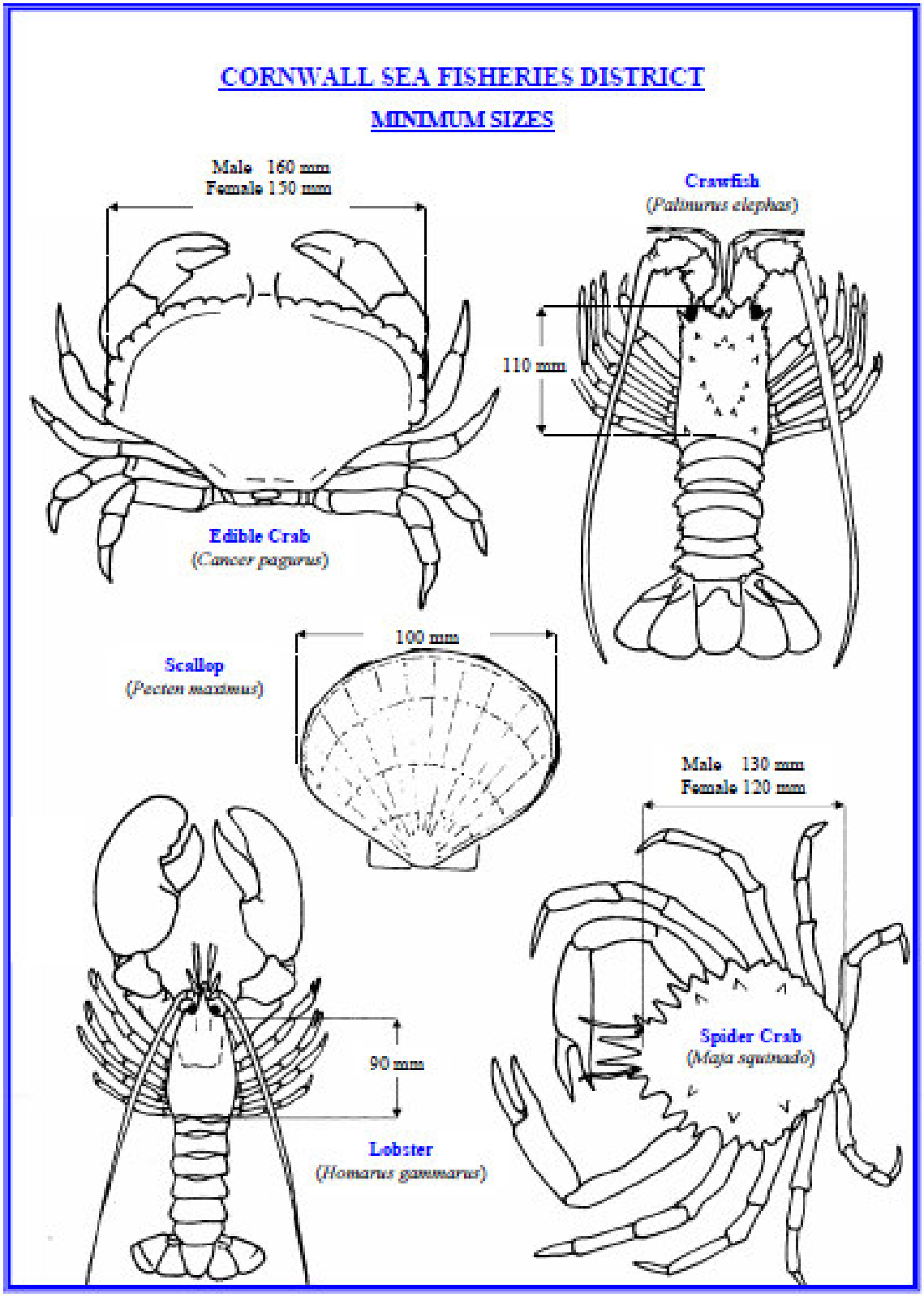
Fishing for shellfish (including scallops) with a vessel exceeding 16.46 metres overall length is prohibited, unless special permission has been granted by Cornwall Sea Fisheries Committee (CSFC).

Trawling

Fishing with a trawl/towed net with a vessel exceeding 18.28 metres overall length or 221 kW engine power is prohibited, unless special permission has been granted by CSFC.

Only a few fisheries regulations are referred to on this card. Further information and advice may be obtained from Cornwall Sea Fisheries, Old Bonded Warehouse, Quay Street, Penzance TR18 4BD, or telephone 01736 369817, or visit our website www.cornwall.gov.uk/seafisheries.

Information on this card was correct at the time of publication and is intended for guidance only. It is not a statement of the Law which is subject to change. [Issue 2. Jun 2008]


CORNWALL SEA FISHERIES DISTRICT
MINIMUM SIZES
Male 160 mm
Female 150 mm
Edible Crab
(Cancer pagurus)
Crawfish
(Palinurus elephas)
110 mm
Scallop
(Pecten maximus)
100 mm
Male 130 mm
Female 120 mm
Spider Crab
(Maja squinado)
90 mm
Lobster
(Homarus gammarus)

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