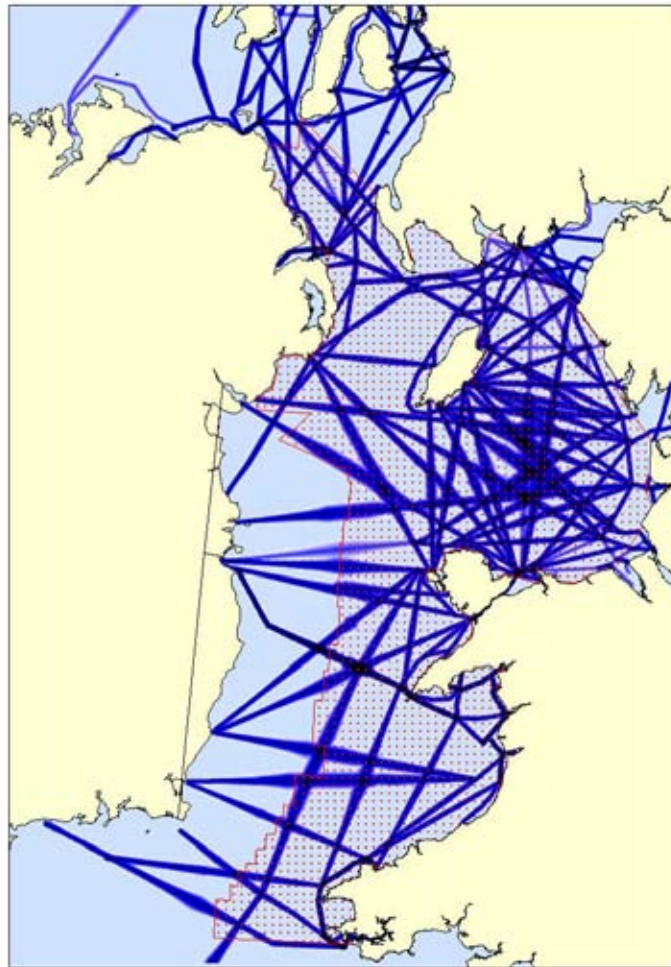


Identifying Recreational Cruising Routes, Sailing and Racing Areas within the SEA 6 Area

A Report for the Department of Trade and Industry
By the Royal Yachting Association

March 2005



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March 2005

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1 Introduction

1.1 Background

This project has been carried out to inform the UK Department of Trade and Industry (DTI) in the completion of a Strategic Environmental Assessment (SEA) of part of the UK continental shelf. This area is the sixth SEA area to be completed and as a result is referred to as SEA 6, see Figure 1. Historically the DTI SEA work has been concentrated on informing the licensing for offshore oil and gas. The SEA 6 area has been expanded to include examining the impacts on stakeholders who may be affected by the development of renewable energy. An SEA was carried out for the three strategic wind farm areas identified in the DTI's *Future Offshore* document. One of the major outputs of the work was the identification of large gaps where data were absent and unavailable.

1.2 Developing a database of recreational boating use

Historically there has not been a database of recreational use of the UK's marine environment. Due to the difficulty in collecting this type of information there had previously been no attempt to gather co-ordinated data concerning the level of recreational boating around the UK or the locations of such activity. As a response to the lack of information highlighted by the SEA carried out for the three strategic wind farm development areas, the Royal Yachting Association, supported by the Cruising Association started to identify recreational cruising routes, general sailing and racing areas. This work was based on extensive consultation and qualitative data collection from RYA and Cruising Association members, through the organisations' specialist and regional committees and through the RYA affiliated clubs. The consultation was also sent to berth holder associations and marinas. The result of this work was published in the document, *Sharing the Wind*.

Sharing the Wind was put together when it became clear that information on recreational boating was urgently needed to assist the Government's drive to develop offshore renewable energy, in particular wind farms, by providing data for consideration during the planning, design, and approval process. Such data has now assisted the work of making informed comment on details of individual wind farm proposals in the three strategic areas.

1.3 Inclusion of recreational boating in Strategic Environmental Assessments

In September 2004, the RYA was approached by Geotek on behalf of DTI to extend work undertaken in *Sharing the Wind* for the SEA 6 area. The decision to include recreational use into the SEA process was welcomed by the RYA. This report is the result of the inclusion of recreational boating interests in the SEA process and has been completed for SEA 6 area. The collation of recreational boating data in the SEA 6 area expands on the data collected and presented in *Sharing the Wind* for the north-west strategic area.

This project has extended the research beyond the north-west strategic area to encompass most of the Irish Sea as well as including shore based facilities which can give an indication of intensity of use. The SEA 6 area includes the waters off Milford Haven in the south west of Wales, to the waters off Mull in the west of Scotland.

Collating information about recreational use is in essence difficult as sailor's passage logs are kept by the individuals. Day sailing and racing is also known to the individuals and clubs and not recorded into an official database. However, through the network of recreational boaters who are members of the RYA directly or are members of RYA affiliated clubs as well as utilising partner organisations such as the Cruising Association and the Conference of Yacht

Cruising Clubs, the RYA is able to reach a wide audience to compile a comprehensive set of cruising routes.

1.4 About the Royal Yachting Association (RYA)

The RYA has taken an active role in policy making that affects boat users and has been the voice of recreational boating for over a century. It represents 101,000 personal members and over 1,500 affiliated clubs representing a further 400,000 boat enthusiasts and administers training standards at over 2,000 RYA training centres.

RYA represents users of:

- Cruising and racing sailboats and powerboats
- Sailing dinghies and day boats
- Windsurfers
- Personal watercraft

The RYA was originally formed as the Yacht Racing Association in 1875 to harmonise the right-of-way and handicap rules for yacht racing. Since then the focus of the Association has extended to encompass the views of all water users under sail or power, and just after WW2, the word "Racing" was justifiably dropped. Then in 1952 the "Royal" title was granted, to form the Royal Yachting Association, or the "RYA" as it is commonly known today.

RYA policy is determined by its democratically elected Council and a series of expert committees. These are almost exclusively occupied by volunteers who give large amounts of their time to helping the RYA, and it is these people who generate the policy and direction of the RYA. At a regional level, the RYA is divided into English regions and Home Country regions. Those relevant to the SEA 6 area are showing in Figure 1.

Figure 1: Map of the SEA 6 area and the adjacent RYA regions and Home Countries



2 Identifying cruising routes, sailing and racing areas in the SEA6 area

The SEA 6 project has been undertaken by the RYA. This has involved the coordination and collation of data within the SEA 6 area and input into a geographical information system. The project has also involved the development of a basic model for mapping cruising routes. This is required as recreational sailing craft do not follow direct routes from A to B as their path depends on the direction of the wind. This is explained in detail in Annex A.

Relevant primary data has been collected through the RYA network of personal RYA members and members of RYA affiliated clubs as well as through partner organisations. The Cruising Association has played a major part in helping to draft the cruising routes and through widening the consultation process to their Honorary Local Representatives placed throughout the SEA 6 region. The initial consultation material was derived from internal expertise as well as through relevant nautical almanacs, regional pilot guides, sailing guides and similar publications. This has led to a comprehensive database of recreational cruising routes categorised into light, medium and heavy or essential routes. The key definitions for these categories are explained in Annex B. In addition, data from the British Marine Federation's moorings and marinas survey (BMF, 2004) as well as the RYA Marina guide (RYA, 2004) has been used. Because the data is reliant on personal observations the data collection process has ensured that each route is correctly attributed to the person or organisation by which it was identified.

The primary data is submitted to the RYA by their volunteer network and as a result remains the copyright of the individuals and the RYA. However, the RYA is keen to share this information with decision makers, marine spatial planners and developers and through projects such as this has prepared the information for the SEA 6 area for wider distribution.

This report provides a set of comprehensive maps for the SEA 6 area that:

- Plot the cruising routes
- Plot the general sailing and racing areas
- Plot the anchorage areas
- Illustrate the intensity at which each route is used from local clubs
- Plot the location and size of shore based facilities

2.1 The format of the study

The study was carried out in three stages:

1. Development of draft charts of cruising routes, sailing and racing areas
2. Consultation with clubs, regional committees and local experts on charts and questionnaire
3. Identification and collation of data on facilities supporting recreational boating to enable some assessment of level of use to be made
4. Consolidation and analysis of information and reporting

The first stage involved compiling data from existing sources and translating the information onto the RYA's Geographical Information System (MapInfo). The collation of this information will form the first draft of recreational boating interests within SEA 6. The draft

charts consisted of a combination of data sets including routes, sailing areas, sailing clubs, marinas, training centres and anchorage areas. This information originates from:

- Standard publications, pilot books, charts and almanacs
- Key representatives from local clubs
- Data from the RYA database of clubs, marinas and training centres
- Data collated by other organisations: British Marine Federation, BoatLaunch.

The consultation list for the identification of cruising routes, sailing and racing areas in SEA 6 can be seen in Annex C. This list of relevant consultees has been compiled by selecting all RYA affiliated sailing clubs, RYA training centres as well as all recorded marinas within 2km of the coast. In addition, copies of the charts were sent to RYA regional and specialist committee members, Cruising Association specialist committees and Honorary Local Representatives and the Conference of Yacht Cruising Clubs (CYCC).

Part of the analysis of the information has been to develop a model of recreational cruising routes to take into account how a recreational sailing craft navigated from A to B taking into account the wind direction (see Annex A).

In addition to this report, the information is also available in digital format GIS files, ArcInfo and Shape files, Vector files and Raster jpg files to feed into the overall research of the area.

2.2 Assumptions taken in data collation

Several assumptions have been made in the collation of the information. These have been summarised in bullet form below:

- Coastal clubs are selected geographically from the location of their club house. Those within 2 km from the coast are selected. This may well omit those clubs without club houses that use the area as well as individuals that are not members of a club.
- Training centres are selected graphically from the location of their Centre which may omit training centres based further than 2 km from the coast but use the coast for practical training courses.
- Selection of relevant clubs, training centres and marinas have also included a number in Scottish waters whilst they are essentially outside the SEA 6 area their location means they are likely to use the SEA 6 waters.
- Whilst comprehensive and covering a large number of individuals, the structure of the consultation will omit yachtsmen who are not members of a club.
- Individual RYA members have not been directly targeted as many live in different places to where they sail and it was assumed the majority could be contacted through their club or as a marina berth holder.
- Individuals who are not members of the RYA or affiliated clubs have not been targeted. However, it is felt that through the RYA and its partner organisations consultation is comprehensive and should effectively represent the knowledge of the recreational boating community.

3 Recreational Boating in the SEA 6 Area

3.1 Introduction:

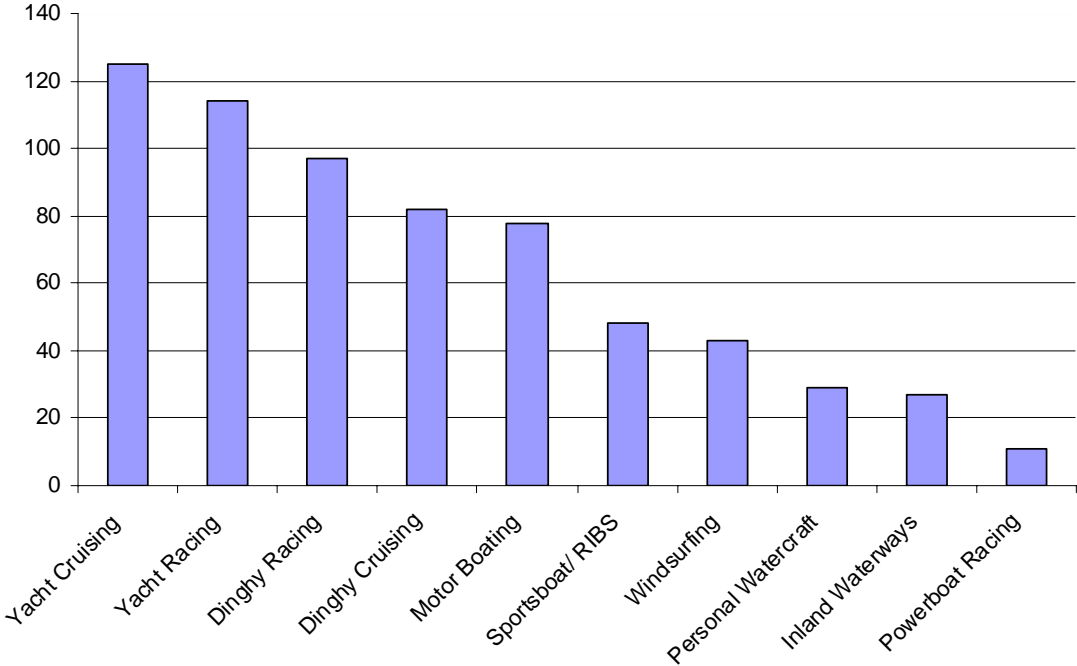
SEA 6 is a popular recreational boating area with routes to and from the English, Welsh, Scottish and Irish coasts as well as to and from the Isle of Man. The relative close proximity of these different and varied locations makes cruising in the Irish Sea particularly popular. The areas where activity is greatest can be seen stemming from the Scottish coast in the north of SEA 6 and the north Wales and Anglesey coast. Sailing remains popular in the region whilst there is an increasing shift, which can be seen in national statistics, to motor cruising. Many of the coastal clubs run active racing programmes which would include racing series held all the year round. During the weekends racing tends to be held further offshore whilst summer midweek racing tends to be shorter courses closer to the club’s base. Craft are kept in marinas as well as on swinging moorings and other pontoon moorings managed by harbour authorities and the individual clubs.

Recreational sailing in the area includes:

- Canoeing, sail-boarding and personal watercraft limited to a few places close inshore
- Dinghy sailing in most estuaries in suitable weather and tide conditions
- Day-sailing and racing around the coast approximately out to 15 miles
- Cruiser passage making between most combinations of yachting base

The most popular activity of the clubs in SEA 6 is yacht cruising and yacht racing. This variety of activities can be illustrated by looking at the various areas of interest of the coastal clubs shown in Figure 2.

Figure 2: Number of RYA affiliated clubs in SEA 6 area involved in specified forms of recreational boating (total number of clubs =143)



3.2 Boating facilities within SEA 6

There are a total of 143 clubs within 2 miles of the coast that would utilise the SEA 6 region. The estimated membership of these clubs is just under 37,000. In addition, there are 156 RYA recognised training centres that are also within 2 km of the coast. These centres offer a number of different courses from yacht cruising to dingy racing. The RYA has 36 commercial marinas listed which have a total of 6,000 berths.

The total moorings available to recreational boating in the SEA 6 area including swinging moorings, pile moorings, commercial marina moorings are estimated at just under 13,000 (BMF, 2004). Additionally, there are a number of access points for launching and recovering boats that are available both through clubs as well as publicly managed that are estimated at 170 (Boat Launch, 2004).

3.3 Navigation in SEA 6

Navigation can be challenging in this area. The tidal range is large and can reach to over 10 metres. The tidal heights are notoriously subject to atmospheric pressure. The entire coastline included in this study, excepting the North Welsh coast, is a lee shore in the prevailing weather conditions which leads to breaking seas over shallow water areas that have to be carefully avoided by recreational craft. There are various dangerous sandbanks at the entrance to some estuaries which have strong tidal streams, in particular the Solway Firth and Morecambe Bay. Many harbours have substantial bars or dry out at low water and are located on lee shores. Ensuring access to the existing harbours of refuge and those that can be entered at all states of the tide will be critical for recreational boating. There are no major offshore navigational dangers other than shallows associated with the major river entrances.

3.4 Competence and equipment

In general terms it may be assumed that recreational craft offshore are fully equipped for their type and that crews have a high level of competence. Typically a vessel offshore will be equipped with marine VHF radio but small craft equipment may not have the same transmission strength as commercial vessels. Many recreational sailors will also have mobile phones which can be useful inshore for calling harbour authorities and marinas but obviously less useful when someone is trying to contact the craft. Many recreational craft carry radars although like VHF radios, they are unlikely to have the same resolution as commercial craft. Most recreational craft do not carry AIS transmitters or receivers.

Figure 3: Map of the location of commercial marinas in the SEA 6 locality



Figure 4: Map of the location of coastal recreational boating clubs in the SEA 6 locality

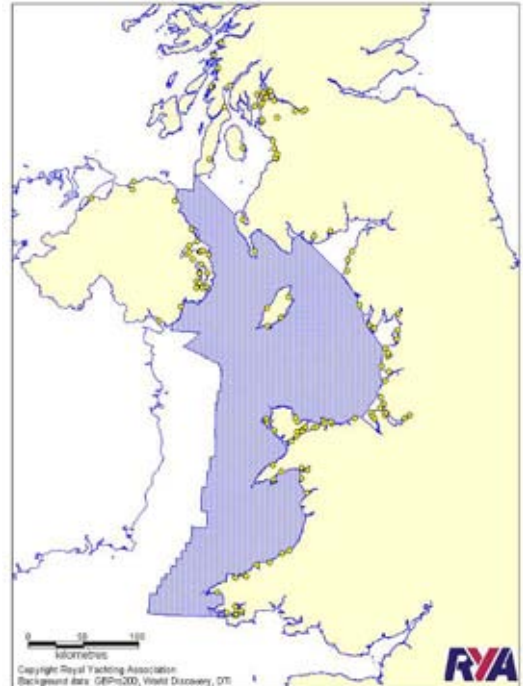


Figure 5: Map of the location of slipways in the SEA 6 locality

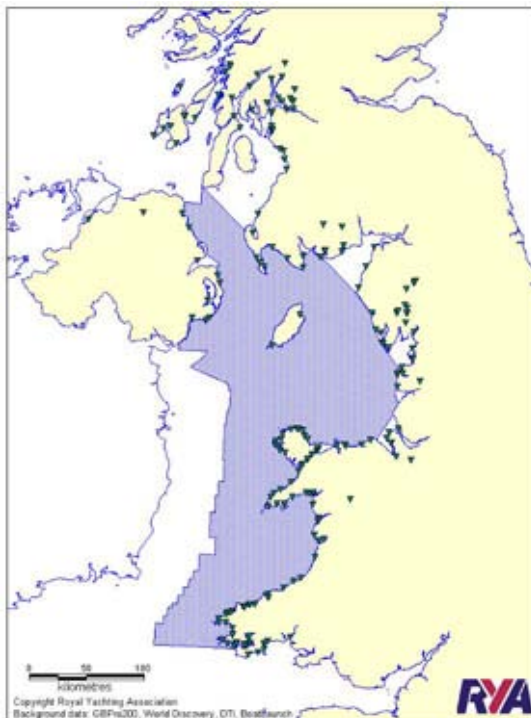
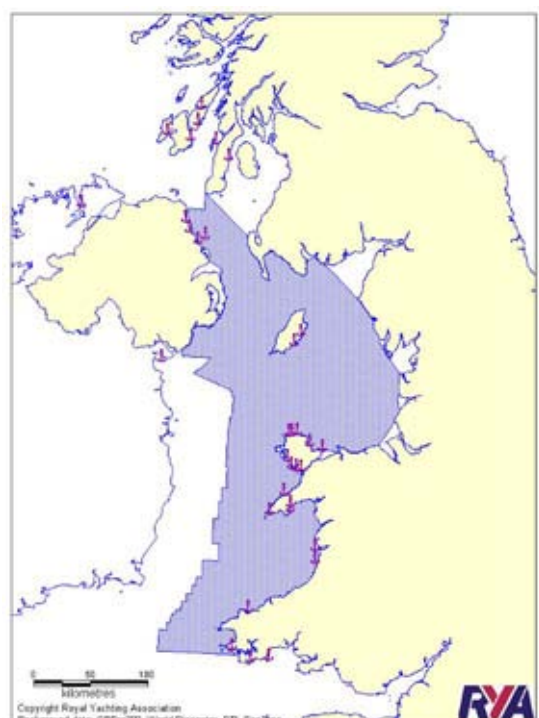


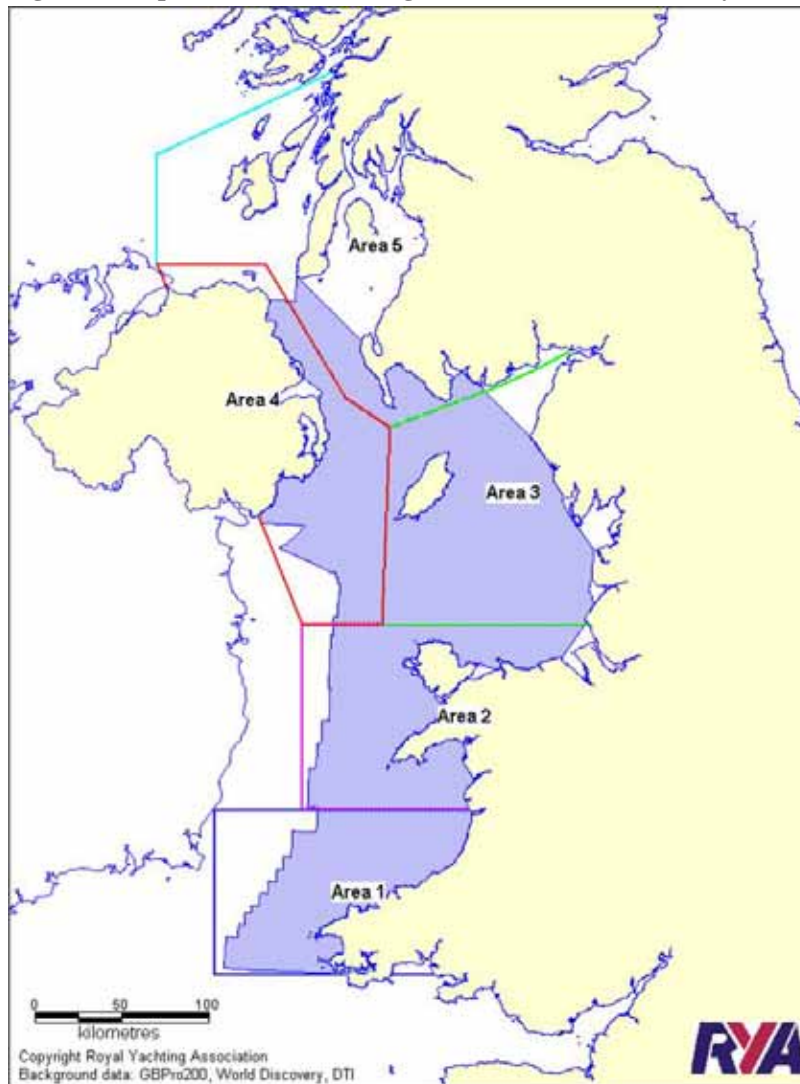
Figure 6: Map of the location of the main anchorages in the SEA 6 locality



4 Intensity of recreational use within SEA 6

Unlike surveys of commercial use, there is currently little available survey data to assess intensity of use of these routes and areas identified. However, through the collation of navigational information it is hoped over time that these areas will be able to be verified and some level of intensity apportioned to each route. The level of facilities available can be taken as a proxy for comparable levels of intensity. In order to compare use across SEA 6, the whole area has been divided into five sub-areas as shown in Figure 7.

Figure 7: Map of SEA 6 and the regional divisions used in analysis of recreational boating activity



4.1 Comparison of use

The major recreational activity is seen in Area 2, Aberdovy to Liverpool followed by Area 5, Solway Firth to Oban. Part of Area 5 lies outside the SEA 6 area but is included as explained in section 2.2. Essentially it has been assumed that much of the recreational boating activity stemming from these coastal facilities will utilise the waters in the SEA 6 area. These higher levels of use can be seen in the series of comparison charts of RYA affiliated club members throughout the sub-areas (see Figure 8), the number of moorings in each of these sub-areas (see Figure 9), the number of RYA recognised training centres in the sub-areas (see Figure

10) and the number of slipways in the sub-areas (see Figure 11). Chapters 5 through 9 look at these areas in detail.

Figure 8: Comparison of RYA affiliated clubs' members between the SEA 6 sub-areas (total club membership = 36,700)

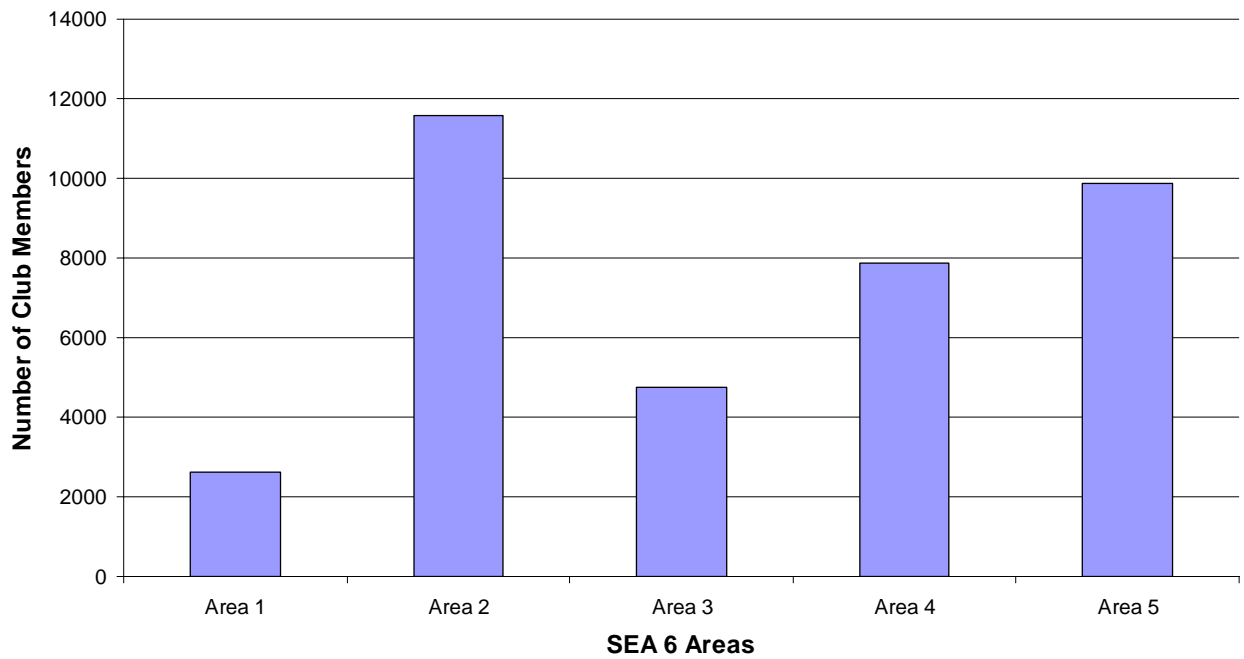


Figure 9: Comparison of the estimated number of moorings between the SEA 6 sub-areas (total number of moorings estimated at 13,000)

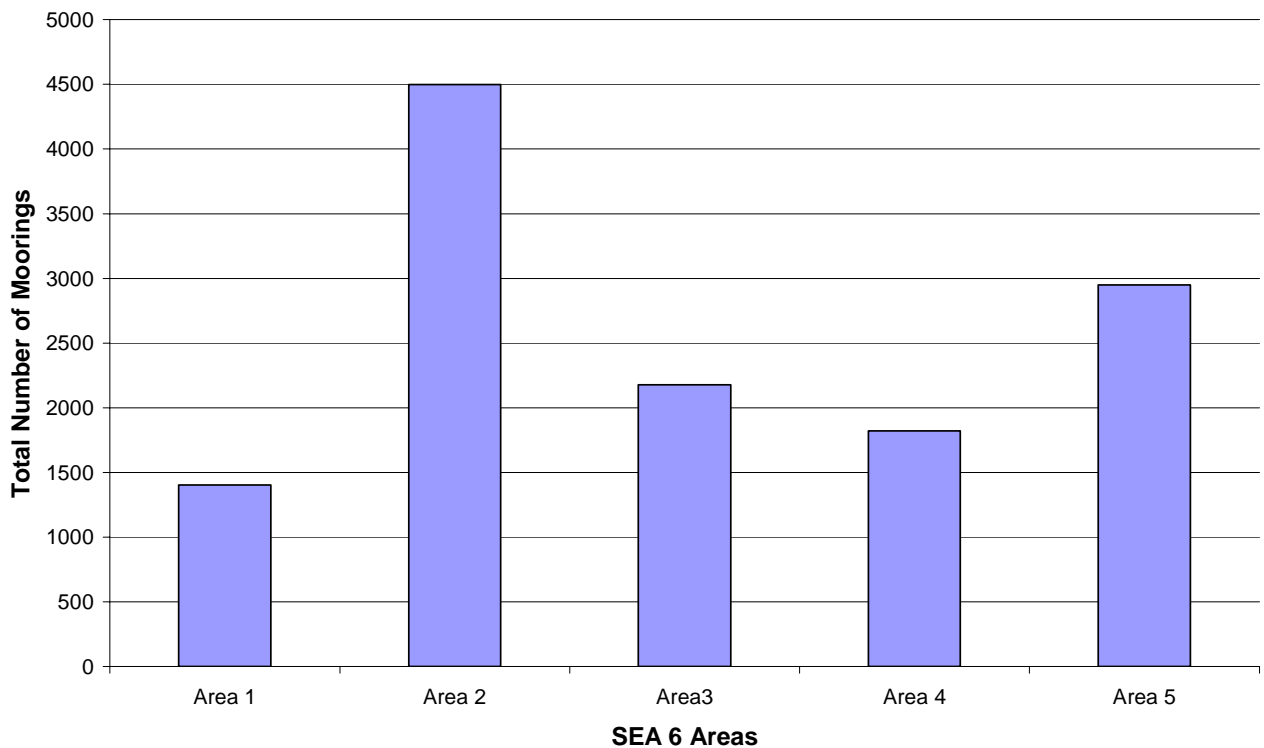


Figure 10: Comparison of the number of RYA recognised training centres between the SEA 6 sub-areas (Total number of RYA recognised training centres =156)

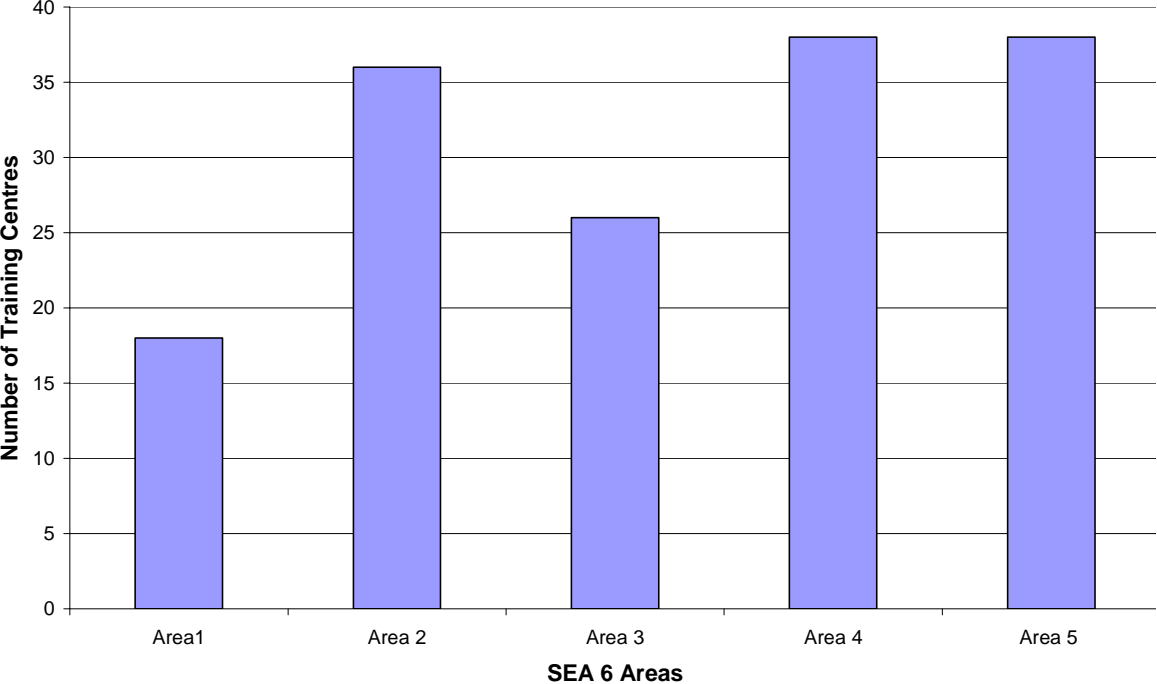
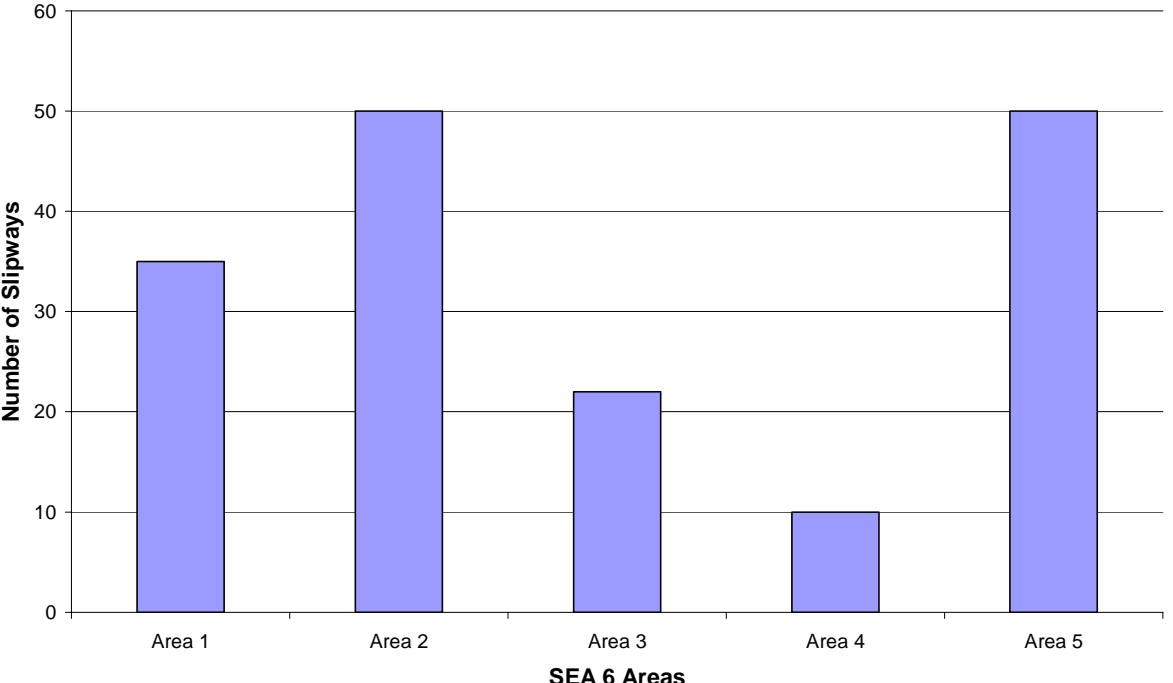


Figure 11: Comparison of the number of slipways between the SEA 6 sub-areas (Total number of slipways = 170)

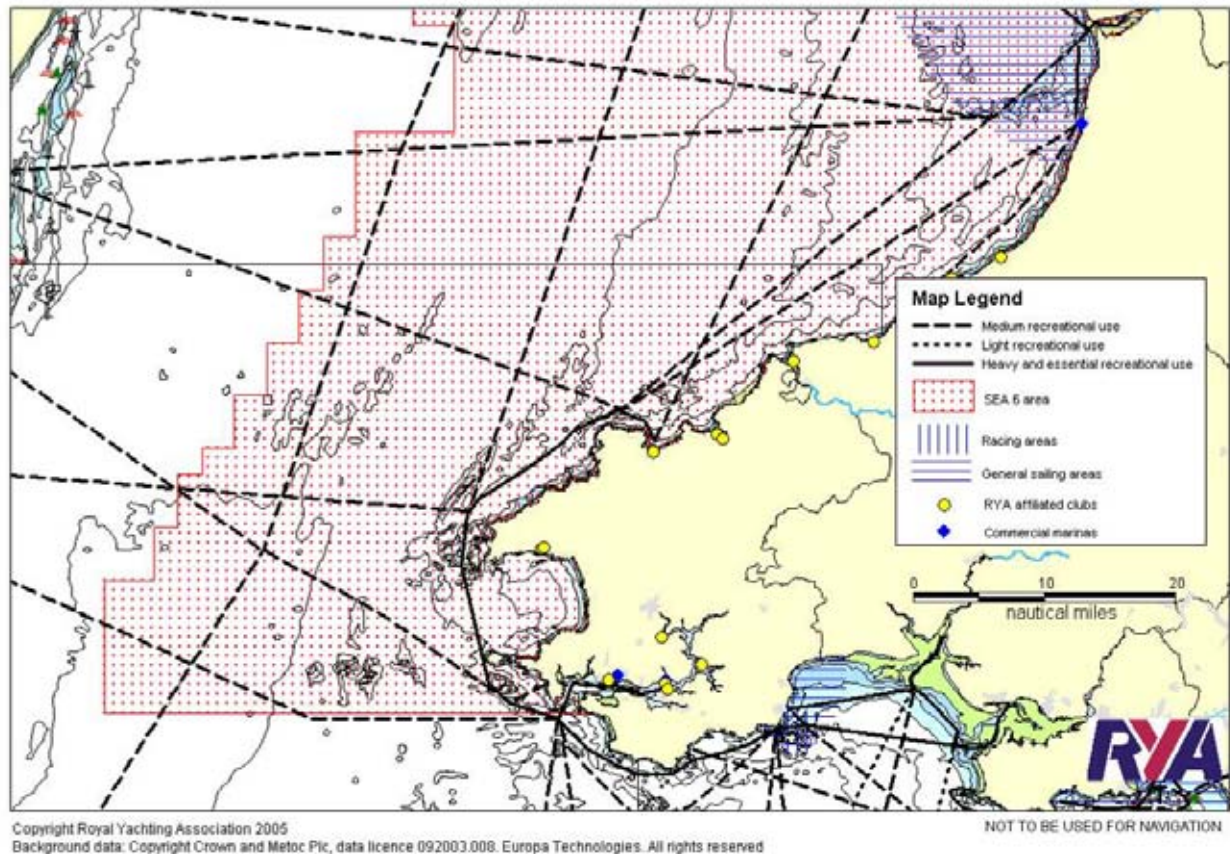


5 AREA 1: Milford Haven to Aberdovy

5.1 Cruising Routes from Milford Haven to Aberdovy

The recreational cruising routes, general sailing and racing areas that have been identified for the Milford Haven to Aberdovy area can be seen in Figure 12. These are described in detail in the following sections.

Figure 12: Recreational cruising routes, general sailing and racing areas within the SEA 6 sub-area 1



Routes passing through Area 1

Due to the number of large marinas, available anchorages, and nature of the passage, few recreational craft transit through this area without stopping. The only route that solely passes through the area is classed as medium use and runs between Lands End and North Wales. The route passes 10 nm offshore of the Pembrokeshire coast.

Routes originating and terminating within Area 1

Routes originating and terminating within the area are primarily from Anglesey, Southern Ireland, Cornwall and Devon. The principle points recreational craft leave and return to within Area 1 are:

- *Aberdovy* - Located in the north of this section, routes predominantly originate from North Wales or within Area 1 itself. Medium recreational routes lead to the two cardinal marks to the north and south of the entrance before the traffic density increases within the estuary itself. The main channel is constantly shifting and a bar at the entrance is a hazard to recreational craft below half tide.

- *Aberystwyth* – Direct, medium recreational routes from Wexford, Arklow and Fishguard. To the north of the entrance there are hazardous rocks so recreational craft either track west before turning into the channel or keep east close to the shore along a heavily used recreational route from Aberdovy. The approach to this harbour is dangerous in strong onshore winds (westerly) winds.
- *Fishguard* – Routes leaving to and returning from Pwllheli, Wexford, Rosslare Harbour and Milford Haven. Fishguard is a large commercial harbour and navigation is made as directly as possible to the harbour via a range of medium use routes. As the traffic becomes more concentrated these become classed as heavily used routes around the entrance to the harbour. Recreational craft are advised to be aware of the High Speed Cats and Ferry movements as well as the large swell at the entrance, commonly experienced in northerly winds.
- *Milford Haven* – Several large marinas are found within Milford Haven such as Milford Marina and Neyland Yacht Haven. All routes entering Milford Haven are characterised as heavy recreational use along which craft from the South West, Southern Ireland and North Wales concentrate. The spring tide is particularly strong across the entrance to the Haven. The large concentrations of recreational craft also have to be aware of the heavy tanker traffic and high speed ferry service.

Routes within Area 1

All the routes wholly within the area follow the coast line, leaving and returning to the north and south of the area, using the various marinas along the coast as shelters of refuge. There is a heavily used recreational route running between Fishguard and Milford Haven and this then continues as a medium used route up the coast to Aberdovy and Aberystwyth.

5.2 General sailing areas from Milford Haven to Aberdovy

General sailing takes place to varying distances off both Aberdovy and Aberystwyth to the north of Area 1. There is not general sailing to the same extent to the south with the routes defining the majority of the waters covered by recreational craft.

5.3 Racing areas from Milford Haven to Aberdovy

No substantial racing areas have been identified within the area.

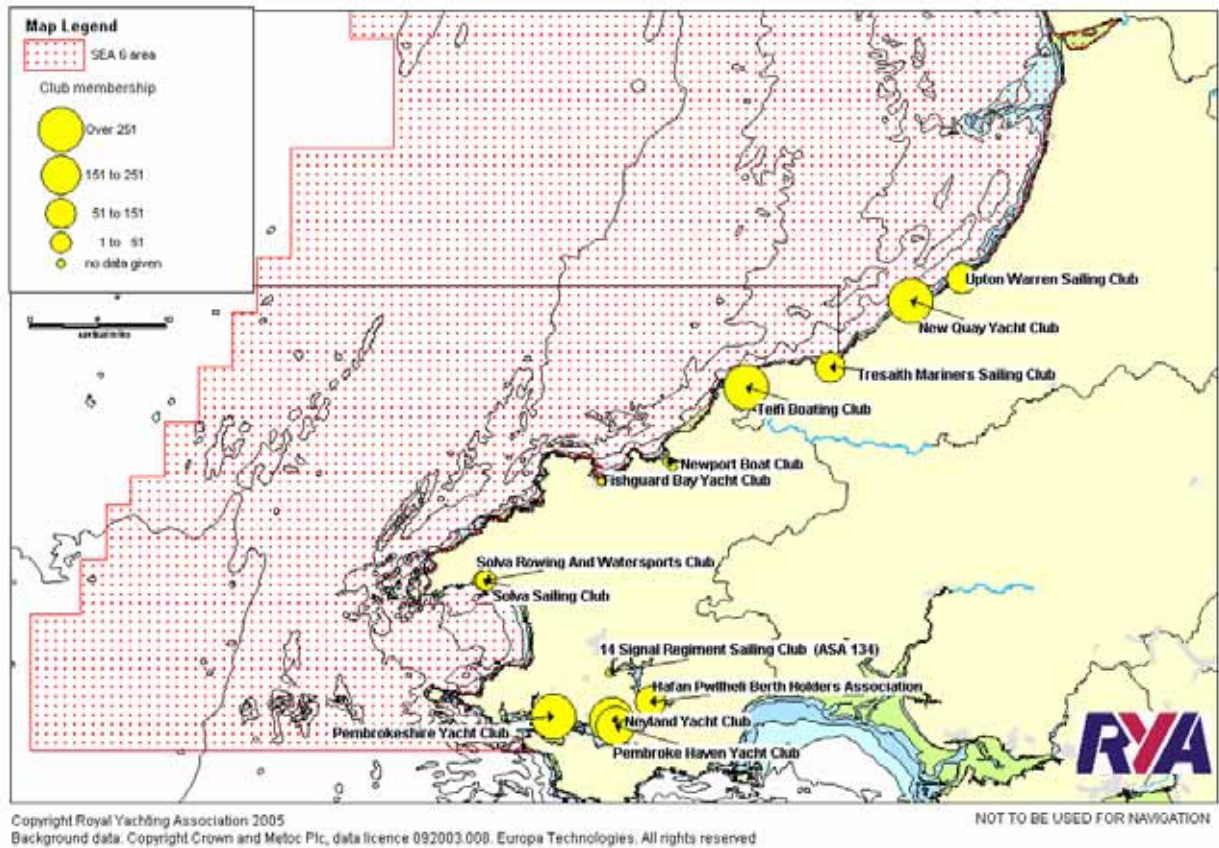
5.4 RYA affiliated clubs from Milford Haven to Aberdovy

Whilst there is no reliable estimate for the number of vessels utilising the area or the number of crew involved club membership along with estimated number of berths and moorings can be used as a proxy for level of use.

This area has the least number of sailing clubs within the SEA 6 area, with only 7% of SEA 6 club membership spread throughout 14 clubs (Figure 13). Total membership of the RYA affiliated clubs in this area is over 2,600. The three most popular activities amongst these clubs are dinghy racing, yacht cruising and yacht racing, of which the latter two activities will follow the routes mapped out in Figure 12.

The clubs with the largest membership are predominantly concentrated within Milford Haven and two are located on the coast further north.

Figure 13: Size and location of RYA affiliated clubs within the SEA 6, sub-Area 1



5.5 Marinas and moorings from Milford Haven to Aberdovy

Three of the 36 commercial marinas within SEA 6 are found between Milford Haven and Aberdovy (Figure 14). This area holds the lowest number of marinas and therefore berths within SEA 6.

Milford Marina and Neyland Yacht Haven are within Milford Haven and the other is located to the north of the area at Aberystwyth. The total number of berths exceeds 700, the number within each marina can be seen below:

- Aberystwyth marina – 100
- Neyland Yacht Haven – 360
- Milford marina – 255

In addition to commercial moorings in marinas, there are a number of other moorings in the area. These have been estimated through the BMF marinas and moorings survey (BMF, 2004) for coastal sectors and can be seen in Table 1.

Within Area 1 over half of all moorings are recorded as pontoons and 55% of all moorings in the area are commercial moorings within marinas and are represented in Figure 14. Milford Haven was recorded to hold the highest number of fore and aft and swinging moorings in Area 1 which corresponds not only to the number of marinas but to the number and membership size of sailing clubs within Milford Haven. The BMF survey found that there were no vacancies for mooring in the area and reports that there are plans for further moorings

to be installed in the near future of which the mooring requirements are generally balanced between sail and motor vessels with some demand for winter storage in the larger marinas.

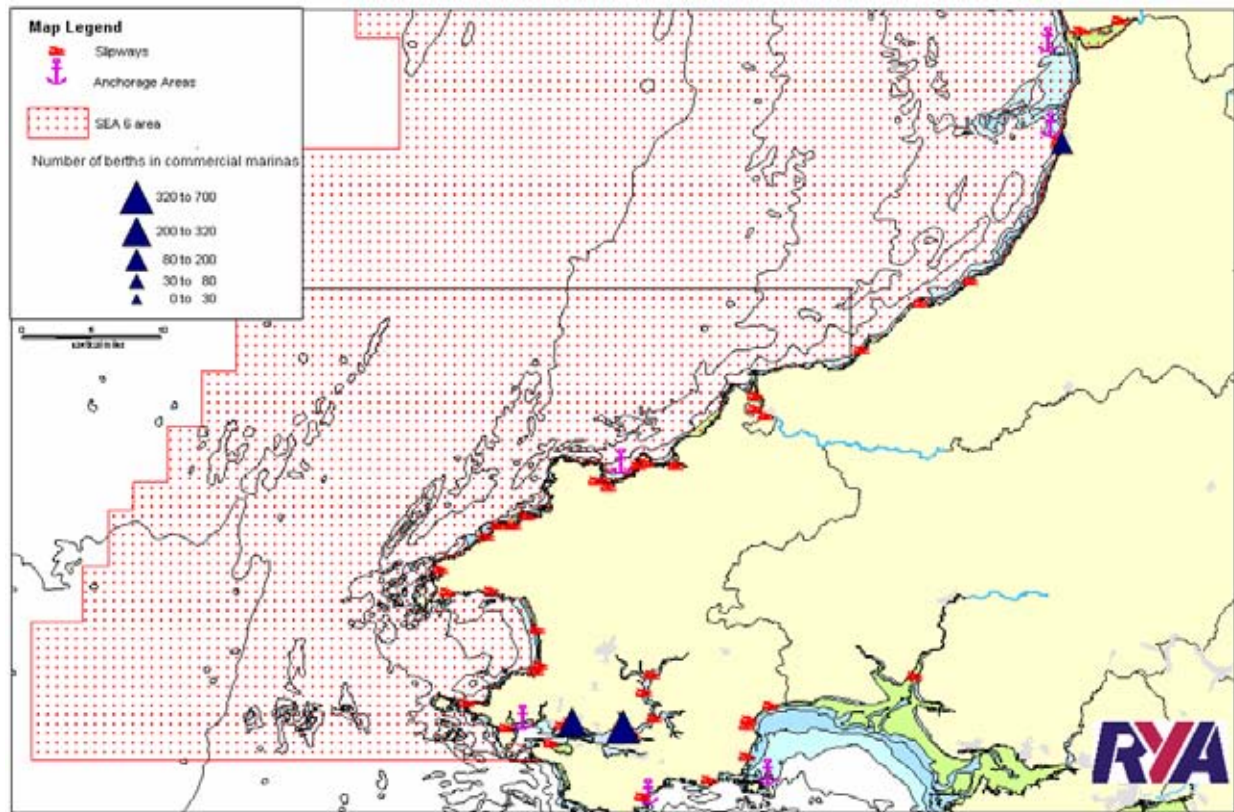
Table 1: Provision of moorings between Milford Haven and Aberdovy

Area 1- Mooring Provisions - Milford Haven to Aberdovy

Mooring Type	Total Moorings	Vacancy	Commercial	Non Commercial	Harbour Authorities	Local Authorities	River Authorities	Other
Pontoon	738	0	652	0	44	42	0	0
Alongside	112	0	25	0	50	37	0	0
Fore & Aft	268	0	29	187	27	25	0	0
Swinging	146	0	31	115	0	0	0	0
Dry Sailing	45	0	0	0	25	20	0	0
Rack Stack	20	0	0	20	0	0	0	0
Store Slip	61	0	26	35	0	0	0	0
Riparian	3	0	0	3	0	0	0	0
Finger Jetty	0	0	0	0	0	0	0	0
Visitor	11	0	5	6	0	0	0	0
Seasonal	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
SUM	1404	0	768	366	146	124	0	0

Source: BMF 2004

Figure 14: Location of anchorage areas, slipways and commercial marinas and number of berths within the SEA 6 sub-area 1



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5.6 Slipways and anchorages from Milford Haven to Aberdovy

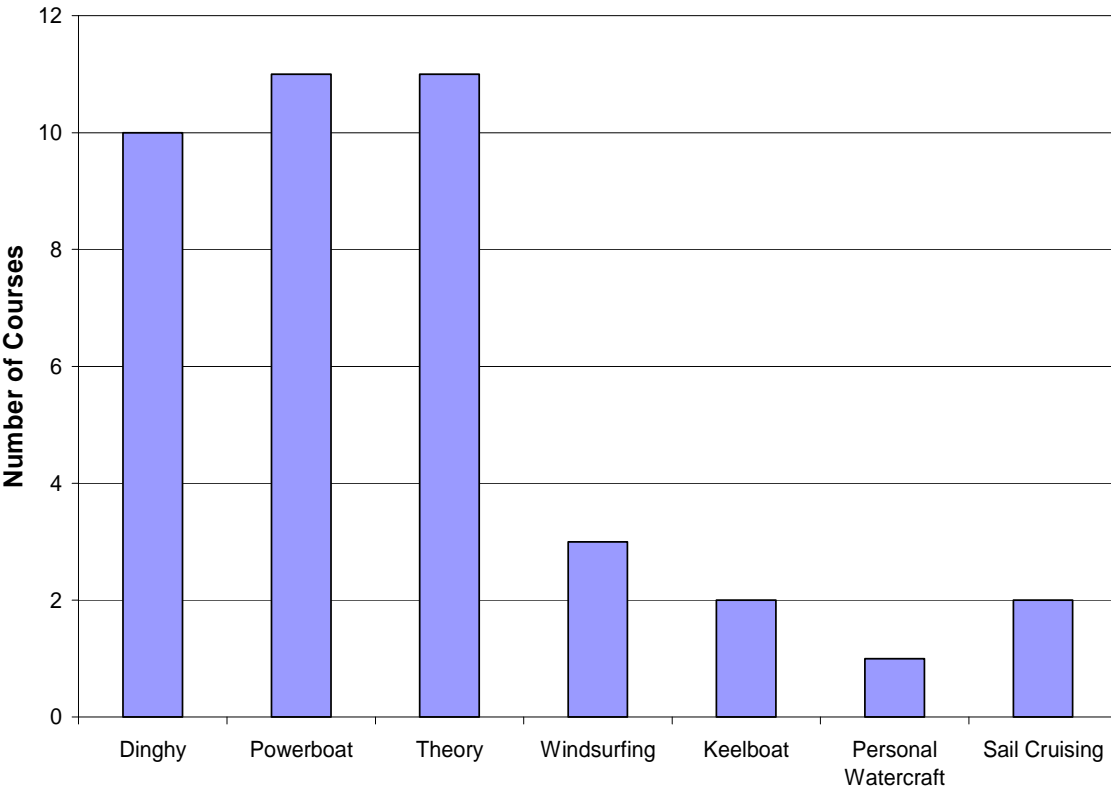
There are four major sites to anchor and find shelters of refuge within Area 1 and these are located close to the major marinas. Milford Haven and Aberystwyth have good, all weather anchorage sites. Fishguard provides good shelter except in strong north westerly and north easterly winds and the only available anchorages are found in the lower harbour, whilst Aberdovy is suitable except in westerly and south westerly onshore winds.

There are 35 slipways in the area, some of which are found at marinas and harbours, some are found at boat yards and others are public slipways located on the coast or estuaries where they can be accessed easily.

5.7 RYA recognised training centres from Milford Haven to Aberdovy

There are a total of 14 training centres in the area running a range of courses. Figure 15 shows the different courses run by the training centres in the area. The courses are predominantly dinghy, powerboat and theory. Theory courses run by the RYA vary from YachtMaster™ and Coastal Skipper theory courses to VHF, First Aid and diesel engine maintenance, all of which are predominantly used in yacht cruising. Dinghy and powerboat courses tend to be more practical based and are concentrated on inshore waters around the training centre.

Figure 15: Number and type of courses run by RYA recognised training centres within sub-area 1

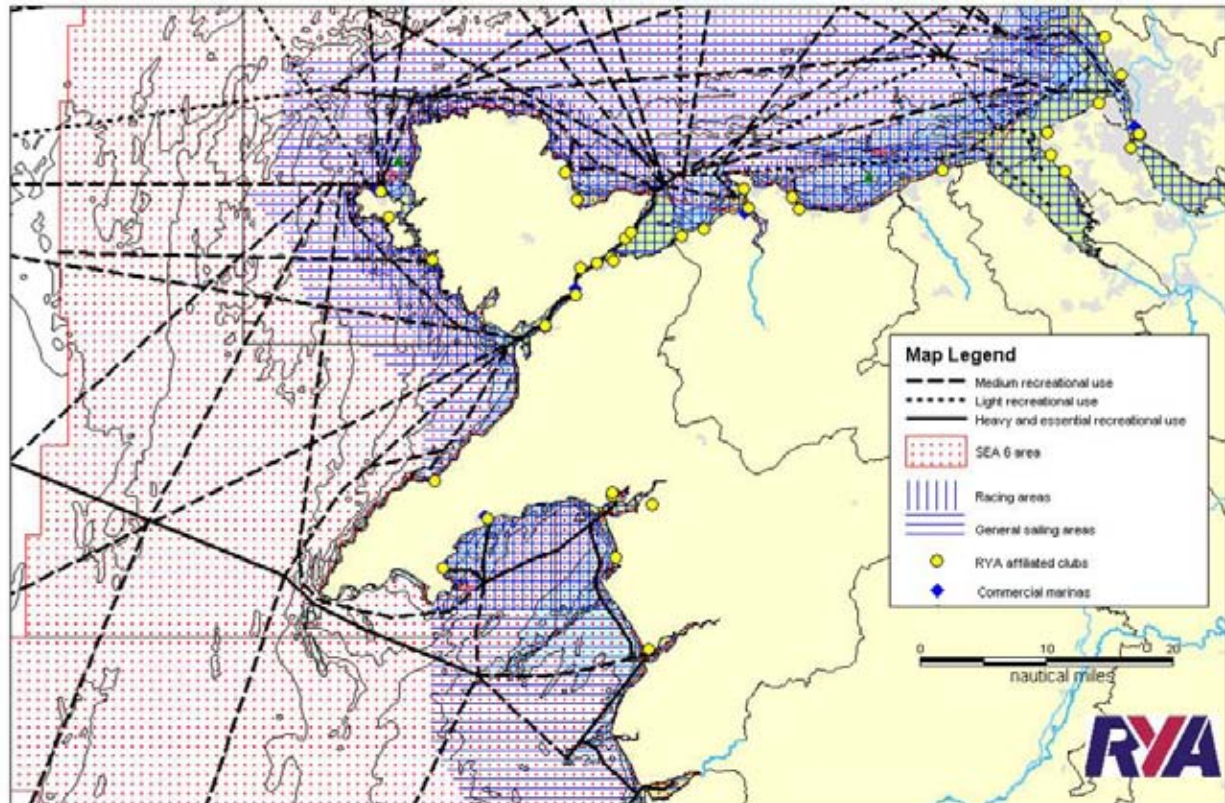


6 AREA 2: Aberdovy to Liverpool

6.1 Cruising Routes from Aberdovy to Liverpool

The recreational cruising routes, general sailing and racing areas that have been identified for the Aberdovy to Liverpool area can be seen in Figure 16. These are described in detail in the following sections.

Figure 16: Recreational cruising routes, general sailing and racing areas within the SEA 6 sub-area 2



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Routes passing through Area 2

Very few recreational craft transit through this area without stopping.

Routes terminating in Area 2

The whole coastline is of growing interest to cruising yachtsmen and recreational craft based within the area visit southern Scotland, the Isle of Man, South Wales and Ireland. The principle points recreational craft leave and return to within Area 2 are:

- *Cardigan Bay* – This is a popular cruising ground for visiting and resident craft. Routes within the bay are recognised to have heavy recreational use and leave and return from four main harbours, Abersoch, Pwllheli, Porthmadog and Barmouth. Medium use of routes has been recorded to the north and south of the area and a heavy recreational route arrives and leaves the area from Dublin.
- *The Menai Strait* - The Menai Strait is a difficult but popular area for recreational craft due to limiting tidal constraints frequently requiring a temporary anchorage or stop at a nearby port. Medium use of routes has been recorded for routes from Dublin, the Isle of Man and Liverpool Bay. These merge within the Strait where there is a high

concentration of sailing clubs, training centres and two predominant marinas, Caernarfon and Port Dinorwic.

- *Anglesey* - There are currently very few navigational dangers in this area except for the separation zones off Holyhead and the islands off the north Anglesey coast. . Routes terminating at Holyhead originate from the Mersey in the east, Dublin and Dun Laoghaire in the west, Cardigan Bay and beyond to the south and the Isle of Man and south west Scotland to the north.
- *Conwy Bay* – Recreational craft amalgamating in Conwy Bay then either track west to the Menai Strait or east to the Conwy estuary. Routes come from the north west coast, Scotland, Isle of Man or the south via Anglesey. Routes do not track along the coast as the inshore passage is not advised so recreational craft are guided carefully into the harbour, often from a point further offshore.
- *Liverpool* – The medium recreational routes recorded as ending in Liverpool come from the Isle of Man, the North West coast, Ireland via Anglesey and Scotland. There are few offshore hazards so routes are direct but once within the estuary it is strongly advised to follow the marked channels as due to the nature of the estuary there are large numbers of shallow sand banks which are hazardous to recreational craft.

Routes within Area 2

The majority of routes within the area tend to follow the coastline. Due to the tidal nature of the ports, such passages tend to be either very short distances, between neighbouring ports for example, or relatively long distances so that arrival times can coincide with the next tide. Either 12 hours or 6 hours travel time depending on whether depth of water or tidal stream is the limiting factor respectively. There tends to be direct navigation between points of origin and destination within the area, avoiding the shallow waters off the north coast of Wales where only light recreational routes are recorded. The nature of the coastline forces the majority of vessels without local knowledge further offshore, before they can turn and follow direct, marked channels into harbours.

6.2 General sailing areas from Aberdovy to Liverpool

General sailing takes place to varying distances off most yachting ports and marinas in the area, constrained only by the necessity to return on the same tide or to wait for the next tide. Such sailing is particularly common on the North Wales coasts in Cardigan Bay, in the waters surrounding Anglesey, Conwy Bay and the Mersey.

6.3 Racing areas from Aberdovy to Liverpool

Racing, principally by dinghies and smaller craft, takes place in the highest intensity in Cardigan Bay and all around Anglesey as well as the Menai Straits. There are also offshore yacht races organised from most of the larger marinas on the coast, such as Conwy and Liverpool, to Ireland and the Isle of Man. There are Tall Ship races out of the Mersey to various international destinations.

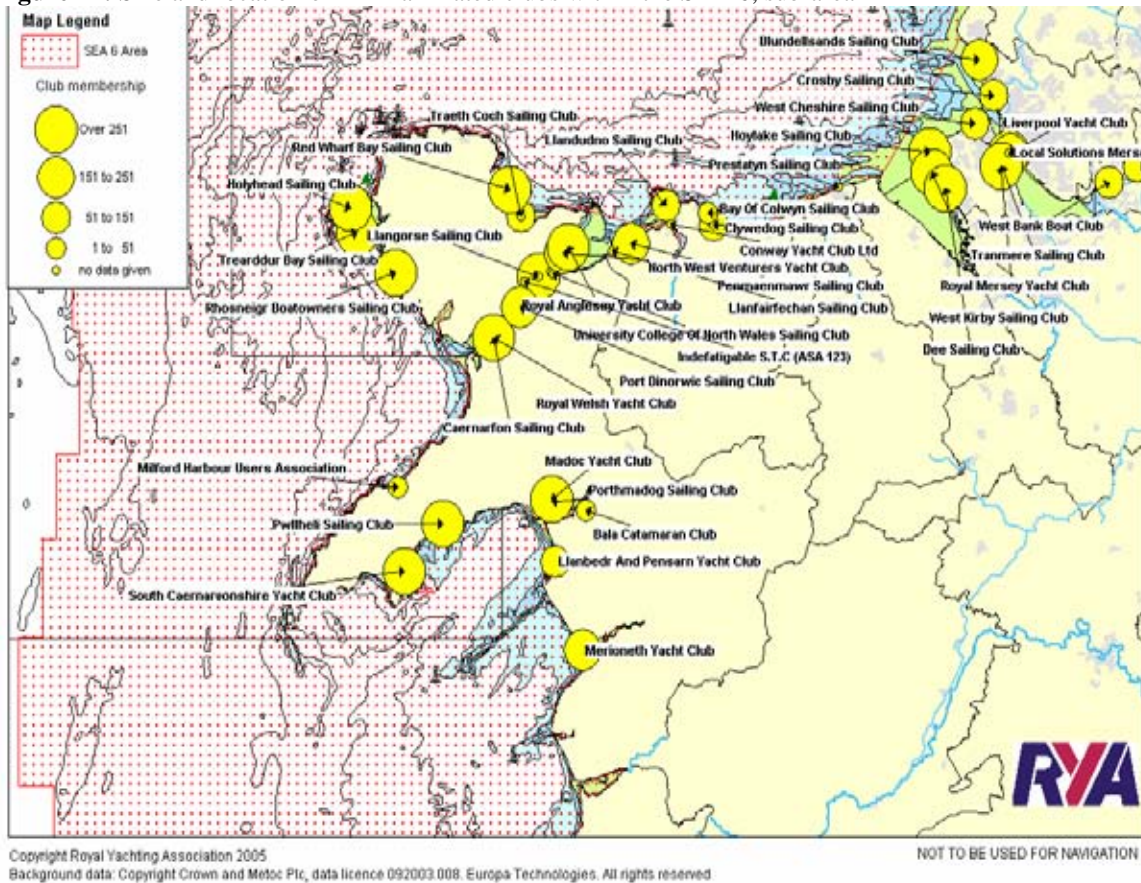
6.4 RYA affiliated clubs from Aberdovy to Liverpool

Whilst there is no reliable estimate for the number of vessels utilising the area or the number of crew involved club membership along with estimated number of berths and moorings can be used as a proxy for level of use.

This area has the highest number of clubs with 32% of SEA 6 club membership being found amongst the areas 40 clubs which are shown in Figure 17. As in Area 1, the three most

popular activities amongst these clubs are dinghy racing, yacht cruising and yacht racing, of which the latter two activities will follow routes mapped out in Figure 16. However the numbers involved in this area are much higher than Area 1 with 11,600 club members taking to the water making this the ‘busiest’ in SEA 6. The clubs are generally distributed evenly along the coast of Area 2 with high concentrations of clubs and high memberships appearing around Anglesey and the Mersey in particular.

Figure 17: Size and location of RYA affiliated clubs within the SEA 6, sub-area 2



6.5 Marinas and moorings from Aberdovy to Liverpool

Seven of the 36 commercial marinas within SEA are found between Aberdovy and Liverpool. This area holds the largest number of moorings within SEA 6. The number of berths within marinas recorded by the RYA marina database is 1650. Figure 18 shows the distribution of the three major marinas which fall into the 320-700 berths classification. This will contribute considerably to the overall number of moorings as well as the level of activity throughout Area 2. The number of berths in each marina is as follows –

- Holyhead Marina - 130
- Caernarfon Marina - 46
- Conwy Marina - 500
- Hafan Pwllheli - 430
- Liverpool Marina - 320
- Albert Dock - 20
- Port Dinorwic Marina – 200

In addition to commercial moorings in marinas, there are a number of other moorings in the area. These have been estimated through the BMF marinas and moorings survey (BMF, 2004) for coastal sectors and can be seen in Table 2.

A wide variety of mooring types are available in this area. The most frequently recorded are pontoons but there are also large numbers of swinging moorings and fore and aft moorings spread along the Welsh coast. These numbers link to the 7 commercial marinas located in Area 2, three of which have over at least 320 berths. There is also a high concentration of RYA affiliated Sailing Clubs along the coast, all of which will contribute in some way to the number of moorings recorded in Table 2. There are 15 recorded available moorings in Area 2 where the waiting list for a mooring is estimated to have 709 sail and 594 motor vessels. Within this area 45% of all moorings are associated with the non commercial sector which is the highest in SEA 6.

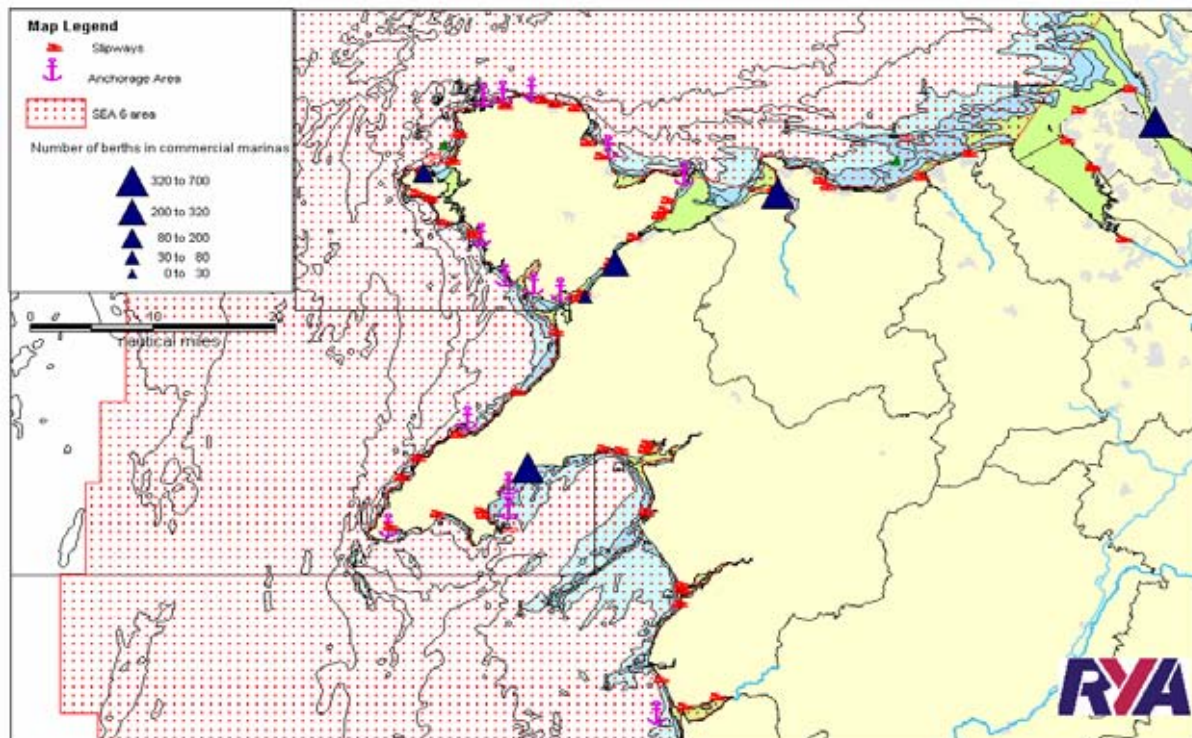
Table 2: Provision of moorings between Aberdovy and Liverpool

Area 2 Mooring Provisions - Aberdovy to Liverpool

Mooring Type	Total Moorings	Vacancy	Commercial	Non Commercial	Harbour Authorities	Local Authorities	River Authorities	Other
Pontoon	1879	0	355	918	110	496	0	0
Alongside	159	7	11	9	139	0	0	0
Fore & Aft	550	8	11	92	271	176	0	0
Swinging	953	0	7	440	506	0	0	0
Dry Sailing	28	0	0	28	0	0	0	0
Rack Stack	0	0	0	0	0	0	0	0
Store Slip	300	0	300	0	0	0	0	0
Riparian	24	0	0	0	24	0	0	0
Finger Jetty	0	0	0	0	0	0	0	0
Visitor	106	0	50	31	25	0	0	0
Seasonal	500	0	0	500	0	0	0	0
Other	0	0	0	0	0	0	0	0
SUM	4499	15	734	2018	1075	672	0	0

Source: BMF, 2004

Figure 18: Location of anchorage areas, slipways and commercial marinas and number of berths within SEA 6 sub-area 2



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6.6 Slipways and anchorages from Aberdovy to Liverpool

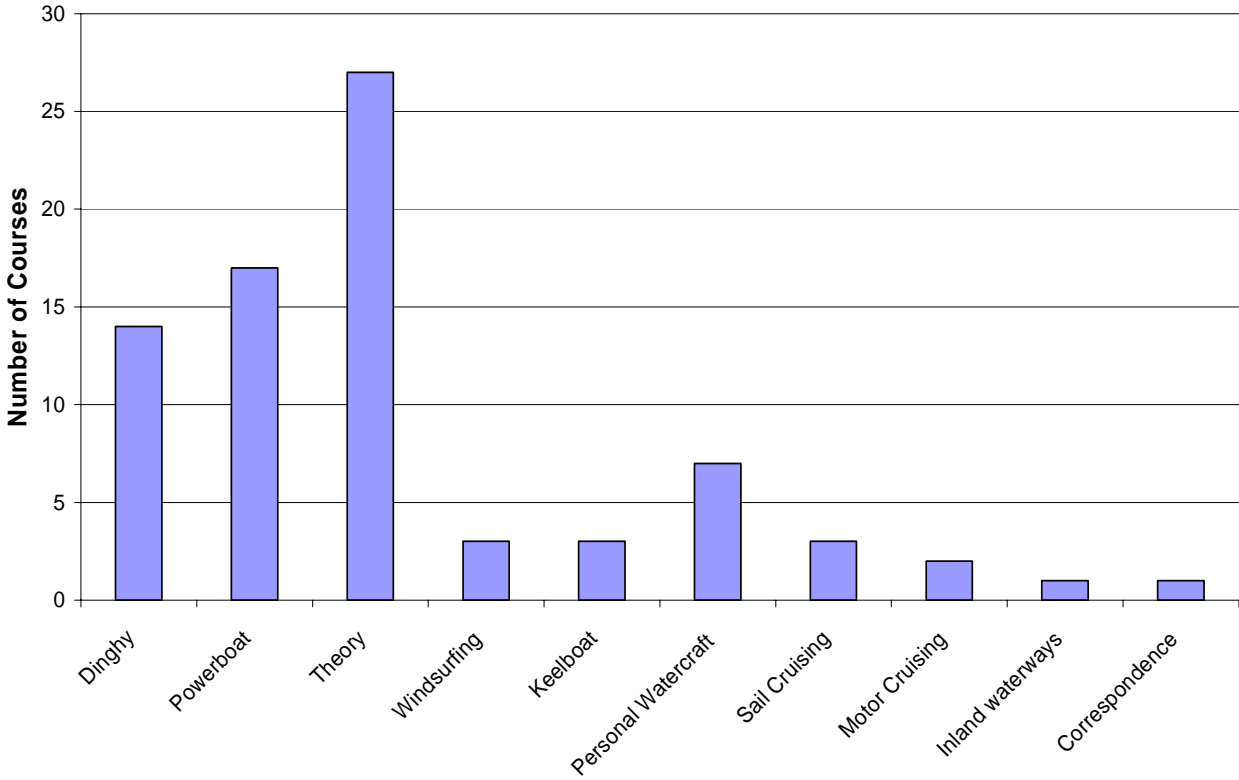
Safe secure anchorages in all parts of the area are limited except in offshore winds. The highest concentration of anchorages are found surrounding Anglesey. In addition to this the only all-weather all-tide port in this area is Holyhead on Anglesey. Most harbours have good holding ground available to wait for a tide in suitable weather and this facility is of essential to recreational craft in the area and is much used.

There are 50 slipways recorded in Area 2, which along with Area 5, is the highest number in SEA 6. Some of these slipways are found at marinas and harbours, some are found at boat yards and others are public slipways located on the coast or estuaries where they can be accessed easily. Due to the nature of the coast in this area there are also more beach slipways than found in the other areas.

6.7 Training Centres from Aberdovy to Liverpool

There are a total of 36 training centres in the area running a wide variety of courses shown in Figure 19. The highest numbers of courses run in Area 2 are theory courses, followed by powerboat and dinghy courses. There is a wider range of courses available in this area including inland waterways and correspondence courses. RYA theory courses cover a wide variety of topics and vary from YachtMaster™ and Coastal Skipper theory courses to VHF, First Aid and Diesel engine maintenance, all of which are predominantly used in yacht cruising. Dinghy and powerboat courses tend to be more practical based and are concentrated on inshore waters around the training centre.

Figure 19: Number and type of courses run by RYA recognised training centres within sub-area 2.

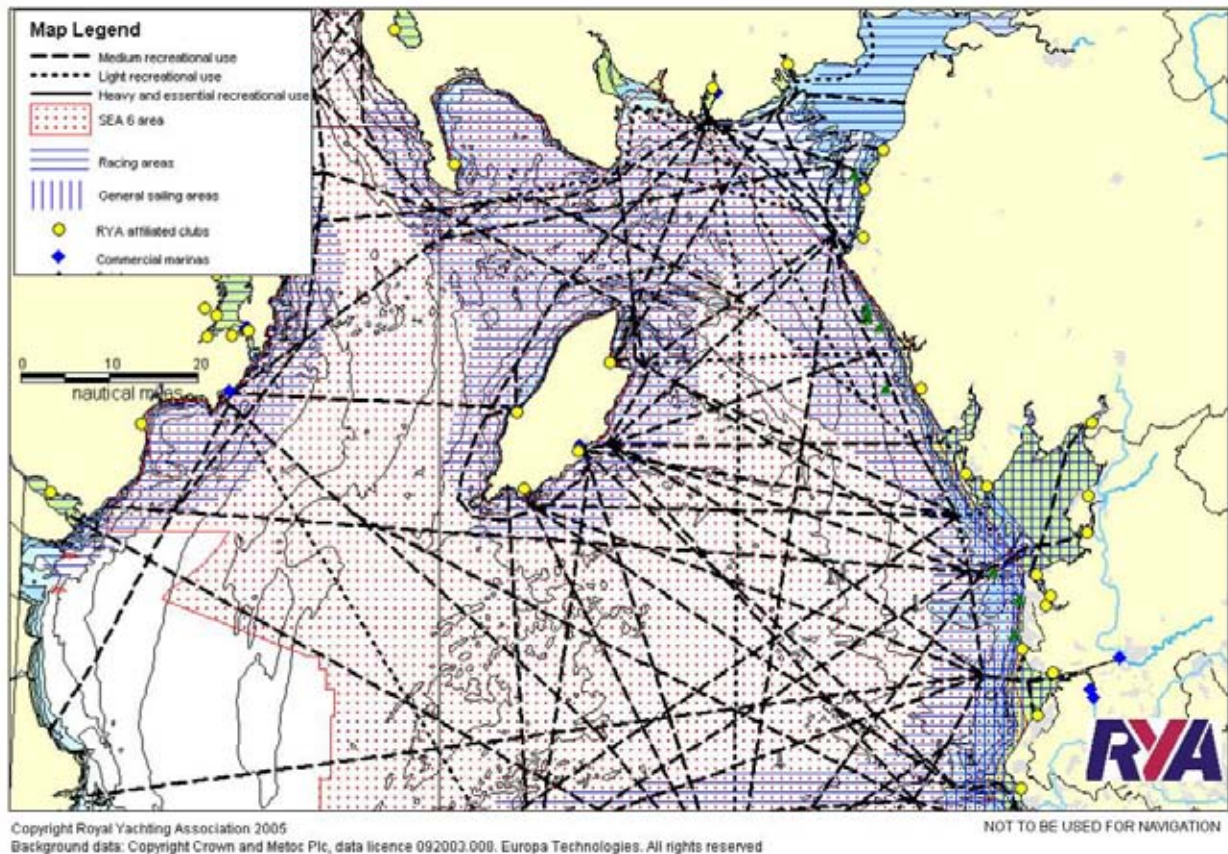


7 AREA 3: Liverpool to Solway Firth (including the Isle of Man)

7.1 Cruising Routes from Liverpool to Solway Firth

The recreational cruising routes, general sailing and racing areas that have been identified for the Liverpool to Solway Firth area can be seen in Figure 20. These are described in detail in the following sections.

Figure 20: Recreational cruising routes, general sailing areas and racing areas within SEA 6 sub-area 3



Routes Passing through Area 3

Few recreational craft transit through this area without stopping. The many recreational craft passing between the Scottish islands and Wales or the South West normally pass west of the Isle of Man and look towards the east coast of Ireland for refuge or shelter. There is one light recreational route recorded which transits Area 3 between the northern shore of the Solway Firth in Area 5 and Conwy Bay in Area 2.

Routes Terminating in Area 3

The whole coastline is of growing interest to cruising yachtsmen with an increasing number of recreational craft visiting from Scotland, Ireland and central or south Wales. Recreational craft based within the area visit southern Scotland, the Isle of Man, Anglesey and Ireland.

The principle points recreational craft leave and return to within Area 3 are:

- *The Ribble* – a number of recorded medium recreational routes concentrate at a waypoint outside this estuary, two of which are from the Isle of Man, one from southern Ireland and one from Anglesey. There are also several localised routes from

Liverpool and Barrow. The estuary is shallow and shifting and must be negotiated on the correct state of tide.

- *Morecambe Bay* – Within this area there are several marinas and harbours used by recreational craft. These include Fleetwood, Glasson Dock, Heysham and Barrow in Furness. This is an increasingly popular destination for recreational craft with three recorded medium routes linking with the Isle of Man, two routes linking with Ireland and two from the north coast of Wales and Anglesey.
- *The Isle of Man* - A principle destination from all ports in the area. Courses and approach are made directly, avoiding only the shallows to north-east of the island where necessary. Most routes between recreational ports within the area and the Scottish Isles/ Northern Ireland use the cruising grounds within Area 3. When not the obvious direct route, this area provides more shelter than routes outside the Isle of Man.
- *Whitehaven and the surrounding area* – There are many localised routes transiting between the northern shore of the Solway Firth, Area 5 and the waters surrounding Whitehaven marina, the majority of which are medium recreational use. There routes linking with the Isle of Man, Northern Ireland and Anglesey. The routes are direct due to the few hazards found in these stretches of water.

Routes within Area 3

There is an increasing amount of traffic linking the between the Mersey and Ribble estuaries to the Isle of Man but the majority of inter-area routes tend to follow the coastline. Due to the tidal nature of the ports, such passages tend to be either very short distances, between neighbouring harbours or relatively long distances so that arrival times correspond with the next tide.

7.2 General Sailing Areas from Liverpool to Solway Firth

General sailing takes place to varying distances off all recreational ports and marinas in the area, constrained by the necessity to return on the same tide or to wait for the next tide. Such sailing is particularly common in Morecambe Bay, Barrow and the Mersey estuary.

7.3 Racing Area from Liverpool to Solway Firth

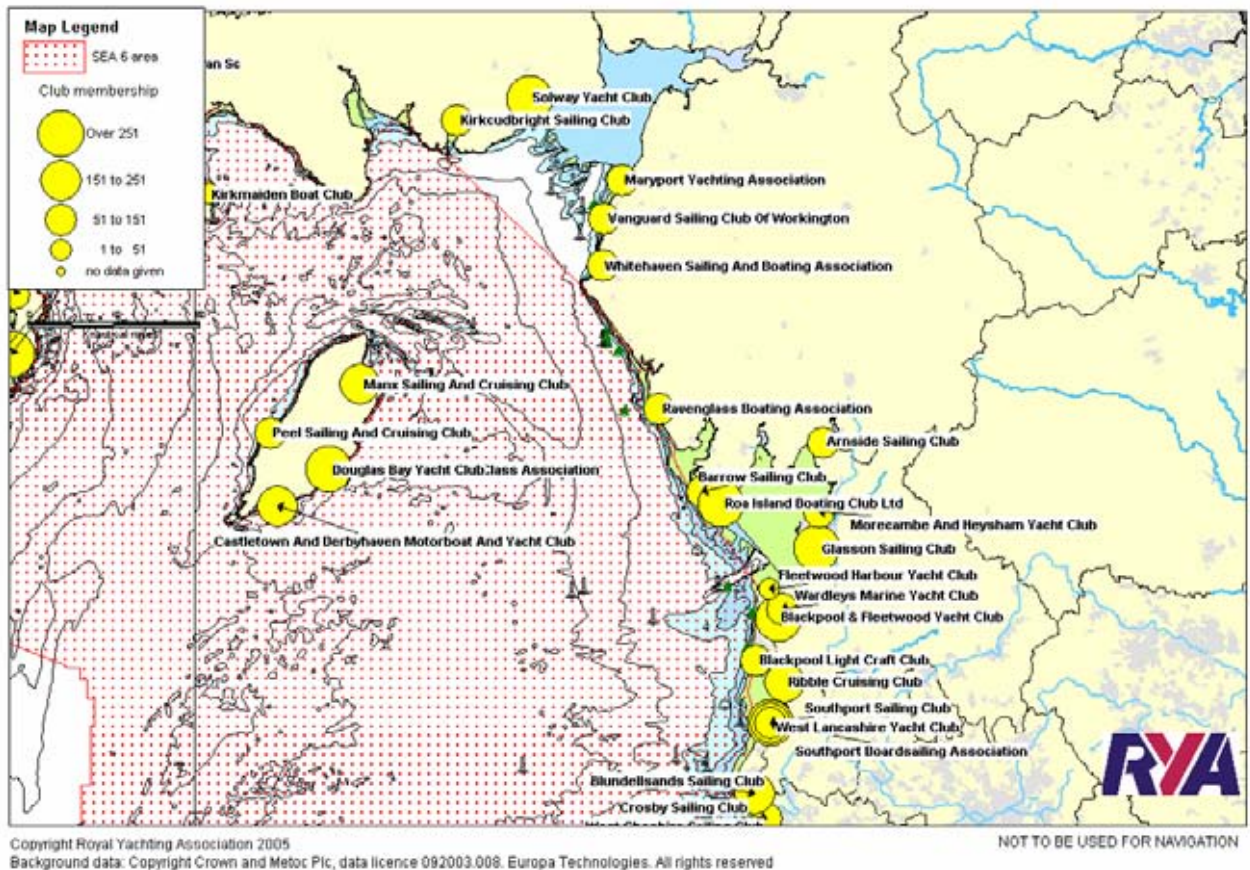
Racing takes place in most of the estuaries and as in Area 2 there are offshore yacht races organised from most of the larger Marinas on the main-land coast to Ireland, The Isle of Man and Anglesey.

7.4 RYA Affiliated clubs from Liverpool to Solway Firth

Whilst there is no reliable estimate for the number of vessels utilising the area or the number of crew involved club membership along with estimated number of berths and moorings can be used as a proxy for level of use.

This area has the second lowest concentration of clubs within SEA 6 and has an uneven distribution of sailing clubs, with a relatively heavy concentration to the south of the area, around Liverpool and Barrow which then disperses to the north towards the Solway Firth where the clubs get smaller and further apart. 14% of SEA 6 club membership is associated with Area 3, spread throughout a total of 25 clubs totalling around 4600 members. The most popular activity within Area 3 is yacht cruising, which contributes to the routes illustrated in Figure 20, followed by yacht racing and dinghy racing.

Figure 21: Size and location of RYA affiliated clubs within SEA 6, sub area 3



7.5 Marinas and moorings from Liverpool to Solway Firth

From the RYA national data-base the number total berths within marinas is recorded at over 800 in the area. Seven of the 36 commercial marinas within Sea 6 are located in Area 3, two of which are large scale marinas both located on the fringes of Morecambe Bay.

- Douglas Boatyard - 140
- Fleetwood Harbour Village Marina - 300
- James Mayor & Co Ltd - 80
- Maryport Marina - 180
- Preston Marina – 125

In addition to commercial moorings in marinas, there are a number of other moorings in the area. These have been estimated through the BMF marinas and moorings survey for coastal sectors 2003/04 and can be seen in Table 3.

Within Area 3 the most popular types of moorings are pontoons and alongside which account for 44% and 34% of all moorings respectively. The harbour authorities in Area 3 are the leading owners of moorings, operating 60% of all moorings. There are a reasonable number of vacancies available within this area and predictions state that this is an area without high mooring demand at present.

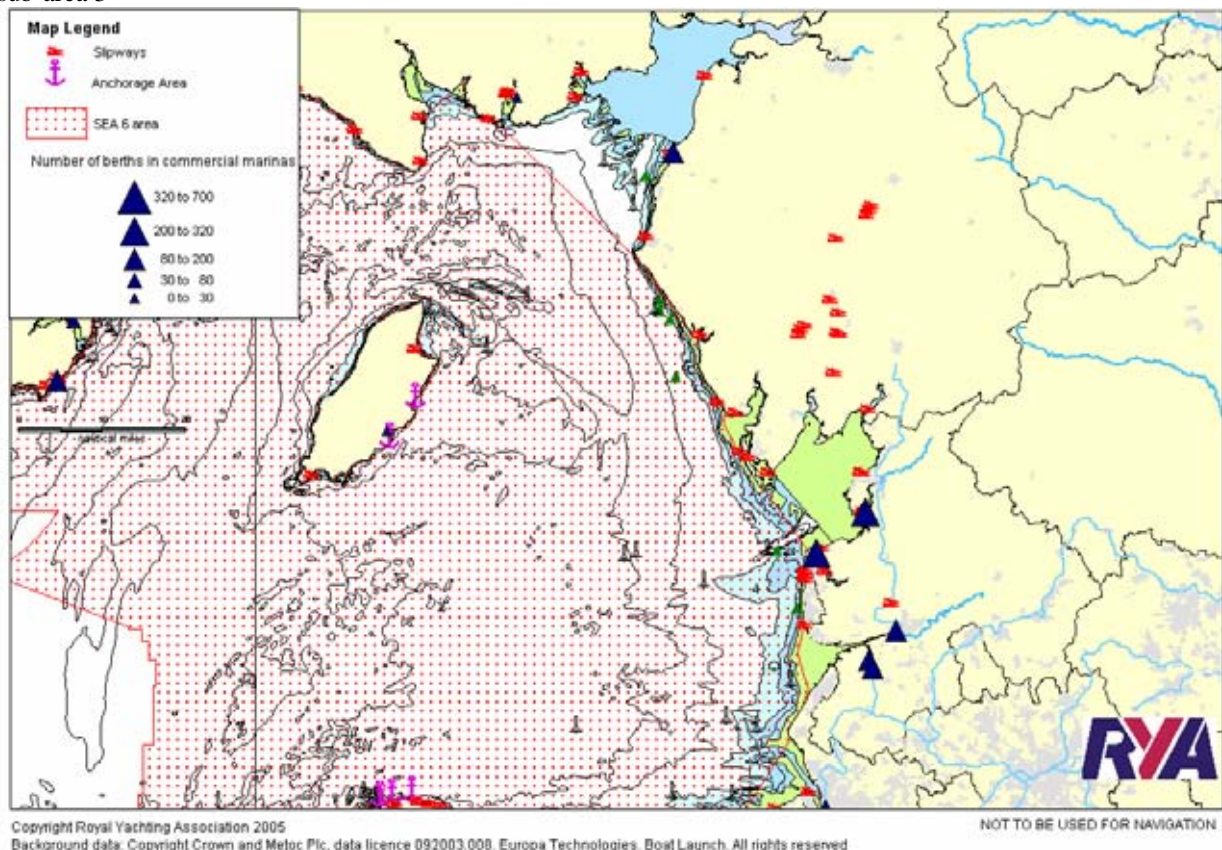
Table 3: Provision of moorings between Aberdovy and Liverpool

Area 3 Mooring Provisions - Liverpool to Solway Firth

Mooring Type	Total Moorings	Vacancy	Commercial	Non Commercial	Harbour Authorities	Local Authorities	River Authorities	Other
Pontoon	953	35	505	13	435	0	0	0
Alongside	738	3	13	166	460	99	0	0
Fore & Aft	113	0	1	17	95	0	0	0
Swinging	84	12	12	0	60	0	0	0
Dry Sailing	30	0	0	0	30	0	0	0
Rack Stack	20	0	0	0	20	0	0	0
Store Slip	140	0	0	0	140	0	0	0
Riparian	0	0	0	0	0	0	0	0
Finger Jetty	30	11	30	0	0	0	0	0
Visitor	82	6	6	0	76	0	0	0
Seasonal	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
SUM	2190	67	567	196	1315	99	0	0

Source: BMF, 2004

Figure 22: Location of anchorage areas, slipways and commercial marinas and number of berths within SEA 6 sub-area 3



7.6 Slipways and Anchorages from Liverpool to the Solway Firth

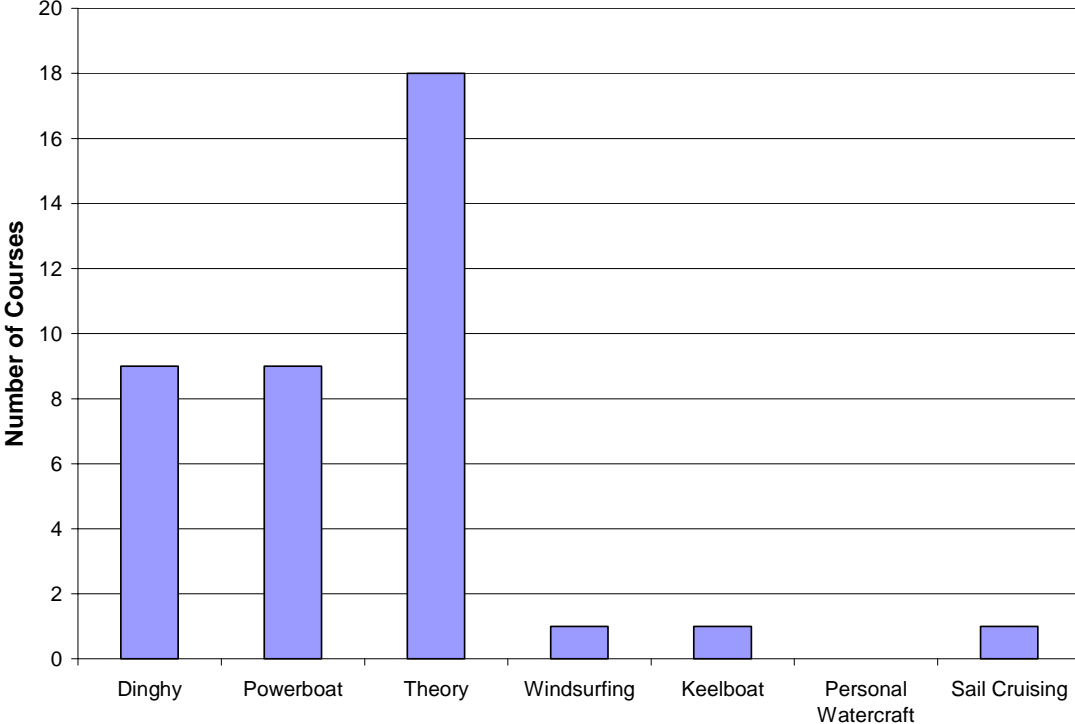
Most harbours have good holding ground available to wait for a tide in suitable weather. There are few large marinas currently within this area but there is much pressure for this type of development in the limited space available including pressure for development of harbour facilities. The Isle of Man has several anchorages but in general there are few to be found within this area.

There are 22 slipways recorded in Area 3, which after Area 4 is the lowest recorded number in SEA 6. Some of these slipways are found at marinas and harbours, some are found at boat yards and others are public slipways located on the coast or estuaries where they can be accessed easily.

7.7 RYA recognised training centres from Liverpool to the Solway Firth

There are a total of 25 training centres in the area running the courses shown in Figure 23. The highest numbers of courses run in Area 3 are theory courses, and as in Area 2 this is then followed by powerboat and dinghy courses. The number of courses available in this area is more limited with no motor cruising or personal watercraft courses being run at all. However, RYA theory courses cover a wide variety of topics which vary from YachtMaster™ and Coastal Skipper theory courses to VHF, First Aid and Diesel engine maintenance, all of which are predominantly used in yacht cruising. Dinghy and powerboat courses tend to be more practical based and are concentrated on inshore waters around the training centre.

Figure 23: Number and type of courses run by RYA recognised training centres within SEA 6 sub-area 3

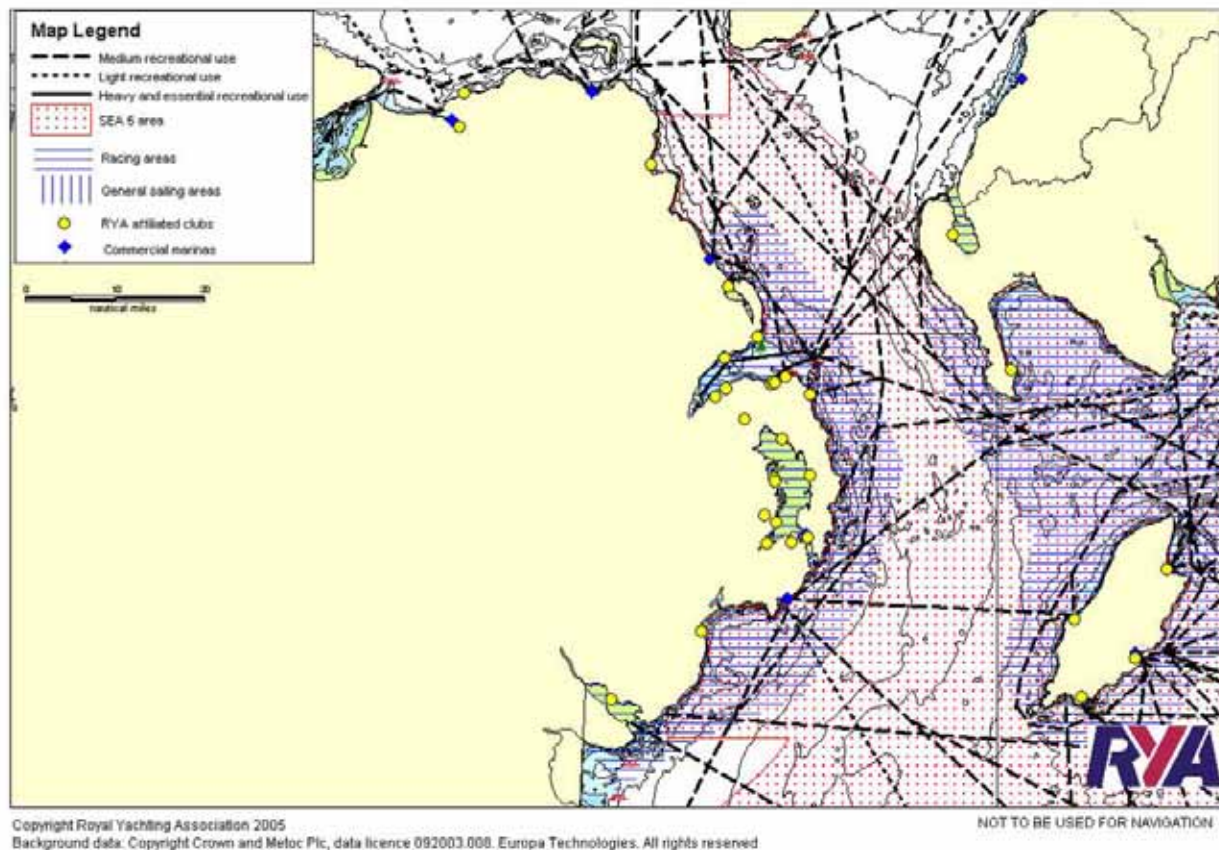


8 Area 4: Northern Ireland

8.1 Cruising Routes from Northern Ireland

The recreational cruising routes, general sailing and racing areas that have been identified for the Northern Ireland area can be seen in Figure 24. These are described in detail in the following sections.

Figure 24: Recreational cruising routes, sailing areas and racing areas within SEA 6 sub area 4



This area shares a narrow offshore cruising ground with Area 5 to the east. Many of the routes are a result of recreational craft passing between the Scottish islands and Wales or the South West and will look to the east coast of Ireland for refuge or shelter.

Routes Passing through Area 4

There are two medium recreational routes that link to Area 3, the North West and disperse amongst Area 5, the South West Scotland having passed the Irish Coast. The Routes are generally direct but there is a wide tidal range, particularly during spring tides which leads to strong flows within the channels.

Routes Terminating in Area 4

The principle points recreational craft leave and return to within Area 4 are:

- *Carlingford Lough* – Routes terminate here from the Morecambe Bay and Anglesey. Within Carlingford Lough there are several refuges for recreational craft such as Carlingford Marina, Carlingford Harbour and piers at Warrenpoint. Navigational hazards include drying rocks which obstruct most of the entrance and the whole area

becomes very choppy in a southerly wind while in a North Westerly the sea state within the Lough is often worse than outside.

- *Strangford Lough and Ardglass Marina* – Ardglass Marina is used by local and visiting recreational craft and is an important harbour of refuge as it is the only all weather all tide shelter between Howth and Bangor. Strangford Lough is the largest inlet on the east coast and as a result many of the routes terminating in Area 4 congregate at this point. Navigational hazards include strong tidal streams through the entrance to the Lough and ferry traffic. Routes to this area come from the Isle of Man, Anglesey and North Wales, and the south west coast of Scotland. The routes are direct and predominantly recorded as medium recreational, with the exception of one light recreational route linking with Holyhead on Anglesey.
- *Belfast Lough* – A number of routes from all the surrounding areas join at the entrance of Belfast Lough where two entering routes are recorded as heavily used. These routes lead to Bangor Marina, Carrickfergus and Belfast harbour, which is a major commercial port with pontoons for recreational craft. Routes predominantly come from the Solway Firth, Mull of Kintyre and more locally up the coast from Ardglass and Strangford Lough and down the coast from the north coast of Ireland.
- *Larne Lough* – Routes in this area are generally recorded as originating from localised areas along the coast to the north and the south. There is one medium recreational route linking this Lough with the Scottish Islands. Navigational hazards include Hunter Rock where magnetic anomalies are found which recreational craft are warned of.
- *Lough Foyle* – Recreational boating activity is less in this area than on the east coast with light recreational routes linking this with Lough Swilly to the west and the North West Scotland. Medium recreational routes follow the coast from Portrush and Port Stewart which link with routes from the east coast of Ireland and Mull of Kintyre area. Routes Entering and leaving this area pass clear to the east and west of Rathlin Island where it is possible to stop within the Inner Harbour on the south side.

Routes within Area 4

The routes within this area all follow the coast north or south, from port to port. There are fewer routes within this area than there are routes entering or leaving but the majority of routes are recorded as Medium recreational use. Due to the tidal nature of the ports, such inter area passages tend to be either very short distances, between neighbouring harbours or relatively long distances so that arrival times correspond with the tides.

8.2 General Sailing Areas from Northern Ireland

General sailing takes place to varying distances off all yachting ports and marinas in the area, constrained by the necessity to return on the same tide or to wait for the next tide. Such sailing is particularly common around Belfast Lough, Carlingford Lough and Strangford Lough.

8.3 Racing Area from Northern Ireland

No substantial racing areas have been defined within Area 4. There is racing but not to the extent that a general sailing area is then also defined as a racing area.

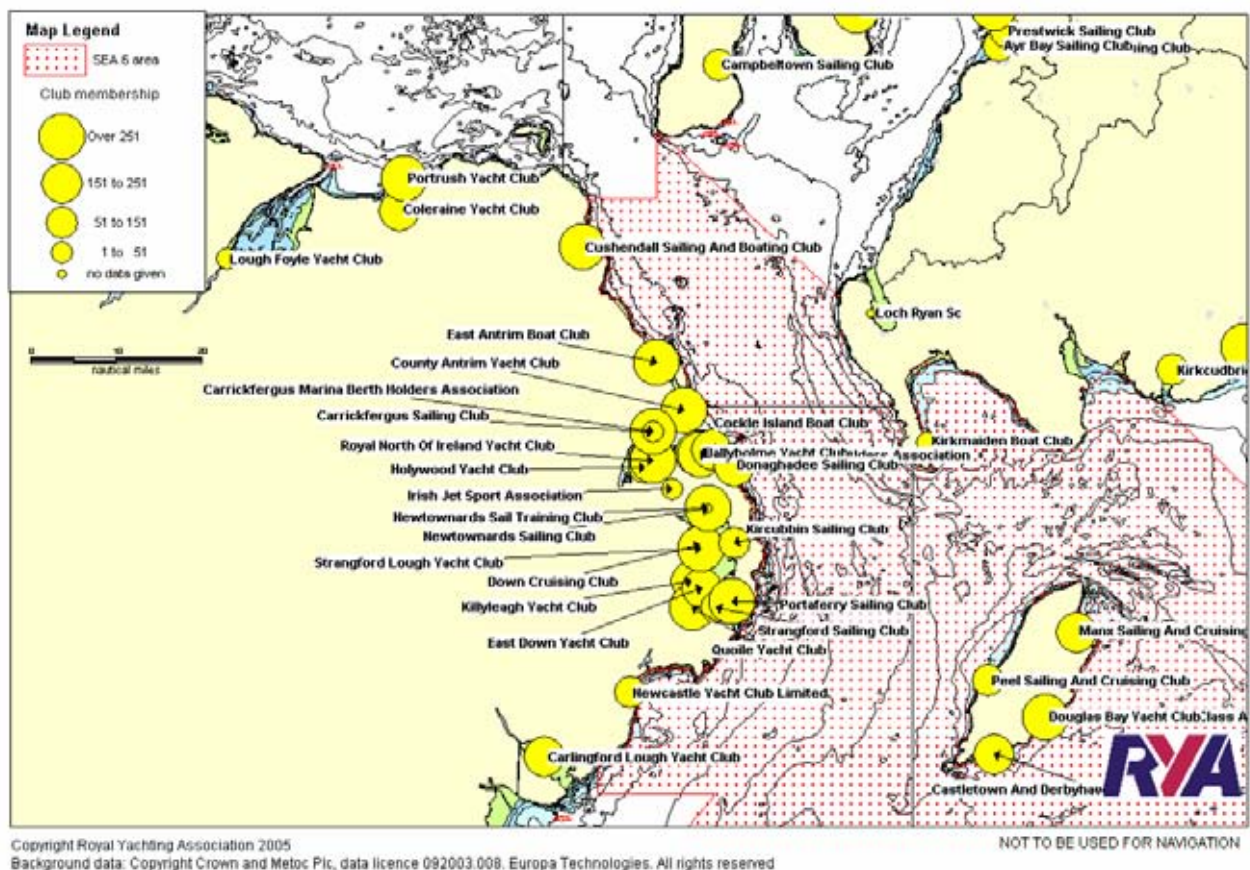
8.4 RYA Affiliated Clubs in Northern Ireland

Whilst there is no reliable estimate for the number of vessels utilising the area or the number of crew involved club membership along with estimated number of berths and moorings can be used as a proxy for level of use.

This area has a total of 26 RYA affiliated sailing clubs with a total of over 7,800 members within the area. This is only one more club than the adjacent Area 3 but Area 4 has over 3,000 more club members over a smaller area at just under 8000. The majority of clubs in this area have 150 members each and are all heavily concentrated around Strangford Lough and Belfast Lough to the east of the area, bar two smaller clubs to the south and four to the north.

In this area yacht cruising and racing are the two most popular activities within the clubs, both of which will follow the routes laid out in Figure 24. Motor boating in this area is more popular within clubs than it is in any other sub area of SEA 6 which also corresponds to the high number of power boat courses provided here (Figure 27).

Figure 25: Size and location of RYA affiliated clubs within SEA 6 sub-area 4



8.5 Marinas and moorings in Northern Ireland

Seven of the 36 commercial marinas can be found within Area 4, of which only one holds over 320 berths and one holds over 200 berths. The other 5 marinas are relatively small compared to marinas in other areas. The number within each marina can be seen below:

- Ardglass Marina – 83 berths
- Ballycastle - 74
- Bangor Marina - 550
- Carrickfergus Marina - 300
- Copelands Marina - 52
- Portaferry - 30
- Seatons Marina – 70

In addition to commercial moorings in marinas, there are a number of other moorings in the area. These have been estimated through the BMF marinas and moorings survey (BMF, 2004) for coastal sectors and can be seen in Table 4.

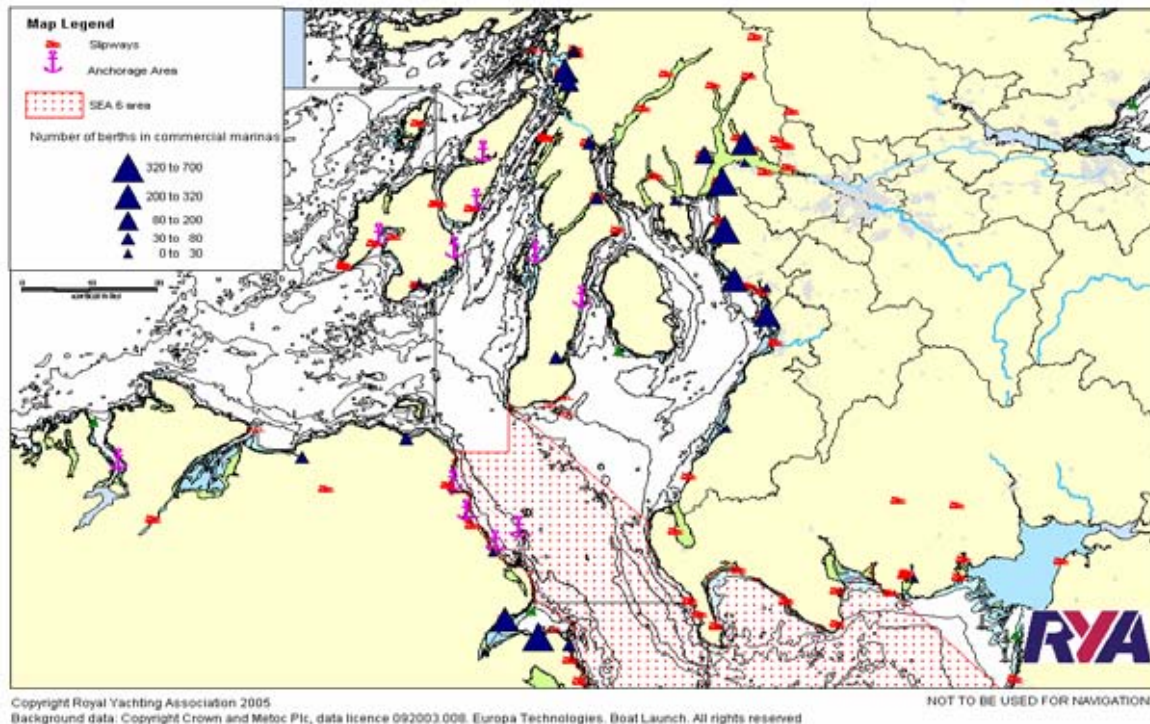
In Northern Ireland the large majority of recorded moorings are pontoons of which the commercially owned are dominant. However, throughout the area the total of all mooring types in the non commercial sector have the highest total sum. This area recorded the highest percentage of vacant moorings with vacancies, a total of 286, clearly exceeding the number of vessels on the current waiting lists with a sum of 74. There are 6 commercial marinas within Area 4 of which only 2 have over a minimum of 200 berths.

Table 4: Provisions of moorings in Northern Ireland
Area 4 Mooring Provisions - Northern Ireland

Mooring Type	Moorings	Vacancy	Commercial	Non Commercial	Harbour Authorities	Local Authorities	River Authorities	Other
Pontoon	1167	217	660	277	0	121	0	109
Alongside	51	6	0	40	2	9	0	0
Fore & Aft	11	1	0	9	2	0	0	0
Swinging	302	14	8	294	0	0	0	0
Dry Sailing	42	0	0	42	0	0	0	0
Rack Stack	9	3	0	9	0	0	0	0
Store Slip	145	20	0	114	0	30	0	1
Riparian	0	0	0	0	0	0	0	0
Finger jetty	0	0	0	0	0	0	0	0
Visitor	69	0	3	33	0	18	0	15
Seasonal	0	0	0	0	0	0	0	0
Other	25	25	0	25	0	0	0	0
SUM	1821	286	671	843	4	178	0	125

Source: BMF, 2004

Figure 26: Location of anchorage areas, slipways and commercial marinas and number of berths within SEA 6 sub-area 4



8.6 Slipways and anchorages in Northern Ireland

There are a total of 5 mapped anchorages within this area on the east coast which provide protection in a prevailing south westerly wind. However there may be other parts of the coast used as anchorages which are not currently recorded in this area.

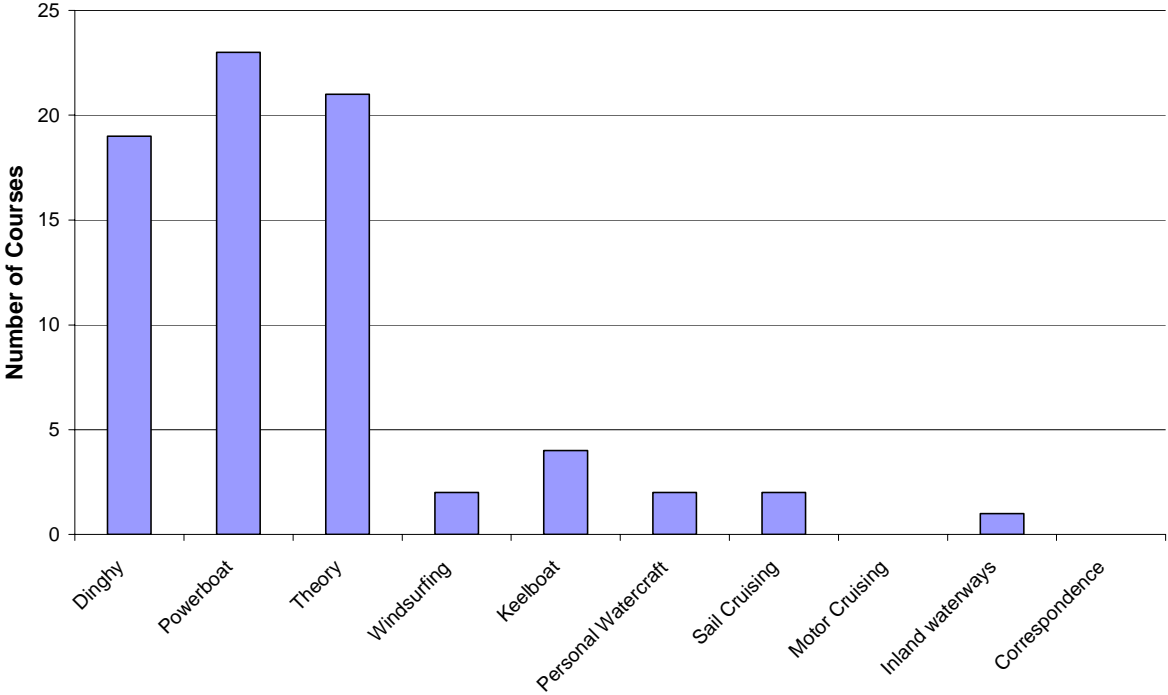
There are 10 slipways in Area 4 which is the lowest recorded number in the whole of SEA 6. Some of these slipways are found at marinas and harbours, some are found at boat yards and others are public slipways located on the coast or estuaries where they can be accessed easily.

8.7 RYA recognised training centres in Northern Ireland

There are a total of 38 training centres within Area 4 which between them run over 70 courses. The most popular course in this area is the powerboat course which corresponds to the number of clubs involved in motor boating in the area. There are a wide variety of courses provided, particularly the theory and dinghy which follow the power boat course in numbers.

However, RYA theory courses cover a wide variety of topics which vary from YachtMaster™ and Coastal Skipper theory courses to VHF, First Aid and Diesel engine maintenance, all of which are predominantly used in yacht cruising. Dinghy and powerboat courses tend to be more practical based and are concentrated on inshore waters around the training centre.

Figure 27: Number and type of courses run by RYA recognised training centres within SEA 6 sub-area 4.

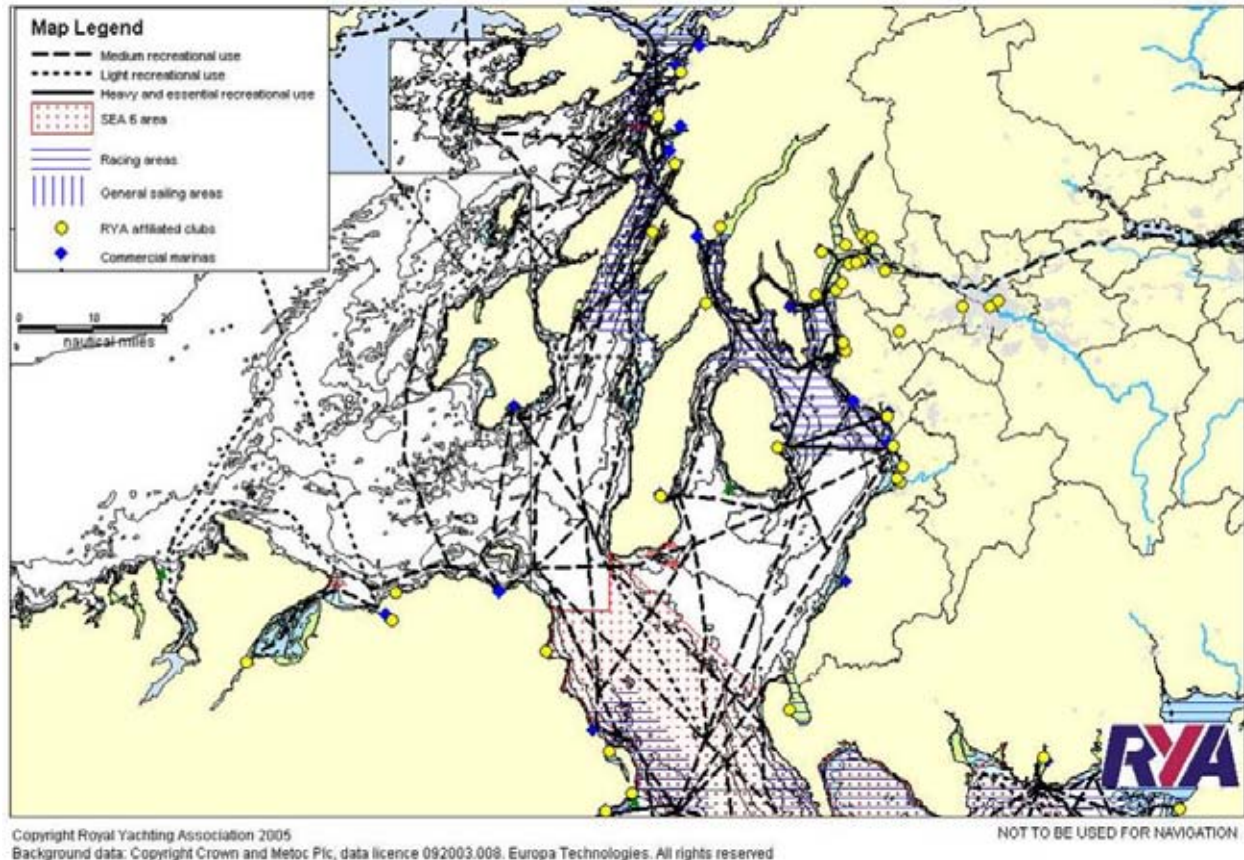


9 AREA 5: Solway Firth to Oban

9.1 Cruising Routes from Solway Firth to Oban

The recreational cruising routes, general sailing and racing areas that have been identified for the area Solway Firth to Oban can be seen in Figure 28. These are described in detail in the following sections.

Figure 28: Recreational cruising routes, general sailing areas and racing areas within SEA 6 sub-area 5



Routes Passing through Area 5

Due to the nature of Area 5 there are no direct routes that pass straight through. Alternatively the routes lead to anchorages, harbours or marinas in the area, where cruising involves more short passages than long offshore passages.

Routes Terminating in Area 5

- *Solway Firth* – within the Solway Firth there are many short routes that run between the Cumbrian coast and the south west Scottish coast as well as to the Isle of Man and eastern Ireland. The major routes terminating in the Solway Firth concentrate at Kirkcudbright Bay. Here there are two light recreational routes which link to Conwy Bay in the south and Morecambe bay to the east. There are three medium recreational routes linking to the Isle of man and other routes leading to the east coast of Ireland.
- *Mull of Kintyre* – Routes in this area all originate either from the east Coast of Ireland the Isle of Man or the Solway Firth. These lead to Marinas in areas such as Campeltown, the Isle of Arran and Troon. The routes within the area of the Mull of

Kintyre are recorded as medium recreational, one tracking from the north coast of Ireland to Troon, three linking with a waypoint off the east coast of Ireland from each of the respective marinas mentioned and several shorter interlinking routes within the area. All three marinas mentioned offer good shelter for recreational craft and are easily accessed directly with few hazards to avoid.

- *The Inner Hebrides* – These routes are not within SEA 6 but have been included to show the density of recreational boating on the boundaries of SEA 6. There are large numbers of clubs, marinas and anchorages that do not stop on the boundary and constantly interlink with the area to the north due to the nature of recreational boating.

Routes within Area 5 – There are few routes solely within Area 5 as many routes initiate from other sub-areas of SEA 6, particularly Areas 3 and 4.

9.2 General sailing areas from Solway Firth to Oban

The sailing carried out is more in the style of short passages from place to place along cruising routes rather than sailing in the vicinity of one area. However there is heavy use of the waters surrounding the Inner Hebrides and some general sailing areas have been defined there.

9.3 Racing areas from Solway Firth to Oban

No substantial racing areas have been defined within Area 5.

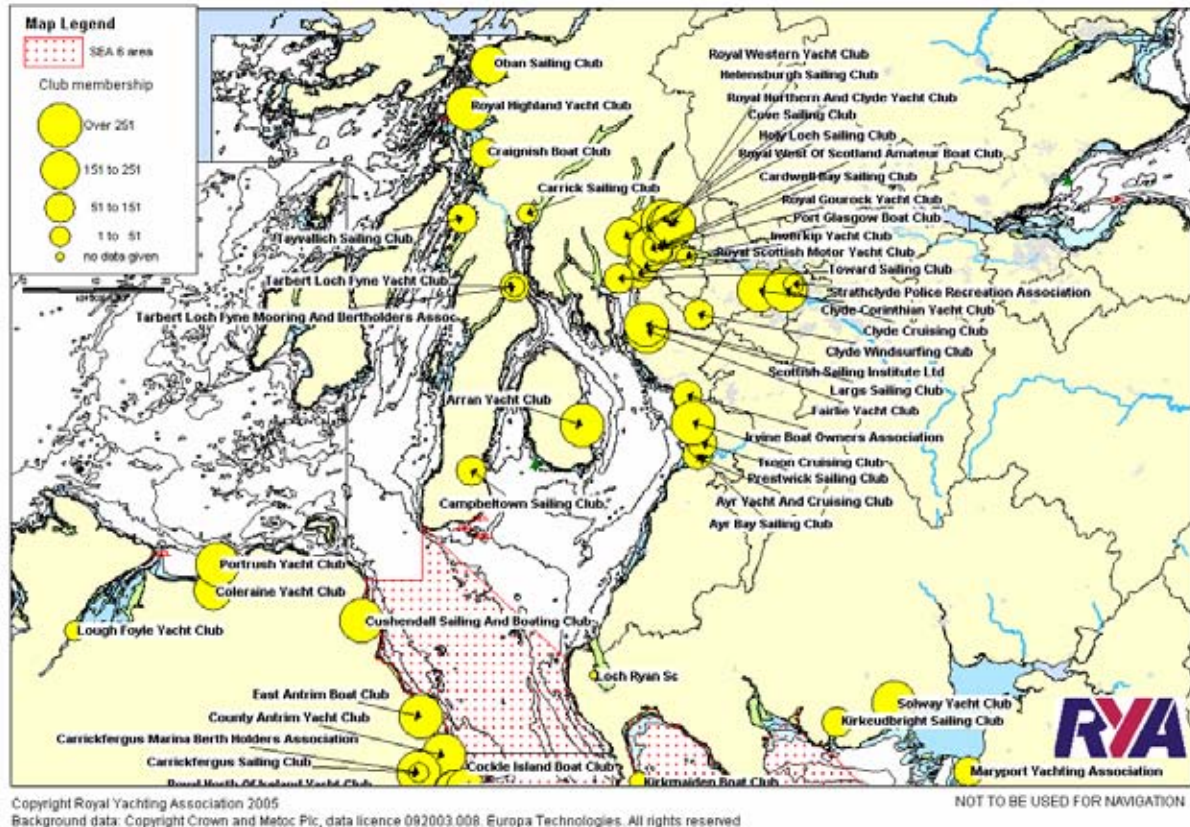
9.4 RYA affiliated clubs from the Solway Firth to Oban

Whilst there is no reliable estimate for the number of vessels utilising the area or the number of crew involved club membership along with estimated number of berths and moorings can be used as a proxy for level of use.

A large proportion of RYA affiliated sailing clubs within Area 5 are to the north and are not located within SEA 6. However, there are 36 clubs within this entire sub-area with a total membership of over 9,800 which amounts to 28% of all SEA 6 membership. The area to the north has been included due to the amount of recreational craft that will use SEA 6 based south of Oban.

The most popular activity within sailing clubs is yacht cruising, which has the highest participation levels within SEA 6 and the same goes for yacht racing in this area. Both these activities are represented by the routes laid out in Figure 28.

Figure 29: Size and location of RYA affiliated clubs within SEA 6, sub-area 5



9.5 Marinas and mooring from the Solway Firth to Oban

At present figures from the RYA national data-base indicate that in Area 5 the total number of berths within marinas over 2,600. Area 5 has 13 commercial marinas of which two hold over 600 berths and five hold over 200 berths. This area holds both the most marinas in our study of SEA 6, but also the largest individual marinas with relation to berths. This illustrates the reason for recording the recreational boating activities to the north of SEA 6 due to the sheer numbers of boats and therefore people taking to the water on the out skirts of the assessment area.

The numbers of berths within these marinas are as follows:

- Ardfern Yacht Centre – 80
- Bellanoch Marina - 67
- Campbelltown Loch Berthing Co Ltd - 40
- Clyde Marina - 200
- Craobh Marina - 250
- Holy Loch Marina - 100
- Kilmelford Yacht Haven - 60
- Kip Marina - 700
- Largs Yacht Haven - 630
- Melfort Pier and Harbour - 0
- Rhu Marina - 200
- Tarbert Harbour - 60
- Troon Yacht Haven - 300

In addition to commercial moorings in marinas, there are a number of other moorings in the area. These have been estimated through the BMF marinas and moorings survey (BMF, 2004) for coastal sectors and can be seen in Table 5.

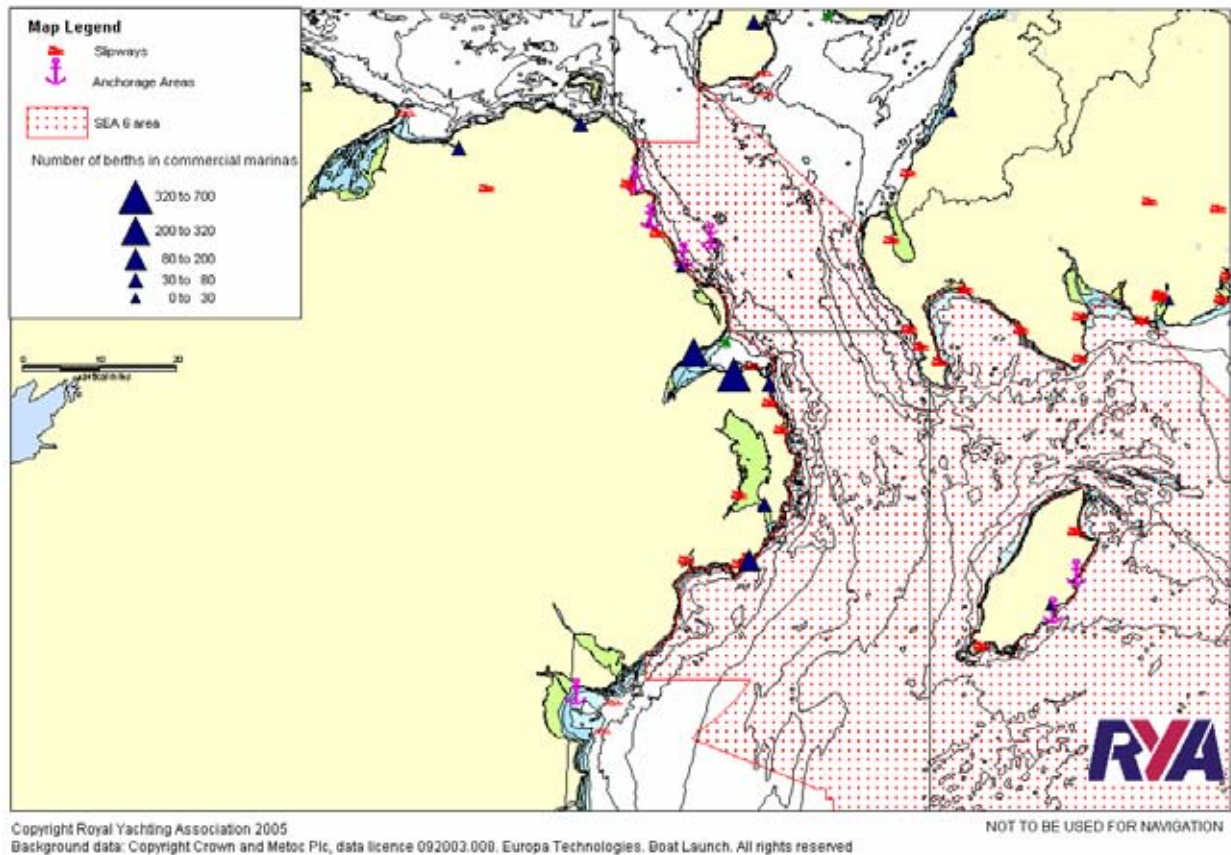
This area is a very popular Scottish cruising ground with the largest number of commercial marinas, a total of 15, of which 6 have at least a minimum of 200 berths. 63% of all the moorings are operated by the commercial sector and pontoons are clearly the most popular type of mooring in the area. This area however does not have the number of moorings expected for the activity associated with the region due to the nature of the coast. There are many sheltered areas in and amongst the Scottish Islands which provide safe harbours of refuge for cruising vessels to anchor, hence reducing the demand for moorings and could be an explanation for the number of vacancies in the area.

Table 5: Provision of Moorings between Solway Firth and Oban
Area 5 Mooring provisions - Solway Firth to Oban

Mooring Type	Moorings	Vacancy	Commercial	Non Commercial	Harbour Authorities	Local Authorities	River Authorities	Other
Pontoon	1909	177	1510	359	40	0	0	0
Alongside	72	0	1	31	40	0	0	0
Fore & Aft	287	45	175	1	51	60	0	0
Swinging	492	14	174	318	4	0	0	0
Dry Sailing	60	0	0	0	40	20	0	0
Rack Stack	20	0	0	20	0	0	0	0
Store Slip	20	0	0	0	0	20	0	0
Riparian	0	0	0	0	0	0	0	0
Finger Jetty	0	0	0	0	0	0	0	0
Visitor	90	0	25	45	0	20	0	0
Seasonal	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
SUM	2950	236	1885	774	171	120	0	0

Source: BMF, 2004

Figure 30: Location of anchorage areas, slipways, commercial marinas and number of berths within SEA 6 sub-area 5



9.6 Slipways and Anchorages from the Solway Firth to Oban

There are many more anchorages within Area 5 than there are seen at any other points within SEA 6. The nature of the area, particularly to the north and the Inner Hebrides leads to many sheltered inlets and harbours of refuge as opposed to the more commercial characteristics of Areas 1- 4.

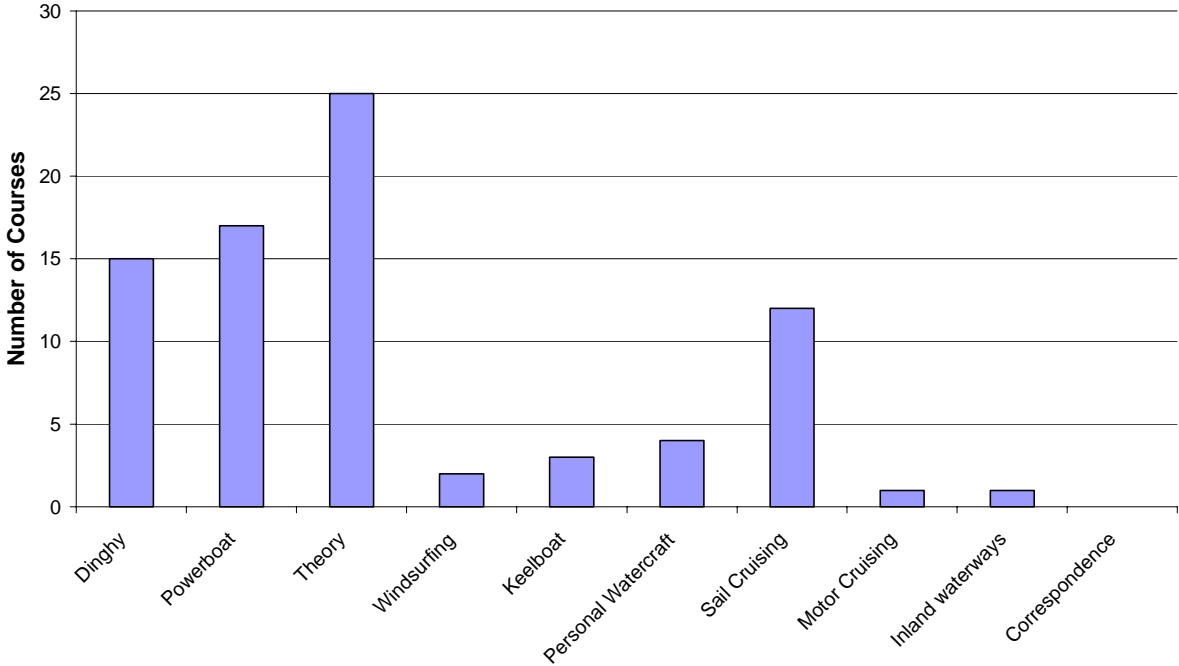
This area, along with Area 2 has the highest number of slipways with a recorded number of 50. Many of these are harbour or marina slipways marinas but some are also found at boat yards and others are public slipways located on the coast or estuaries where they can be accessed easily

9.7 RYA recognised training centres from the Solway Firth to Oban

There are a total of 38 training centres along the coast of Area 5 and there is a wide variety of courses available. As seen in other areas, the most popular course is theory followed closely by powerboat and dinghy sailing. However, this area runs the most sail cruising courses of all 5 sub areas which relates to the nature of recreational boating to the north of SEA 6.

As mentioned in the other areas, RYA theory courses cover a wide variety of topics which vary from YachtMaster™ and Coastal Skipper theory courses to VHF, First Aid and Diesel engine maintenance, all of which are predominantly used in yacht cruising. Dinghy and powerboat courses tend to be more practical based and are concentrated on inshore waters around the training centre.

Figure 31: Number and type of courses run by RYA recognised training centres within sub area 5.



10 Modelling recreational cruising routes

In order to truly represent the variation from a specified route, we developed a method of mapping this variation. This was achieved using GIS modelling within IDRISI. The cruising routes identified through the consultation process and shown in Figures 12, 16, 20, 24 and 28 were exported from MapInfo into IDRISI. In addition, the coastline and the 10 metre depth contour were also exported. MapInfo was used to create zones out from the coast at 10, 20 and 30 nm distances and these vector layers were also exported.

The exported data formed multiple layers within IDRISI. A friction layer was created using the coastline, depth contour and distance zones out from the coast. This was used to represent the deviation from an identified route that could be expected to be taken by a recreational craft. The assumptions made were that within the 10 m depth contour, a craft would only deviate slightly from the designated route, whilst as the craft moved further offshore they would deviate a greater distance from the route being influenced by the direction of the wind and not constrained by channels or depth.

A distance function within IDRISI utilising this friction layer was then used to model the spread of intensity of recreational boating from the originally identified routes. This was done for each of the light, medium and heavy routes. In addition the points where the medium routes intersected were reclassified as 'heavy' routes.

The resulting models were then adjusted to reflect the different intensities that light, medium and heavy may reflect and combined to form a single layer within IDRISI. Whilst this layer does not have actual levels of intensity the model clearly identifies hotspots of activity and shows those routes that are essential for accessing coastal locations for example.

The assumptions used in the model are as follows:

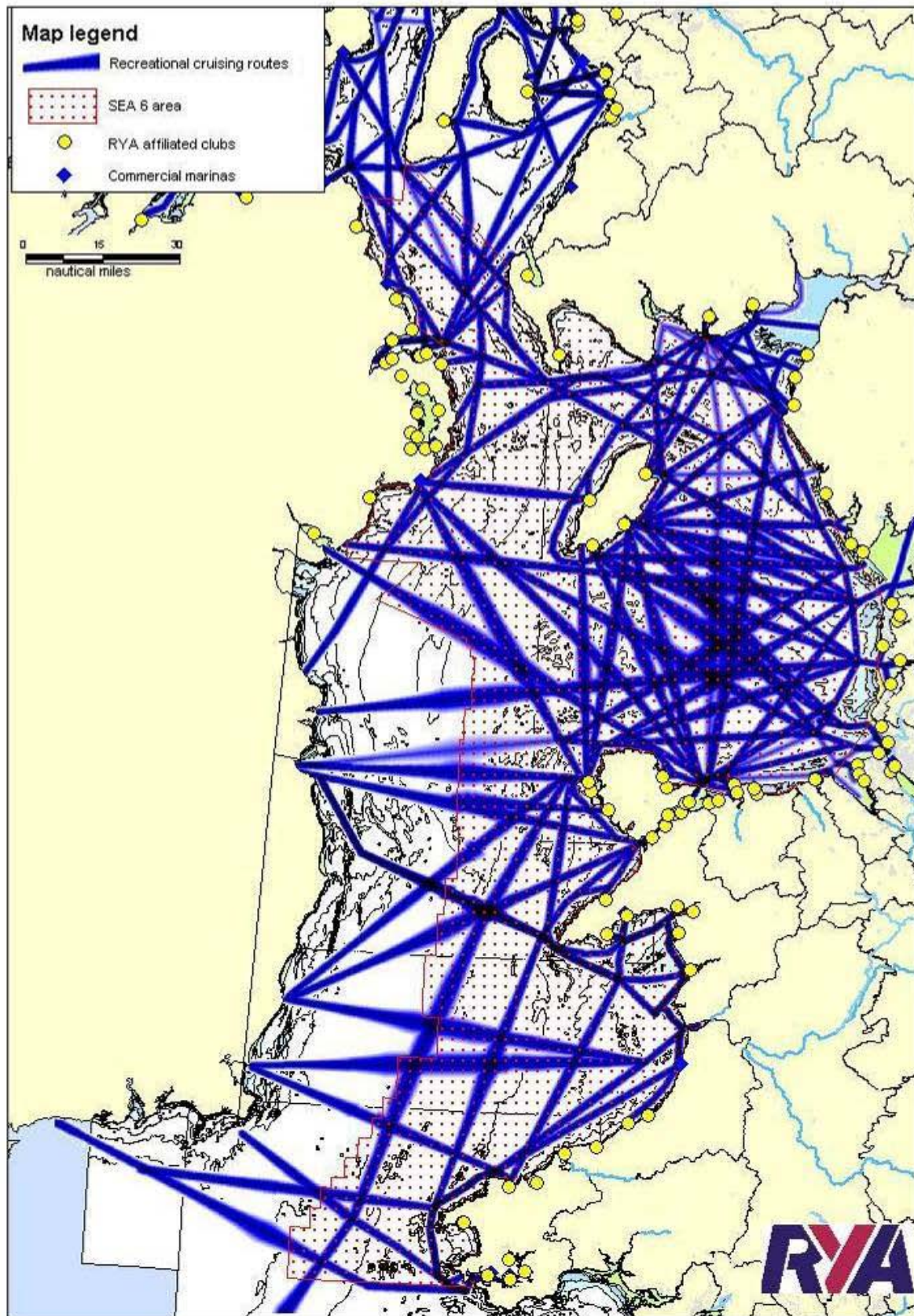
- A *light* route carries a third of the traffic of a *heavy* route and a *medium* route carries two thirds of the traffic of a *heavy* route.
- Intensity levels of the routes that intersect are added, e.g., a medium route intersecting with a light route becomes a heavy route.
- As the craft moves further from the coast the deviation from the route marked as a 'line' increases. The maximum variation is 5 km either side of a route.
- Once the craft is within the 10 m charted depth contour, they become more constrained by depth and deviate less from the marked route.

General sailing and racing areas have not been included in the modelling process but are generally identified in the output of the model.

The resulting model shown in Figure 32 shows the assumed dispersion of recreational craft along the identified routes and clearly identified 'hot spots' where routes overlap. These could be seen as 'essential' areas for recreational craft where further interference with navigational hazards could prove detrimental to navigational safety.

This is the first step towards modelling recreational boating use. Utilising real time data and refining the model would prove valuable in its development.

Figure 32 Recreational cruising routes in the SEA 6 area based on GIS model accounting for water depth and distance offshore.



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NOT TO BE USED FOR NAVIGATION

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Unless otherwise specified 'Updated' means kept up to date, either continuously or at short intervals. The latest version as of March 2005 was used.

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Annex A: How a Recreational Craft Works

1. Both sailing yachts and power cruisers normally wish to sail in a straight line along a route between required turning points. There are many limiting factors however, which rarely permit this such as varying depths, the strength and direction of wind, the strength and direction of the tide and the time at which the tide turns, all of which are important when planning a voyage. Other factors include crew comfort in the prevailing weather and sea conditions, the possible necessity to avoid other marine traffic, and the accuracy to which navigation plans may be followed.
2. The laws of physics mean that sailing yachts cannot sail directly into the wind, and the closest to the wind direction they can get is 45 degrees. As a result yachts can never sail through more than 270 degrees of a 360 degree circle and many vessels, due to design or crew comfort, cannot sail through more than 260 degrees. If the wind is strong, a wind blowing from directly behind the boat can be very uncomfortable and sometimes dangerous, so therefore leads to avoidance of courses where the wind is closer than 15 degrees either side of the stern. As a result many sailing yachts are limited by a further 30 degrees, leaving only 230 degrees out of 360 degrees possible to them for safe and easy navigation.
3. To deal with this limitation when in a narrow channel a sailing yacht will 'tack'/'zig zag' up a channel i.e. will sail first with the wind to one side of the bow, usually until it reaches the edge of the channel, and then it will turn the bow through the wind until the wind is on the other side of the bow and sail until it reaches the far side of the channel. Progress to windward therefore requires the full width of available channel, which will be limited varyingly by the height of tide at the time. Only with the wind from the side or from behind can a yacht proceed along a reasonably straight line.
4. It should be noted that a sailing yacht rarely proceeds in exactly the direction in which it is pointing with a difference (called leeway) between the two of up to 10 degrees. This is due to the physics of sail power which produces a sideways as well as forwards driving force.
5. It should also be noted that the speed of the tide is often a significant proportion of the speed of the vessel. Thus a yacht sailing at 4 knots will make only 2 knots over the ground if against a 2 knot tide but will make 6 knots over the ground if the same tide is with it. Speed through the water can differ considerably to speed over the ground.
6. A power cruiser is normally able to proceed directly to windward but this is often very uncomfortable in rough seas and heavy winds due to butting into waves. This results in power vessels choosing to 'tack' and not follow a direct route up the channel and could well require most of a channel width.
7. The strength of wind and its direction felt at sea level by a recreational craft is considerably affected by the nearby presence of land particularly if this is of any height. In general, a recreational craft will seek a distance offshore, which best meets its requirements.
 - An offshore wind will produce less waves close in shore and lead to choice of routing accordingly.
 - In conditions of a sea-breeze against an offshore wind a craft may similarly prefer a route in the quieter conditions often then found some miles offshore.
 - In conditions of on-shore winds most craft will choose to remain offshore for safety reasons and avoid routes close inshore.

- In strong conditions recreational craft will balance between the choice of quieter routes along channels protected by shallows each side and more offshore routes away from shallow water.

8. The presence of waves or swell is an important element in determining choice of route or continuation of passage. The major factor is the direction and speed of the tidal stream relative to the strength and direction of the wind. Wind-against-tide conditions are avoided where possible because the wave pattern and shape then produced are particularly problematic for small craft.

9. The wind strength and direction felt by a small recreational craft at sea level will rarely be quite the same as at wind-turbine heights and will suffer greater short-term variation. This is due to the frictional effect of the sea and waves (which may be felt up to about 40 ft (13m). A veer of 15 degrees and reduction of 1 Beaufort force would not be exceptional. Experience of vessels sailing close to wind-turbines and similar structures elsewhere in Europe indicates little effect from turning-blade wind shadows but some effect downwind from turbine towers.

Annex B: Definitions

Definition of Cruising Routes - Heavy, Medium and Light Use Recreational Routes

Recreational boating, both under sail and power is highly seasonal and highly diurnal. The division of recreational craft routes into Heavy, Medium and Light Use is somewhat arbitrary although there is widespread agreement on the assignments to these classes indicated on the charts.

- **Heavy Recreational Routes:** - Very popular routes on which a minimum of 6 or more recreational vessels will probably be seen at all times during summer daylight hours. These also include the entrances to harbours, anchorages and places of refuge.
- **Medium Recreational Routes:** - Popular routes on which some recreational craft will be seen at most times during summer daylight hours.
- **Light Recreational Routes:** - Routes known to be in common use but which do not qualify for medium or heavy classification.

a. Definition of Sailing Areas

General Sailing Areas: - Areas in extensive use for general day-sailing by all types of recreational craft but particularly smaller craft such as small cruisers, day-boats, dinghies, sailboards and personal watercraft. Such craft will not normally be undertaking point-to-point passages but will be on out and return activities and may appear to be sailing in random directions as they take advantage of wind and tide to make progress.

Racing Areas: - Areas in frequent use, particularly at week-ends and holiday periods, by large numbers of racing craft normally under sail but also power. Such areas are generally under the control of nearby Sailing Clubs and may contain temporary or permanent race course marking buoys. Detailed routes will normally only be determined on the day of the race although certain longer-distance races may have routes published in advance. In addition some racing may take place outside the areas indicated. Racing craft will obey the specialised racing rules between themselves but will follow the conventional Collision Regulations when other vessels are in conflict.

b. Definition of Sailing Facilities

Training Centres: - Teaching institutions providing practical and theoretical training in sailing and power boating to recognised Royal Yachting Association standards. Those located on the coast will normally have marina-type boat berths attached which are in use throughout the year.

Sailing Clubs: - Membership organisations affiliated to the Royal Yachting Association. Each tends to specialise in certain types of activity – for example dinghy racing, sail cruising, power-boating, but all are normally open to passing visitors. The facilities provided usually include both alongside berths and swinging moorings but shore facilities are not normally to expected commercial standards. The majority of persons sailing in the areas charted are expected to be members of local sailing clubs but some may be visitors from other areas. The areas charted therefore have recreational boaters from local, national and international areas.

Marinas: - All charted are commercial marinas. Most berth-holders will be permanently based at that marina but most also have a high proportion of visitor berths available for passing craft. Most have a full range of yachting facilities such as chandlers and repair shops and should be regarded as primary ports of origin and destination for all recreational craft routes.

Annex C: SEA 6 Consultees

North West Consultees

- Albert Dock
- Anglesey Maritime Training
- Arnside Sailing Club
- Atlantis Aquatic Sports
- Bangor Marina
- Bay of Colwyn Sailing Club
- Blackpool & Fleetwood Yacht Club
- Blundellsands Sailing Club
- Caernarfon Marina
- Caernarfon Sailing Club
- Douglas Bay Yacht Club
- Douglas Boatyard
- Castletown and Derbyhaven Motorboat and Yacht Club
- Chester Sailing and Canoeing Club
- Conway Centre
- Conway Yacht Club Ltd
- Conwy Marina
- Llanfairfechan Sailing Club
- Longitude School of Navigation
- Lymm Marina
- Manchester Cruising Association
- Manx Sailing and Cruising Club
- Maryport Marina
- Maryport Yachting Association
- Morecambe and Heysham Yacht Club
- North West Venturers Yacht Club
- Offshore Circuit Racing Drivers Ass.
- Penmaenmawr Sailing Club
- Port Dinorwic Marina
- Port Dinorwic Sailing Club
- Preston Brook Marina
- Preston Marina
- Red Wharf Bay Sailing Club
- Rhosneigr Boat Owners Sailing Club
- Rhyll Yacht Club
- Ribble Cruising Club
- Conwy Marina Berth Holders Association
- Corus Colours Sailing Club
- Crosby Sailing Club
- Dee Sailing Club
- Fiddlers Ferry Yacht Haven
- Fiddlers Ferry Sailing Club
- Fleetwood Harbour Village Marina
- Frodsham Water Sports
- Glasson Basin Yacht Co Ltd
- Glasson Sailing Club
- Holyhead Marina
- Holyhead Sailing Club
- Hoylake Sailing Club
- Indefatigable S.T.C (ASA 123)
- James Mayor & Co Ltd
- Kirkcudbright Sailing Club
- Liverpool Yacht Club
- Llandudno Sailing Club
- Roa Island Boating Club Ltd
- Royal Anglesey Yacht Club
- Royal Dee Yacht Club
- Royal Welsh Yacht Club
- Solway Yacht Club
- Southport Lifeboat
- Traeth Coch Sailing Club
- Tranmere Sailing Club
- University Of North Wales Sailing Club
- Water Park
- West Kirby Sailing Club
- West Lancashire Yacht Club
- White Bear Marina
- Whitehaven Marina
- Whitehaven Sailing and Boating Ass.
- Wind & Wave Water sports
- Windermere Marina Village
- Wirral Sailing Centre

Northern Ireland Consultees

- Ardglass Marina
- Ballycastle
- Ballyholme Yacht Club
- Bangor Marina
- Bangor Marina Berth Holders Association
- Carrickfergus Marina
- Carrickfergus Sailing Club
- Cockle Island Boat Club
- Coleraine Yacht Club
- Copelands Marina
- County Antrim Yacht Club
- Cushendall Sailing And Boating Club
- Donaghadee Sailing Club
- Down Cruising Club
- East Antrim Boat Club
- East Down Yacht Club
- Holywood Yacht Club
- Irish Jet Sport Association
- Killyleagh Yacht Club
- Kircubbin Sailing Club
- Lough Foyle Yacht Club
- Newtownards Sail Training Club
- Newtownards Sailing Club
- Portaferry
- Portaferry Sailing Club
- Portrush Yacht Club
- Quoile Yacht Club
- Royal North Of Ireland Yacht Club
- Royal Ulster Yacht Club
- Seatons Marina
- Strangford Lough Yacht Club
- Strangford Sailing Club

South West Scotland Consultees

- Ardfern Yacht Centre
- Arran Yacht Club
- Bellanoch Marina
- Campbelltown Loch Berthing Co Ltd
- Campbeltown Sailing Club
- Cardwell Bay Sailing Club
- Clyde Cruising Club
- Clyde Marina
- Clyde Windsurfing Club
- Clyde Yacht Clubs Association
- Craignish Boat Club
- Craobh Marina
- Dunstaffnage Marina
- Glasgow University Sailing Club
- Helensburgh Sailing Club
- Holy Loch Marina
- Holy Loch Sailing Club
- Irvine Boat Owners Association
- Kilmelford Yacht Haven
- Kip Marina
- Kirkcudbright Sailing Club
- Largs Sailing Club
- Largs Yacht Haven
- Leven Cruising Club
- Loch Lomond Sailing Club
- Lochaber Yacht Club
- Melfort Pier and Harbour
- Oban Sailing Club
- Oban Yachts & Marine Services Ltd
- Prestwick Sailing Club
- Rhu Marina
- RNSA Clyde Branch Neptune SC
- Royal Gourock Yacht Club
- Royal Highland Yacht Club
- Royal Northern And Clyde Yacht Club
- Royal Scottish Motor Yacht Club
- Royal West Of Scotland Amateur Boat Club
- Royal Western Yacht Club
- Scottish Sailing Institute Ltd
- Solway Yacht Club
- Strathclyde Police Recreation Association
- Tarbert Harbour
- Tayvallich Sailing Club
- Toward Sailing Club
- Troon Yacht Haven
- University Of Strathclyde Sailing Club
- Western Isles Yacht Club

Wales Consultees

- 14 Signal Regiment Sailing Club
- Aberystwyth Marina
- Aberystwyth University Sailing Club
- Albert Dock
- Bangor Town Regatta Committee
- Barry Yacht Club
- Bristol Channel Yacht Club
- Bristol University Sailing Club
- Cabot Cruising Club
- Caernarfon Marina
- Caernarfon Sailing Club
- Cardiff Bay Yacht Club
- Cardiff University Student Union
- Cardiff Yacht Club
- Clevedon Sailing Club
- Conwy Marina
- Corus Sailing Club Margam
- Fiddlers Ferry Yacht Haven
- Fishguard Bay Yacht Club
- Frampton On Severn Sailing Club
- Hafan Pwllheli
- Holyhead Marina
- Holyhead Sailing Club
- Indefatigable S.T.C (ASA 123)
- Liverpool Marina
- Llanbedr And Pensarn Yacht Club
- Loughor Boating Club
- Lydney Yacht Club
- Madoc Yacht Club
- Merioneth Yacht Club
- Midway Boats Limited
- Milford Marina
- Monkstone Cruising And Sailing Club
- Mumbles Yacht Club
- New Quay Yacht Club
- Newport Boat Club
- Newport Pembs Regatta Committee
- Newport Uskmouth Sailing Club
- Neyland Yacht Club
- Neyland Yacht Haven Ltd
- North West Venturers Yacht Club
- Pembroke Haven Yacht Club
- Pembrokeshire Yacht Club
- Penarth Marina
- Penarth Yacht Club
- Port Dinorwic Marina
- Port Dinorwic Sailing Club
- Port Of Bristol Authority Sailing Club
- Porthmadog Sailing Club
- Portishead Cruising Club
- Portishead Marina
- Portishead Yacht And Sailing Club
- Preston Brook Marina
- Pwllheli Sailing Club
- Red Wharf Bay Sailing Club
- Rhosneigr Boatowners Sailing Club
- River Towy Yacht Club
- Royal Anglesey Yacht Club
- Royal Welsh Yacht Club
- Saundersfoot Sailing Club
- Solva Rowing And Watersports Club
- South Caernarvonshire Yacht Club
- Swansea Marina

- Swansea Yacht And Sub-Aqua Club
- Teifi Boating Club
- Tenby Sailing Club
- Thornbury Sailing Club
- Towy Boat Club
- Traeth Coch Sailing Club
- Tresaith Mariners Sailing Club

- University Of North Wales Sailing Club
- University Of Wales Swansea
- Uphill Boat Centre
- Victoria Basin
- Watchet Harbour Marina
- Young Bristol

RYA REGIONAL CONSULTEES

- North West Region
- RYA Northern Ireland
- RYA Scotland
- Welsh Yachting Association
- Scotland Coast Watchers Forum – 20 Reps

CRUISING ASSOCIATION CONSULTEES

- Anglesey HLR
- Ayr / Southern Isles HLR
- Chairmen of HLR Committee
- Chairmen RATS Committee
- Cruising Association Council
- Cruising Association Past President
- Cruising Association President
- Cumbria HLR
- Dublin/Ireland HLR
- 96 Cruising Association Members
- General Secretary
- Honorary Editor
- Isle of Man HLR
- Lancashire HLR
- Mersey – Wales HLR
- North Wales HLR
- Northern Ireland / Belfast HLR
- RATS Committee members (x5)
- Solway – Fishguard HLR

Annex D: Contact details

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