

# CETACEAN WATCHING IN SUSSEX 1991 to 2004



© E. Mitchell, 1 mile off Worthing 1999

## Cetacean monitoring along the Sussex Coast **A summary of sighting data and introduction to acoustic monitoring**

*by Stephen Savage,  
Mid-Sussex Coordinator Sea Watch Foundation, Sea Mammal County  
Recorder, Area Rescue Co-ordinator Southern marine Life Rescue*



Support through the Defra  
Aggregates Levy Sustainability  
Fund



Printed by

*Worthing*  
BOROUGH COUNCIL

## Monitoring Sussex Cetaceans

March 2004 saw the completion of an exciting pilot programme that will greatly increase the amount and quality of data we can record in our local waters. The Sussex Regional group of the Sea Watch Foundation has been recording and analysing cetacean sightings along the Sussex coast since 1991. In 2003, the regional group obtained a Tpod for detecting dolphins and porpoise to deploy in the waters off Brighton and Hove. This pilot programme will be discussed in more detail later in this document.

The main aim of this booklet is to summarise our work to date and provide an introduction to the acoustic monitoring project and how it will assist in cetacean monitoring. For those who wish to take part in our work I have included some guidance on how to undertake a cetacean watch in Sussex, and other activities that we are involved in locally. The relevant sighting forms can be obtained separately

### Cetacean watching summary 1991 to 2003

Prior to the start of the monitoring programme in 1991, sightings from the Sussex area came largely from casual sightings and a systematic watch based at Hastings, (East Sussex). In May 1991, I set up the Sussex Dolphin Project, within a wider-themed programme to raise awareness and appreciation of Sussex Wildlife. This was achieved with the help of local volunteers and was concentrated mainly on the sea and coastline around Brighton (East Sussex) on the south coast of Britain. Between 1991 and 1993 we recorded the inshore movements of transient dolphins, most of which were identified as bottlenose dolphins *Tursiops truncatus*. We plotted their movements along the coast, in particular between Hove and Brighton where several watch sites had been set up. Almost all dolphin observations showed a west to east movement, a pattern that has been shown to be the case for most Sussex sightings. The inshore movements between 1991 and 1993 are summarised in fig 1.

Fig 1

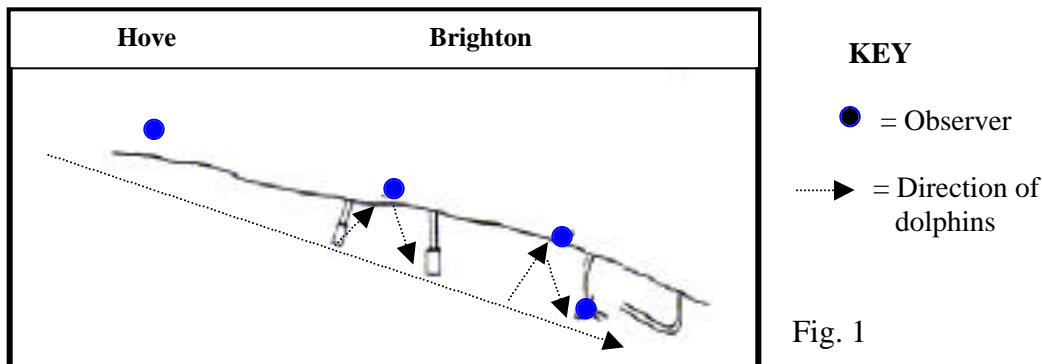


Fig. 1

Fig. 1 shows the movement of dolphins along the coast, west to east. The dolphins follow 3 different patterns. The most common movement involves dolphins being observed at Hove and then heading towards Brighton. They pass round the west pier, heading closer to shore staying for a while before heading off past the Brighton Marina. The second movement involves dolphins swimming straight along the coast and past the marina. The third movement involves dolphins entering the water just west of the Brighton Marina, usually to feed. Dolphins often mill around at the surface, at then Hove observation point before moving east.

I passed our observations to the Sea Watch Foundation (formerly the Cetacean Group, within the Mammal Society) to be included in their UK observation programme and in 1993 I was invited to set up the Sussex regional Group to expand on this study.

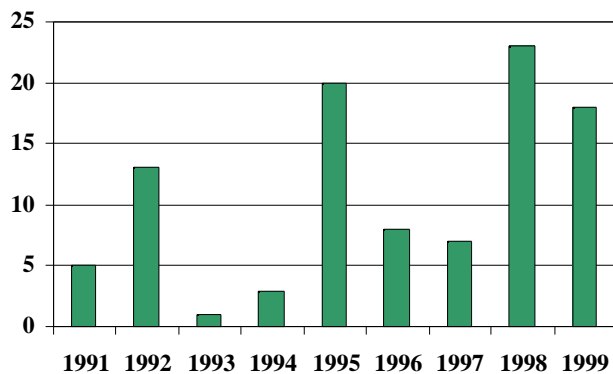
### 1993 & 1994

A dip in sightings for this period co-occurred with extensive coastal development at Hove and Brighton with the construction of a storm water overflow tunnel between Hove and Brighton. At the same time to the west at Worthing, work was undertaken by Southern Water to extend the sewage outfall. It is likely that the noise and consequent vibration by pile drives and boring equipment resulted in dolphins avoiding the area possibly by moving further out to sea. Sadly, as out offshore monitoring is very much on a casual basis insufficient data was collected to ascertain the exact effects. There was however an increase in anecdotal offshore sightings in waters to the west of Worthing. (At the time we had no systematic observers at Worthing). We did work closely with Southern Water concerning the extended outfall, who were willing to report any dolphin sightings but none occurred.

In 1993 we had one dolphin sighting in Brighton, reported by the sea front office, just prior to the commencement of the work on the Brighton Seafront. No further sightings were reported by the lifeguards at Hove or Brighton until 1995. The three dolphin sightings that were recorded for Sussex in 1994 occurred offshore and to the west of the outfall development at Worthing. Hot weather and calm seas for much of the summer provided ideal conditions for spotting dolphins, so it was rather disappointing.

Monitoring continued to increase with volunteer training and a higher number of positive species identification was achieved. The confirmed sightings of bottlenose dolphins between Brighton and Worthing from 1991 and 1999 are summarised in fig 2. Where the same dolphins have been observed more than in the same day, they only appear once of the graph.

Fig 2.

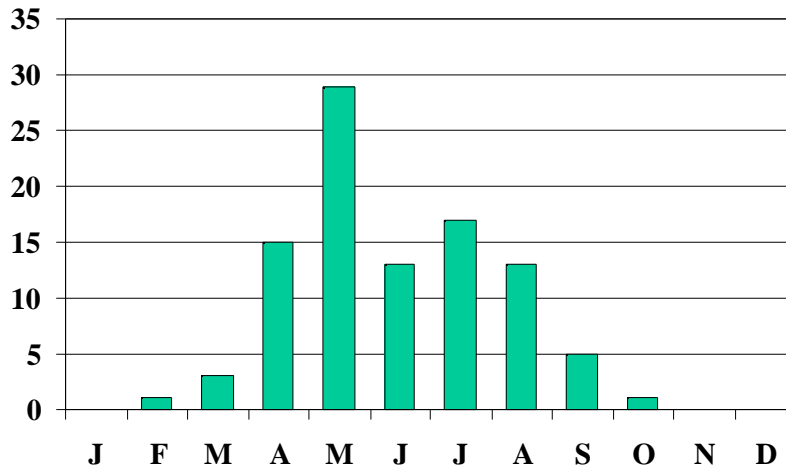


In 1995, 1998 and 1999 a relatively high number of bottlenose dolphins were recorded. These figures may in part be affected by the number of volunteer observers watching from one year to the next. However, inshore sightings are more common during periods of calm sunny weather, which is reflected by the above figures. These higher figures could be due to one or more of the following.

- Increased chances of observing dolphins in calm waters
- Dolphins may surface more frequently in calm water
- They may avoid movements close to shore in rough waters because of acoustic disturbance and low visibility from agitated substrate
- Prey species not present in poor sea conditions.

- Preliminary comparison between Sussex sightings and similar sightings made in the western end of the English Channel suggests that there are natural factors that affect their west east migration.

Fig. 2 Shows the same sightings 1991 to 1999 arranged by month



### Recorded Behaviours

The dolphin observations can be divided into four categories, swimming, feeding, playing, and resting.

#### Swimming

Many inshore sightings involve dolphins slowly swimming into view, passing the observer and then disappearing from view. On occasions, breaching has also been observed. These sightings may last 5 minutes or up to 30 minutes. On days of calm sea conditions, the dolphins observed surfaced about once a minute

#### Feeding

Actual feeding behaviour is sometimes difficult to interpret when recorded from shore-based sightings. Observers have recorded feeding behaviour accompanied by small silvery coloured fish bursting from the water. It is difficult in these situation to be sure if the 'silvery' fish are the intended prey, or the prey of larger fish pursued by the dolphins underwater and out of sight from the observer. Feeding behaviour in association with seabirds feeding has also been recorded, where dolphins are circling in an area or slowly moving with sea bird activity overhead. However, gulls feeding off shore are seen quite regularly but the presence of dolphins is confirmed in only a few cases. E.g. in 1998, two sightings involved probable feeding activity and in 1999, five sightings involved probable feeding activity.

We have only one confirmed sighting of co-operative feeding behaviour, using the land and the marina arm (Brighton 1991) as barriers while the dolphins corralled a shoal of fish in the deeper water and took it in turns to feed.

Feeding behaviours have been recorded from vessels and either fish have been present in the water (known because of human fishing activity) or because fish have been seen leaping out of the water in front of the dolphins. Early dolphin sightings in March near Bognor Reef have been associated with black bream spawning.

### **Playing**

Most behaviour that falls into this category occurs around vessels. This usually involves dolphins swimming alongside the vessel and diving underneath and reappearing on the other side. This often takes place while other members of the group ride the bow wave. It is interesting to note that the dolphins riding the pressure wave appear to voluntarily give up their position at the front of the vessel so that another dolphin can take over its position. Breaching has also been recorded as part of such vessel interactions. Odd sightings of dolphins milling near the shore at Brighton or Hove were recorded early on in the study when dolphins were seen playing with driftwood and similar objects. This occurred near the King Alfred's swimming pool and between the Brighton Pier and the West Pier. Since the study commenced, there has been a great increase in the number of jet-skis and similar water sport activity at Brighton and this inshore play has not been recorded since 1996.

### **Human and dolphin interactions**

On rare occasions, the dolphins appear to be aware of people on the vessel as well as the vessel itself. The local Fisheries Officer reported one such event on the 18th May 1999.

"We encountered 7 adult and 1 juvenile bottlenose dolphin, 2 miles off Littlehampton. 38N 43W. They played around the boat for \_ hour. The dolphins split into smaller groups, but interchanged. For example, a group of 4 dolphins played ride the bow wave while others swam alongside the vessel. One dolphin had been watching one of the crew before turning on its back and swimming upside down. It then soaked the crewmember by splashing water with its tail several times! Dolphins kept coming and going as the vessel kept to its course before the dolphins continued on their eastward direction".

### **Resting**

Resting behaviour was also recorded in most years prior to 1996. This occurred in the same areas where inshore play was recorded and often observations of this type include both play and rest. The consequent lack of sightings of inshore resting has also been attributed to the increase in water sport activity.

### **Group Sizes**

Through analysis of the bottlenose dolphin observations it has been shown that in Sussex waters the group size of bottlenose dolphin ranges from solitary individuals to a group size of 12 or more. Small groups or solitary dolphins are common. In 1998 and 1999 several sightings were of groups including one or juveniles. Analysis has shown that the most common group size recorded is a group size of between 2 – 4 dolphins. The example below is for 1998.

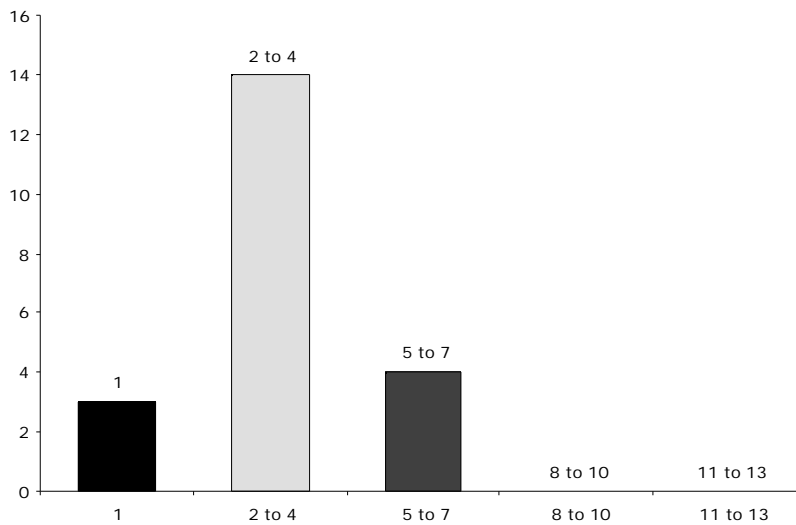


Figure 3. Most solitary dolphins also appear to be transient. It is possible that on some occasions solitary dolphins may be scouts searching for food inshore, returning to the main group if prey is found. On occasions a solitary dolphin has been observed patrolling an area of coastline, but usually for no longer than a day.

#### Resident dolphin

On one occasion, in 2001 a dolphin became resident for a short time at Brighton and Hove. The first sighting definitely attributed to this dolphin was 30<sup>th</sup> June and the last sighting was on 14<sup>th</sup> July. The dolphin patrolled an area of about 3 \_ miles between the Brighton Marina and an area just west of the King Alfred's Leisure Centre. The dolphin was recorded at various times between these dates, often several times a day. I recorded three simultaneous sightings of what appeared to be this dolphin on one day 2<sup>nd</sup> July. On the 5<sup>th</sup> July I followed the dolphin from the Brighton Pier to the Brighton Marina, which took the dolphin 30 minutes to travel this distance. The dolphin was not the Sociable dolphin know as George (from France and Channel Islands) that visited Dorset and the extreme west of Sussex. The resident dolphin disappeared from our waters following a few days of very stormy sea.

### **Acoustic Monitoring**

From early 2004 our visual monitoring will be supplemented by data from an acoustic device. This is a data logger that records the presence of dolphins and porpoise by detecting their vocalisation. The pod had been previously used in field trials undertaken in Cardigan Bay in Wales where there is a high level of both bottlenose dolphin and harbour porpoise activity.

The main aim of the pilot project was to test the POD locally, which would lead to permanent deployment site/s in 2004. This gave us the opportunity to experiment in different locations and make adjustments to the POD's settings regarding the unique conditions of deployment locally. A major issue to overcome was the safety of the POD as it was to be deployed in an area of high human activity and fishing activity.

## **Sponsors**

This pilot acoustic project has been funded as part of the Wildlife Trusts' South East Marine Programme. This 2003-04 project, entitled 'Marine biodiversity and aggregates in South East England', is supported by English Nature, through Defra's Aggregates Levy Sustainability Fund.

It is hoped that the data from the pod, in conjunction with our visual monitoring will provide the following.

- Consistent effort data (essential in annual and site to site comparison)
- While most inshore dolphin sightings are confirmed as bottlenose dolphin, the pod will make it possible to confirm the identify of casual sightings and ascertain if other cetacean species visit inshore waters near Brighton. (porpoise have been observed on occasions)
- 3. Discover if cetaceans are active inshore at night.
- 4. Record in poor sea conditions

## **How does it work?**

The pod will record systematically on the set frequencies that will include vocalisation range of bottlenose dolphin and porpoise. The pod will need to be brought to the surface and the data downloaded onto a laptop about once every two to three weeks. At this time other essential maintenance can also be done (e.g. change the battery pack). Computer software will look for frequency patterns that will identify the presence of dolphins and porpoise and provide date and time. The pod is not able to distinguish the number of animals or behaviours and so the acoustic monitoring and the visual monitoring will be equally as important

The deployment of the pod will reduce the necessity for maintaining systematic watches at Brighton. It will also mean that we can focus our attention on encouraging more local people (especially those who work on the coast at Brighton) to be aware and report dolphin sightings as their 'visual' data will compliment that recorded by the pod. They will also be encouraged to call the hotline number 07773610036 so that we can respond to sightings and increase the information recorded (also photographic or video)

The pod will need to be visited and serviced about once every 3-4 weeks to download data and change the battery pack. Sightings recorded each year are shared with a variety of sources, some as raw data other in the form of a simple report. The consistent effort data will increase the value of our data when used by other sources. These include the following;

- Actual data is stored on the Sea Watch Foundation National UK Whale and Dolphin Database where it is available to use by other parties as well as forming part of other reports and recommendations. Data recorded by the local group has been used in publications such as the JNCC Coastal Directory for Region 8 for East Sussex and the Cetacean Status Review.
- Sightings of cetaceans and seals are passed on to the Sussex Biodiversity Record Centre
- Three websites, British marine Life Study Society, UK CetNet and MarineMammals.
- Durdley Marine Project

- Southern Marine Life Rescue, Booth Natural History Museum (Brighton), Sussex Wildlife Trust, County Ecologist, Brighton and Hove Advisory Group, Brighton University, (hoped to eventually be used towards a Brighton & Hove BAP. General enquires and volunteers

## Cetacean Monitoring tips.

### Distance

It takes practice to judge the distance of a whale or dolphin from the coast. The regional group training includes the distances of known objects from the shore, which observers can become familiar with to help them judge distances. These include the two piers at Brighton. The longest is the Brighton Pier, which is 500 metres long; the shortest is the West Pier, which is only 338 metres.

Marker buoys can also be used to judge distances. Along the coast at Brighton there are two lines of buoys, the nearest is 100 metres from the shore; the furthest is 200 metres from the shore. At Hove the buoys are 500 metres from the shore. If you practice estimates of such known objects, you will find it easier to judge sea distance even when such markers are not present.

### Equipment

Binoculars are an important tool for dolphin watching. The best magnification range is between 7x and 10x. The former end of the range has good light gathering, which is useful when looking out to sea.

### Optional equipment

If you live on the coast you may wish to use a telescope, however dolphins travel relatively fast and may be difficult to spot. They can be useful for whale watching from the land as whales generally move slower than dolphins.

A 20x magnification is best; greater than this magnification and the view may be too dim and the area of view too limiting. Cetaceans often surface and dive before you can get a good look at them. A camera or video camera can be useful allowing you to record spout, dive sequence and other features that will aid identification. A video camera with a digital stabiliser helps reduce camera shake and you can get a good hand held video camera with a decent zoom quite reasonably (e.g. 36x). If you already have a video camera or are intending to buy one for other use, then this equipment can be a useful tool, but not one you would purchase just for dolphin watching.

### Tips for good cetacean watching

A high vantage point is useful, such as the cliff top east of Brighton or the extra vantage provided by a marina or pier allowing you to scan a good area of sea.

Calm seas provide the best watching conditions. However timed watches should be done in all reasonable conditions to provide as much coverage as possible. Dolphins have been observed off Sussex in more choppy sea conditions, however very stormy days are unlikely to yield any sightings. It is important to record days that you intend

to watch but the sea is too stormy as this too is part of the picture. Only watch for 15 minutes and record the reason for a shortened watch time

It is best to scan the sea with naked eye as well as through the binoculars to prevent eyestrain. Look for any splashes, spouts or other surface disturbance. Look for any splashes, spouts or other surface disturbance with the naked eye, including sea bird activity. If you spot something, do not take your eyes off it, but instead raise the binoculars to your eyes and you will be looking in the right area.

You should aim for a watch session of 3 to 4 hours, however this time can, for example, be made up of two observers watching simultaneously.

### **Observer Training - Getting Started**

In areas where observers are already in place, we try as much as possible to organise volunteers to observe from one or two sites and match new volunteers with their nearest site. This increases the coverage from each site and greatly increases the value of the data when looked at nationally. However, where volunteers are undertaking a systematic watch one of the most important factors is finding a site that the volunteer can watch from on a regular basis. The regional coordinator will set you up at your nearest watch site.

### **Training**

Basic training and support will allow a new volunteer to start watching and fill in the observation forms with confidence. It is recommended that you attend one of the training workshops once you are up and running. This may be a local workshop organised by the regional coordinator or a national workshop the nearest of which takes place at Cardigan Bay in Wales.

### **Recording Forms**

There are two main types of recording form, 'Effort Recording Form' and 'Sighting Form'.

#### **Effort Form**

Every time you undertake a watch session you will fill in the effort form. This provides general data about the site you are watching from, e.g. sea conditions, weather, etc. This information is very important to help us build up a picture of when watches have occurred from a particular site and days when cetaceans were not seen. It is this data that helps us to make sense of the actual sighting data.

#### **Sighting Form**

When a whale or dolphin is spotted, this information is recorded on the sighting form. A reference number should be used to link both entries. Fill in as much information as possible.

#### **Identification**

The identity of the species of dolphin or whale should be based on support identification material. Identification features of the main species observed off Sussex are illustrated in this booklet. A 'Guide to the Identification of Whales, Dolphins and Porpoise in European Seas' can be purchased from the Sea Watch Foundation. Ask your regional coordinator for details or contact the main office in Oxford. This guide illustrates the most important features for each species when seen above water.

## Other Cetacean Species

While bottlenose dolphins form the bulk of positive sightings, a few other species have been recorded since 1991. Harbour porpoise have been positively identified on a few occasions, including a group of six seen feeding near the Brighton Marina during the 2002 National Whale & Dolphin Watch Weekend organised by the Sea Watch Foundation.



Long finned Pilot whale ( A Gannier)



Harbour Porpoise ( P Fisher)

Long finned pilot whales have been reported offshore, most reports have come via the Sussex Ornithology Society Seabird Watch. The only positive inshore sighting came in 1994 when 2 adults and a calf were spotted only 50 metres from the shore at Hove (East Sussex). Common dolphins and harbour porpoise have been identified on occasions.



Common Dolphin ( PGH Evans)

## **Stranded Cetaceans**

We work with the local Booth Museum and the London Natural History Museum to help attend dead stranded animals. Our role includes securing the animal for collection, identification of species and recording details such as measurements etc. Most common stranded species in Sussex are common dolphins and harbour porpoise. The increased number of these stranding since 2001 have been attributed to Bycatch. Bottlenose dolphins, Pilot whales and Risso's dolphins have also stranded on occasions. We also work with Southern marine Life Rescue concerning live sea mammal strandings in our area. Live cetacean strandings are rare in Sussex but juvenile seals are occasionally washed ashore injured or ill.

## **How can I help?**

You can take part in the activities of the regional group in various ways: such as a volunteer observer, helping at awareness events, help to organise meetings, distribute information etc. There is no membership fee for regional groups.

Further information about the Sea Watch Foundation and its national work visit the website [www.seawatchfoundation.org.uk](http://www.seawatchfoundation.org.uk)

## **References**

\*Coastal Directory Region 8 Sea Mammals

Tursiops. Photo-identification guide to bottlenose dolphins in the English Channel. Prepared by Celine Liret, Peter Evans, Jim Heimlich-Boran & Vincent Ridoux. 1998

Dolphin Societies, Discoveries and Puzzles. Edited by Karen Pryor and Kenneth Norris 1998.

The Natural History of Whales & Dolphins, P G H Evans, 1987

Guide to the Identification of whales, Dolphins and porpoises in European Seas, PGH Evans, Sea Watch Foundation Publication, Oxford 1995

\*UK Cetacean Status Review. Peter G.H. Evans, Pia Anderwald and Mick E. Baines, 2003

Those marked with a \* are documents that contain contributions of data from the Sussex Regional group.



