

# BRITISH SEAHORSE SURVEY 2007

British  
Seahorse  
Survey



The  
Seahorse  
Trust



By Neil Garrick-Maidment  
Executive Director

## British Seahorse Survey

Funded and supported by;

- The Estate of Betty Van Pepperzeel

- WWF



# BRITISH SEAHORSE SURVEY 2007



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# BRITISH SEAHORSE SURVEY 2007



## INTRODUCTION

The British Seahorse Survey was set up in 1994 because of an original sighting by Sue Daly in Jersey and has been running for 13 years now and has progressed from a paper exercise to an active surveying project using the diving and fishing industries and with the help of the general public. It is the longest running survey of its kind and this continuity has been invaluable in understanding the nature and lives of the Seahorses found around the British Isles and beyond.

All Seahorse species are listed under CITES 2 and the 2 British species are no exceptions, in 2002 we submitted them for extra protection as named species under the Wildlife and Countryside Act 1981 as a result of the work of the British Seahorse Survey, due to administration errors we are still waiting for the results but it is looking very likely that they will be granted full named protection which will be excellent news for the species as a whole.

We have come on a long way since the start of the survey; and we are starting to understand a great deal more about these elusive creatures and their behaviour. It is now understood what happens to them in the winter, where they are breeding and why we have 2 species and what are their own unique traits that help them to blend in so perfectly with their environment.

The survey would not be possible without the community based voluntary help we receive whether it is from divers, fishermen or walkers on the beach, everyone can and do make a valuable contribution, in fact without these people giving up their time and getting in touch with us we would not know so much about British Seahorses.

The survey is a good balance of science and community based help and it is intended to keep it going for many years to come, allowing us to gain further knowledge to protect for future generations the British Isles and Irelands 2 best kept secrets.

## SEAHORSE SPECIES

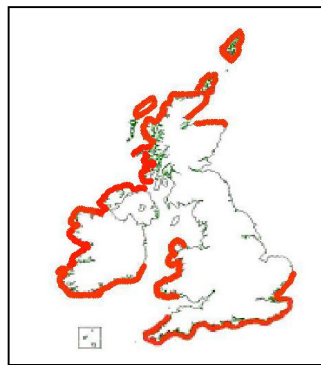
### Spiny Seahorse *Hippocampus guttulatus*

Common names: Spiny Seahorse, Long Snouted Seahorse.

Distribution: Southern Norfolk, Essex, South Eastern England, along the south coast up around parts of Wales and on up the West coast of Scotland to the Shetland Isles; Around the West coast of Ireland.

Description: A big bony looking Seahorses approximately 17 to 18cm from the top of the coronet to the end of the tail. Often although not exclusively covered in long spines on the top of the head and down the back.

Spiny Seahorse by Steve Trehella



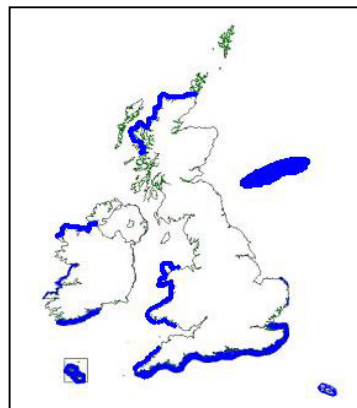
### Short Snouted Seahorse *Hippocampus hippocampus*

Common names: Short Snouted Seahorse

Distribution: Essex, Kent and along the south coast of England all around the Channel Islands, around parts of Wales, Ireland and Scotland with reports during 2006 in the North Sea off Dogger Bank.

Description: A stocky solid looking Seahorse 15 to 17 cm from the top of the coronet to the end of the tail. Unlike the Spiny Seahorse around the United Kingdom the Short Snouted Seahorse seldom has spines on its head and back.

Short Snouted Seahorse by Neil Garrick-Maidment



## THE SURVEY

The survey started off back in 1994 looking into historical sightings of Seahorses around the British Isles and Ireland, it was a surprise to the author that so many sightings had occurred right back to 1799, in fact sightings 40 to 50 years ago were more common than the 10 years prior to the start of the survey, why this is, is not fully understood but could be due to the public perception of Seahorses and where they come from. It is often difficult to get people to believe there are Seahorses in the world let alone 2 species of Seahorses in British waters.

It is considered that most Seahorses occupy warmer tropical waters but in fact as many as half of Seahorse species are found in cooler and temperate waters.

The initial paper chase looking for Seahorses was a long slow affair due to the difficult location of a lot of the sightings but it paid off and gave a reasonable idea of where the general distribution was thought to be. Quite a number of earlier sightings had to be discarded as the authenticity of them was in doubt; often the descriptions looked to be more like pipefish than Seahorses. Local newspaper records proved to be an interesting source of information and gave us a unique insight into local species. Personal communication with long term residents of areas has proven to be very useful especially retired fisher folk.

Once the paper chase had been done this gave us areas to concentrate on to ask local divers and fishermen, museums and wildlife based organisations such as the wildlife trusts as to sightings and commonality of sightings in their area, this led to a great number of leads which again gave us a better idea of locations.

We developed a reporting sheet for sightings that has been proved to be very successful, under advice from Dragon Search in Australia we had a colour outer leaflet with information about the survey and Seahorses with a paper insert that could be sent back to us separately. Dragon Search found that they often did not get reports sent to them because members of the public wanted to keep the glossy outer sheet.

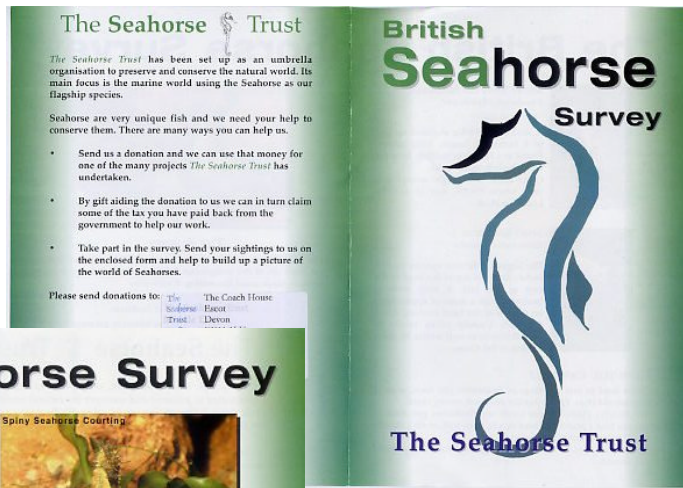
The survey sheet has been used now for 10 years and is in need of an update but the initial format we used has been very successful. The idea was to keep it relatively simple but get enough basic information to make a number of conclusions from; by and far the most important piece of information was the reporters contact details. As near as possible every sighting is followed up by further contact, this has led to a great deal more information being extracted from the reporter. We deliberately decided not to make the form too scientific or complicated as most reporters would be put off by this and we would not receive the sighting at all; it appears to have worked and we now have hundreds of confirmed sightings from around the British Isles (as well as a large number of unconfirmed sightings)

The survey form now has an electronic format on the British Seahorse Survey web site; it was decided to set up a dedicated web site for the British Seahorse Survey ([www.britishseahorsesurvey.org](http://www.britishseahorsesurvey.org)) to act as an educational and reporting forum. The electronic reporting sheet has proved very popular and we have had approximately 75 sightings reported in the last couple of years from this site. We also know from feedback that the site and The Seahorse Trust sites are both used for educational research.

Long term it is intended to keep the survey running and already it has become the longest running continuous survey of its kind. The information we are gathering is already being used for policy decisions and for changes in the legal status of Seahorses around the United Kingdom.

The survey is also an important community tool with dive groups and others looking out for Seahorses which in turn is giving community members a greater pride in their own 'patch'.

The British Seahorse Survey leaflet with its paper insert. The insert was chosen to be paper to maximise the numbers of sightings sent back to us.



The most important piece of information on the survey sheet is the contact details of the reporter. Almost all reports are followed up to gather more information. This technique does not overload the reporter with too many scientific questions but allows us to gather much needed information.

British Seahorse Survey	
<i>Your Details</i>	
Name:	
Address:	Post Code:
	Tel. No.:
	Dive Club:
<i>Sighting Details</i>	
Date:	Depth:
Dive Site:	Grid ref.:
Weather Conditions:	State Dive:
	Boat Dive:
Size Bed Habitat:	
Seahorse Species (if known)	Please include a sketch if possible
Number:	
Size:	
Brief Description of Seahorse(s):	The Seahorse Trust The Coach House Escot Devon EX11 1LU Tel: 01404 822373 <a href="http://www.the Seahorse Trust.co.uk">www.the Seahorse Trust.co.uk</a> <a href="http://www.britishseahorsesurvey.org">www.britishseahorsesurvey.org</a>
<small>Please include photographs if possible</small>	



## DATABASE

The database for the British Seahorse Survey is held in three formats: firstly an excel database where the details from all the sightings are held, secondly a photo database to hold all the photos taken of specimens found throughout the survey and thirdly a paper record system (including written and photographic reports) as a back up.

### Excel database

The excel database is an ideal format for the survey as it can be easily added to, changed if needed and cross referenced with other databases. The data is easily extracted to allow for the development of graphs and charts which are an excellent tool for analysing the data received.

Every sighting within the database has a unique identification number and this can be correlated with the photo database and the paper system.

The excel database was ideal at the beginning but we started to gather a wide range of photographs so it was decided to set up the photo database.

### Photo database

The photos are kept on a cd as well as the computer and each cd is backed up with a spare copy. As the information is vital to the work of the survey it is important that all work is backed up so it cannot be lost. The photos are easily located and each photo contains the name of the recorder, the species and its unique identification number.

Copyright of the photographer is respected and pictures are given to the survey only for the use of the survey and if we are requested for pictures to be used for other means then the photographer's permission will be gained prior to use.

[H.hippocampus against a measure which is the ideal picture for the survey](#)  
by Becky Seeley MARLIN



### Paper records

Although both the excel and photo databases are ideal, it was decided to also keep a paper record system as well, just in case of lose of information on the computer or any of the back up devices.

Wherever possible a photograph is included on the paper recording sheet for quick reference.

All three systems can be cross referenced using the unique identification number of each sighting and the system has worked well for the life of the survey, we are aware that it does need to change due to changing circumstances and the flexibility of the system allows for this.



Pregnant male *H.guttulatus* that was returned to the wild.

Picture by Simon Sharp

*H.hippocampus* found dead on the beach by Jan Light the measure is vital to scaling the animal.

Picture by Jan Light





## SEAHORSE MIGRATION

Seahorses are a slow moving fish with a limited swimming ability; their only form of propulsion is the tiny dorsal fin on the back of their trunk which will 'flutter' between 35 and 70 beats per second and the movement moves down the dorsal fin from the top to bottom, driving the Seahorse along. When not swimming the fin will lie at rest against the body; a good defence against accidental damage when amongst algae and rocks and during storms where they will get bashed around in the surge. The pectoral fins either side of the head will aid in stability and appear to help in changing direction, these lie flat against the side of the head when not in use and like the dorsal fin flutter at high speed when in use.

Traditionally it was thought that the sightings we had in the British Isles were just 'accidental visitors' that had been washed across the channel from the continent; or a seasonal migration from across the channel; this appears to be highly unlikely for a number of reasons.

The current in the channel tends to work from west to east or east to west so most of the seahorses that would probably have to raft [that is be attached to an object as it drifts in the current] would be driven by the current the wrong way, although undoubtedly some would have made their way across the channel but not in the numbers we have recorded over the years.

Although we do have a couple of sightings of Seahorses in mid channel (Sue Daly personal observation and Ivor Rees; seahorse caught in a scientific trawl) the chances of a small fish being able to swim across the channel unaided seems highly unlikely.

The work of the survey has shown that they do migrate but not across the channel and any recruitment from across the channel is more accidental but does aid to the genetic diversity.

We have a number of sightings of fully pregnant Seahorses in the waters around the British Isles and a number of recordings of fry, juveniles or sub adults giving us the conclusive evidence of them breeding in our waters.

One sighting is of particular note and that is a fully pregnant male off Dorset in 2005 (see picture) he was then videoed in the same area a few days later having given birth. The male was confirmed by matching the head fronds proving it was the same animal.



Fully pregnant male *Hippocampus guttulatus* (Spiny Seahorse) photographed off the coast of Dorset in 2005. He was videoed a few days having given birth. Identification was confirmed by matching the appendages on his head.

Picture by Steve Trewhella.

### Seasonal migration

It has always been assumed that Seahorses are site specific and will spend their full lives in the same area. The work of the survey has cast doubts on this and in the 2004 report we explained our discovery of a seasonal migration for both British

species, this has been confirmed with a further 2 years of data. [See charts below]  
 This migration particularly applies to those Seahorses that are found in exposed areas where the seahorses are at great risk of damage from severe winter storms and extreme tidal and weather conditions; in sheltered areas such as Poole harbour and the Solent and some of the more sheltered areas such as estuaries around the coastline the population appears to stay the same area all year around.

As can be seen by the graphs the depth to time of year ratio is the same throughout England and the Channel Islands. Although there are sightings for Scotland and Ireland there is insufficient data to form a conclusion as to the time of year/depth ratio for those areas.

The data spans back to 1799 with the majority of sightings being in the last 20 years, increasing to the last 4 to 5 years due to increasing awareness of the British Seahorse Survey and how to report sightings.

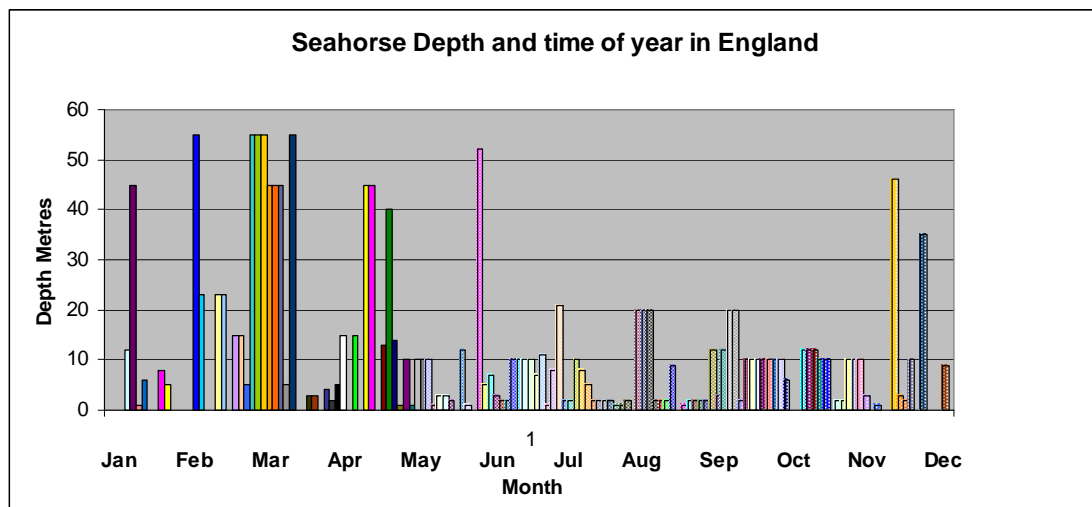
There is absolutely no evidence to suggest that we have Seahorses in our waters due to global warming; a myth being put around by the media and scientists alike, as was said earlier at least half the Seahorse species occur in cooler or temperate waters. Seahorses around the British Isles have been found as far north as the Shetland Isles.

The deeper depths occur during December through to April, which is the time of the worst storms and turbulent seas and the lowest temperatures (leading to a decrease in food supplies). It appears that this migration to deeper water is in response to the winter storms and looks to be a successful survival technique.

Through the work of the survey we have confirmed a resident breeding population in the British Isles but as described above there would be limited recruitment from continental Europe, this would most likely be by 'rafting'.

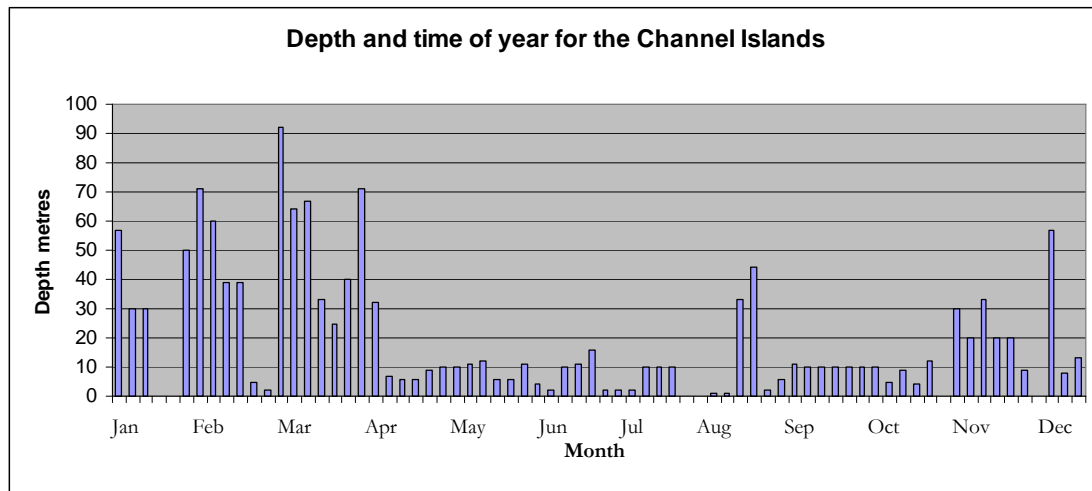
### Seahorse Depth and time of year chart for England

There were 248 sightings used for the graph with 63 not used due to lack of information.



## Seahorse Depth and time of year chart for the Channel Islands

There were 72 sightings used for the graph with 39 not used due to lack of information.

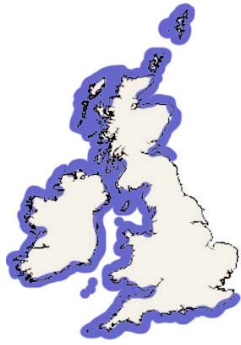


It can be assumed from the known data that the Seahorses are returning to shallower waters in the warmer months of the year for breeding [European seahorses are known to breed in captivity more frequently during the warmer months, although this is not a firm rule] and this coincides with the time of year for the various peaks in plankton blooms, which tend to be from early April; the first and largest peak through to the Autumn during which time there are several smaller and medium sized peaks throughout of varying degrees.

### The Gulf Stream

The plankton bloom is caused by the influence of the Gulf Stream and the longer hours of daylight and warming sea temperatures. The planktonic algae (phytoplankton) increases into enormous blooms which are then followed firstly by a boom in phytoplanktonic animals; those that eat algae followed very quickly by carnivorous planktonic animals (zooplankton). The increase in planktonic animals is a good time for producing Seahorse fry which will consume in excess of 3,000 pieces of plankton in a 24 hour period, they are virtual eating machines due to their very poor digestive system, which consists mainly of a digestive tube running from the mouth to the anus, during the passage through this digestive tract the food is only partially digested and is often excreted partially digested, because of this they need to consume large amounts of food to give them the required nutritional intake.

It is not by coincidence that a large number of creatures that feed either directly (like the Basking Shark) or indirectly (like the Leather Backed Turtle that feeds on Jellyfish that feed on plankton) on plankton are found in the same geographical regions and most of these geographic regions are the ones influenced by the Gulf Stream. In the British Isles this tends to be on the South, South West and Western coasts, with a lesser influence on the Eastern coast.



Basking Shark Distribution following the influence of the Gulf Stream

Map courtesy of MARLIN



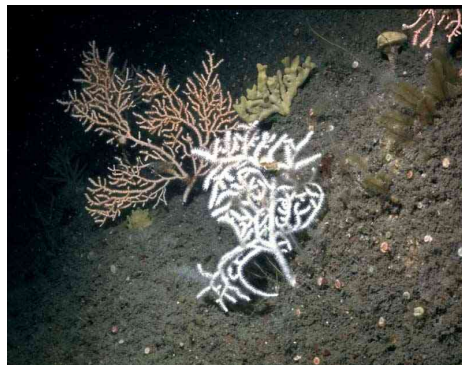
Rhizostoma Jellyfish distribution, they are one of the main food items for Leatherback turtles which follow them as they drift across on the Gulf Stream.

Map courtesy of MARLIN



Leatherback Turtles are the largest of all the turtle species and are usually solitary

Map courtesy of MARLIN



Pink Seafans are found mainly on the South West and western Irish coasts.

They feed mainly on plankton and like the other species on this page are reliant on the Gulf Stream to bring them the plankton.

Map courtesy of MARLIN



## The Gulf Stream

The main influence of the Gulf Stream which originates across the Atlantic from the coast of Mexico is the western, south western, southern and north western coastlines.



In 2006 the first reports of Seahorses (*H. hippocampus*) found in the North Sea occurred on the Dogger bank area (Dr John Pinnegar and Craig Mills, Care for the Environment, Lowestoft), as can be seen by the Gulf Stream map this is where there is a confluence of the Gulf Stream coming up from the south through the English Channel and down from the north around the top of Scotland.

Dogger Bank in the North Sea marked in Red. The *H. hippocampus* sightings came from this region during a tow by Care for the Environment's Dr John Pinnegar and Craig Mills



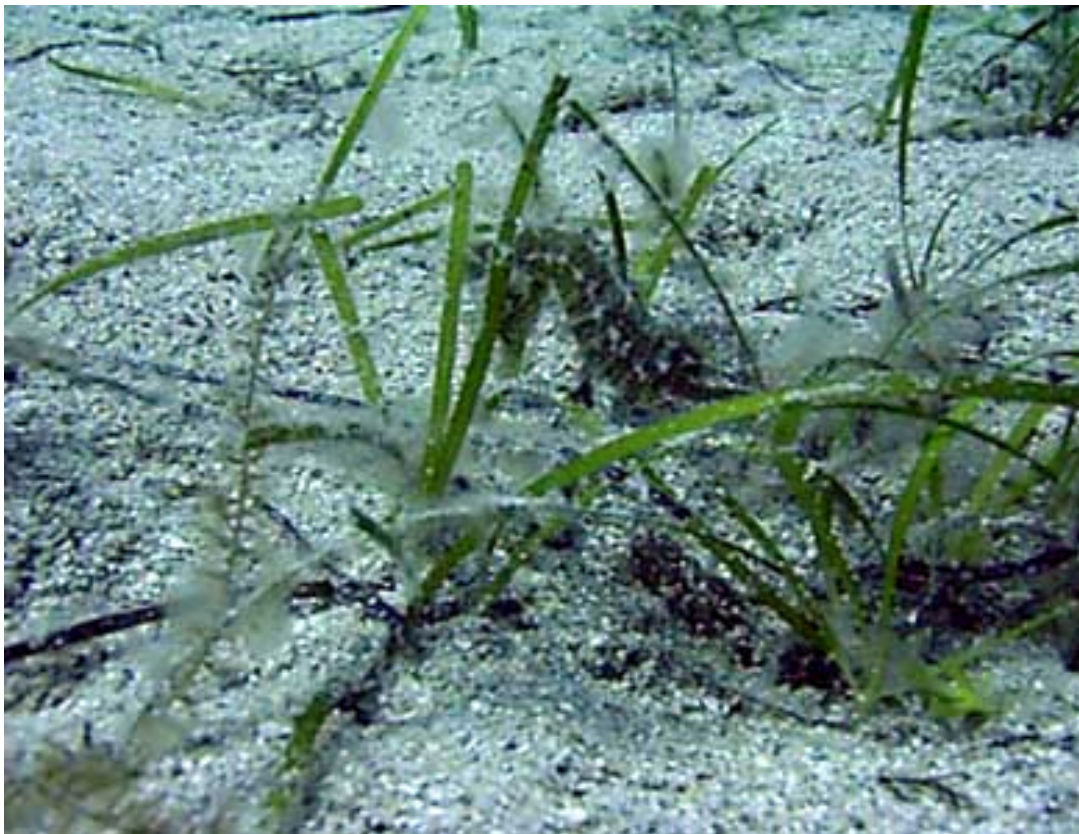


## HABITATS

It's been long thought that all Seahorses live just in Eel grass beds, slowly this is being disproved and the evidence from The British Seahorse Survey reports 2002, 2003, 2004 and now 2007 show this to be far from the case, *H.guttulatus* does seem to be found more in Eel Grass than *H.hippocampus* but the choice of habitats is wide spread from Eel grass to man made objects and marinas, it shows that both species are highly adaptable and will probably select habitats based firstly on food availability and secondly on the type of habitat.

Although both species can be found in the same habitat and there have been sightings within metres of each other; there does seem to be a slight difference in their preferred habitat and the evolution of the shape of the body, the appendages on it and the snout shape and length that have allowed both species to coexist in the same area and in quite diverse habitats.

Whether it is different food types that drive the differing habitat needs or the differing food types are a direct result of the adaption is not known but *H.guttulatus* has a proportionally longer snout than *H.hippocampus* which allows it to delve deeper into nooks and crannies and amongst tighter weeds but is this an adaption to the prime habitat of Eel grass with epiphytes.



*Hippocampus hippocampus* in Eel grass by Robert Smith

Around the British Isles *H.guttulatus* have on the whole more body appendages than *H.hippocampus* which is the perfect disguise for being amongst algae that is often covered in epiphytes. The *H.hippocampus* does not often have appendages in British

waters which is ideal for the preferred habitats where there is little or no algae, if they had appendages this might make them stand out.



Hippocampus guttulatus in the same Eel grass bed as the above picture showing Hippocampus hippocampus by Robert Smith

H.guttulatus seems to have a need for some form of cover whether this is weed or rock, they are seldom found out in the open over sand or silt or mud. H.hippocampus has a much more even spread on habitat preference and can be found in most areas.



Eel grass bed in Salcombe Estuary in Devon  
By Nigel Mortimer

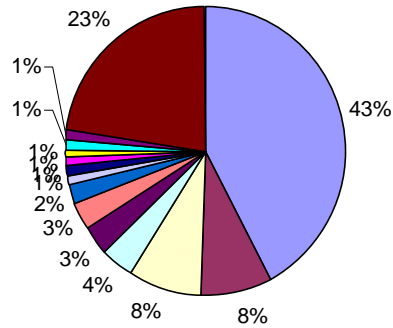


Hippocampus  
hippocampus on silt  
by Lisa Allison



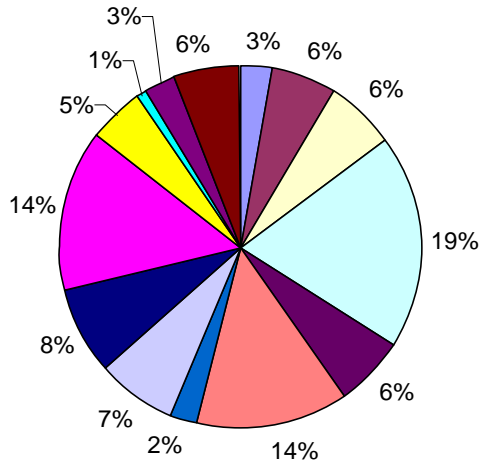
Eel grass bed

**Habitats where Hippocampus guttulatus were recorded between 1799 to December 31st 2006**



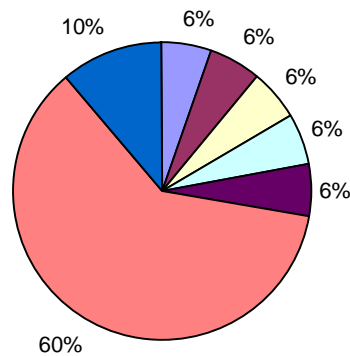
- Eel Grass
- Mixed rocky/Algae
- Found on beach
- Sandy bottom
- Rocky
- Mud / silt
- on deck of boat
- rocky wall
- crab pot
- mud and rocks
- weed around a wreck
- Rock Pool
- Weedy
- N/K

**Habitats where Hippocampus hippocampus were recorded between 1799 to December 31st 2006**



- Eel Grass
- Mixed rocky/Algae
- Found on beach
- Sandy bottom
- Rocky
- Mud / silt
- In Trawl
- sandy, sand mason worms
- Mixed Algae
- mud and rocks
- Unnatural Objects
- Rock Pool
- Sand & Weedy
- N/K

**Habitats where unknown Hippocampus sp were recorded between 1799 to December 31st 2006**



- Eel Grass
- Oyster bed
- On deck of boat
- Sandy bottom
- Mud / silt
- N/K
- Unnatural Objects

## Notable sightings

The last few years have produced some very notable sightings of Seahorses from a variety of sources and in a variety of habitats and locations all of which are helping to build a unique picture of these amazing creatures. As the knowledge builds of the Seahorses it is allowing us to understand and plan for the future protection of them. Fishermen and divers have proven to be an invaluable source of information about Seahorses and other marine creatures and the success of the survey has been due to the relationship built up with many communities including these two.

Listed below are just a small handful of the fascinating sightings that have occurred over the last few years, the survey itself has many hundreds of sightings from a wide variety of sources.

- Probably the most important sighting for the survey as a whole and Seahorse knowledge in general was in 2005 that was of a fully pregnant male found by Julie Hatcher the warden from Kimmeridge Marine Centre of a Spiny Seahorse (*Hippocampus guttulatus*) that was then photographed by Steve Trehwella. [Julia and Steve are the coordinators for the survey in the Hampshire area] This picture was followed a few days later by a video sequence taken by Colin Froud showing the same animal having given birth; we confirmed the identification by matching the spines on the head and dorsal region. This was the first time in the British Isles we could pin point within a few days when a seahorse had given birth in the wild, judging by the size of the pregnant male's pouch he would have given birth to a minimum of 350 fry.
- Another sighting of note was by Sue Daly from Jersey in August 2006, [Sue is also the surveys coordinator for the Channel Islands] she reported a sighting from a marina where a group of children had been 'netting' seahorses alongside the pontoons where the boats were moored up, the children had found approximately 30 Seahorses of a variety of sizes from juvenile down to fry. Sue went down the following day to check out the site and found another small group of 8 seahorses.  
We know from previous sightings that the Seahorses are breeding in this location and Sue has videoed Seahorses in the marina before.
- Another spectacular series of sightings that have occurred three times now is the finding of Seahorses in the cooling waters of a power station on the coast of Kent on the 26<sup>th</sup> of September 2005 and twice in 2006 in November a week apart. The Seahorses were found in the filter screens which are used to keep unwanted items out of the power stations. These filter screens are checked regularly by William Jones who has been monitoring the fish species that are caught up in the water intake.
- Water intakes seem to attract Seahorses we have a report by boat skipper Chris Mowlem in September 2005 who had a Seahorse dragged into his water cooling intake on his engine, amazingly it survived.
- As well as divers and fishermen the general public are a good source of information and we frequently get sightings by members of the public finding washed up Seahorses on beaches; just occasionally they are still alive and will be



returned back to the sea. The dead ones help Lucy in her work on the DNA analysis of European Seahorses.

- By far the largest Spiny Seahorse (*Hippocampus guttulatus*) I have ever seen was caught by fisherman Michael Bailey of Dorset in Southern England, it was almost 9 inches (23cm) from the top of its head to the end of its tail. After being photographed it was returned back to the wild safely.



- A first for the survey in May 2006 was the sighting of Seahorses in the North Sea on Dogger Bank; Dr John Pinnegar and his team from CEFAS were sampling the area and a *Hippocampus hippocampus* female came up in the trawl. This is a first for this area but not surprising when you consider that Seahorses are found on both sides of the North Sea and down into the English Channel.

## DNA Analysis

The Seahorse Trust works with many organisations and individuals in its quest for knowledge about Seahorses especially the British Seahorses.

With this in mind we are working with Lucy Woodall a PhD student working on the identification and genetic makeup of the 2 European Seahorses.

Lucy is studying the DNA in the species found throughout Europe to try and identify if they are just the 2 species throughout the range or whether they divide into sub species or even if there other species.

Lucy has been taking samples from specimens from as far a field as Bulgaria, Spain, France, Italy and also here in the UK and her work is ongoing and will be invaluable in the captive breeding work The Seahorse Trust is doing with many others to create secure captive populations.

When the British Seahorse Survey gets a report a of a sighting through we then contact Lucy and she will travel to the site, if the animal is still held to take a small fin sample or we arrange for the animals to be sent to her if they are dead.

It is too early to make concrete decisions about the origins and diversity of Europe's Seahorses and Lucy will need to do more extensive research before she can finalise her studies; meanwhile The Seahorse Trust will continue to work closely with her helping to understand more about these 2 enigmatic species.



Lucy Woodall with the director (and author of this report) of The Seahorse Trust Neil Garrick-Maidment with 2 Seahorses about to be sampled in Dorset

When a specimen is to be sampled Lucy brings an array of equipment to do the sampling, she has perfected the technique now so samples can even be taken underwater; not an easy task.

Wherever possible Lucy will try to get the Seahorse into a controlled environment such as a bucket or a fish tank.

Picture by Steve Trehwella



All measurements are taken during sampling to give an overall view of the specimens from around their range

Picture by Steve Trehwella







The next step is to take a small fin sample from the specimen which is then transported back to Lucy's lab for analysis.

Picture by Steve Trehella

The British Seahorse Survey would not be possible without the kind help of many people including the diving and fishing industry.

In this picture fisherman Michael Bailey has kindly taken us out on his boat to sample the Seahorses in Dorset

Picture by Steve Trehella



## Coordinators

The survey has built up a network of volunteer coordinators in various parts of the British Isles and Ireland without them we would not be able to receive the quantity of information that we get for the survey.

Although the list below is of our official coordinators the survey is indebted to the huge number of others who give up their time free of charge to send in sightings that either they have made or heard about from others, it would be impossible to list all the people who have helped us so I would like to give a generalised thank you to everyone.

British Seahorse Survey Coordinators around the British Isles and Ireland.

Area	Sighting Coordinator	Contact details
England	Neil Garrick-Maidment	Tel:01392 875930 <a href="mailto:neil.seahorses@tesco.net">neil.seahorses@tesco.net</a>
England	Robin James	Tel:01305 761465 <a href="mailto:robinjames@merlinentertainments.biz">robinjames@merlinentertainments.biz</a>
England	Louisa Jones	Tel:01752 251338 <a href="mailto:louisa.seahorses@tesco.net">louisa.seahorses@tesco.net</a>
Isle of Wight	Lucy Boynton	Tel:07766521818 <a href="mailto:lucyboynton@yahoo.co.uk">lucyboynton@yahoo.co.uk</a>
Anglesey	Karen Tuscon Anglesey Seazoo	Tel: 01248 431912 <a href="mailto:zooteam@angleseyseazoo.co.uk">zooteam@angleseyseazoo.co.uk</a>
Ireland	Kealan Doyle	Tel:00353 9532945 <a href="mailto:seahorseireland@eircom.net">seahorseireland@eircom.net</a>
Northern Ireland	Adrian Tolliday	Tel:012842728062 <a href="mailto:adrian.tolliday@ards-council.gov.uk">adrian.tolliday@ards-council.gov.uk</a>
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## Conclusion

Seahorses in the British Isles and Ireland are better understood now than they were 13 years ago when the survey was started, we have a better idea of the habitat preferences of the 2 species and we better understand their distribution and their migratory patterns.

We now know for certain they are resident in our waters and breeding; the assumption is the population, although not a very common animal is indeed stable and hopefully subject to no marine or environmental disasters will remain so.

In this day and age of Global Warming doom and gloom scenarios it is refreshing to see an exotic tropical looking animal that is not here because of the Global Warming but because it has always been a resident here; they were even recorded by the Picts on their stone carvings during their occupation of the British Isles.

The increased knowledge gained by the survey has allowed us to target areas of known populations to gain an even better understanding and as the survey continues we will break down some of the barriers and gaps in our knowledge.

This knowledge can only be gained by the kindness of others giving up their free time to search for the Seahorses and with better promotion of the survey via the internet and the media we will get more volunteers helping us in our work. The network of coordinators throughout the country has proved to be a valuable system in reporting sightings and to gain a better local knowledge of the people finding Seahorses and the habitat they live in.

Even with the knowledge we have after 13 years of the survey there is still an even greater need for more knowledge and as the survey goes on into its 14<sup>th</sup> year and beyond we will be adding to the large database we have so we can get a greater understanding of one of the British Isles most elusive but enigmatic species; whose future will hopefully remain a positive one.

## Thanks to:

The survey has not been possible without the input of so many people all around the British Isles from fishermen, to divers and beach walkers to rockpoolers. It is very difficult to name all of the people who have helped to make the survey a success but listed below are a few who deserve mentioning; in particular the estate of the late Betty Van Pepperzeel whose timely bequest to us gave us the much needed financial boost to push the survey on and to Sylvette Péplowski of WWF who has been a great supporter of the survey for many years.

With many thanks to all who have helped the survey especially:

Betty Van Pepperzeel  
Sarah Church (of A.R.Browns)  
PADI Project AWARE.  
Steve Trehella  
Lucy Woodall  
John Newman  
Dan Davies  
Victoria Copley

A.R. Brown and co. (Solicitors)  
Sylvette Péplowski of WWF  
Sue Daly  
Julie Hatcher  
Robin James Weymouth Sealife Centre  
Michael Bailey  
James Blue Reef Aquarium Southsea

And to the many others too numerous to mention

## The British Seahorse Survey supported by:

- The Estate of the late Betty van Pepperzeel



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