

## The diary of a wild, solitary, Bottlenose Dolphin (*Tursiops truncatus*), resident off Amble on the north Northumberland coast of England, from April 1987 to January 1991

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### Abstract

A solitary, but now sociable, male bottlenose dolphin (*Tursiops truncatus*) Montagu, christened 'Freddy' by local fishermen, first appeared in mid April 1987. Since his arrival he has remained within a very small triangular 'home range' that is rarely deserted. Given good weather and sea conditions, both visual and acoustic observation of feeding, resting and recreational activity is possible, and several complete 24 hour watch cycles have been successfully conducted. Through personal, colleagues, local resident and dive group observations, the dolphin's movements and activities have been recorded from June 1988 to January 1991; a history of events prior to June 1988 has also been pieced together. The recording of information on his lifestyle continues in an attempt to document the whole event.

Protection against harassment from dramatically increased dolphin-related recreational boating and swimming activity is being encouraged through information leaflets, display boards, and formal and informal talks to local schools and community groups.

### Introduction

Solitary, sociable dolphins have been recorded in many areas of the world, and several species, including *Tursiops*, have been involved (Lockyer, 1990).

The appearance and prolonged residency in one area of solitary bottlenose dolphins around the coast of the British Isles is a regular occurrence. Several have been documented since the mid 1960's: 'Charlie' a female was resident firstly in Elie, Fife, for several years and later moved south to Eyemouth, Northumberland (Gilchrist, 1967; Munday, 1967); 'Donald'/'Beaky' a male first reported in S.W. Isle of Man moved to S.W. Wales and finally to S.W. Cornwall in 1972 until he disappeared in 1976 (Lockyer, 1978); 'Percy' a male lived in the St Ives region of Cornwall from 1981–84 (Lockyer and Morris, 1986); 'Simo' a juvenile male, was observed

in S.W. Wales 1984–85 (Lockyer and Morris, 1988); 'Funghi' a male appeared in Dingle Bay, S.W. Ireland in the mid 1980's and is still in residence.

This paper presents the collected data from two long term sightings schemes currently in operation and provides a diary of the more notable day to day events and activities over this three year period. The conservative nature of his movements has enabled more intense and detailed 24 hour water periods to be carried out when both visual and acoustic watches were employed (Bloom, 1991).

### The area

Warkworth Harbour at Amble has the River Coquet flowing out of its narrow entrance which virtually dries out on low water spring tides. The whole area around the harbour entrance is very shallow, averaging 2–5 m depending on tidal state. The mainland to the west, Coquet Island and sand bars to the south and east and Pan Bush shoals to the North East provide shelter and protection from severe sea and weather conditions. The port has an active fishing fleet consisting mainly of inshore traditional cobbles as well as several larger seiner/traulers that work further out to sea. With a large marina development and local yacht and boat clubs also situated in the estuary, there is both fishing and recreational boat traffic all year round (Fig. 1).

The town's domestic sewage is pumped into the bay along an Outfall Pipe marked with a navigational buoy, which forms the southern boundary of 'Freddy's' territory. This buoy is 500 m east of the harbour which is the inshore limit, while the Pan Bush shoal, marked to seaward by a navigational buoy 1000 m north east of the Harbour, forms the offshore boundary, to what is essentially a triangular 'home range' of less than 0.5 km<sup>2</sup>.

There are several features common to this area that are also present in other locations that became the territory of solitary *Tursiops*, namely a shallow protected bay containing a river mouth/harbour

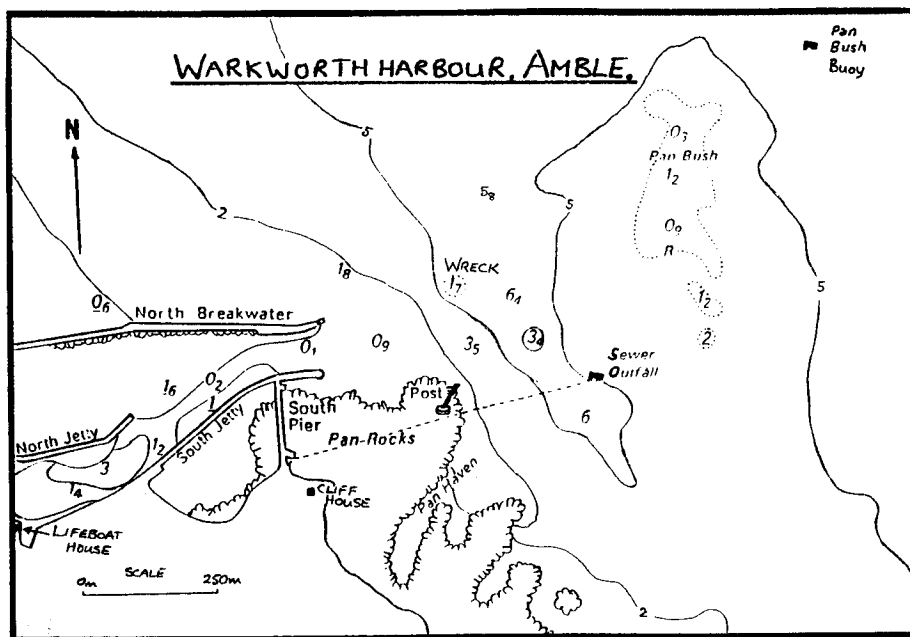


Figure 1. Map redrawn from Admiralty chart 1627.

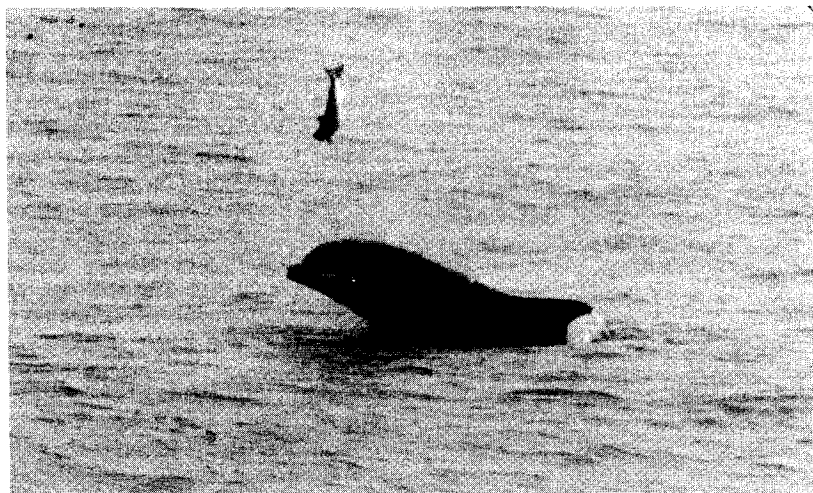


Figure 2. 'Freddy' tossing salmon.

giving a good all year round food supply, as well as providing associated boat and swimmer activity.

#### Dolphin appearance

'Freddy' is estimated to be between 3.1 and 3.25 m in length and very solid in build. The beak is scarred and pitted, the melon very pronounced and the eyes small

and deepset. The lower jaw and mouth line are very white, giving the impression of having very white cheeks (Fig. 2). There is an obvious deep ear crease behind both eyes, as well as a deep crease line running under the throat. There are several broken and missing teeth in both sides of the upper jaw, and one or two missing from the lower left jaw, while the remaining ones are worn and rounded (Fig. 6). There were



Figure 3. Dorsal fin.



Figure 4. Head and right flipper.

no papillae on the edges of the tongue, which along with his poor dentition and general 'beaten up' appearance suggest an animal of middle to old age, perhaps in his 20's. The beak, melon and blowhole area are discoloured, as are the areas around the dorsal fin and tail stock areas (Figs 3 and 4). The white ventral areas have a build-up of dead skin which has sloughed erratically, and also been deeply scratched and worn away in many areas (Fig. 5). The tail flukes, left pectoral and dorsal fins have no damage to their outlines, but the right pectoral fin now bears the scars of a deep wound on both the leading and trailing edges caused by an entangled fishing ling slowly tightening and cutting into it. On the dorsal fin

towards the leading edge, on both sides, there is a definite contour line where healthier more evenly coloured skin meets the paler and patchily discoloured skin. This marking has remained constant in photos taken in both 1989 and 1990.

There are many old scars all over the body, the most obvious being a deep 20 cm scar running parallel to the body above and behind the right pectoral fin. Several old rake marks are visible, particularly on the right tail stock area, from interaction with other marine mammals; these scars have not faded or disappeared, but remained prominent, throughout 1989 and 1990. No new rakes, and only one superficial wound (October 1990), have been recorded during this study period. No accurate estimations of complete healing and scar duration times have so far been possible so no comparisons can be made with other studied animals (Lockyer and Morris, 1990).

Many of the existing scars are surrounded by much paler skin colouration giving a halo effect while other skin areas are almost black in colour. Cold seawater temperatures, prolonged exposure to sometimes extremely cold freshwater runoff and regular exposure to the towns raw untreated sewage may all contribute to his poor skin condition, the incomplete healing of wounds, and the development of secondary skin infections.

#### Sea water quality

##### *Sewer outfall buoy*

Water samples were regularly taken over a twelve month period from the sewer outfall buoy area to try and establish levels of entero-bacteria routinely present, and to determine the presence of *E. coli*, *Salmonella*, *Pseudomonas*, and *Candida* spp., were also tested for as part of the standard water test in operation at Grange Laboratories, Wetherby, W. Yorks., which carried out all the testing (Table 1).



Figure 5. Patchy skin loss on belly.



Figure 6. Missing and broken teeth.

Wide fluctuations of Entero-bacteria levels were recorded reflecting perhaps that sewage is pumped according to storage tanks level and not at set times or tides. A sudden dramatic increase in seagull activity on the water in the sewer buoy area is a good indication of the recent pumping of sewage. Sample times were dependent on the availability of a boat, so were not taken at set times, tides or intensity of bird activity, so the wide fluctuations in entero-bacteria readings indicating varying sewage concentrations is to be expected. Industrial sewage is not routinely disposed of down this pipe so perhaps cleaning and disinfecting operations may be a possible explanation for the zero count recorded on 2.2.90, and the  $< 1$  count of 30.4.90. Perhaps the 10 count of 10.10.89

may be due to several hours of dispersal with no additional pumping.

#### *Harbour entrance*

Bacterial levels were consistently low in this location, as would be expected, because this is a fine salmon river. There appears to be little contamination from the large numbers of boats using the harbour and extensive marina development (Table 1).

#### **History—April 1987 to June 1988**

The first sighting of 'Freddy' in Amble was mid-April 1987 just before the Easter Bank Holiday weekend. Jackie Marshall, a local resident, went to check the story of two excited young neighbours who thought they had seen a shark playing about at the Harbour entrance (pers. comm.). Joe Haliday took a photograph of 'Freddy' jumping, with the Pan Bush Buoy behind, later that same weekend. Most of the sightings over the next year are general recollections, with very few specific dates, as systematic collection of information did not start until a year later. The local commercial inshore fishermen report him mainly in the Pan Bush region, although he would escort their boats on occasion, usually on the stern near the propeller or on the boat's bow waves. Gordon Easton, the R.N.L.I. lifeboat mechanic, and David Grey, a boat builder, also run two boats, the Gay Fisher II and the Gay Jennifer. Both are licensed to carry passengers and are used to take out fishing parties, and bird watching and grey seal sightseeing trips around Coquet Island. Both report seeing 'Freddy' regularly especially in the Pan Bush Region. They confirmed

## Water Quality Analysis

Date of Sample	Sample Depth (metres)	Enterobacteria (/ml)	E. Coll (/ml)	Salmonella (/ml)	Candida (/ml)	Pseudomonas (/ml)
10/10/89	0	400	Yes		No	No
10/10/89	3	10	Yes		No	No
12/1/90	0	240	Yes	No		
2/2/90	0	0	No	No	No	No
7/3/90	0	1100	Yes	No		No
3/4/90	0	260	Yes	No		No
30/4/90	0	<1	No	No		No
30/6/90	0	480	Yes			
9/8/90	0	540	Yes	No		No
2/10/90	0	620	Yes	No		No
5/11/90	0	160	Yes	No		No

## Harbour Entrance

Date of Sample	Sample Depth (metres)	Enterobacteria (/ml)	E. Coll (/ml)	Salmonella (/ml)	Candida (/ml)	Pseudomonas (/ml)
10/10/89	0	<1	Yes		No	No
12/1/90	0	10	Yes	No		
2/2/90	0	0	No	No	No	No
7/3/90	0	0	No	No		No
30/6/90	0	<1	No			
9/8/90	0	<10	No			

Table 1.

the sex of the animal as male because he was observed on one occasion that summer belly up with an erect penis pressed against the hull of their boat. Gordon Easton also had the impression that 'Freddy' was dull and sluggish, and 'slack skinned' that first year compared to more recent times (pers. comm.).

'Freddy' did not disappear that winter but was seen regularly by fishermen escorting their boats, or in the vicinity of the Harbour entrance, or Pan Bush or sewer outfall buoys. A dive club also reported him in the area, accompanying their boat, but he showed no apparent interest in any of their party when they tried to get in the water with him. On 1 January 1988 he was in the Harbour entrance most of the afternoon.

From the Spring of 1988 onwards, the true conservative nature of his range became more apparent. Most sightings were inside his defined home range, except for the odd boat escort which might lure him further out to sea than his normal drop off points at sewer outfall or Pan Bush buoys. On one occasion,

on a high spring tide, he escorted a cobble right up the harbour to its moorings, opposite the Lifeboat House, before returning to the Harbour Mouth.

During this period there were many stories of there being more than one dolphin in the area; also of a smaller mate or perhaps a calf being killed. There were no reports of dead animals made to the Natural History Museum for this period (Martin Sheldrick, pers. comm.). It also proved remarkably difficult to track down eye witnesses to many of these apparent events when more than one dolphin was seen. One report, however, was confirmed from two witnesses who were fishing from the pier in early October 1988 when a large dolphin and a much smaller dolphin appeared in the harbour entrance. The smaller of the two which was approximately half the size of the larger was the more active and played and jumped around the larger. After a few minutes a second large dolphin ('Freddy?') appeared and all three animals moved out of the harbour towards the Pan Bush and were lost from view.

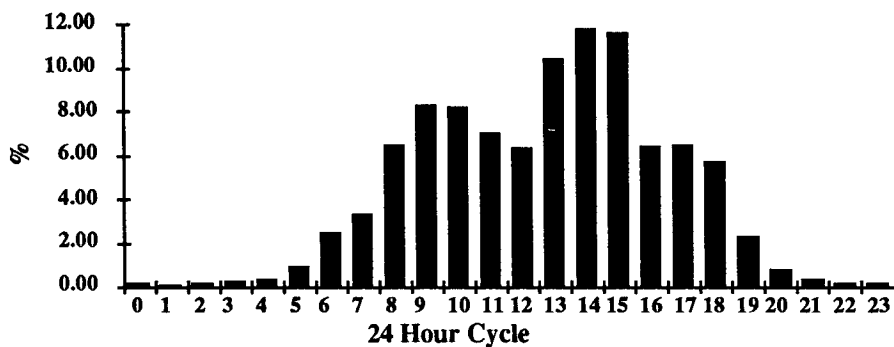
## HOURLY REPORT FREQUENCY FOR 1988-90 PERIOD

TIME	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL	%
0						2							2	0.14
1						1							1	0.07
2						2							2	0.14
3	1					2	0.5						3.5	0.24
4	1				2	2	1		0.5				4.5	0.31
5	1		1	1	0.5	5.5	2.5	1	1.5				14	0.97
6	1		0	3.5	7.5	4	8	5	5	1.5			35.5	2.47
7	2	2	9.5	5.5	4.5	7.5	5.5	4	7	4.5	0.5	1.5	48	3.34
8	4	3	7.5	11	6	10	14	9.5	11.5	9.5	2	3	93	6.47
9	5.5	5	10	10.5	7	15	12.5	8	17.5	14	5.5	8	118.5	8.24
10	7.5	7	7	6.5	8.5	9.5	7.5	12.5	15	11.5	14	11.5	118	8.21
11	6	6.5	6	4.5	7	5	7	15	13.5	10	7	13.5	101	7.02
12	5	5.5	6	4	8	5.5	10	7	13	11.5	8.5	6.5	90.5	6.29
13	6	8	7	10	15.5	15	20.5	15	16.5	17	6	13	149.5	10.40
14	4.5	7.5	14.5	8	12	12	19.5	21	19.5	24	11	16	169.5	11.79
15	8.5	10	8.5	10	14	13.5	18	17	21	21.5	12	3	167	11.61
16	3	4	7	6.5	9	10.5	6	15	14.5	10.5	2.5	3.5	92	6.40
17	1	1.5	6	6.5	10.5	9	16	20.5	16.5	4.5	1	0.5	93.5	6.50
18	1		6	7	17.5	9	18.5	12.5	9.5	2			82	5.70
19	1			3.5	6.5	9	6.5	5	1				32.5	2.26
20	1				3	2	3.5	1					10.5	0.73
21						2	3						5	0.35
22						2			0.5				2.5	0.17
23						2			0.5				2.5	0.17
<b>TOTAL</b>	<b>60</b>	<b>60</b>	<b>89</b>	<b>98</b>	<b>137</b>	<b>157</b>	<b>180</b>	<b>169</b>	<b>184</b>	<b>142</b>	<b>70</b>	<b>92</b>	<b>1438</b>	<b>100</b>

Shaded Hour denotes the average sunrise and sunset times for each month  
(All times corrected for Greenwich Mean Time)

Table 2.

## Hourly Report Frequency for 1988-90 Study Period



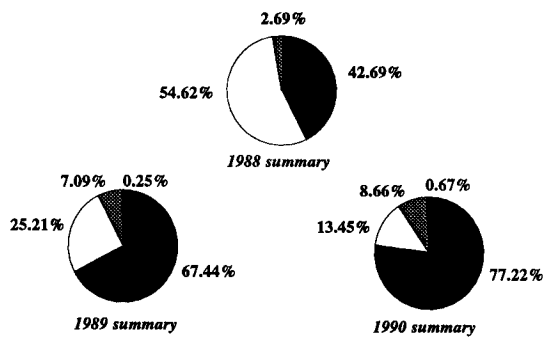
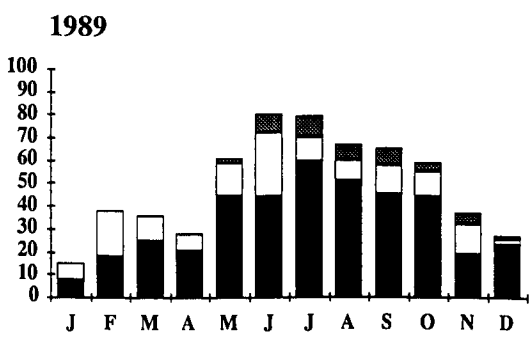
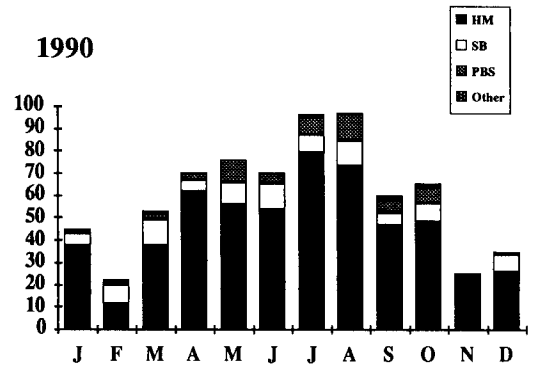
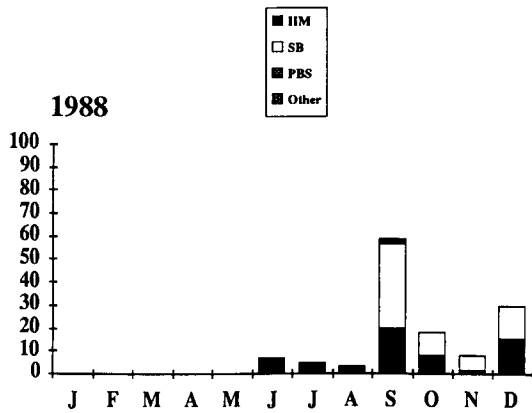
Graph 1.

*Setting up the 'Dolphin Diary' and 'Dolphin Monthly Watch' schemes*

Two detailed accounts of close contact with a wild dolphin in Amble, on top of the previous year's

reports prompted a personal visit on 25 July 1988. My first reaction was of disappointment, when on arrival at the end of the Pier at 0700, two anglers told me they had never even heard of the Amble dolphin

Dolphin Location Summary



Graph 2. HM: Harbour Mouth, SB: Sewer Buoy, PBS: Pan Bush, Other: Other.

let alone seen it. However literally 5 minutes later 'Freddy' came porpoising into the harbour entrance from the sewer buoy area to meet two angling boats leaving. These were accompanied a short distance, and then he returned to the harbour entrance, and started a regular to and fro patrol pattern across the harbour mouth. Two fish were caught and tossed during this observation period. The first was definitely a salmon or sea trout of 2-3 kg. The second, a smaller fish, jumped clear of the water ahead of the dolphin, which came out of the water behind it and caught it before it hit the surface.

A report sheet was devised for distribution to try and collect data on the dolphin's movements and behaviour. Local contacts with boatmen, guest houses, schools, dive clubs and other interested, not only watching, but perhaps recording data were established. The collected hourly reports, with those of longer than an hour being divided into hourly segments, form the basis for the location and activity data (Graphs 2 and 3).

*Informal observer biases*

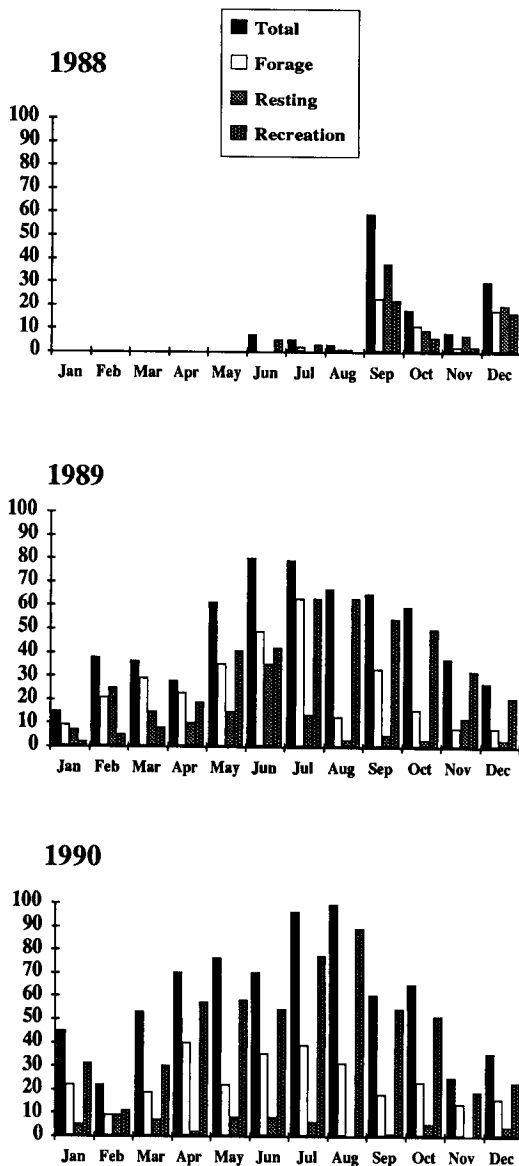
All the verified reports for the 1988 to 1990 period have been included in the location and activity

graphical representations (Graphs 2 and 3). Data collection from a number of sources, some formal but most informal, over the three year period has been regular but inconsistent. Different observers, times of the year, time of day, weather and sea-state conditions, tides, position and activity of the observer with regard to the dolphin, have all created informal observer biases. These need to be taken into account when looking at the summarised data, and the results and the conclusions drawn from these results. For example: there were more hours of observation recorded, in 1990 rather than in 1988, in summer months rather than winter months, in the afternoons rather than the mornings. Formal watches accounted for most of the observations between 2200 and 0400 while informal watches dominated the 0500 to 2100 period.

Table 2 summarises the report distribution, by month and time of day, for the 1988-1990 period. Sunrise and sunset times vary according to the time of the year and can be seen to significantly affect the hour in which each month records its first and last significant number of reports.

Graph 1 represents the timing and frequency of hourly watches throughout the 24 hour cycle.

## Dolphin Activity Summary



Graph 3.

Reports peak at 0900–1000, mid-morning, and 1300–1500, mid-afternoon, with a distinct depression at 1200, the time of the mid-day meal in the north of England.

#### June 1988 to December 1988 (Bloom, 1989)

Diary Sheet contributions and personal visits, including two continuous dawn to dusk watches, for the

purposes of comparison, were split into 130 hourly watch periods. Analysis of this data shows that his time was split fairly evenly between sewer buoy and harbour entrance areas, with only occasional sorties out towards the Pan Bush region (Graph 2). Resting, foraging and recreational activities were determined, and their occurrence at some time, not necessarily for the whole time, during a watch period was recorded (Graph 3).



DIVE / BREATHING TIMES FOR 1988-1990

1988

Date	Time	Dolphin Location	Apparent Activity	No. Dives Recorded	Observed Time (secs)	Mean Dive Time (secs)
10-Sep	1500	HM	F	14	405	28.93
12-Sep	0900	HM	F	10	318	31.80
12-Sep	1000	SB	R	31	1735	55.97
12-Sep	1300	SB	R	12	345	28.75
30-Sep	1000	SB	R	10	330	33.00
5-Oct	0900	HM	F	20	614	30.70
5-Oct	1200	SB	R	10	544	54.40
5-Oct	1300	SB	R	10	398	39.80
5-Oct	1600	HM	F	10	371	37.10
5-Oct	1800	SB	R	26	709	27.27
8-Oct	1500	HM	F	15	342	22.80
8-Oct	1600	HM	F	15	427	28.47
16-Oct	1200	SB	R	44	1566	35.59
16-Oct	1400	SB	R	13	426	32.77
20-Oct	1600	SB	R	10	316	31.60
6-Nov	1100	SB	R	27	701	25.96
17-Nov	1000	HM	F	10	124	12.40
9-Dec	0800	SB	R	20	671	33.55

1989

Date	Time	Dolphin Location	Apparent Activity	No. Dives Recorded	Observed Time (secs)	Mean Dive Time (secs)
23-Jan	0800	HM	F	10	287	28.70
23-Jan	1200	HM	F	10	464	46.40
1-Feb	0800	HM	F	14	432	30.86
1-Feb	1400	HM	F	15	438	29.20
7-Feb	1300	SB	R	21	863	41.10
15-Feb	1500	HM	F	10	185	18.50
3-Mar	0800	HM	F	10	190	19.00
19-Mar	1200	HM	F	19	902	47.47
19-Mar	1300	HM	F	31	1447	46.68
20-Mar	1400	HM	F	20	437	21.85
21-Mar	1100	HM	F	13	392	30.15
26-Mar	1700	HM	F	10	152	15.20
12-Apr	1900	HM	F	11	232	21.09
24-Apr	1600	HM	F	30	713	23.77
11-May	0900	HM	F	20	373	18.65
14-May	1300	HM	F	10	192	19.20
17-May	0700	HM	F	20	755	37.75
17-May	1000	SB	R	19	1000	52.63
16-Jun	1300	SB	R	10	213	21.30
27-Jun	0400	HM	F	46	1328	28.87
27-Jun	0800	SB	R	25	1843	73.72
27-Jun	1000	SB	R	16	775	48.44
20-Jul	0900			20	376	18.80
2-Aug	0900	SB	R	13	349	26.85
12-Sep	1600	HM	F	10	303	30.30
22-Sep	0700	HM	F	38	911	23.97

1990

Date	Time	Dolphin Location	Apparent Activity	No. Dives Recorded	Observed Time (secs)	Mean Dive Time (secs)
1-Feb	1000	SB	R	24	601	25.04
1-Feb	1100	HM	F	13	326	25.08
28-Jun	1300	SB	R	21	719	34.24
29-Jun	0400	HM	F	25	1077	43.08
6-Dec	0900	HM	F	10	318	31.80

Year and activity	No. dives	Sequences	Mean Dive Time	S.D.
1988 forage	94	7	30.77	4.42
1989 forage	347	19	28.30	9.73
1990 forage	48	3	33.25	7.44
Total forage	489	29	29.42	8.68
1988 resting	213	11	36.24	9.66
1989 resting	104	6	44.01	17.30
1990 resting	45	2	29.64	4.60
Total resting	362	19	38.00	13.09

Table 3.

These activities are defined as follows: Resting: long, short, short, short, long, diving sequences (short = <20 seconds, long = >1 minute)/no echo location activity/no interest in swimmers and passing boat traffic/no foraging activity. Foraging: steady to and fro patrol pattern/steady echo location activity; a more evenly timed dive pattern with medium dive times (20 to 60 seconds). Recreation: the escorting of boats; swimmers and other animate and inanimate object investigation.

### General observations

#### *Tidal influence*

The Harbour mouth can virtually dry out at low water, and at these times 'Freddy' can usually be found in a resting pattern out around the sewer buoy. At high water, when there is little tidal flow, he may also be found at the sewer buoy. When the tide is ebbing and flowing, particularly the former, he is usually more active and engaged in foraging in the harbour entrance area, or recreational activity in areas of his home range other than close to the sewer buoy.

#### *Diving and breathing behaviour*

Eighteen sequences were recorded during 1988. These sequences were of a minimum duration of 10 surfacings, and those interrupted by obvious recreational activities, such as boat escorting, were terminated. Two patterns predominate: Firstly the long, short, short, short, long associated with the sewer buoy and now known to be associated with resting behaviour. Secondly, a more evenly spaced pattern, with less short dives, and medium dives outnumbering long dives. This pattern of surfacing came to be associated with foraging activity, usually in the harbour entrance.

Forty-nine sequences containing 871 dives were recorded over the three year period (Table 3). The overall mean surfacing rate, regardless of activity, was 32.05 seconds (S.D. = 11.83 seconds).

Looking at this data by activity, and discounting the unspecified activity and position entry of 20.7.1989, variations in mean dive times do become evident, with the 29 foraging sequences having a mean of 29.42 seconds (S.D. = 8.68 seconds), and the 19 resting sequences having a mean of 38.00 seconds (S.D. = 13.09 seconds). However, as the Standard Deviations overlap, these apparent differences are not statistically significant and more sequences need to be recorded.

#### *Feeding and fish chasing*

The dolphin was observed tossing and carrying fish on a number of occasions during 1988. (Fig. 2). One diver reported seeing 'Freddy' swim into view carrying a salmon. I have watched him catch a large

salmon of at least 5 kgs, toss it repeatedly in the air, and smack it against the water surface. The head and upper body broke away, apparently discarded, as he then moved out carrying the tail portion in his mouth. Dos Santos (1987) reported similar behaviour by *Tursiops* when feeding on cuttlefish (*Sepia officinalis*). Salmon (*Salmo salar*) and sea trout (*Salmo trutta*) are his observed principal prey, but he has also been seen feeding on smaller non-salmonid fish possibly coalfish (*Pollachus virens*). During the 1988-1990 study period other prey species to be observed included herring (*Clupea harengus*), mackerel (*Scomber scombrus*), a dogfish spp. (*Squalus*) and flatfish spp. (Dabs *Limanda limanda*, flounders *Platichthys flesus*). Feeding has not been observed in the sewer buoy area, but the dolphin has been seen with fish in the Pan Bush and wreck areas. There has not been any recorded observation of the dolphin tail kicking fish into the air, although this behaviour has been observed elsewhere (Wells *et al.*, 1987; Shane, 1990).

#### *People investigation*

With divers on scuba he is interested but wary, and either did not show himself, or flitted in and out of view at the limit of visibility. With swimmers at the surface, he seemed more confident, and would approach to within a metre but would not allow actual contact. I have one report of deliberate contact initiated by 'Freddy'. A woman reported that her son was trailing his foot off the transom of their sailing dinghy when he received a severe fright. 'Freddy' came up behind the boat and deliberately prodded the foot hard with his beak.

#### *Other animals and birds*

There is a small colony of grey seals (*Halichoerus grypus*), numbering 6 to 22, resident on the seaward side of Coquet Island. (R.S.P.B. warden, resident on Island, pers. comm.). Single animals are occasionally seen in the harbour area but no interaction was observed during any of the 1988 watch periods. Eider ducks (*Somateria mollissima*) are resident all year round and on three occasions in December 'Freddy' was observed to deliberately panic these birds by surfacing underneath them, causing them to panic and fly off.

#### *Boat escorting*

'Freddy' was not observed to interact with any floating inanimate object except boats and the two navigational buoys on his territorial boundaries. Commercial inshore fishing boats, mainly traditional cobbles, are constantly entering and leaving the harbour and, apparently at random, some of these will be escorted within his home range. There is also a small fleet of bigger seiner/trawlers working further out which leave and return together. He will often

escort these one by one, to and from harbour mouth toward the Pan Bush, before peeling off to escort the next in line. This activity is repeated, except in reverse, as the fleet returns to port. Yachts and other recreational craft are also randomly escorted while the two principal sightseeing boats taking trips aimed specifically at 'Freddy' are rarely ignored. Inflatables with outboard motors, however, seem to exert a special fascination and receive the most regular attention, rarely being ignored. Swimming upside down below, hanging very close to the propeller, occasionally expelling a 'surprise bubble', and bow and stern wave riding were all commonly observed.

#### January 1989 to December 1989 (Bloom, 1990)

In an attempt to place 'Freddy' somewhere in his home range as often as possible, on as many days as possible, during the year, the second information gathering scheme was introduced in December 1988. This required of the observer, just a record of the time, dolphin location, and activity, but did not require a prolonged observation period. This information was to be recorded on personal monthly sheets or on poster displays strategically placed around the town in places such as the library, Tourist Office, fish docks, schools, etc. These sheets are systematically updated each month, so that regular contributors can see that their efforts are appreciated. The regular monthly visit has proved invaluable in maintaining a network of local contacts, and the collection of background information and anecdotes.

The monthly sheets managed to record him as present on 357 days. Severe weather and sea conditions were present on the 8 missing days. From 4 April to 14 December, he was reported at least once, usually several times each day.

The more detailed Dolphin Diary Sheet scheme recorded 592 watch periods. As with 1988, most of his time was spent in the harbour and sewer buoy areas, but a much higher proportion of that time was spent in the harbour entrance area (Graph 2).

Foraging activity was more commonly observed during the first half of the year, and, with the exception of September, was much reduced in the last half of the year. Resting behaviour was also commonly reported during the first half of the year, but was rarely seen in the latter half. Conversely, recreational behaviour was not a significant feature until May, and by July was the activity most commonly reported throughout the rest of the year (Graph 3).

#### *Some of 1989's events are documented below*

In January the only event of interest was the partial sinking of the sewer outfall buoy. Although the dolphin escorted the dive boat to the buoy, he did not show himself to the divers during the clearance operation.

February and March were very quiet months as well. Interest in boats was more significant and on one occasion he came to an inflatable near to the Sewer Buoy with a piece of kelp in his mouth.

In April boat interest rocketed, but it was not until the last day of the month that he actually paid close and prolonged interest to someone in the water.

On 1 May the fishing line wrapped around the right flipper and trailing behind was first noticed. However a photo taken of him breaching in October 1988 clearly shows the wound on the leading edge of the flipper.

On 17 May we dived at the sewer outfall buoy. We found the bottom of the buoy covered in kelp weed, and the first 3 m of chain encrusted with mussels, below that there was nothing. No seaweed, shellfish or fish were observed, just bare rocks and silt. The heavy anchor chain, however, makes an audible clinking noise as wave action moves it on the bottom.

On 19 June a diver was taking his young daughter out for a swim. She was nervous and got a piggy back ride from Dad, to which the dolphin paid close attention. He then moved away and returned carrying a salmon which was dropped close to the diver. After some deliberation the diver picked it up and tossed it to the anglers on the south pier. On 23 June the first cetacean sighting, other than 'Freddy', occurred when two dolphins or porpoises were reported, close inshore, approximately 1 km south of the sewer buoy.

June had, we think, a grey seal/dolphin interaction when several dolphin signature whistles were heard, along with some 'oinking' sounds tentatively identified as coming from a grey seal. The dolphin was seen to jump three times in quick succession in the same spot but no seal was actually observed. This event was recorded during the first formal 24 hour watch carried out in conjunction with Dr Margaret Klinowska of Cambridge and David Goodson of Loughborough Universities (Bloom, 1991).

On 1 July a grey seal was in the harbour mouth area but no interaction was seen. On the 8th he was observed inside the harbour entrance lying on his back at the surface, with a large fish wedged between his erect penis and belly. On the 10th a dead dolphin was washed up on Hauxley Beach, just south of the sewer buoy. This was photographed by the finder and identified as a white beaked dolphin (*Lagenhorynchus albirostris*), a calf, male and about 1.2 m long. At 7pm on the same day three Killer Whales were observed inside Coquet Island. They moved steadily north, passing within 200 m of the sewer buoy, and were lost from view on the other side of the Pan Bush. The dolphin, who had been with swimmers, near the sewer buoy, disappeared and was later found inside the Harbour Entrance. On the 11th two divers were in the harbour mouth in good visibility. They watched the dolphin playing with a

fish underwater. He was allowing a large salmon to roll along the sandy bottom while he hung above it, occasionally ducking down to nudge or mouth it back a few yards against the water current. I have watched this game from the pier, where you see the dolphin appear to dive on the spot, often not submerging completely and almost reversing back to the surface. The same day 'Freddy' allowed a diver's flipper to brush his flank. Later the same divers were involved in the second fish hand-over. This time the tail only of a salmon, which, when recovered, weighed 1.3 kg. On the 12th 'Freddy' allowed a diver's hand to make flank contact. On the 20th the dolphin got highly excited with some swimmers, repeatedly jumping, charging and veering away at the last moment causing considerable nervousness amongst the swimmers. Physical contact increased throughout late July, as did the incidence of erections. On the 29th the dolphin actually gripped a swimmer's arm and caused bruising through the wetsuit.

In August the sightings scheme shows days when there were people in the water from early morning until dusk, which may account for the low incidence of observed resting and foraging behaviour. On 5th, from underwater, the dolphin was observed, at the sewer buoy, to criss cross between two sightseeing boats and repeatedly rub his erection on the keels. Later on, but during the same observers report, he was also seen to lay up under the buoy itself for several minutes, go up to the surface, and then return to this same position. On 10th he was deliberately trying to mate with anyone in the water. On the 15th and 16th most of fishing gear wrapped around his right flipper was cut away leaving only a hook high up in the flipper and a short length of line embedded in the partially healed wound. The hook was apparently loose, as this was pulled out, and the embedded line trimmed to a few centimetres later in the month. On the 21st we have definite aggression. A swimmer got in the water from the south pier. Immediately the dolphin, who was already with another man, went over to him and pushed and butted him so severely he was forced to get straight out again. The dolphin then returned to the first swimmer as if nothing had happened.

In September periods containing swimmer interaction were high, and blatant sexual behaviour became a routine part of swimmer interaction. Threatening and aggressive behaviour were also regularly reported. On the 4th the dolphin was biting at a gloved hand and vocalising a buzzing noise so loudly that it was heard on the boat with the engine running. On the 5th a diver on the bottom was using a camera and flash gun. The dolphin took offence and came at him mouth open, jaw popping and buzzing angrily. He actually attacked the camera and flash gun, breaking the flash-gun. On the 12th the Coquet Island R.S.P.B. Warden revealed that, on two of his

recent trips to the Harbour, the dolphin had swum under his small inflatable and lifted the bow out of the water, on the second occasion nearly overturning it. On 22nd there was a nasty sore of his erect penis: Hardly surprising considering the abuse observed on that one morning alone, when he persistently used it to hook arms and legs as well as rubbing it on people, boats and, early in the day, wedging a salmon on his belly. On the 28th we had a grey seal/dolphin confrontation that lasted several minutes. 'Freddy' was in the harbour mouth with swimmers, when he took off porpoising out of the entrance. He swam an excited zig-zag pattern, breathing explosively and diving quickly, gradually moving toward the sewer buoy. Close to it a grey seal appeared, amidst boiling water and then disappeared. The dolphin returned to the swimmers shortly afterwards and the grey seal was not seen again.

In October the incidence of sexual activity remained high, with him regularly trying to mate with swimmers. On the 5th, for example, a correspondent reported: 'He wanted his belly stroking and supports me on his belly swimming upside down. He was swimming perpendicularly to me crossing underneath, thrusting and brushing hard against me and lifting me up (in the water) each time.' On the 7th two swimmers are now convinced that the dolphin saved one of their lives when one had an asthma attack. As she was out of range of the boathook her friend went to support her. The dolphin then pushed them to the side of the boat and held them there while the skipper pulled them out. Two days later, while taking water samples for analysis of bacteria levels I watched him 'save' one of my staff. The dolphin lay angled on his back on the surface, and with his erect penis pushed the swimmer hard up against the boat's hull, pinning him there, apparently attempting to mate with him. It was the same skipper, and he confirmed that the dolphin's positioning and actions had been identical two days previously when he 'saved' the female swimmer. On the 13th I have a report of his skin peeling away on the head area and some type of lice on his body. On the 16th a grey seal surfaced within a few metres of the dolphin and some swimmers but the event appeared passive, with the seal only surfacing once before disappearing. On the 22nd we had another salmon handover, this time a whole one to a swimmer, again in the harbour mouth.

In November blatant mating behaviour was common, but aggressive behaviour was less frequent, perhaps because the number and frequency of swimmers was reduced. On the 26th a group of swimmers, one of whom was spastic, went in. Although the dolphin was in amongst them he would not go near the spastic swimmer, perhaps wary of the jerky and uncoordinated movements.

On 5 December the Royal Navy Ordnance Disposal Team were called in to blow up a mine snagged

in a trawl that had been buoyed north of the harbour mouth. Fortunately the dolphin came into the harbour early in the morning to forage, and with the addition of 3 or 4 snorkellers and small boats, we kept his attention inside the harbour mouth thus protecting him from the blast. Although we did not hear the explosion, we felt the shock wave underwater and I personally would not have liked to have been any closer or in line of sight. 'Freddy' disappeared for a couple of minutes afterwards but reappeared with a flatfish in his mouth apparently non the worse for the experience.

#### January 1990 to December 1990 (Bloom, 1991)

The monthly sheets collecting opportunist sightings record 'Freddy' as being present on all but three days of the year. Swimming and boat activity aimed at 'Freddy' was intense and not just confined to late Summer. One morning in January, for instance, over 30 swimmers were in the water. There is a record of people being in the water soliciting contact on 220 days of the year. Not all swimmer days will have been recorded so the true figure will be higher.

The Diary Sheet scheme recorded 716 Watch Periods. Most of 'Freddy's' observed time was spent in the harbour mouth and time recorded as spent at the sewer buoy continued to decline from 1988 and 1989 levels. Time spent out towards the Pan Bush and wreck areas remained similar to 1989 (Graph 2).

Foraging activity was remarkably constant being observed on average in 40% of each month's watch periods. Its occurrence did not vary wildly as in 1989.

Recreation was the activity most often observed during every month as has been the case since June 1989.

Resting behaviour was low throughout the year, with the exception of February, and was not observed at all in August or November. Resting behaviour has not been significant since June 1989 when recreational behaviour began to dominate.

#### Resume of 1990

In early January we had our second 24 hour Watch (Winter 1) with the same core personnel involved. A communication receiver tuned to the Sonobuoy frequency aided the observers at the end of the pier. This was particularly useful at night, as we could now listen to him echo-locating and match this to his to and fro swimming pattern. On several occasions on this watch we heard complete hunting sequences, that were sometimes confirmed as being successful visually, with a fish being tossed. The contrast between the silence at the sewer buoy and the barrage of echo-location activity in the Harbour entrance areas was quite startling. On 28 January 'Freddy' was aggressive toward a male swimmer in the water

with his woman partner. He split the pair, who were holding hands, pushing and butting the man away, making him leave the water, but remained placid with the woman. Later the man went back in on his own and 'Freddy' behaved quietly and calmly.

On 14 February 'Freddy' was preventing a solo swimmer from leaving the water at the south pier. On 20 February a string of cod nets (bottom set trammel nets) were set in an arc from the wreck area, through Pan Bush area towards the sewer buoy causing concern amongst some observers. A telephone call to the Harbour Master established that these nets were not a hazard to navigation as they were properly buoyed. Calls to the National Rivers Authority established that, while dropping surface nets in the close vicinity of a salmon river mouth was illegal because these areas are classified as salmon 'playground areas', dropping bottom set nets was legal. Given that in shallow water bottom set nets must also fish close to the surface, orders went down the command chain to the River bailiffs, who were asked to monitor the situation. Our concern for the dolphin's welfare was perhaps overdone as on 24 February I watched 'Freddy' accompany the boat checking and resetting this string for over an hour.

On 11 March a single porpoise (*Phocoena phocoena*) was observed in the wreck area and on 15 March a group of five were observed in the same location. On both occasions 'Freddy' was in the vicinity, accompanying the boat and its swim party that made the report, but no interaction was seen. On 16 March the 'cod nets' were removed, due perhaps more to lack of fish being caught than public pressure. That same day a dead porpoise was stranded behind north pier. Unfortunately it was buried by the fender below the high water mark and so a post mortem was not possible. On 20 and 26 March, in the early morning, 'Freddy' was observed up in the harbour close to a steel barge moored by the diesel tank. This steel barge was being loaded by crane with huge limestone blocks. The underwater noise of this loading operation must have been considerable, so could perhaps have attracted the investigation. On 26 March, despite warnings and in mountainous seas (which prevented the lifeboat from leaving harbour), a man went in to swim with 'Freddy'. He was hurt entering the water from the south pier and was then trapped, in the heavy seas, under the cliffs below Cliff House. An R.A.F. rescue helicopter on a training exercise in the area winched him to safety, and undoubtedly saved his life. On 30 March another single porpoise observed near the sewer buoy during a sightseeing trip. The same day the sewer buoy was replaced with a new one, and over 40 people were recorded as being in the water soliciting contact with 'Freddy'.

In April, in an attempt to ease some of the swimmer pressure on 'Freddy', Gordon Easton, the most

regular swimparty boat skipper, started operating a policy of putting his swim parties in the water and allowing 'Freddy' to come to them. If he was foraging then he was left alone. On 2 April two, duck bullying, events were recorded in the same hour while he was foraging in the harbour entrance. On 12 April 'Freddy' was observed tossing a huge salmon and on the following day was seen with a flatfish in his mouth.

May saw several cases of over excitement, blatant mating behaviour and aggression reported. One man actually having his wetsuit ripped, another being badly ducked and buffeted, and a woman being prevented from getting back aboard a boat. On 16 May the inshore lifeboat was launched to pick up 3 swimmers in difficulties, one of them being the same man rescued by helicopter the previous month. One week later a returning fishing boat picked up a lone woman swimmer in difficulties. On 27 May a diver observed some more fishing line around the right pectoral fin, which he was able to remove. The hook and line suggest light tackle used to catch small fish from the South Pier. On 28 May three more porpoises were observed in 'Freddy's' vicinity, but he did not leave the swim party he was with to investigate.

In June reports of sexual and aggressive behaviour were increased. Two tail smacking incidents, and another couple splitting episode, with 'Freddy' getting rough with the male swimmer, being recorded. He also got very excited and sexual with a menstruating woman swimmer, and on another occasion became aggressive towards two males in a swim party, one of whom had been encouraging sexual contact. In both cases bruised and bleeding hands resulted from 'Freddy's' attention. On 28 June, at the start of the third 24 hour Watch (Summer 2), two grey seal events were observed. The first involved the seal surfacing close by two swimmers and 'Freddy' in the post area. There was apparent interaction with 'Freddy' porpoising and jumping in the area where the seal was last seen. The second incident, two hours later occurred when a seal, possibly the same one, surfaced close by the sewer buoy while 'Freddy' was in residence and swimming in a resting pattern. This time no interaction was seen. On 30 June speed boat harrassment was noted with a water ski boat, apparently not a local boat, deliberately driving at him repeatedly at high speed.

Early July saw intense and virtually continuous daytime swimmer activity, both from boats and from the shore. Sexual and aggressive behaviour became as commonly reported as calm non-sexual interactions. Incidents of couple splitting, swimmers being breached on, ducked, tail swiped, mouthed, physically dragged around, and generally dominated were all reported. This unpredictable behaviour was also evident when a diver was driven out of the water back onto the south pier, and yet his diving buddy

was treated quite normally and calmly. On 29 July a diver, Neil Hope, removed the final piece of fishing line that had been embedded in the right flipper for at least the last two years when he gently tugged at it. During this same dive he observed 'Freddy' carrying a large salmon in his mouth. On 2 July 'Freddy' was observed outside his home range beyond the Pan Bush buoy by a returning fishing boat which he escorted back to the harbour entrance. An unidentified dolphin was seen breaching a week later, two miles east of Coquet Island, by a fishing cobble tending lobster pots. The skipper did not think it was 'Freddy', who was reported as being in his home range at approximately the same time. 'Freddy' has been seen to swim at speeds of 30 km/hour (Bloom, 1991) so the possibility remains that it could have been him 5 km further out, as this distance could have been traversed in minutes. At the end of July an information and warning sign was put up on the south pier barrier. In addition, a colour leaflet giving similar but more detailed information, warnings and advice, was distributed around the town.

In August swimmer activity was intense, and so was 'Freddy's' involvement with it. No resting activity was reported as being observed in any of the 99 hourly record sheet analysis collected for August. All the sexual and aggressive behaviours mentioned in previous months were observed, but with greater frequency. A variation on the couple splitting behaviour was also observed when aggression was aimed at a swimmer trying to break in on an already intense interaction between 'Freddy' and a regular male swimmer. The male swimmer, who was set upon, panicked and had to be pulled from the water bruised and with bleeding hands. On 4 August he was exhibiting blatant mating behaviour with a bikini clad woman swimmer and four days later he was seen to ejaculate after rubbing against another woman swimmer. On 12 August he defaecated in the face of a male swimmer. The diver who reported that this had happened to him before. On 14 August a group of youths were on the north pier with airguns, initially shooting at the ducks, but with 'Freddy' foraging close by they were also shooting at him. They were chased off, and it is probably lucky for them they were not caught by the outraged chasers. On 17 August a man was tragically drowned after jumping off the pier in an attempt to save his son who had been washed off the lower level. 'Freddy' was in the harbour entrance foraging at the time, but chose to ignore the man and the frantic rescue attempts going on around him. On 22 August yet another length of fishing line and hook were untangled from his right flipper making this the second set removed this year, not counting the removal of the final embedded piece of last years long-term entanglement. On the same dive the same reporter, in good visibility, also observed 'Freddy' feeding. He chased, caught and

swallowed a silvery fish of about 30 cm in length without surfacing.

September saw erratic and unpredictable behaviour continue. Calm and sometimes boisterous interactions were interspersed with sexual and aggressive episodes, aimed at both male and female swimmers. There were also disturbing reports of sexual behaviour being actively encouraged by both male and female swimmers, and that aggressive behaviour toward other swimmers during and after these episodes was markedly higher. On 2 September, in excellent water visibility, 'Freddy' was observed feeding in an enormous herring shoal that actually encircled the south pier. On 9 September divers report 'Freddy' very vocal. Whistles and clicks were heard and bubble blowing observed whilst accompanying divers on the bottom. On 12 September David Bone reported the result of informal speed trials. A semi-rigid inflatable doing 22 knots was caught up from behind and then overtaken by 'Freddy'. On 28 September a regular diver with 'Freddy', John Nolan, witnessed him 'cough up some polo mints'. On examination he thought that they were separated salmon backbone vertebrae worn smooth on the external surface. Nolan also reported two events witnessed while watching 'Freddy' from underwater. Firstly he observed 'Freddy' herd and shepherd a salmon until it was only 2 m from him. He then snatched it and carried it out of view. (This behaviour has also been observed and recorded during a 24 hour Watch.) Secondly, he reports watching 'Freddy', earlier in the month, swim into view with a large salmon in his mouth. He saw him shaking and snapping at the fish until the head broke away. The head portion was discarded and dropped to the bottom while he then swallowed the rest before being lost from view.

In early October reports of sexual and related aggressive behaviour were still common, with several swimmers allowing these sexual interactions to develop. However, not all interactions were sexual or aggressive. Diver Neil Hope reported that on 10 October he watched, from underwater, him teasing a salmon, but not actually harming it whilst in his view. Later the same day in the afternoon he had a game of tug o' war with 'Freddy' using a fresh caught salmon as the rope. Early October also saw two excursions from his home range. The first, a cobbler returning to harbour, had 'Freddy' join them at the north west Coquet buoy and escort them into the harbour. The second involved Amble's lifeboat out on a routine maintenance run towards Alnmouth several kilometres north of Amble. One of the crew reports that 'Freddy' accompanied the boat northwards for about 5 km staying close to the propeller most of the way. On the return run he spent most of the time on the bows or by the side of the boat. On 10 October the first recognisable new mark appeared on the body,

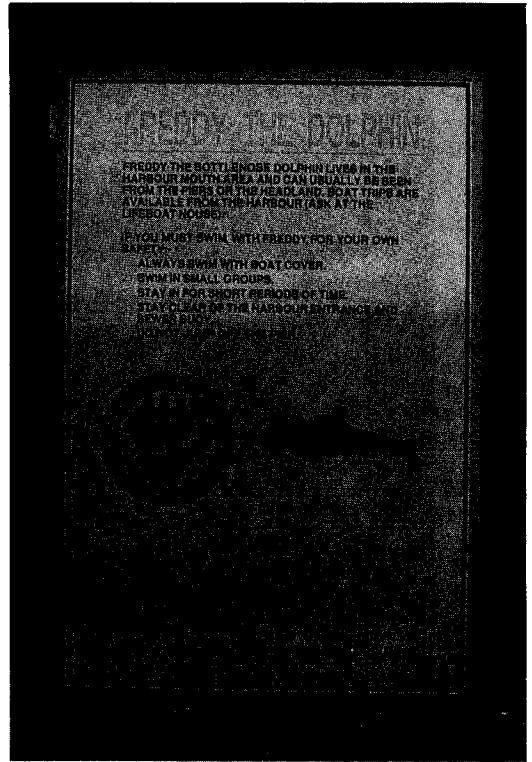


Figure 7.

with the appearance of a deep but superficial single cut about 30 cm in length positioned mid body, right side below the dorsal fin parallel to the body.

In November the number of swimmers was decreased, although most days there were still some going in the water. The chief boatman, Gordon Easton, is now limiting time in the water and restricting swimmers to one at a time in the water. The 25th November was the first day since January with no confirmed sighting of 'Freddy'. (The third and final day was 25 December.)

On 12 December violent storms and life threatening seas, which sank several boats right up inside the Harbour, saw 'Freddy' in the deeper dredged area opposite the diesel tank, scene of his stone loading examination forays in late March.

### Protection

The level of swimmer and boat activity has increased greatly since the summer of 1989, when 'Freddy' first allowed physical contact. Much of this contact is now sexually orientated, with many swimmers unwittingly (and unfortunately some apparently deliberately) encouraging this behaviour. This has

**FREDDY**

**Freddy is a large, old, male Bottlenose Dolphin (Tursiops truncatus). He is around 3.2m long and weighs perhaps 250kg and has been in Amble for over 3 years. Although we don't yet know of his marker movements if he leaves we will be able to recognise him through photo identification.**





PHOTO: KEVIN ANDERSON

**WHY AMBLE?**

Like all large predatory animals his basic needs are food and shelter and Amble provides both. Firstly the River Ouse is a fine Salmon river and the narrow harbour entrance forms a perfect fishtrap. Secondly it's sheltered and should give protection from waves. Stone walls and other harbour activities around the harbour mouth and provide additional shelter.




**WHERE TO FREDDY WATCH?**

Research and observation over the last 3 years has shown that Freddy uses two all year round and fairly quiet but well bounded by the Pier Bath Buoy, Scaer, Duffell Buoy and Harbour entrance. That sector rather sometimes shifts him further away but he always returns to his small 'private' 'house' which is close to the pier. The South Pier and Cliff House (sewerfall) are also average spots, especially the former which he is also frequent. There are hot spots available throughout the year and these have from the Lighthouse area of the harbour.

**SWIMMING**

If you plan to go in the water with Freddy remember this is a large and animal subject to changing moods and unpredictable behaviour. Staying in the water you are already disturbing his normal activity and constant physical contact can lead to over excitement, frustration and even aggression. Clearly he looks for food in the Harbour entrance and stays safely at the Scaer Buoy to respect this behaviour and hasn't been shown in their area. It is dangerous to swim in the Harbour mouth and unpleasant and unhealthy in the Scaer Buoy anyway!



GRAPHIC: DAVID GIBSON

**FOR YOUR OWN SAFETY:**

1. Swim in small groups for short periods of time.
2. Never swim with unattended load items.
3. Always wear a wetsuit or drysuit for protection.
4. Never jump off the Pier.
5. Never touch, tease or allow Freddy to swim.
6. Never swim in the harbour entrance.

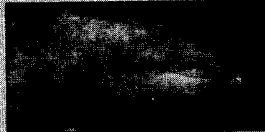



PHOTO: PETER ANDERSON

**RESEARCH**


There is an ongoing research project plotting his movements and behaviour. If you wish to contribute DOLPHIN WANDY RECORDS sheets are available. Please contact Amble's Tourist Information Office, Public Library or Lifeline House or write to: Peter Bloom, Dolphintown, Ramsgate, Margate, N. Yorks. YO17 0UX.

The leaflet approved by:


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Produced by Dolphin Services (Bloom) U.K. Tel 065 386 371

Figure 8.

led to frustration and aggression, often aimed not at the guilty party, but at some other innocent swimmer. Whether from sexual frustration, dominance or plain boisterous behaviour, butting, nodding, tail swiping, dunking, mouthing and biting of hands and arms are now commonly part of swimming with 'Freddy', especially in the intensive June to September period. These incidents can often take place for no apparent reason amidst calm reactions to others swimming in the same group.

Coincidentally in 1990, in the U.K., much press coverage was given to the potential benefits of swimming with wild dolphins, and to theories about the dolphin erection, far from being a display of sexual intent or dominance, was instead just being used as additional sensory receptor used for the examination of his environment and could be taken as a sign of trust. The statement, as reported by the press, that dolphins have never hurt or harmed a human, and in fact often save people from drowning, also exacerbated the situation by encouraging impressionable people to ignore common sense and put themselves, other people, and 'Freddy' at risk. Cold water temperatures, liberal doses of raw sewerage, sometimes heavy commercial and recreational boat traffic and strong water currents around the harbour mouth that tend to sweep a swimmer out to sea, are additional risks that many people had not seriously considered prior to leaping off the end of the pier.

To try and combat this, with the Harbour Masters permission, a large Information sign was designed

and bolted to the south pier gate. This was backed up by the printing and distribution of 10 000 colour 'Freddy' leaflets with more detailed information about him throughout the town (Figs 7 and 8).

Local newspapers, schools, clubs and community groups were involved, by giving illustrated talks and lectures free of charge, in order to try and inform and involve local people and visitors in efforts to protect 'Freddy's' lifestyle in Amble.

The three objectives of this educational exercise were therefore to provide basic information about 'Freddy' and his behaviour, to encourage common sense, and reduce the pressure on 'Freddy' by asking swimmers to leave him alone in his principle foraging and resting areas, which are dangerous and unhealthy to swim in anyway.

Finally it was hoped to reduce the changes of accidents through ignorance. The air sea rescue helicopter and the lifeboat both rescued people last year on several occasions, and returning fishing boats also picked up others swept out and in difficulties.

### Summary

'Freddy' appeared suddenly in the Amble area and had remained loyal to this tiny Harbour mouth area ever since. His staple diet is salmon and sea trout, supplemented by other species of inshore and estuarine fish. Foraging and recreational activities most often take place in the harbour entrance area, while quieter resting periods are most often spent around



the sewer outfall buoy. Boat escort duties have provided him with regular recreation since his arrival in 1987. Initially he was wary of people in the water and it took over two years before deliberate physical contact was allowed. In the space of just four weeks during the summer of 1989, these first tentative steps were developed into complete physical interactions, many of which were sexually orientated. Unpredictable and sometimes aggressive behaviour also developed, and this still remains a feature of many swimmer interactions. Measures to protect 'Freddy' from harassment and abuse have been developed, in an attempt to reduce the frequency of this and serious accidents occurring. During his stay, despite a chronically poor skin condition, he has appeared physically fit, and has never looked obviously thin. However with several teeth missing, many of the remaining ones rounded, a very battered white beak and scarred body suggests an animal of 20 to 25 years of age.

The only potentially serious problem encountered, apart from over exposure to swimmers, has been fishing line entanglement. The first and most serious case, which lasted for at least 18 months, was only removed after he allowed himself to be handled. Subsequent entanglements have been cleared before the line tightened and inflicted damage.

Only one case of close and prolonged interaction with other Cetaceans has been verified (October 1987). The regular sightings of porpoises have all, as far as could be seen, been ignored, and while a killer whale pod moved through he apparently hid from them. Interactions with local grey seals have been both calm and aggressive.

The two informal dolphin sightings schemes are still in operation and will hopefully continue to provide data from observers, standing informal watches. These in conjunction with the more detailed and controlled formal 24 hour watches, should increase our knowledge of the habits and lifestyle of these solitary animal events.

#### Acknowledgements

To all those regular, and irregular, 'Freddy' watchers for making the effort to collect information, fill in forms, record observations and then pass it on to me on a regular basis. In particular: Gordon Easton, Brenda Henderson, David Grey, John Almond, David Bone, Neil Hope, Sue Owen, Anne Atkinson, Tommy Turnbull, Mattie Stuart, and Karl Robinson. To David Goodson and Margaret Klinowska for guidance, help and encouragement, and all the staff at Flamingo Land Dolphin Centre for covering for my regular absences. To Patricia St John for help in developing the measures aimed at protecting

'Freddy' from harassment. To Lesley Hunter and Dave Maddocks of HM Associates for their help in computer analysis, and data and graphics presentation. Finally to Victor Manton for making me open the 'Freddy' filing cabinet and arrange the contents into some sort of order, and having the patience to wait for the finished article.

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