
Managing human interactions with solitary sociable dolphins – two case studies.

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Abstract

'Solitary sociable' cetaceans often become the focus for intensive human interactions and this has been found to put them and their admirers at high risk. The recent histories of two solitary sociable bottlenose dolphins in UK waters are considered here. One, Georges, spent ten weeks frequenting a busy part of the south coast of England in 2002 and the other, Marra, became trapped in a dock in Cumbria on the northwest coast of England in January, 2006. Both animals became the focus of considerable human attention, creating urgent management problems. Marra was ultimately captured and released back into the open sea and Georges eventually moved away on his own.

1. Introduction

A special workshop on the issue of solitary sociable cetaceans was held in San Diego in December 2005 (Vail *et al.*, 2006). The workshop established that there were many examples of such animals and the widespread nature of the problems they present. It also made some recommendations for their management. Subsequent to this workshop, one of the most high-profile of these animals (and one that was considered in depth during the workshop), the juvenile orca, *Orcinus orca*, known as Luna (or L98), was killed by accident by a tug-boat propeller. He had been living on his own in and around Nootka Sound on the west side of Vancouver Island, in British Columbia, since July 2001. A few weeks later, a common bottlenose dolphin, *Tursiops truncatus*, that appeared to be starting to exhibit solitary sociable tendencies, was also killed by a tug boat propeller in the busy entrance to Portsmouth Harbour in the UK. These latest deaths serve to also underline the vulnerability of these animals.

It is not clear why some usually sociable cetaceans come to live in isolation from the rest of their species or why they increasingly seek interactions with people (Vail *et al.*, 2006). Nor is it clear what the implications are for the populations that they belong to but, in the case of small isolated populations (such as those of bottlenose dolphins in the UK), even losses of single individuals may be significant.

A common pattern of increasing habituation to people has been recognised and has been summarised in a number of stages by Wilke *et al.* (2005) thus:

Stage 1: The dolphin appears and remains in a new home range, sometimes restricting itself to a small, protected part of the range often < 1km². Dolphin

may follow boats (usually fishing boats) or inspect fishing gear, but does not yet approach humans.

Stage 2: The dolphin becomes habituated to new range and may start to follow boats. Local people aware of its presence may attempt to swim with the animal. Dolphin appears curious but remains at a distance from swimmers. May bow ride or inspect ropes, chains and buoys, etc.

Stage 3: The dolphin becomes familiar with the presence of one or more people who have deliberately attempted to habituate it – this process may be assisted or even initiated by the dolphin. At this stage, the dolphin interacts with only a limited number of people in the water. Behaviour may include swimming in close proximity or diving side by side; the dolphin being touched including having its dorsal fin held to allow swimmers to be pulled along by the animal.

Stage 4: The presence of the animal becomes widely known, often assisted by media exposure. It becomes a local celebrity and tourist attraction, attracting visitors. During this stage, inappropriate human behaviour may provoke unwanted and possibly dangerous behaviour in the dolphin, including dominant, aggressive and sexual behaviours directed at humans.

Here we review the histories of two solitary but sociable common bottlenose dolphins encountered in the UK in recent years and consider whether any lessons might be learnt from their circumstances. The information presented here is gleaned from direct observations by the authors or first hand reports, unless stated otherwise.

2. First Case Study: ‘Georges’

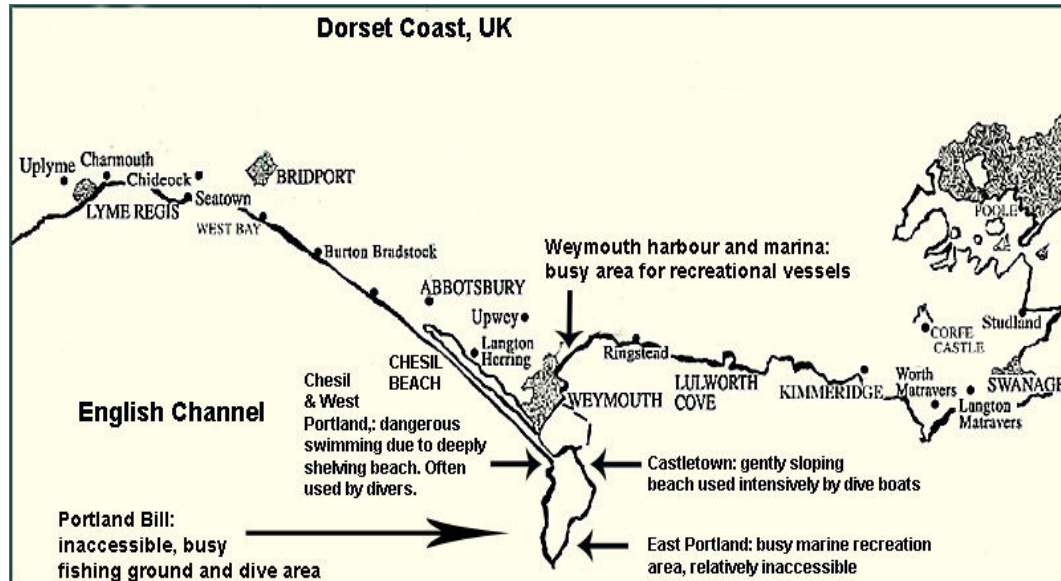
2.1. The animal and the location.

The dolphin, a heavily scarred, 3 metre long adult male bottlenose (estimated to be around 6 years of age), was first reported in English waters on 28th March 2002, in Weymouth harbour, Dorset. He remained in the Weymouth and Portland area until 4th June 2002. Within a few weeks of his arrival, photo-id matching confirmed that he was the same individual known from the French coastline, where he was first recorded in August 2001 on the Vendée coast near La Rochelle, and where he was known as Randy. He had been briefly sighted in September 2001 on the Brittany coast before spending the period October 2001-March 2002 off the north coast of Normandy and in the adjacent Channel Islands, prior to crossing the Channel to the Dorset Coast.

Georges made many shifts in his home range during the period 2001-5, employing what Müller *et al.* (1998) term ‘nodal home ranges’. This seemed to be similar to the behaviour of Maui off New Zealand’s South Island, Donald/Beaky off Cornwall, and Dolphy off the French-Spanish Mediterranean coast, although other sociable wild bottlenose dolphins have been reported to have more limited home ranges, often well under 100 km². For example, Freddie on the east coast of England had a home range of only around 0.5km², Simo off the Welsh coast had a range of 25km², and Fungie who is still resident off south-west Ireland, has a home range of <20km² (Müller *et al.*, 1998). During his 10-week residency off Weymouth, Georges was regularly sighted within a 26km range of coastline between Weymouth Bay and Chesil Beach, Lyme Bay. This area included Weymouth harbour and marina, Chesil and West

Portland, Castletown, East Portland and Portland Bill. Figure 1 provides a map of the same area and some comments on the local risk factors.

Figure 1. ‘Home range’ of the solitary bottlenose dolphin Georges during Spring-Summer 2002



2.2 Georges' behaviour

During his time off the French coast and the Channel Islands, Georges had gained a reputation as a fearless and curious dolphin, keen to investigate both animate and inanimate objects and unafraid of contact with people, indeed often appearing actively to encourage or seek out such contact. Whilst off the busy tourist beaches and marinas of the English south coast, Georges displayed the behaviours outlined in Table 1, which are broadly similar to – and probably a further development of – those demonstrated by him the previous year off France and the Channel Islands. Over time he became increasingly socialised and almost obsessively curious. Most of these behaviours are fairly typical of solitary sociable bottlenose dolphins and have been widely reported in the literature, including in Wilke *et al* (2005) and Samuels *et al* (2000).

Table 1. Summary of George's behaviour in the UK.

1 Interactions with boats:

- Continually approaching boats and soliciting attention from those aboard for abnormally long periods of time
- Close approach, including bow-riding and 'escorting' vessels into the area
- Following vessels for some distance
- Repeatedly diving and surfacing beneath rowing boats and canoes; unintentionally being struck by oars

- Lying belly-up below the hull of small boats
 - Pulling at fenders, oars or buoys attached to a vessel
 - Propeller approach (the dolphin demonstrated a persistent habit of pushing his beak or flanks right up against vessel propellers, stalling engines due to the pressure of his beak or flanks which prevented the propeller blades from rotating)
 - Close approach to fishing boats and nets
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2 Interactions with humans

- Repeated diving and surfacing only centimetres from swimmers and divers, and often only a few metres from the shore
 - Spending extended periods of time in the company of swimmers
 - Rolling on his back to present his belly to be stroked or tickled
 - Butting or ramming swimmers with his beak, or mouthing their limbs
 - Swimming through people's legs
 - Preventing swimmers from leaving the water
 - 'Socio-sexual behaviour', including genital erection and forcefully rubbing against swimmers and divers, particularly females
 - 'Hauling out behaviour', whereby the dolphin would partially haul himself out of the water onto a boat or pontoon
 - Seeking interactions whilst in extremely shallow water (<20cm), with his belly on gravel and most of his body out of the water
 - Dogs were also present on many occasions in close proximity to the dolphin.
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During the first three weeks of his residency, Georges was carefully monitored by researchers from Durlston Marine Project (DMP 2002). The dolphin's behaviour and interactions were studied and ethograms of his behaviour were produced and compared against those from wild bottlenose dolphins seen off the Dorset coast. The dolphin's physical condition was assessed several times by a marine mammal veterinarian (including nutritive state and body condition; skin condition and mapping of wounds and scarring).

The dolphin's body condition was judged to be moderate, with his nutritive state moderate to low (although this was felt to be normal at this time of year) and although badly scarred, his wounds were healing with no obvious sign of infection. His behavioural ethograms were reported as consistent with wild *Tursiops* in the area (DMP, 2002).

2.3 Public reaction to Georges

Not surprisingly, the dolphin's presence so close to shore created tremendous public interest from the start and Georges quickly became a tourist attraction. Media coverage was extensive, both local and national and was often sensationalist (tending to focus on alleged sexual behaviour towards female swimmers) and sometimes inaccurate, but nonetheless succeeded in encouraging large numbers of visitors to the

area. It was not uncommon for crowds of several hundred people (one estimate was between 500-750 people) to be gathered on the beach watching the dolphin at any one time, whilst two dozen or more people attempted at the same time to swim with the dolphin.

Below is an eyewitness account relating to a typical encounter:

“The dolphin re-entered Chesil Cove, Weymouth around 1.30pm on Saturday April 20th, following a dive boat. (He had been around until 10.30am that morning, but a large dive boat had entered the bay, dropped 20 wet-suited swimmers in and then headed off towards Weymouth harbour with the dolphin in tow.) Three wet-suited divers were quickly in the water, the dolphin diving and surfacing very close to them, probably only about 10-15m from the beach. Within minutes, around 25 swimmers (all ages, most without wetsuits, quite a few children) had waded in to join them. I was on the beach talking to as many people as possible - there were over 100 people on the shore watching. I witnessed some very irresponsible and potentially dangerous behaviour including:

- A little boy, around six years old, on a body board frequently within half a metre of the dolphin
- Swimmers surrounding the dolphin in a tight circle, leaving little room for manoeuvre in case of accident
- Several people stroking the dolphin and also grabbing at his dorsal, trying to haul themselves onto his back, and tickling his belly, which was presented on several occasions.

The encounter went on until 2.50pm when the dolphin left the bay bow-riding the yellow RIB” (Williams-Grey pers obs.)

A diver reported a separate occasion, earlier in April, when he and a friend dived with the dolphin and later watched the general public interacting with Georges:

“This dolphin is very interactive and obsessed with anything white...he is very playful when we thought that he had swum off, he was always behind us, nudging us that he was there. He would swim between us, roll on his back and loved having his belly rubbed..... [later] I could not believe the extent that people went to in order to swim with this dolphin. Some wore wetsuits but most wore swimming costumes (in April!) and one excited girl actually jumped in wearing her tracksuit bottoms and jumper!.... What I found most distressing was the behaviour of some swimmers trying to cuddle the dolphin and trying to hitch rides on its back... there was a definite element of possessiveness..... this whole episode reminded me somewhat of a circus show.” [Paul Baker, Calne Sub Aqua Association, pers comm.]

In our view, almost from the start of his residency off Weymouth, Georges's behaviour had reached Stage 4 as described by Wilke *et al.* (2005). The dolphin was variously described by swimmers and divers as ‘friendly’, ‘passive’ and ‘gentle’, yet by others as ‘boisterous’, ‘excitable’, ‘rough’ and ‘aggressive’. Some reported feeling

that the dolphin was behaving in a manner which they perceived as being both dominant and highly sexual, as recorded for other solitary male bottlenoses in British waters - i.e. Freddie, Donald/Beaky, Percy and Simo - as well as others elsewhere (Wilke *et al.*, 2005).

2.4 Concerns and Responses

Durlston Marine Project's preliminary report about Georges established the following concerns (DMP, 2002):

i. The dolphin's behaviour placed it at risk of further injury from boat propellers or entanglement in fishing nets.

Georges was already heavily scarred when he arrived in the area. On April 13th, he was examined by an experienced marine mammal veterinarian. The examination revealed a large wound in the leading edge of the dorsal fin, acquired before arrival in Dorset waters and deemed to be consistent with propeller strike. This wound was in the process of healing, creating a distinctive notch. The dolphin was found to have numerous superficial scars to the body, head and fins, including to the left flank and dorsal surface of the left fluke, plus an abrasion (2cm in diameter) near his eye. During his time off Weymouth, Georges gained numerous fresh wounds to his rostrum, tail stock and dorsal.

Local fishermen reported that the dolphin approached so close to their vessels as to prevent them letting out their nets, prompting fears that he might become entangled.

ii. The dolphin risked being harmed by people

Increasingly boisterous interactions put the dolphin at risk of harm from the public, whether accidental (swimmers grabbing his dorsal fin to 'hitch a ride', or damage to his skin from jewellery or watches, etc); or deliberate (malicious attack, including retaliation by swimmers in response to rough behaviour from the dolphin, or by local fishermen whose livelihoods might be hampered by the dolphin's disruptive behaviour around their nets: there were some anecdotal reports suggesting that threats had been made by some members of the public to physically harm the dolphin).

A further risk was posed by the potential threat of zoonotic diseases: Swimmers and, on many occasions, their pet dogs, frequently interacted in close proximity to the dolphin, risking the transfer of human or canine diseases to the dolphin, and vice versa.

iii. The public was at risk of being harmed by the dolphin

As detailed above, whilst Georges could be extremely passive in his interactions, swimmers were also frequently rammed, butted or had their limbs mouthed by the dolphin. Georges also had the somewhat bizarre habit of sticking his rostrum into the seabed and flipping his tail over, frequently

knocking swimmers (some of whom were holding children) off their feet (James Barnett, pers comm.).

Georges frequently tried to prevent swimmers – seemingly females in particular – from leaving the water. In one reported incident, Georges behaved in what was described as a very ‘frisky’ manner towards a researcher from Durlston Marine Project, who entered the water to assist a marine mammal veterinarian in measuring Georges. The dolphin positioned himself belly up right next to the researcher, almost lifting her clean out of the water. He seemed intent on preventing her from getting out and started propelling her into deeper water. She was badly frightened and had to be rescued by her colleague (Owens, pers comm.)

Sea water temperatures were low during March and April particularly and hypothermia was also a risk for swimmers, particularly since many were inadequately dressed for the activity. Some people were seen entering the water fully-dressed to interact with the dolphin. In addition, strong currents, steeply sloping pebble beaches and a powerful undertow also presented a threat to inexperienced swimmers and could create problems for people trying to exit the water.

Georges interacted with swimmers and divers or boats for between 80-100% of daylight hours, prompting concern that his behavioural budget was so biased towards interactions with people that feeding or resting behaviour might be negatively affected (DMP, 2002).

In addition to the monitoring conducted by the Durlston Point research team and the early involvement of vets to examine the dolphin’s health status, attempts were also made to bring together all stakeholders to develop management responses and a meeting was convened in April, 2002. A coalition was formed to help direct management efforts and its membership represented local, national and international expertise in cetacean conservation, welfare and rescue, (including the management of solitaires); cetacean research; marine mammal veterinary expertise; law enforcement; people management and safety; local and national official agencies, including maritime agencies, and community group representatives, including fishermen, divers and local tourism .

It was agreed that, since Georges was a wild, free-ranging dolphin, behaving in a similar manner to other recorded solitaires (i.e. that this was not aberrant in terms of solitary behaviour), that the primary method of managing the situation should focus upon managing and modifying human interactions around the dolphin, particularly given that, as Wilkes *et al.* (2005) noted “wild dolphins are probably more difficult to manage than humans”.

A management plan with the following components was developed:

A. Managing human behaviour

i) Outreach to swimmers and divers via:

- The establishment of voluntary ‘no swim’ areas using buoys and flags

- An extensive campaign to raise awareness of the risks to dolphin and human safety (warning posters; leaflets; press releases and interviews with local and national newspapers, radio and television interviews; briefings to local MPs, etc). Posters and leaflets strongly advised visitors to confine watching to the shore and to keep dogs under control. Swimmers were advised not to closely approach the dolphin and if approached by the dolphin, to refrain from touching it, grabbing its dorsal fin and so forth (the text of one handout is provided in appendix 1). The public was reminded about relevant legislation and also about the possibility of zoonoses. The texts of two handouts are annexed to this paper.
- Beach patrols, which were planned to answer questions and monitor public behaviour to ensure that there was no breach of legislation protecting dolphins from harm or harassment.

ii) Outreach to boat-users and divers via:

- Boat patrols (generally mounted by trained marine mammal rescue personnel, but also involving local police and RNLi patrol vessels) monitoring vessel behaviour around the dolphin, answering questions and handing out leaflets advising vessel users how to behave responsibly around the dolphin (see Appendix 2). Boat users were informed that the dolphin was attracted to boat propellers and had sustained several injuries as a result. They were advised to turn off their engine if the dolphin approached their vessel, or to gently distract the dolphin away from the propeller using an oar or dragging a fender buoy on a length of rope. Divers were advised not to attempt to touch or swim with Georges, and to be aware of the possibility of wetsuit fittings or dive kit damaging the dolphin's sensitive skin.

B. Ongoing assessment of the dolphin's behaviour and physical condition via:

- Regular veterinary assessments of the health and welfare of the dolphin
- Collation of sightings reports, including behavioural monitoring and site use
- Rescue arrangements in case of serious injury

2.5 Measuring the success of the management plan

2.5.1 Successes

i) Despite suffering numerous injuries, the dolphin remained alive during his time in UK waters. This was an achievement in itself, given the dolphin's 'high-risk' behaviour and that Georges' home range along the beaches and harbour areas off Weymouth and Portland – and other major tourist resorts the dolphin subsequently visited along the south-west coast – almost certainly represented the busiest and most densely-populated areas he had encountered in his travels to date.

ii) The fact that photo-id matching quickly confirmed that Georges was almost certainly the same dolphin previously recorded off the coast of France and the Channel Islands was very helpful as it enabled contact to be made with researchers from those areas who had experience in managing Georges off their shores.

iii) Close monitoring of the dolphin's site fidelity and behaviour budget (after controlling for increased visitor and boat numbers as the summer –and peak tourist season - approached) indicated a reduction in time the dolphin spent in inshore areas (where he would be most accessible to swimmers), and an overall decrease in interactions with swimmers, divers and vessels as time went on. These trends suggest a possible positive effect from the management plan, in particular that the public awareness campaign had some effect in mitigating human behaviour around the dolphin.

iv) Boat patrols proved a useful tool in educating boat users about how to behave around the dolphin, which had a particular attraction to propellers. The patrol vessels also had some success in coaxing Georges away from the most densely populated beaches and harbours, and from other boats, by towing a long line behind a RIB with a buoy attached. On other occasions, the patrol vessel would distract the dolphin away from vessel propellers by gently slapping an oar in the water.

2.5.2 Difficulties and failures

i) The case highlighted the inadequacy of current legislation to protect solitary sociable dolphins. In England and Wales, it is an offence to disturb, harass or harm cetaceans under the Countryside and Rights of Way Act (2000) and the Wild Mammals Protection Act, 1996. Most wild cetaceans are reasonably wary of getting too close to humans, particularly if a clear escape route is not obvious. However, the behaviour patterns typically exhibited by Georges (and seemingly many other solitary, sociable dolphins) - in particular, his habit of soliciting close interactions with both people and vessels - made it very difficult to 'separate out' and identify reckless behaviour in humans. Therefore, law enforcers, and those seeking to protect the dolphin, experienced great difficulty in determining whether any offence had taken place, reducing confidence in securing a successful prosecution.

ii) There was a marked lack of coordination between the official agencies and a reluctance of any official agency to take a clear lead in managing this case. Jurisdiction over managing Georges and his activities seemed to fall between several stools: harbour masters had the authority to order people out of the water, but only within the confines of the marina areas and they - along with local police and coastguards - assumed a mainly passive role, frequently citing other priorities and indicating that they would intervene only if a significant incident occurred. In practice, this meant that, whilst Coalition membership included representation from these agencies, most Coalition initiatives were developed and implemented by voluntary agencies, relying largely on the help of volunteers to man beach and boat patrols, distribute leaflets and so forth.

iii) This lack of any formal Coalition authority meant that public respect for, and compliance with, Coalition requests to modify their behaviour around the dolphin was very variable. Whilst overall, the situation appeared to improve following the public awareness campaign, there was reluctance by some members of the public to comply with requests to avoid close interaction with the dolphin and the right of the Coalition to make such requests was frequently challenged. Both beach and boat patrol

volunteers reported verbal harassment and intimidation, and some volunteers were physically threatened.

iv) Unlike the situation in the Channel Islands and France, the main sites that the dolphin used during his time off Weymouth were not covered by relevant by-laws governing human use of the area. Therefore, it was not possible to implement zoning schemes and other formal safeguards and the management plan had to rely instead upon voluntary swim codes of conduct. (Both France and the Channel Islands had been able to implement 'no swim' legislation to protect both the dolphin and humans.)

v) Another major problem was a schism within the Coalition itself over how best to manage the dolphin. Whilst the majority favoured a philosophy of managing and mitigating human interactions, others argued that the dolphin should be captured and relocated or lure back to the French coast.

Despite attracting much media attention, the plan to lure Georges behind a fishing vessel back to France was abandoned by the proponents in early June. A couple of days later, on June 4th, Georges left the Weymouth area of his own accord and spent the next three months travelling along the coast of Dorset, Devon and Cornwall (revisiting Weymouth briefly in early July and again over several days later in August) before heading to the Isle of Wight in early September. During this period, the Coalition made contact with local agencies at many of the major tourist resorts visited by Georges, offering advice to harbour masters, local councils and police wildlife liaison officers and providing posters and leaflets to assist them in managing encounters with Georges whilst he spent time in their waters.

Whilst Georges rarely remained in any area for longer than a few days during this phase, his behaviour was broadly similar to that displayed during his residency off Weymouth and was characterised by boisterous and at times, highly sexual behaviour towards swimmers and enthusiastic targeting of vessels. Several people, including children, received minor injuries and one man was hospitalised after being tossed out of the water by Georges and suffering a heart attack. The dolphin also suffered further minor injuries.

Georges left UK waters in early September 2002, and was next reported off Dieppe, northern France on 9th September. Apart from a brief sojourn off the coast of Holland and Belgium during December 2002, Georges has mostly remained off the French coast where he has sometimes been sighted in the company of another sociable male bottlenose, now known as Jean Floch. He has frequently been reported interacting with swimmers (with some injuries to swimmers reported, including to several children), and vessels (including fishing boats and jetskis). He was sighted in early January 2006 off Cap Sizun, Brittany, in the company of Jean Floch and, at the time of writing, is believed to still be alive.

3. Second Case Study: 'Marra'

3.1 The animal and the location

This animal was also a male, although this was not known until his rescue. He was less heavily marked and believed to be younger than Georges. ‘Marra’ which is the local word for friend, became trapped in a Victorian dock used as a marina in the town of Maryport, in Cumbria in the UK, early in January 2006. He was first observed coming into the tidal outer harbour at the beginning of January (i.e. 2nd – 4th). He entered the dock on the 5th January and stayed there until his release on the 30th of January).

The dock was easily accessible to the general public with roadways on either side of the dock walls and parking directly above the water. It was also possible to walk across the dock gates (although this was forbidden) and along the floating pontoons of the marina, which had restricted access but no real barrier to determined members of the public. The presence of the dolphin eventually caught the attention of the local and national media (despite appeals to reporters not to reveal his location) and many thousands of people flocked to the town to see him.

The rectangular dock, which had an approximate area of 200m x 80m, has a narrow opening to the sea and within this ‘bottleneck’ is a sea gate. The gate is closed on the low tide to maintain the water levels in the dock. When it is opened it lies on the sea bed beneath the water. Beyond the seagate is a tidal channel that leads out to sea. The channel is bounded by a wall which faces the gate.

Marra’s stay in the dock coincided with a significantly cold period in the UK. The water temperature in the dock (which has some freshwater input) was found to be several degrees colder than the surrounding sea (about 5.5°C) and, shortly before his release, as the weather turned even colder, ice had started to form on the water surface. The marina was subject to various boat movements and the usual operational discharges that occur at such locations. One larger oil spill (5 - 10 litres) occurred whilst the dolphin was resident and was treated with a biodegradable dispersant. The dolphin was apparently not harmed by either discharge but there was concern about the longer term health effects of his exposure to various forms of pollution in the dock and to fresh water.

3.2 Marra’s behaviour and interactions

The most marked aspect of Marra’s behaviour was that he did not leave the dock when the gate was open. One WDCS observer spent two weeks constantly observing the dolphin through most daylight hours and was able to confirm that he was effectively confined to the dock. (Other observers from WDCS who also studied the dolphin for several more days came to the same conclusion.) However, there was, some confusion about this as some local people insisted that he was coming and going. It is possible that they had seen him before he became trapped in the harbour area outside the dock or that they had seen other dolphins. A specific watch was set up when the marina gates were lowered and experts who were monitoring the dolphin agreed that he was probably afraid of the gate mechanism and fearful of passing back across it into the tidal channel.

One report suggests that he was deliberately led into the dock by a boat that he was interacting with (although there is no reason to believe that the skipper could have known that the dolphin would become trapped). Video footage shows recreational

fishing boats throwing fish to the animal before he entered the marina. Other reports suggest that fishermen, and possibly other boat users, had been feeding bottlenose dolphins in the adjacent Solway Firth in the preceding summer months. Nothing is known about the bottlenose dolphins in this area, although they may be part of the population that is resident in Cardigan Bay to the south.

Subsequent to Marra's release he has again been seen accompanying fishing boats. It is therefore possible that Marra was an animal that was used to being provisioned and was enticed into the dock. Once in the dock he accepted both live and dead fish from various sources (live and dead) and the local pet shop even reported that it had run out of goldfish because they had been bought to feed the dolphin. He was also seen to feed on the wild fish that naturally occurred in the dock, sometimes appearing to react to the fresh prey that entered when the gate was opened.

Most of the time he swam around the dock and sometimes in simple patterns (probably when resting). He also interacted with a kayak and other boats, but never followed them out across the gate. He also interacted with people on the pontoons, with several reports of people successfully enticing him close enough to allow them to stroke and pet him.

3.3 Concerns and Responses

In addition to the coldness of the dock water and the possibility that it would freeze over, the easy accessibility of the dolphin caused considerable concern. Various items were dropped or thrown into the water with him and on at least one occasion, a catapult was fired in his direction. The marina managers worked hard to provide some protection for him (facilitated by CCTV cameras), as did the local coastguard, but as the weeks went by, his condition seemed to decline and a veterinary assessment made shortly before his rescue concluded that he was losing weight and his skin condition was deteriorating.

In addition to attempts to interact with him from the pontoons, some attempts were also made to swim with him, with one person at least travelling to Maryport specifically to do this. All the concerns that relate to swimming with a wild dolphin, as outlined above (section 2.4), thus applied. A significant difference between the situations of Marra and Georges, however, was that Marra's residency coincided with winter and the low water temperature which undoubtedly provided a significant disincentive for swimming in waters of the Maryport marina! Human safety issues in this case included concerns about adults and children falling into the dock or slipping on wet steps and steep ladders.

Management responses included the following:

- i. The stationing of researchers in Maryport to monitor the situation at the marina. Both British Divers Marine Life Rescue (BDMLR) and the Whale and Dolphin Conservation Society (WDACS) sent officers to Maryport to work with local people to study the situation and provide on-site advice;
- ii. The formation of a coalition of rescue groups to respond to public and press enquiries and to jointly manage the situation;

- iii. The posting of warning notices around the dock and extensive interaction with the local and national press to explain concerns;
- iv. Liaison with the local coastguard (who took responsibility for safety in and around the dock, the presence of the dolphin creating significant extra work for them), English Nature (the relevant statutory agency) and the local police force;
- v. Well-planned briefings of press and local people ahead of the two rescue attempts; and ultimately
- vi. The capture of the dolphin and his release back to the open sea.

Given that the dolphin had not left the marina for several weeks where it was easily accessible, exposed to low temperatures and that his condition appeared to be declining, the coalition decided that it was in the best interests of the animal if it was persuaded to leave. Capture and actual handling of the animal was deemed to be a high risk approach. So, initial attempts to lure Marra with a kayak (which he had previously shown interest in) were initiated but failed. Whilst the dolphin did interact with the boat, he would not follow it out over the gate. Making loud noises at the end of the dock furthest away from the exit gate to try to drive the dolphin out was also considered but was not attempted.

A ‘bubble-curtain’ approach was devised by the team from BDMLR using air compressors and some plastic piping. The piping with holes in it was positioned on the bed of the dock near to the gate. The compressors caused a wall of bubbles to rise from the pipe, theoretically producing a harmless barrier that might help to persuade the dolphin over the gate when it was fully opened. When the dolphin was between the submerged piping and the gate it was turned on. He responded to the noise and the bubbles by first swimming strongly towards the opening but then turned back as he drew level with the submerged gate mechanism, and swam back through the bubble-curtain at the point furthest from the compressor where the bubbles were weakest. An attempt was made to make the curtain stronger by using two compressors in combination but again Marra escaped back into the body of the marina.

One week later, following agreement within the coalition that the dolphin would have to be captured, a BDMLR team deployed nets and divers in the dock. The water level was lowered and Marra was cornered and placed in a rescue stretcher. This was then hoisted onto a waiting boat and the dolphin was taken out to sea and released in the presence of another bottlenose dolphin which he apparently joined. A watch was maintained around the marina and the surrounding shore for several days but, despite some false sightings, he did not immediately return to the area.

At the end of April 2006 the local coastguard identified Marra swimming alongside fishing boats. She reported that his condition seemed to be good and that he came over to ‘greet’ her. Of more concern was the fact that he also seemed to be feeding from the fishing nets.

3.4 Measuring the success of the management plan.

The presence of a ‘friendly’ bottlenose dolphin trapped in a dock was unprecedented in the UK. Marra appeared to be in the process of becoming socialised (maybe at Wilke *et al.*’s stage 2 or 3) and if he had remained longer in the dock this would

probably have become more pronounced. Attempts to feed, interact and even swim with him were diffused by the presence of the welfare groups and the local coastguard, acting with the support of the marina management (and not to mention the very cold weather).

Drawing on their experience with Georges, the rescue coalition was able to consult swiftly and to rapidly develop plans that had the support of all parties. Early consultation with, and regular updating of, English Nature helped to ensure that actions were conducted within the law and with the support of the relevant statutory agency.

There were elements within the local community that insisted that the dolphin was perfectly happy where he was and that he was not only able to leave the dock but was regularly doing so. No amount of reassurance after the event appears to have persuaded them that the dolphin was trapped and vulnerable, and considerable adverse publicity continued to appear in the local press for some weeks after the rescue. Certainly, for the people of Maryport this was a major event. The presence of the dolphin brought hundreds of sightseers and some unexpected income to the town during January. Some local people clearly saw Marra as ‘their dolphin’ and, perhaps, viewed the actions of outsiders to release it as an unwelcome interference.

Other problems included the refusal of the media not to disclose the location of the dolphin.

Nonetheless, the release of Marra back into the wild, despite the risks involved in manhandling him, can be seen as a successful rescue mission.

4. Conclusions and Recommendations

To date, at least 70 sociable and solitary cetaceans have been recorded worldwide (Vail *et al.*, 2006) and concern about them seems well-founded. Doak (1988), for example, concluded that “in the history of lone dolphins approaching human settlement, one thing is clear – it is highly dangerous for the dolphin”. Frohoff (2000) adds that “odontocetes exhibiting the highest degree of contact with humans are generally at the greatest risk of injury, illness and death” and this is confirmed by the histories of the sociable dolphins recorded on British shores. For example, Percy (seen off Cornwall in the early 1980s) suffered a fish hook in his eye, whilst Beaky (off Cornwall) and Freddie (off Ambleside, on the east coast of England) both suffered serious propeller injuries. Most recently, in February 2006, a bottlenose dolphin regularly seen in marinas and ports around Portsmouth and the Isle of Wight, that seemed to be starting to socialise with people, was killed when struck by a boat propeller.

The stories of Georges and Marra seem to conform to this unfortunate pattern and may yet have tragic conclusions. Marra is still in the region and still following boats and was sighted close to Silloth harbour, further north along the Solway Firth coast, at the end of April 2006. Similarly, Georges is regularly reported around the French coast and may yet return to the highly populated shores of southern England. Are we in a better position now to manage the problems that this would again bring?

Problems are not limited to busy UK waters. Jo Jo (in the Turks & Caicos) has reportedly suffered around 40 injuries as a result of human interactions, with at least eight being life-threatening. There are at least four documented cases of well-known solitaires being deliberately killed by humans and others have disappeared under mysterious circumstances, presumed dead at the hands of humans after locals or fishermen complained about their disruptive behaviour (Samuels *et al.*, 2000). Further examples were considered during the recent workshop in San Diego (Frohoff *et al.*, 2006).

The primary lessons from these events are arguably as follows:

- i. that it is only a matter of time before another (or the same) solitary sociable dolphins arrive on British shores and present the same concerns and therefore the relevant UK agencies and welfare organisations need to be ready;
- ii. there must be early implementation of a management plan to mitigate harmful human interactions around the solitary dolphin (and plans must be carefully tailored to fit the needs and circumstances of each individual solitary);
- iii. it is important that all relevant agencies are kept informed as such a situation develops and that rescue and welfare groups agree plans and work together in the best interests of the animal;
- iv. that the focus of management actions should be to discourage people from interacting with such animals, including feeding them, and this must be clearly explained because of the risks involved (the death of the Portsmouth dolphin may act as a salutary tale);
- v. that the management plans are seen to be underpinned by relevant and enforceable laws and law enforcement officials; and that
- vi. the management (or rescue) coalition involved should have clear leadership. In the UK, the long-established Marine Animal Rescue Coalition would seem to be a suitable body to undertake this role.

Finally, we note the recommendation from the San Diego workshop (Vail *et al.*, 2006) to try to improve communications between the researchers and others worldwide who are involved in managing and monitoring solitary sociable cetaceans and we certainly agree that this is an important need.

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Appendix 1.

Weymouth Dolphin Coalition
Code of conduct for beach users and swimmers

A solitary male bottlenose dolphin, known as Georges, and previously seen off the French and Guernsey coasts, has been in the Portland area since 28th March 2002. Dolphins are powerful wild animals and are legally protected. They are sensitive to disturbance from boats, people and dogs, and may become aggressive if they feel threatened. For your own safety and the dolphin's, please follow these simple guidelines.

- Please confine watching to the shoreline. Viewing from the shore allows the best views of the dolphin without disturbing its natural behaviour.
- It is strongly recommended that you do not attempt to closely approach or swim with this animal. There is a chance of disease transmission, and serious risk of injury to yourself or the dolphin.
- If you are already in the water and the dolphin approaches, please do not under any circumstances try to touch or grab the dolphin, ride upon it or feed it.
- Encourage your dog to stay out of the water.
- This dolphin is attracted to boat propellers. He has already been injured and risks further injury unless boat contact is markedly reduced. If it approaches your boat try to draw it away from the propeller by holding out an oar or fender.

It is an offence to disturb, harass or harm this dolphin under the Countryside and Rights of Way Act, 2000, and the Wild Mammals Protection Act, 1996. Regular beach patrols are in place to ensure the responsible behaviour of visitors and any breaches of the law will be prosecuted.

Appendix 2.**Code of conduct for boat users (leaflet)**

Weymouth Dolphin Coalition

**DOLPHIN INTERACTION
IMPORTANT NOTICE TO BOAT OWNERS**

A male bottlenose dolphin, known as Georges, has been in the Portland area since 28 March 2002. It has proven to be a very sociable animal but, due to the public response, it has been necessary to form boat patrols to protect the interests of the animal as well as the public.

Prolonged interaction with the animal will compromise its normal feeding and resting behaviours as well as limiting its potential communication with other wild dolphins in the area, so reducing its chances of re-integration back into the dolphin community. If interacting with the dolphin, please limit the time to 15 minutes and behave responsibly by following the guidelines below. For your own safety, be aware that dolphins are fast and powerful animals. If they feel threatened, they may become aggressive. There is a possible risk of disease transmission through skin contact and via the blow-hole. Also be aware that, when in the water, you are at risk of hypothermia, muscle cramps and exhaustion.

IN THE BOAT

- ☐ Let the dolphin come to you.
- ☐ Do not chase or drive head on to it.
- ☐ This dolphin is attracted to boat propellers and has already been injured, and risks further injury unless boat contact is sympathetic. If the dolphin is close to your craft, stop your engine / take it out of gear. When moving off, keep the revs low until the animal is visibly clear of the vessel. The dolphin can be drawn away from the propeller by holding out an oar, or by lowering a fender buoy, letting it out on a rope and tugging it. Do NOT bounce or splash any object in the water around the dolphin, as you may injure him).
- ☐ If interacting near one or more vessels, please do not 'compete' for the attention of the dolphin.
- ☐ Never rev your engine to attract the dolphin!
- ☐ Be careful to prevent any rubbish falling overboard, including lengths of rope and especially fishing net.
- ☐ Keep any fishing tackle safely packed away. Fishing hooks, baited or not, could prove very dangerous.

IN THE WATER

- ☐ **For your own safety and that of the dolphin, do NOT attempt to swim with him.**
- ☐ Please do not attempt to touch, grab or ride upon the dolphin or try to feed it!
- ☐ **Divers:** if closely approached by the dolphin, be aware of jewellery, wet/dry suit fittings and kit scratching the dolphin's skin, which is very delicate and prone to damage and infection.

IT IS AN OFFENCE TO DISTURB, HARASS OR HARM ANY DOLPHIN. ANY PERSON(S) IN BREACH OF THE LAW IS (ARE) LIABLE TO PROSECUTION. ALSO ANY INTIMIDATION, PHYSICAL HARM TO PATROLLERS, OR WILFUL DAMAGE TO PATROL VESSELS WILL BE REPORTED AND THE POLICE AUTOMATICALLY CALLED.