
11. Otters in Poole Harbour

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Historical evidence suggests that Otters used Poole Harbour extensively in the past and today there is a range of habitat features that should provide opportunities for a thriving Otter population. However, records collected by the Dorset Otter Group since 1997 have been scarce and irregular, suggesting that Otters have not colonized the harbour to the extent that they did in the 1960s before the population underwent a dramatic crash. A lack of information restricts full understanding of the potential barriers to Otters colonizing the harbour and the possible solutions. Initial actions should, therefore, focus on surveying and research. However, other problems could include Otters drowning in unregulated fyke nets which are used to catch eels, lack of holt or resting sites close to freshwater, increasing boat traffic, development and roads, potential pollution problems and possible declines in fish stocks.

Introduction

A decline in the population of European Otter *Lutra lutra* in Dorset in the late 1950s continued into the 1980s with the species ceasing to occupy previous territories including Poole Harbour. This decline is believed to be the result of pollution of watercourses from pesticides, particularly organophosphates, and through loss of habitat. In 1978, the Otter became legally protected in England and Wales and various conservation bodies worked to reverse the declining population.

In 1995, the Otter was identified as a 'Priority' species for action in the UK Biodiversity Action Plan (JNCC, 1995). The objectives of the national Otter Biodiversity Action Plan (BAP) are:

- to maintain and expand existing Otter populations
- by 2010, to restore breeding Otters on all catchments and coastal areas where they have been recorded since 1960.

Historical context

Poole Harbour should offer excellent opportunities for Otters as there is an abundance of prey items and suitable habitat within the harbour. The name of 'Otter Island' in Lytchett Bay suggests that Otters were a feature of the harbour in the past. However, we need to examine historical records to check that the harbour did naturally support Otter populations.

The Courtenay Tracy Otter Hunt took over informal hunts in Dorset in 1887 on most rivers, but formal records for Otter kills were not kept until the 1930s. However, although there are plenty of records for Otters on rivers flowing into the harbour, there are few for Poole Harbour itself as not many hunts occurred here. During this period, the majority of records come from naturalists or school natural history societies such as Bryanston and Clayesmore. As the BAP target relates to the Otter population in the 1960s, records from this time are particularly important. These are shown in Table 1 and the distribution of these records is illustrated in Figure 1.

Many of the records for Poole Harbour between 1960 and 1979 lack detail. Only the few Otter hunt records give information on what the observation was and most records are four figure grid references so exact locations are not too clear. Yet they do indicate that Otters were widespread in Poole Harbour up until the 1970s when records become scarcer. In order to fulfil the BAP objectives, therefore, we need to reach a stage when Otters are recorded as widespread again.

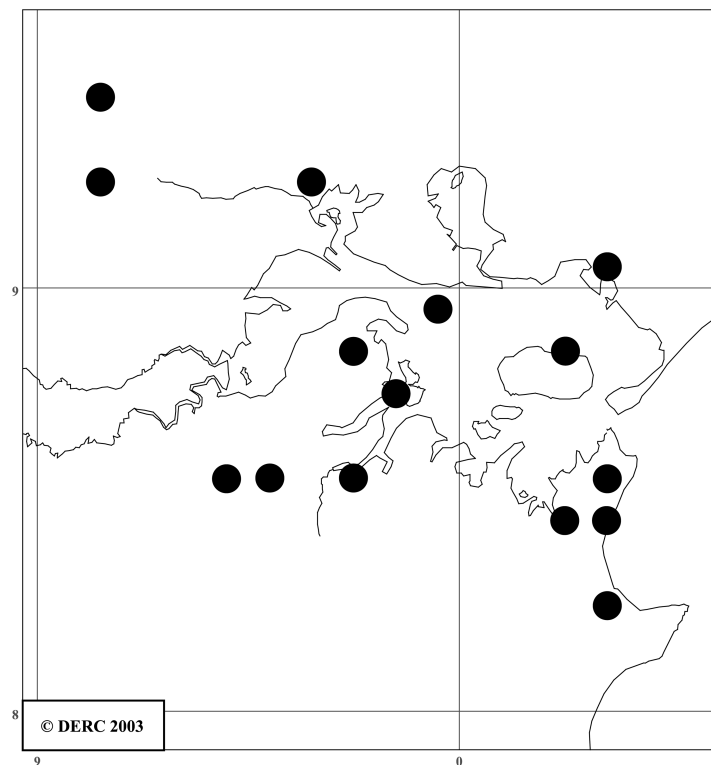


Figure 1 Records for Otters in Poole Harbour, 1960–79.

Table 1 Otter records in Poole Harbour 1960–79

Grid reference	Date	Recorder	Area in Poole Harbour	Observation
SY961929	26/7/61	Courtenay Tracy Otter Hunt	Lytchett Minster, footbridge	2 Otters (1 male 20 lb)
SZ0384	7/2/63	Brotherton, H.	Studland Beach	Unknown
SY978856	8/4/63	Courtenay Tracy Otter Hunt	Wyth Farm, far side of estuary	Otter 17 lb
SZ0382	29/3/64	Unknown	Studland NNR	Unknown
SY961929	26/9/64	Courtenay Tracy Otter Hunt	Lytchett Minster	Drag
SZ0288	2/65	Bromby, A.	Brownsea Island	Unknown
SZ0288	5/65	Bromby, A.	Brownsea Island, West Lake	Unknown
SY9585	1967	Duff, K.	Slepe Heath	Unknown
SY9485	1967	Duff, K.	Hartland	Unknown
SY9192	6/67	Cox, J.	Sherford River	Unknown
SZ0384	22/9/67	Teagle, W.	Studland	Unknown
SZ0385	2/12/67	Teagle, W.	Studland	Unknown
SZ0385	3/12/67	Teagle, W.	Studland	Unknown
SZ0385	22/12/7	Teagle, W.	Studland	Unknown
SZ0284	1968	Cox, J.	Littlesea	Unknown
SZ0385	1968	Teagle, W.	Studland	Unknown
SZ0288	1968	Wise, A.	Brownsea Island	Unknown
SY977887	1969	Pickess, B.	Arne	Unknown
SZ0390	12/69	Brotherton, H.	Poole	Unknown
SZ0390	1/70	Brotherton, H.	Poole Harbour	Unknown
SZ0284	1970	Unknown	Littlesea	Unknown
SZ0284	1973	Cox, J.	Littlesea	Unknown
SY9194	1973	Anon	Sherford River, Morden	Unknown
SY916926	26/7/73	Cox, J.	Sherford River, nr Morden	Unknown
SY9989	26/8/73	Milton Abbey School, Natural History Society	Poole Harbour, nr Wareham Channel	Unknown
SY9887	7/12/75	Prendergast, E.	Poole Harbour, nr Arne peninsula	Unknown

Source: Collated by James (1999).

Recent records

In 1997, the Dorset Otter Group, co-ordinated by the Dorset Wildlife Trust, was formed. The Group trains volunteers to look for signs of Otters throughout the county and has found a significant increase in these signs as well as recording an increase in the population on several rivers and in Christchurch Harbour. However, records for Poole Harbour have been scarce and inconstant. For example, the record for Brownsea in Table 2 indicates that an Otter was leaving regular spraint makings for a few months, but this did not continue unlike many Otter sprainting spots in the county. Continued regular sprainting in a specific spot indicates ongoing presence, and hence a territory. Sprainting for a short period may indicate an Otter investigating an area then moving on, unless another detrimental factor has occurred, such as a fatality.

The records in Table 2 are from the northern side of the harbour only, despite the southern side offering some of the best habitat opportunities for Otters. Moreover, of the four rivers flowing into Poole Harbour, only the Corfe River has no records for Otters despite surveying effort to detect Otter signs in what is a relatively accessible area.

These records suggest that Poole Harbour is not being occupied by Otters as regularly as the 1960s when regular records were gained from a variety of areas within the harbour. Despite checking of obvious sprainting/markings areas, such as on Brownsea, no current regular sprainting area has been identified within the harbour.

Table 2 Otter records in Poole Harbour

Grid reference	Date	Recorder	Area	Observation
SY9087	Spring 1999– Summer 2003	Lamming, J.	River Piddle, close to harbour	Spraint
SY9187	Summer 2000	Lamming, J.	River Piddle, close to harbour	Spraint
SY9388	Summer 2000	Lamming, J.	River Piddle, close to harbour	Spraint
SY9288	Spring 1999– Summer 2003	Windsor, S. and G.	River Piddle, close to harbour	Spraint
SZ0288	August 1999	Ramsey, J.	Brownsea Lake	Sighting
SZ0288	August 1999	Williams, C.	Brownsea boardwalk	Spraint
SY9192	Spring 2002	Fortesque, P.	Sherford Bridge	Spraint
SY9689	Summer 2003	Casual	Off Shag Looe Head	Sighting
SZ0089	Spring 2003	Kingston, S.	Lower Hamworthy	Dead in fyke net

Source: Provided by the Dorset Otter Group.

Habitats

There are a range of habitat features within Poole Harbour which can be utilized by Otters.

- Rivers – these are the habitat feature most commonly associated with Otters. Four main rivers flow into the harbour as well as the small Studland streams. All provide suitable habitat and the Rivers Frome and Piddle, where there are regular records for Otters, offer potential colonizing routes for Otters into the harbour.
- Sheltered bays – bays offer great opportunities for Otters. However, how well an Otter can exploit bays and harbours is related to the geology and landscape of the area. A coastal area that has freshwater pools, gentle shorelines and native woodland offers greater potential to Otters than a coastal area with high cliffs and intensive agriculture (IOSF, 1998). Poole Harbour is similar to the former and should be ideal for Otters. Prey density is often greater in marine areas than rivers and Otters can exploit whatever is available. Eels can still be found in the harbour and also flat fish, small fish such as sea scorpions or rocklings, molluscs and crustaceans. Some studies (Krunk *et al.*, 1998) have recorded Otters feeding entirely on items from the sea rather than freshwater habitats.
- Freshwater – if Otters are exploiting coastal areas then access to freshwater on a daily basis is essential for maintenance of their fur to preserve its thermo-insulating properties and to drink for maintenance of kidney function. There is a good supply of freshwater around Poole Harbour in both the lakes and rivers. Small pools and streams around coastal areas tend not to be used for foraging but purely for washing (Krunk *et al.*, 1998).
- Lakes – the two freshwater lakes on Brownsea and Littlesea Lake at Studland are available for Otters to wash in but are probably less important as food sources. These are oligotrophic lakes and have a low productivity, supporting only minnows and eels. Although these are popular food items for Otters, it is unlikely that a great amount of hunting effort would be focused here as there are much higher prey availability densities elsewhere in the harbour.
- Wet woodland – this offers both cover and food availability for Otters. Alder carr exists on Brownsea and along some of the Studland streams. Old alder stools that are above the waterline can provide potential holt sites for Otters.
- Reedbeds – offer prime habitat for Otters. The reed cover is extremely dense and Otters often do not require the covered holt sites used in other habitats. There have even been examples of females with young cubs raising them above ground in the centre of reedbeds on areas of raised ground. Reedbeds have good food availability, they are breeding areas for some coarse fish species, juvenile fish use reedbeds as refuge habitat, eel density tends to be high and amphibians can exploit the habitat. Some radio-tracking studies (Krunk *et al.*, 1998) showed a preference by Otters for reedbed and island habitats in freshwater habitats but it is unclear just how important they are in marine habitats.

Otter territories are large. Males can encompass 15 miles or more, so one territory can include a number of these habitat features, providing wide opportunities for Otters.

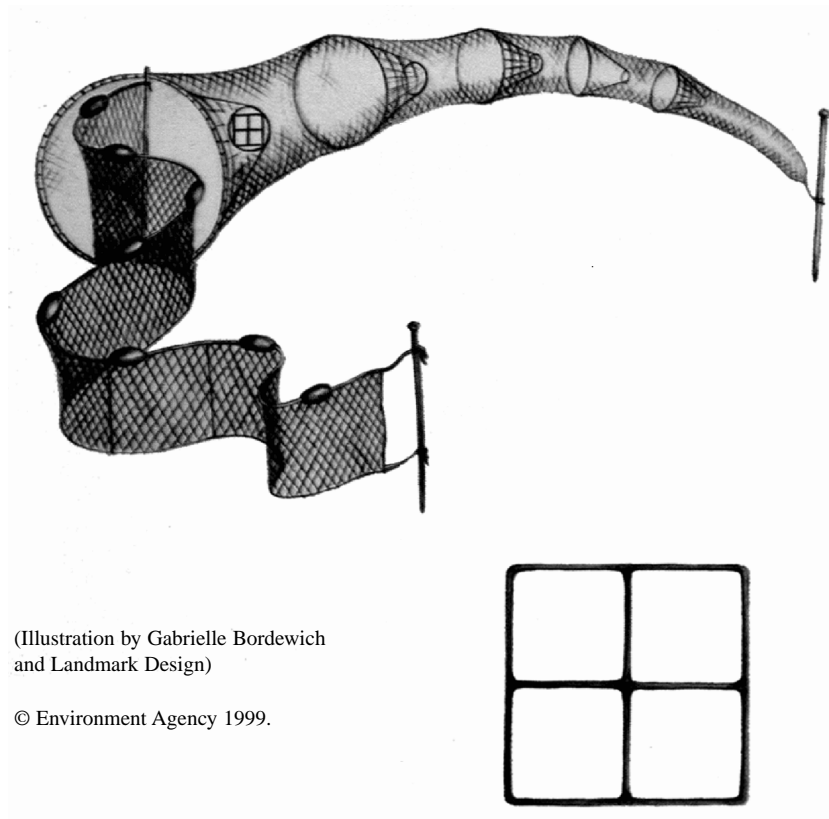
Problems

As habitat is good, Otter colonizing routes from existing populations are present and the historical records indicate past use of Poole Harbour, why are there not more records for Poole Harbour? One reason is the difficulty in surveying for Otters in the harbour area. Much of the surrounding habitat is inaccessible with deep water in reed and bog habitats: ideal for Otters, but unsuitable for Otter surveyors. This is particularly true on the southern side of the harbour where there are fewer records but probably the most habitat potential for Otters.

However, there are certain 'spots' where Otter signs are expected but which are not giving regular, positive results. Otters prefer unvegetated and often artificial structures for sprainting on, such as concrete, boardwalks, weirs and beneath bridges. Sites such as Brownsea Island offer structures such as these amongst ideal habitat. These structures are surveyed on a regular basis for Otter spraint but are not resulting in regular records. From the few records we have, there is an indication of some Otter activity. Yet, for a fully established Otter population to be recognized in Poole Harbour, there should be more regular records indicating a breeding population with defined territories rather than Otters passing through the harbour with undefined territories.

It is possible that there could be a factor or factors limiting the Otter population in Poole Harbour. Possibilities include

- **Fyke nets** – Poole Harbour is one of the most important eel fisheries in the country and fyke nets are used to catch eels. If these are registered by the Environment Agency, they should have coloured tags attached to indicate the year of registration and be fitted with an Otter guard. There is a legal requirement to fit an Otter guard under a national by-law. Fyke nets include a series of concentric circles as shown in Figure 2. Otters go into the net after eels but become trapped and drown within the net. An Otter guard stitched into the entrance of the net as shown in Figure 2 prevents an Otter from entering. On 6 March 2003, a male Otter was found dead in a fyke net at Lower Hamworthy by the Poole Harbour Commissioners. This was an unregistered net used illegally, and highlights the problem that exists when poaching occurs.
- **Declining prey items** – various fish stocks are believed to be declining, including eel stocks. If prey items are not as abundant as in the 1960s, it is possible that this could limit the Otter population size. However, with eels still being caught in good numbers in Poole Harbour, it seems unlikely that this would stop them from colonizing altogether. Other items such as sea scorpions and flat fish are also recorded within the harbour so it appears that food is available.



(Illustration by Gabrielle Bordewich
and Landmark Design)

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Figure 2 Fyke net and Otter guard.

- Availability of holt sites – Otter holts may be more important in coastal areas than freshwater as, despite washing in freshwater daily, it has been suggested that coastal Otters may have a greater problem with thermal regulation than freshwater Otters. Otters may require covered holts to keep warm in coastal habitats in a way they do not in freshwater areas. Moreover, Krunk *et al.* (1998) have shown that coastal Otters which utilized rocky holes as well as tree roots for holts chose holt sites that were very close to a source of freshwater. In fact, small freshwater pools were often found within the holt itself.
- Reedbeds could be important as Otters have made couches (above ground resting sites as opposed to covered holts) within reedbeds. These are quite elaborate ball-shaped designs made from bitten-off reeds. It is thought that these offer some insulating properties to help with thermal regulation. However, most reedbeds in Poole Harbour are saline so this may limit Otters' ability to exist in these areas and restrict resting sites to freshwater reedbed areas.

- Development and roads – there has been a large increase in development around Poole Harbour, but Brownsea Island and the Purbeck side of Poole Harbour have been largely unaffected. The Holes Bay and Sandbanks areas have seen a significant increase in development leading to the loss of some harbour edge habitat on the Poole side. Traffic on roads has significantly increased since the 1960s, which can cause problems throughout Dorset. In 1999, an unconfirmed report of a dead Otter was received on the A35 near Holes Bay. Unfortunately, a body was not picked up to confirm the report but it coincided with the disappearance of the Otter from Brownsea Island. We cannot be sure that these incidents are linked, and there is the potential for Poole Harbour to contain many Otters, but it could also have been the only or one of few Otters in the harbour thus greatly affecting the population.
- Boat traffic – the amount of boat traffic in the harbour has expanded since the 1960s. This could disturb Otters, particularly if it occurs at night or could harm/kill Otters if they are hit by a boat. Many large boats enter the harbour and there has been an increase in marinas and sailing schools contributing to the rise in development around the harbour edge.
- Pollution – increased run-off from development, chemical treatments on boats and sewage have all contributed to pollution within the harbour, some of which is retained in the sediments over decades. In their position at the top of the food chain, Otters are quite sensitive to pollution, which was the primary reason for their decline in the 1950–70s. Pollution could be a problem within Poole Harbour if it affects the Otter's food items or causes isolated incidents with localized effects. However, there are no data to determine whether or not this is a problem.

Solutions

To restore the Otters to a viable breeding population in Poole Harbour, we need to determine which of the potential problems are limiting factors and if possible address these problems.

Surveying and research – a pressing need and more regular surveys for Otters in Poole Harbour are required. Landing stages and slipways, particularly on the islands, could serve as Otter sprainting sites and sailing clubs could be enlisted to examine such areas. Other user groups such as bird watchers, canoeists and fishing clubs could be requested to assist. One canoeing club has been trained to look for Otter signs, as this sport allows access to the more inaccessible areas of the harbour that most Dorset Otter Group volunteers cannot reach. Poole Harbour Study Group could be helpful in stimulating research and surveying within the harbour. Student projects could be designed to examine details on Otter behaviour.

If any Otter carcasses are found it is vital that these are sent for post-mortem to detect if any toxic substances are present in the tissues, if any intraspecific aggression has occurred (which could indicate that other Otters are around and defending territories) and, in the case of females, if any breeding has happened.

With regard to regulation – legislation exists which affects the Otter population in Poole Harbour, notably the requirement to fit an Otter guard into a fyke net under a national by-law. Although a conviction for breaking this law and failing to register fyke nets results in a £500 fine plus costs, it is unclear whether this is a big enough deterrent and whether fines should be increased in the future. The Otter is a listed species requiring special protection measures under the European Habitats Directive (92/43/EEC) and is listed in Annex 2 requiring the designation of Special Areas of Conservation (SACs) for sites supporting important Otter populations (DEFRA, 2003). However, the Otter is not a listed species for the Poole Harbour candidate SAC. This means that consideration of the Otter population is not required when determining whether the SAC is in a favourable condition, but there is a need consider the Otter under its own legal requirements. This requires attention in the future.

Also useful are schemes to benefit or ensure the protection of both freshwater or coastal wetland habitat. These will aid the Otter population, particularly if they include Otter holts. Artificial holts may well help increase the density of Otter populations within the harbour, but these have to be created alongside freshwater areas or with freshwater washing pools constructed next to any holts. Management of the freshwater reedbeds to encourage the Otter population could also be important.

Finally as some roads are very close to where Otters could be using the harbour, particularly at Holes Bay, mitigation may be required to reduce Otter casualties. Survey work is required to identify potential areas where Otters could have a problem with the road and suggest works that could mitigate against the effects.

References

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