POOLE HARBOUR STUDY GROUP

WADER AND WATERFOWL ROOST SURVEY OF POOLE HARBOUR

WINTER 2002/03

S.J. Morrison

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INTRODUCTION

Poole Harbour and its environs have long been recognised nationally as being of high biological importance. In 1964, the Harbour was designated under The National Parks and Countryside Act, 1949, Section 23, as a Site of Special Scientific Interest (S.S.S.I.). Its importance was further recognised in "A Nature Conservation Review" in which it was listed as a Grade 1 Site (Ratcliffe, 1977). The Harbour also meets the criteria for designation as a Special Protection Area (S.P.A.) under the European Community Directive, and as a wetland of international importance under the RAMSAR Convention. Both of these proposals were finally ratified on 31st March 1999. In addition, the southern and western side of the Harbour are included in the Purbeck Heritage Coast and within the Dorset Area of Outstanding Natural Beauty.

A general survey of 'wildfowl and waders' in Poole Harbour was undertaken by Collins (1985, 1986) giving the locations of roosting sites around the Harbour. Over 16 years has elapsed since Collins' surveys. There is an urgent need to re-survey the roosts in the Harbour and to record the changes, if any, which may have occurred during the intervening years. The information required was the present location of roosts, the species attending each site, together with current and perceived threats.

This report presents the results of a survey undertaken during the winter of 2002/03 to record the location of roosting waders and waterfowl[1] in Poole Harbour. The changes that have occurred since Collins (1985, 1986) are given, together with the current threats to each site.

[1] As defined by WeBS. However, for the purpose of this report, and within the context of Poole Harbour, the definition of waterfowl is restricted to the grebes (*Podicipedidae*). divers (*Gaviidae*), cormorants (*Phalacrocoracidae*) and sea-duck (Anatidae: *Somateriini, Mergini*).

METHODS

Utilising the wader roost information provided in Collins (1985), the author visited each wader roost at least twice during high tide to assess the extent of the roost, the physical character of the site, the species attending the roost, and their approximate numbers. Visits were made between November and February. The Harbour was searched for any additional roost sites not recorded by Collins (1985); a roost being defined as a site that regularly held more than 10 waders during normal and spring high tides. At all the roost sites identified by Collins (1985), any changes that had occurred were recorded and their impacts noted. Additionally, previously unrecorded roost sites were assessed for their known period of occupancy.

To assess the size of the wader roosts in relation to one another, two co-ordinated counts were arranged to identify and count the attendant species. Wetland Bird Survey (WeBS) counters, local Royal Society for the Protection of Birds (R.S.P.B.) staff and other volunteer birdwatchers were contacted to assist in these counts. Counters and especially those with a long association with a roost were asked additionally for any historical information concerning the site.

To assist in any future survey, the methodology used and information required is given in Appendix I.

Thirteen visits were made to locate waterfowl roosts. Most were dusk visits but dawn visits were also undertaken. The location of waterfowl roosts was fixed by using a combination of a Global Position System (G.P.S.), a laser rangefinder, and compass. However, the use of distinct landmarks was used to gauge the horizontal position, so a compass was not necessary much of the time. Additionally, a monthly count of the known Goldeneye roost at Little Sea, Studland Heath N.N.R. was undertaken.

Further details on methodology are given under the relevant chapters.

WADER ROOSTS

INTRODUCTION

Between the 25th October 2002 and the 15th March 2003, a total of 32 visits were made to survey the high tide wader roosts within Poole Harbour. All the roosts identified in Collins (1985) were visited and additional roost sites located are shown in Figures 1 & 2. Each roost site was visited at least twice, while some extensive roosts required several visits.

The two co-ordinated counts were undertaken during spring high tides on the 20th December 2002 (high tide at 09.16) and the 17th February 2003 (high tide at 09.19). Enough volunteers were available to count all the main roost sites identified by Collins (1985). These counts were undertaken to coincide with spring high tides and to locate the roosts that were vital to waders during such high tidal conditions.

Unfortunately, the information provided was not sufficient to assess the importance of a roost site in relation to another, due to the difficulty of counting the birds. However, the counts did help to confirm the location of roost-sites.

All areas of Poole Harbour, which were known to hold wader roosts in the past, were visited, while potential sites were also visited. However, permission for access was not obtained for Keysworth (roosts 61 to 63), although information was provided through the co-ordinated counts. Visits were not made to the Brownsea Lagoon but information was provided by the Dorset Wildlife Trust.

It is suggested that reference should be made to Pickess & Underhill-Day (2002), which provides information on the wader populations within Poole Harbour, in conjunction with this report.

Poole Harbour is an estuary with a constricted mouth, which prevents any significant amount of water leaving the Harbour. The consequence of this is an unusual tidal regime in which a "double" high tide occurs, i.e. a larger volume of water is retained in the estuary than is the case with other sites that experience the normal twice-daily tidal cycle. These unusual micro-tidal conditions give the Harbour the characteristics of a lagoon. This has consequences on the distribution of feeding and roosting waders within the Harbour, which will be discussed later.

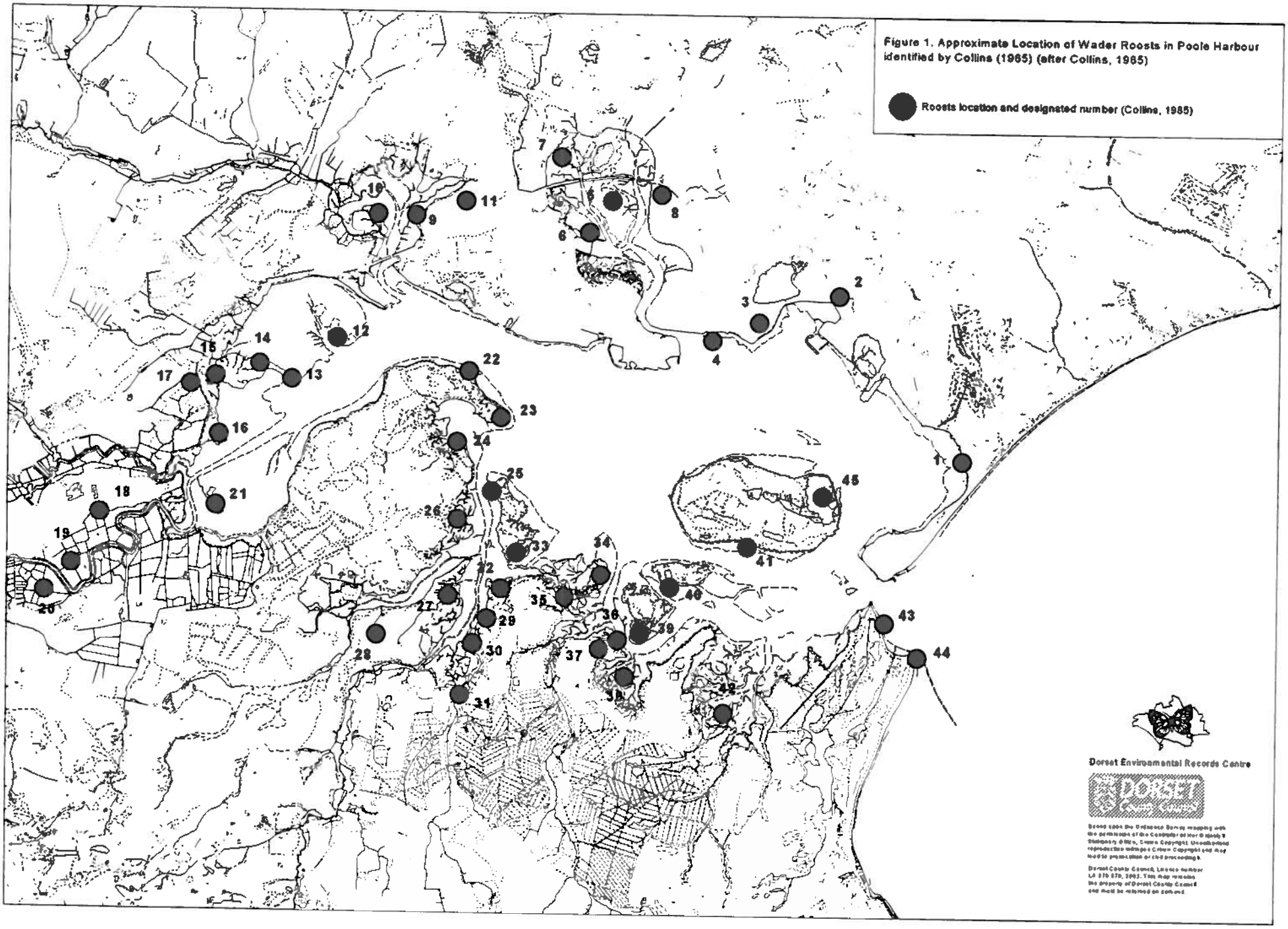
Figure 1. Approximate Location of Wader Roosts in Poole Harbour identified by Collins (1965) (after Collins, 1985)
Roosts location and designated number (Collins, 1985)
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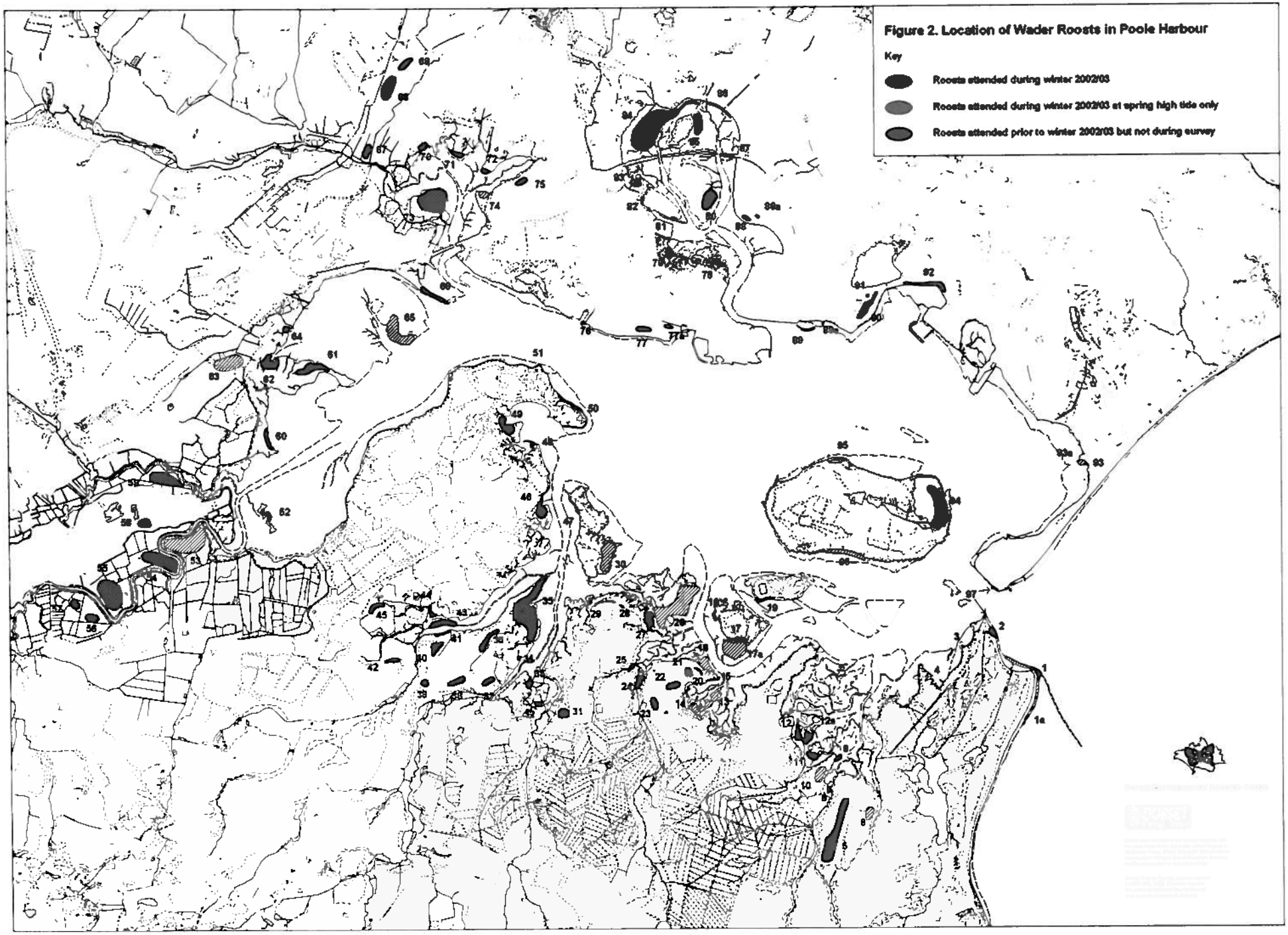
Figure 2. Location of Wader Roosts in Poole Harbour
Key
Roosts attended during winter 2002/03
Roosts attended during winter 2002/03 at spring high tide only
Roosts attended prior to winter 2002/03 but not during survey

ROOST ACCOUNTS

The locations of all current wader roosts are shown in Figure 2. A description of each of these roost sites is presented, including the following information.

- ***Physical character***: Type of habitat and location.
- ***Attending species***: A list of species noted attending the roost during the survey, together with a total co-ordinated count for each of the main count dates.
- ***Historical changes***: Recent changes to the roost site and to the status of the waders attending the roost.
- ***Threats***: A summary of any threats and disturbance observed during the current survey specific to the roost, and to ascertain any potential threats.

A general discussion is given of the overall changes to the roosting sites that have occurred since 1986, followed by individual species accounts.

In this report, the current numbering system for roosts is given against those designated by Collins (1985). It should be noted that during the survey no birds were recorded at roosts no. 6, 8, 9, 12, 17, 33, 38, 39 and 41. His roost, number 8 no longer exists due to the reclamation land, noted in his report, being no longer suitable.

The heading for each roost description below lists the roost number as shown in Figure 2, followed by the site name and the designation given by Collins (1985), where relevant.

1/1a. Pilot's Point and Studland Bay north ***Collins, roost 44***

Physical character: Sandy beach influenced by tide bounded by open sea and dune.
Attending species: Oystercatcher, Ringed Plover, and Dunlin.
Historical changes: This roost has been in existence since at least the end of the 19th century (T.M. Pike, *in litt.*) and was, until recently, regarded as the largest roost within Poole Harbour. Since the mid 1990's, the site has seen a significant increase in the amount of sand being deposited through longshore drift from Studland Bay south. In the late 1990's this has resulted in the establishment of a small dune at New Cut stream in Shell Bay. The apparent decrease in the amount of sand from the southern part of the Studland Bay is not currently a cause for concern with regard to the roost. The causes of the decrease are unknown but a change in the main current leaving Poole Harbour, through dredging and construction of sea defences at Sandbanks, and the presence of groynes along Bournemouth beach may have prevented or decreased erosion of the Bournemouth cliffs from which the sand at Studland is derived. Roost 1a shows the area of beach previously attended while the present extent of the roost is now delimited by roost 1. Species that regularly attended this roost included Oystercatcher, Ringed Plover, Grey Plover, Knot, Sanderling, Dunlin, Bar-tailed Godwit, Turnstone, and, intermittently, Purple Sandpiper. Species attending the roost are now seemingly restricted to Oystercatcher, Ringed Plover and Dunlin, and only in small numbers. It is apparent that some waders have gradually adopted Brownsea Lagoon as an alternative roost site, especially since the placement of a sluice has allowed the water levels to be controlled more effectively.
Threats: This site is now heavily and extensively disturbed by walkers and dog walkers. The level has increased significantly in the last decade (*pers. obs.*). In the late 1990's, the area of the

roost was "posted" off with signs at each end informing the public of the high tide wader roost and requesting them to remain outside the area of posts in an attempt to reduce disturbance to the waders. This has largely failed due to the restricted area posted off and the large numbers of people using the area, with a resultant small percentage of them ignoring the signs. The disturbance threat is unlikely to abate.

Although the roost at Brownsea Lagoon has become more important for waders, some attempt should be made to safeguard the Studland Bay roost.

2. Shell Bay ***Collins, roost 43***

Physical character: Sandy beach influenced by tide and bounded by open sea and dune. The flow and direction of Central Cut stream, when in full flow, often creates and island of shoreline shunned by people who cross the stream at a point closer to the dunes.
Attending species: Ringed Plover and occasionally Oystercatcher and Sanderling.
Historical changes: This small site has changed little since Collins (1985). However, the species attending this roost have declined in number and diversity; it regularly included Ringed Plover, Sanderling, Dunlin, and, occasionally Grey Plover and Purple Sandpiper. Species attending the roost are now more or less restricted to Ringed Plover and their attendance has become more intermittent in the last three years.
Threats: This site is now heavily and extensively disturbed by walkers and dog walkers. The level has increased significantly in the last decade (*pers. obs.*). The disturbance threat is unlikely to abate.

3. Gravel Point ***Collins, not listed***

Physical character: Gravel, mud, and sand influenced by tide and bounded by dune and open estuary.
Attending species: Oystercatcher, and Ringed Plover.
Historical changes: Little change to the site has been noted over the last 20 years. However, species attendance has dwindled and Turnstone seems to have disappeared or at least become an irregular visitor. In addition, attendance by Oystercatcher and Ringed Plover has also declined.
Threats: The presence of human disturbance through the activities of walkers, dog walkers, fisherman, and water sports results in the abandonment of this roost. A slight increase in usage has been noted over the last decade but not to the extent encountered at Studland Bay. The disturbance threat is unlikely to abate.

4. Bramble Bush Bay concrete jetty ***Collins, not listed***

Physical character: Man-made concrete blocks leading westwards from the shoreline bordered by open estuary, and heath and secondary woodland.
Attending species: Occasionally Knot, Sanderling, Dunlin, Redshank and Turnstone.
Historical changes: The concrete blocks have been in place since the Second World War. Species attendance has always been intermittent and limited to the outer blocks, particularly at very high tide. Numbers are very small compared with most roosts.
Threats: The presence of human disturbance through the activities of walkers, dog walkers, and

occasionally fisherman, results in the abandonment of this roost, probably accounting for the intermittent attendance. A slight increase in usage has been noted over the last few years and it may be that this site is used as an alternative or opportunistic roost when birds cannot attend their normal roosts, e.g., Shell and Studland Bay.

5. Greenland's Farm south ***Collins, not listed***

Physical character: Pasture bordered by secondary woodland, heathland, and scrub.
Attending species: Lapwing and Curlew.
Historical changes: Little change to the site has been noted over the last 20 years. Recently, the farm lease ran out upon the death of the leaseholder and the local landowners, The National Trust, intend to revert part of the site back the heathland.
Threats: The appearance of walkers temporarily disturbs any roosting birds but the site is large enough to allow birds to move from one end of the roost to the other to avoid such disturbance. The only threat is the reversion of the pasture back to heathland. Although this is a threat to the roost, which will eventually be lost, it is regarded as acceptable in the light of the importance of the heathland habitat to other wildlife.

6. Greenland's Farm north ***Collins, not listed***

Physical character: Pasture bordered by secondary woodland, and scrub.
Attending species: Lapwing and Curlew.
Historical changes: Little change to the site has been noted over the last 20 years. Recently, the agricultural lease expired and the landowner, The National Trust, intend to revert part of the site back to heathland.
Threats: The appearance of walkers temporarily disturbs any roosting birds but the site is large enough to allow birds to move from one end of the roost to the other to avoid such disturbance. A possible threat is the planned reversion of the pasture back to heathland.

7. Greenland's Farm east ***Collins, not listed***

Physical character: Pasture bordered by secondary woodland, heathland bog, and scrub.
Attending species: None recorded during the survey.
Historical changes: Little change to the site has been noted. This area previously held, albeit intermittently, Lapwing and Curlew and, in late summer, occasionally Black-tailed Godwit and Whimbrel. Recently, the agricultural lease expired and the landowner, The National Trust, intend to revert part of the site back to heathland.
Threats: None apparent, although the planned reversion of the pasture back to heathland may affect the roost.

8. Mead Creek ***Collins, not listed***

Physical character: *Spartina* saltmarsh bordered by pasture and secondary woodland.
Attending species: Redshank and Greenshank (the latter particularly on migration).
Historical changes: Little change to the site or the attending birds has been noted over the last 20

years.
Threats: None apparent.

9. Brand's Point ***Collins, not listed***

Physical character: Mud and gravel spit with some cover of *Spartina* bounded by open estuary.
Attending species: Oystercatcher, and Redshank and occasionally Avocet, Dunlin and Black-tailed Godwit present at very high tide.
Historical changes: Little change to the site or the attending birds has been noted over the last 20 years.
Threats: None apparent.

10. Drove Point ***Collins, not listed***

Physical character: *Spartina* saltmarsh, open *Salicornia* marsh, brackish meadow, bordered by pasture and scrub.
Attending species: None during normal tidal conditions but during particularly high tides includes Grey Plover, Lapwing, Knot, Dunlin, Curlew, Whimbrel (on migration), Redshank and Avocet when present in the bay.
Historical changes: Little change to the site or the attending birds has been noted over the last 20 years. With the probability that Brand's Bay south-west (roost 12) will become less favourable (see below); it is possible that this site will become more important.
Threats: None apparent.

11. Drove Island ***Collins, not listed***

Physical character: *Spartina* saltmarsh bordered by Drove Island (low scrub) and primary/secondary woodland.
Attending species: Redshank and occasionally Spotted Redshank and Greenshank.
Historical changes: Little change to the site has been noted prior to the mid 1990's. Since then a decline in *Spartina* saltmarsh cover has been noted.
Threats: The decline in *Spartina* has not affected the roost site but further depletion of the *Spartina* will likely result in its loss.

12/12a. Brand's Bay south-west ***Collins, roost 42***

Physical character: *Spartina* saltmarsh bordered by open estuary and primary woodland.
Attending species: Grey Plover, Knot, Dunlin, Curlew, Whimbrel (on migration), Redshank and Black-tailed Godwit and Avocet when present.
Historical changes: This, the largest roost within Brand's Bay, has changed little since Collins (1985). Most of the birds that feed in Brand's Bay and to a lesser extent Newton Bay attend this roost. In recent years, *Spartina* die back has been noted and has increased significantly in the last three to five years, resulting in the roost contracting a little (formerly roosted at 12a, an extension of the main roost).
Threats: During the winter season, infrequent campers and walkers at Goathorn cause occasional

disturbance of the waders, and rowing boats occasionally access the site for various unknown reasons, the latter may be on the increase. Duck shooting has declined here but very occasionally an unauthorised shooter is encountered. Water skiers accessing the site in recent years is a new problem but one that is not frequent. However, there disturbance effect is very high, with all birds taking flight upon their appearance.

The main threat to the site is *Spartina* die back, which has resulted in the fragmentation of the roost, in line with the fragmentation of the saltmarsh. Waders no longer form large species-specific flocks. Nowadays mixed flocks limit themselves to the resultant *Spartina* islands created by the die back; Curlew located in the middle of the islands, while Dunlin and Grey Plover take advantage of the eroding edges, with Redshank somewhere between. If the die back continues, it is likely that the roost will be abandoned.

13. Newton Bay ***Collins, Roost 38***

Physical character: *Spartina* saltmarsh bordered by open estuary, agricultural pasture and primary/secondary woodland.
Attending species: None recorded during the survey.
Historical changes: This, the largest roost within Newton Bay, has until recently little changed during the past 20 years. The *Spartina* die back has resulted in a depleted saltmarsh and probably the demise of this roost, which regularly held Grey Plover, Knot, Dunlin, Black-tailed Godwit, Whimbrel (on migration), and Redshank, although enough *Spartina* still exists for a small roost.
Threats: None apparent, although water skiers occasionally access the site, along with other leisure watercraft. The main threat to the site is the *Spartina* die back. As with Brand's Bay, it has resulted in the fragmentation of the roost, with the effect that the roost is no longer viable, or at least not used as regularly, as prior to the die back.

14. Newton Bay west ***Collins, not listed***

Physical character: Mud and gravel shoreline with scattered *Spartina* saltmarsh bordered by open estuary, agricultural pasture and secondary woodland.
Attending species: Redshank.
Historical changes: This roost may be new and because of the demise of the main roost within the bay.
Threats: None apparent although possible brief disturbance from a private track adjacent to the site.

15. Cleavel Point ***Collins, not listed***

Physical character: Mud and gravel shoreline with scattered *Spartina* saltmarsh bordered by open estuary, agricultural pasture and secondary woodland.
Attending species: Oystercatcher and Redshank.
Historical changes: Unknown
Threats: None apparent although water skiers occasionally access the site along with other leisure watercraft.

16/16a. Cleavel Point north ***Collins, roost 36***

Physical character: *Spartina* saltmarsh bordered by open estuary, agricultural pasture (with adjacent hedgerow) and pumping station.
Attending species: None recorded during the survey.
Historical changes: Since Collins (1985), the site has suffered from *Spartina* dieback and consequently the size of the saltmarsh available to roosting waders has shrunk. None were recorded during visits but it is likely that some birds (e.g., Curlew) may occasionally use the site.
Threats: None apparent although water skiers occasionally pass close to the site, along with other leisure watercraft. In addition, people accessing the pumping station at Ower may cause minor disturbance. Public access is prohibited. However, the main threat has been *Spartina* die back leading to a depletion of the saltmarsh. This has led to its apparent abandonment.

17/17a. Green Island south ***Collins, roost 39***

Physical character: Formerly *Spartina* saltmarsh bounded by open water to the south (roost 17a) and sandy beach to the north (roost 17).
Attending species: **17** – Oystercatcher, Grey Plover and Knot. **17a** – None recorded during the survey.
Historical changes: This site has changed significantly since Collins (1985). During the 1990's, *Spartina* die back occurred to the point where the saltmarsh has now disappeared. Consequently, Knot, Dunlin, Curlew, Redshank, Black-tailed Godwit and the occasional Greenshank no longer use the site.
Threats: Disturbance from the occasional passage of watercraft was noted in the past but the disappearance of the saltmarsh through *Spartina* die back has resulted in the loss of the roost. The beach is on land upon which public access is prohibited but there is the possibility of disturbance from passing watercraft.

18 Green Island north-west ***Collins, not listed***

Physical character: Sand beach bordered by open water, *Spartina* saltmarsh, and cliff.
Attending species: Oystercatcher.
Historical changes: None apparent to the site but it seems strange that Collins (1985) did not record Oystercatcher on this part of the island. However, the Furzey Island roost was seemingly used more often during Collins' survey. Has there been a change of venue?
Threats: Disturbance from the occasional passage of watercraft was noted.

19. Furzey Island ***Collins, roost 40***

Physical character: Sandy beach bordered by open water and sand cliff.
Attending species: Occasionally Oystercatcher.
Historical changes: None apparent to the site since Collins (1985), although the numbers of Oystercatcher seem to have declined and may be due to the apparent adoption of Green Island north-west (roost 18).
Threats: None apparent. Public access is prohibited.

20. Cleavel Point field east ***Collins, roost 37***

Physical character: Agricultural pasture, usually grazed, bordered by open estuary and hedgerow.
Attending species: Oystercatcher, Lapwing and Curlew.
Historical changes: None apparent.
Threats: Minor disturbance by people accessing the pumping station at Ower. Public access is prohibited.

21. Cleavel Point field west ***Collins, not listed***

Physical character: Agricultural pasture, usually grazed, bordered by open estuary and hedgerow.
Attending species: None during normal tidal conditions but during particularly high tides includes Grey Plover, Knot and Dunlin.
Historical changes: None apparent.
Threats: Minor disturbance by people accessing the pumping station at Ower. Public access is prohibited.

22. Ower ***Collins, not listed***

Physical character: Agricultural pasture, usually grazed.
Attending species: Lapwing.
Historical changes: None apparent.
Threats: None apparent.

23. Ower Heath south ***Collins, not listed***

Physical character: Agricultural pasture, usually grazed.
Attending species: Lapwing.
Historical changes: None apparent.
Threats: None apparent.

24. Shotover Creek ***Collins, not listed***

Physical character: *Spartina* saltmarsh bordered by enclosed estuary and agricultural land.
Attending species: Redshank and Greenshank.
Historical changes: None apparent.
Threats: None apparent.

25. Fitzworth Heath south-east ***Collins, not listed***

Physical character: *Spartina* saltmarsh bordered by enclosed estuary and agricultural land.
Attending species: Redshank.
Historical changes: None apparent.
Threats: None apparent.

26. Fitzworth Point saltmarsh ***Collins, roost 34***

Physical character: *Spartina* saltmarsh bordered by open water.
Attending species: None recorded during the survey.
Historical changes: *Spartina* die back since Collins (1985) has resulted in a fragmentation of the saltmarsh and previously attendant waders, which included Grey Plover, Dunlin, Black-tailed Godwit, Curlew and Redshank, no longer occur.
Threats: Clam-fishing boats were noted passing through roost areas 25 and 26 during the co-ordinated count on the 20th December 2002. (B. Edwards, *in litt.*). This resulted in the birds leaving the area. The *Spartina* die back seems to have instigated the desertion of this roost.

27. Fitzworth Point ***Collins, roost 35***

Physical character: *Spartina* saltmarsh bordered by open estuary and agricultural land.
Attending species: Redshank and occasionally Grey Plover.
Historical changes: *Spartina* die back since Collins (1985) has resulted in a fragmentation of the saltmarsh.
Threats: Clam-fishing boats were noted passing through roost areas 26 and 27 during the survey. This resulted in the birds leaving the area. In addition, *Spartina* die back seems to be continuing and may result in the disappearance of the roost.

28. Fitzworth Point pool ***Collins, not listed***

Physical character: Upper shore lying between agricultural pasture and *Spartina* saltmarsh.
Attending species: None during normal tidal conditions but during particularly high tides often includes Grey Plover, and Redshank while the pool occasionally attracts Greenshank.
Historical changes: None apparent.
Threats: None apparent. Public access is prohibited.

29. Vitower ***Collins, roost 32***

Physical character: Upper shore lying between agricultural pasture and *Spartina* saltmarsh.
Attending species: None during normal tidal conditions but during particularly high tides includes Curlew.
Historical changes: None apparent, although birds seemingly roosted on the *Spartina* saltmarsh (Collins 1985), which was not observed during the survey.
Threats: None apparent. Public access is prohibited.

30. Round Island south ***Collins, roost 33***

Physical character: *Spartina* saltmarsh bordered by open water and secondary/primary woodland.
Attending species: None recorded during the survey.
Historical changes: None apparent to the site since Collins (1985) but Curlew and Redshank regularly roosted in the area. The reasons for their absence during the survey are unclear.
Threats: None apparent. Public access is prohibited.

31. Wych Moor ***Collins, not listed***

Physical character: Agricultural pasture, usually grazed, bordered by enclosed estuary and saltmarsh, secondary woodland, and road.
Attending species: Curlew.
Historical changes: None apparent.
Threats: Minor disturbance by walkers using the road (the latter, unintentionally trespassing).

32. Wych Creek south-east ***Collins, not listed***

Physical character: *Spartina* saltmarsh bordered by enclosed estuary and agricultural land.
Attending species: Curlew and Redshank.
Historical changes: None apparent.
Threats: None apparent.

33. Nath Point ***Collins, roost 31***

Physical character: *Spartina* saltmarsh bordered by enclosed estuary and agricultural land.
Attending species: Curlew and Redshank.
Historical changes: None apparent.
Threats: None apparent.

34. Middlebere east creek ***Collins, not listed***

Physical character: *Spartina* saltmarsh bordered by enclosed estuary and brackish meadow.
Attending species: Redshank.
Historical changes: None apparent.
Threats: None apparent.

35. Middlebere Point ***Collins, roost 27***

Physical character: *Spartina* saltmarsh bordered by enclosed estuary and brackish meadow.
Attending species: Curlew and Redshank.
Historical changes: None apparent. Attendant waders in the past have intermittently included Black-tailed Godwit, Grey Plover and Dunlin.
Threats: Disturbance is caused by any, albeit occasional, passing leisure watercraft.

36. Middlebere north ***Collins, not listed***

Physical character: Agricultural grazed pasture bordered by brackish meadow and *Spartina* saltmarsh, and planted copse.
Attending species: Curlew and Lapwing.
Historical changes: None apparent.
Threats: None apparent. Public access prohibited.

37. Middlebere south (east) ***Collins, not listed***

Physical character: Agricultural grazed pasture bordered by brackish meadow and *Spartina* saltmarsh, and planted copse.
Attending species: Curlew and Lapwing.
Historical changes: None apparent.
Threats: None apparent. Public access prohibited.

38. Middlebere south (west) ***Collins, not listed***

Physical character: Agricultural grazed pasture bordered by *Spartina* saltmarsh.
Attending species: Lapwing.
Historical changes: None apparent.
Threats: None apparent. Public access prohibited.

39. Middlebere south-west ***Collins, not listed***

Physical character: Agricultural grazed pasture bordered by pine plantation, farm outbuildings, and track, which is also a permissive footpath.
Attending species: Lapwing and occasionally Golden Plover and Curlew.
Historical changes: None apparent.
Threats: Public access prohibited but disturbance caused by walkers using the track.

40. Middlebere Farm ***Collins, roost 28***

Physical character: Agricultural grazed pasture bordered by *Spartina* saltmarsh and farm buildings.
Attending species: Lapwing, Curlew, and occasionally Ruff and Black-tailed Godwit.
Historical changes: None apparent to the site since Collins (1985) but he also records Oystercatcher, which may have been an infrequent visitor.
Threats: Public access prohibited but some disturbance from people using the track.

41. Middlebere Creek south ***Collins, not listed***

Physical character: Grazed *Spartina* saltmarsh bordered by enclosed estuary and agricultural land.
Attending species: Curlew and Redshank.
Historical changes: None apparent.
Threats: Access by wandering leisure watercraft (e.g., canoes, etc.) causes major disturbance to this roost – birds are noted to leave the area on such occasions.

42. Slepe Farm ***Collins, not listed***

Physical character: Agricultural grazed pasture bordered by reedbed, and hedgerow.
Attending species: Lapwing and Curlew.
Historical changes: None apparent.
Threats: None apparent. Public access prohibited.

43. Middlebere Lake ***Collins, not listed***

Physical character: Enclosed creek with mud substrate bordered by *Spartina* sp. saltmarsh.
Attending species: This site is only partially covered during neap high tide and at such times is one of the most important roost sites in the Harbour. When the tide allows, Avocet, Grey Plover, Knot, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Redshank, and occasionally Greenshank, Spotted Redshank and, rarely, Turnstone occur.
Historical changes: None apparent.
Threats: Access by wandering leisure watercraft (e.g., canoes, etc.) causes major disturbance to this roost – birds are noted to leave the area on such occasions.

44. Coombe Heath ***Collins, not listed***

Physical character: Grazed *Spartina* saltmarsh bordered by enclosed estuary, heath and secondary woodland.
Attending species: Avocet, Black-tailed Godwit, Curlew, Redshank, Greenshank and occasionally Grey Plover, Knot, Dunlin, and Spotted Redshank.
Historical changes: None apparent.
Threats: Access by wandering leisure watercraft (e.g., canoes, etc.) causes major disturbance to this roost – birds are noted to leave the area on such occasions. Public access is prohibited from landward side. The area is owned by the R.S.P.B., so future protection of the roost should be secure.

45. Saltern Fields ***Collins, not listed***

Physical character: Agricultural grazed pasture bordered by reedbed, brackish meadow, *Spartina* saltmarsh and pine plantation.
Attending species: Lapwing.
Historical changes: None apparent.
Threats: None apparent. Public access prohibited.

46. Shipstal Point south *Collins, roost 26*

Physical character: *Spartina* saltmarsh and sand beach bordered by open estuary, heathland scrub, and secondary woodland.
Attending species: Oystercatcher, Grey Plover, Knot, Dunlin, Curlew and Redshank.
Historical changes: None apparent since Collins (1985).
Threats: Public access from Shipstal Point causes some disturbance to the site. The area is owned by the R.S.P.B. so future protection of the roost should be secure.

47. Long Island *Collins, roost 25*

Physical character: Sand beach bordered by open estuary and secondary woodland/scrub.
Attending species: Oystercatcher, Grey Plover, Knot, Dunlin, Curlew and Redshank.
Historical changes: None apparent to the site since Collins (1985), although more species were observed during the current survey than compared to his survey, which revealed only Oystercatcher.
Threats: Long Island is privately owned with public access prohibited. The only threat apparent is from watercraft passing too close to the site.

48. Arne Spit *Collins, roost 24*

Physical character: Sandy beach bordered by open estuary, *Spartina* saltmarsh, and heathland/scrub.
Attending species: Oystercatcher, Grey Plover, Dunlin, Curlew, and Redshank and occasionally Black-tailed Godwit.
Historical changes: None apparent since Collins (1985).
Threats: None apparent. The area is owned by the R.S.P.B. so future protection of the roost should be secure.

49. Arne Bay *Collins, not listed*

Physical character: *Spartina* saltmarsh bounded by primary/secondary woodland and estuary.
Attending species: Oystercatcher and Curlew.
Historical changes: None apparent.
Threats: None apparent, although the upper shore has suffered from overgrazing by Sika Deer *Cervus nippon*. The area is owned by the R.S.P.B. so future protection of the roost should be secure.

50. Patchins Point *Collins, roost 23*

Physical character: Sand/gravel beach bordered by open water and bracken heath hinterland.
Attending species: Oystercatcher, Avocet, Grey Plover, Dunlin, Black-tailed Godwit, Curlew, and Redshank.
Historical changes: None apparent since Collins (1985) but the evident increase in numbers and diversity of waders using the site is noteworthy.

Threats: None apparent, although the effect of watercraft passing too close to the site is unknown. The area is managed by the R.S.P.B. so future protection of the roost should be secure.

51. Gold Point ***Collins, roost 22***

Physical character: Sand/gravel beach bordered by open water secondary woodland.
Attending species: Oystercatcher and Grey Plover.
Historical changes: None apparent.
Threats: None apparent, although the effect of watercraft passing too close to the site is unknown. Imerys Minerals Ltd. currently lease the area to the R.S.P.B., so the future of the roost is reasonably secure.

52. Gigger's Island ***Collins, roost 21***

Physical character: Island with *Spartina* surrounded by open estuary.
Attending species: Black-tailed Godwit, Curlew, and Redshank.
Historical changes: None apparent.
Threats: None apparent.

53. Ridge Moors north-west (Turner's Cove) ***Collins, not listed***

Physical character: Grazed water-meadow bordered by a river to the west, north and east.
Attending species: None recorded during the survey
Historical changes: Little change. This is one of four areas regularly used by waders along Wareham water-meadows. The species and numbers attending are often ephemeral but have regularly included Lapwing, Black-tailed Godwit, Dunlin and Curlew. Their presence depends on ground conditions and the availability of food within the water-meadows. Possibly, this area should not be described as a regular roost site but when feeding birds are present, they will remain during the high water period.
Threats: None apparent. The area is owned by the R.S.P.B. so future protection of the roost should be secure.

54. Wareham water-meadows north-east ***Collins, roost 50***

Physical character: Grazed water-meadow bordered by a river immediately to the south and east.
Attending species: Curlew.
Historical changes: Little change. However, although the site has been agriculturally improved, reversion is now occurring under stewardship. This is one of four areas regularly used by waders along Wareham water-meadows. The species and numbers attending are often ephemeral but have regularly included Lapwing, Black-tailed Godwit, Dunlin and Curlew. Their presence depends on ground conditions and the availability of food within the water-meadows. Possibly, this area should not be described as a regular roost site but when feeding birds are present, they will remain during the high water period.
Threats: None apparent. However, any drainage has probably had an effect on any food supply.

55. Bestwall *Collins, roost 19*

Physical character: Grazed water-meadow bordered by a river to the south and conurbation.
Attending species: Lapwing, Black-tailed Godwit, Dunlin and Curlew.
Historical changes: Little apparent change since Collins (1985), however, although the site has been agriculturally improved, reversion is now occurring. This is one of four areas regularly used by waders along Wareham water-meadows. The species and numbers attending are often ephemeral and depend on ground conditions and the availability of food within the water-meadows. Possibly, this area should not be described as a roost site but when feeding birds are present, they will remain during the high water period.
Threats: None apparent. The area is owned by the R.S.P.B. so future protection of the roost should be secure.

56. Redcliffe *Collins, roost 20*

Physical character: Grazed water-meadow bordered by a river and public footpath to the west and north.
Attending species: Lapwing, Black-tailed Godwit and Curlew.
Historical changes: Little apparent change since Collins (1985), however, although the site has been agriculturally improved, reversion is now occurring under stewardship. This is one of four areas regularly used by waders along Wareham water-meadows. The species and numbers attending are often ephemeral but have regularly included Lapwing, Black-tailed Godwit, Dunlin and Curlew. Their presence depends on ground conditions and the availability of food within the water-meadows. Possibly, this area should not be described as a roost site but when feeding birds are present, they will remain during the high water period.
Threats: None apparent. However, any drainage has probably had an effect on food supply.

57. Wareham water-meadows north-west *Collins, not listed*

Physical character: Grazed water-meadow bordered by a river and public footpath to the north.
Attending species: Lapwing.
Historical changes: Little apparent change since Collins (1985), however, although the site has been agriculturally improved, reversion is now occurring under stewardship. This is one of four areas regularly used by waders along Wareham water-meadows. The species and numbers attending are often ephemeral and depend on ground conditions and the availability of food within the water-meadows. Possibly, this area should not be described as a roost site but when feeding birds are present, they will remain during the high water period.
Threats: None apparent. However, drainage has probably has an effect on food supply.

58. Swineham Farm *Collins, not listed*

Physical character: Agricultural pasture.
Attending species: Lapwing.
Historical changes: Formerly agricultural pasture bordered by secondary woodland. This is a new roost site.

Threats: None apparent expect perhaps human disturbance from walkers. The effects of current gravel extraction close to the site are presently unknown.

59. Piddle water-meadows ***Collins, not listed***

Physical character: Grazed water-meadow bordered by a river to the north, secondary woodland belt, and public footpath.
Attending species: Lapwing. Occasionally, Curlew and Green Sandpiper.
Historical changes: Little apparent change. However, extensive gravel extraction by Bardon Aggregates has begun close by. Only two Lapwing were recorded during the survey and this is below what is normally expected for this site.
Threats: The effect of current gravel extraction close to the site is unknown but it is possible the water levels here may be affected. The area is bordered by a footpath, human disturbance, although low at present, could be a severe problem if the area under gravel extraction is developed.

60. Keysworth Point ***Collins, roost 16***

Physical character: *Spartina* saltmarsh bordered by open estuary and grazed water-meadow.
Attending species: Curlew and occasionally Oystercatcher and Redshank.
Historical changes: None apparent since Collins (1985).
Threats: None apparent. Land privately owned and access to the site is difficult.

61. Keysworth north-east (Shag Looe Head) ***Collins, roost 13 and 14***

Physical character: *Spartina* saltmarsh bordered by open estuary and reedbed.
Attending species: Curlew and Redshank and occasionally Lapwing.
Historical changes: None apparent since Collins (1985).
Threats: None apparent. Land privately owned and access to the site is difficult. The effects of passing watercraft are unknown.

62. Keysworth north ***Collins, roost 15***

Physical character: *Spartina* saltmarsh bordered by open estuary, grazed water-meadow and reedbed.
Attending species: Curlew and Redshank with occasional Oystercatcher and Lapwing.
Historical changes: None apparent.
Threats: None apparent. Land privately owned and access to the site is difficult.

63. Keysworth fields ***Collins, roost 17***

Physical character: Grazed water-meadow/agricultural pasture bordered by *Spartina* saltmarsh, secondary woodland, and scrub.
Attending species: None recorded during the survey.

Historical changes: None apparent to the site since Collins (1985). Access was not gained to this site and therefore it is unclear whether waders are still roosting here.
Threats: None apparent.

64. Holton Heath south ***Collins, not listed***

Physical character: *Spartina* saltmarsh bordered by open estuary and reedbed.
Attending species: Black-tailed Godwit, Curlew, and Redshank.
Historical changes: None apparent.
Threats: None apparent. The land is privately owned and public access is prohibited.

65. Wareham Channel gull islands ***Collins, roost 12***

Physical character: *Spartina* saltmarsh surrounded by open water.
Attending species: None recorded during the survey.
Historical changes: None apparent to the site since Collins (1985) but the reason for the lack of Curlew and Redshank recorded in past years is largely unknown. However, the recent and extensive use by fishing boats of the waters close to the islands may possibly be a reason.
Threats: None apparent due to difficulty of access. Effects of passing watercraft were not observed (no waders) but should not be under-estimated for such an open site.

66. Wood Bar Looe ***Collins, not listed***

Physical character: *Spartina* saltmarsh spit surrounded by open water and railway bridge to north.
Attending species: Oystercatcher.
Historical changes: Unknown.
Threats: None apparent.

67. Sherford River north ***Collins, not listed***

Physical character: Grazed water-meadow frequently flooded.
Attending species: Lapwing.
Historical changes: Unknown.
Threats: None apparent.

68. Lytchett Minster (Old Watery Lane north) ***Collins, not listed***

Physical character: Agricultural land.
Attending species: Lapwing, when ground suitable.
Historical changes: None apparent.
Threats: None apparent. The presence of a flock is largely opportunistic and depends on the condition of the field (birds attend the roost if the field is ploughed or the grass short).

69. Lytchett Minster (Old Watery Lane north) ***Collins, not listed***

Physical character: Agricultural land.
Attending species: Lapwing, when ground suitable.
Historical changes: None apparent.
Threats: None apparent. The presence of a flock is largely opportunistic and depends on the condition of the field (birds attend the roost if the field is ploughed or the grass short).

70. Lytchett Bay north-west ***Collins, not listed***

Physical character: water-meadow.
Attending species: Lapwing, Black-tailed Godwit, Redshank and occasionally Curlew.
Historical changes: None apparent.
Threats: None apparent.

71. Lytchett Bay north ***Collins, not listed***

Physical character: *Spartina* saltmarsh bordered by open estuary.
Attending species: Lapwing and Redshank.
Historical changes: None apparent.
Threats: None apparent although see under roost 72.

72. Lytchett Bay north-east ***Collins, not listed***

Physical character: *Spartina* saltmarsh bordered by open estuary.
Attending species: Lapwing, Dunlin and Redshank.
Historical changes: None apparent.
Threats: None apparent although disturbance by a watercraft was noted during the co-ordinated count on the 20th December 2002 (H. Lilley, *in. litt.*).

73. Otter Island ***Collins, roost 10***

Physical character: *Spartina* saltmarsh bordered by open estuary.
Attending species: Dunlin, Curlew, Spotted Redshank, and Redshank.
Historical changes: None apparent since Collins (1985).
Threats: The land is privately owned and public access is prohibited. The only apparent threat is from watercraft getting too close to the roost site.

74. Lytchett Bay south-east spit ***Collins, roost 9***

Physical character: Sand beach and *Spartina* saltmarsh surrounded by open estuary and conurbation.
Attending species: None recorded during the survey.
Historical changes: None apparent to the site, although the sand beach may be less extensive.

Visits were made during very high tides and not mean high tide, so it is possible that species recorded by Collins (1985) (Oystercatcher, Dunlin, and Redshank) still use this site during normal tidal conditions.
Threats: Minor public disturbance caused by general recreational activities and dogs, although the site is perhaps far enough away not to be affected.

75. Turlin Moor playing fields ***Collins, roost 11***
Physical character: Mown grass recreation ground.
Attending species: Oystercatcher.
Historical changes: None apparent since Collins (1985).
Threats: Minor public disturbance caused by general recreational activities, and dogs, worse at weekends.

76. Lake ***Collins, not listed***

Physical character: Sandy promontory bordered by open water and conurbation.
Attending species: Oystercatcher, when not disturbed.
Historical changes: Unknown.
Threats: Public disturbance caused by general recreational activities, and dogs.

77/77a. Hamworthy Park ***Collins, not listed***

Physical character: Mown grass recreational ground bordered by open water and conurbation.
Attending species: Oystercatcher, when not disturbed.
Historical changes: Unknown.
Threats: Public disturbance caused by general recreational activities, and dogs.

78. Back Water Channel west ***Collins, not listed***

Physical character: *Spartina* saltmarsh bordered by industrial land and open estuary.
Attending species: Occasionally Curlew and Redshank.
Historical changes: Unknown.
Threats: None apparent although watercraft passing through the Back Water Channel may disturb birds. The area is very small.

79. Cobb's Quay south ***Collins, not listed***

Physical character: *Spartina* saltmarsh bordered by open estuary, conurbation and marina.
Attending species: Occasionally Curlew and Redshank.
Historical changes: None apparent since Collins (1985).
Threats: None immediately apparent, although many small rowing boats are moored on the upper shore. Access to the open water would be through the roost site.

80. Creekmoor Lake *Collins, roost 5*

Physical character: *Spartina* saltmarsh surrounded by open estuary.
Attending species: Avocet, Dunlin, Curlew and Redshank.
Historical changes: *Spartina* die back has affected the area since Collins (1985), with an apparent decline in the numbers and species attending the roost.
Threats: A number of threats were identified during the survey. These included various private watercraft passing to the south of the area but disturbance was apparently brief. However, the main threat came from the Royal National Lifeboat Institute's hovercraft. This was seen on many occasions to drive through the saltmarsh at high speed and occasionally the hovercraft would lay up in the saltmarsh. During all occasions the hovercraft was in operation, no birds were present on the islands. On one occasion, a flock of 47 Avocet, followed by a flock of ca.350 Dunlin were seen attempting to settle on the islands but due to the presence of the hovercraft, they climbed to a height of ca 35 metres and headed south out of Holes Bay.

Other than the above current and direct threat, any *Spartina* die back within Holes Bay may lead to the disappearance of this roost.

81. Upton Lake south *[Collins, roost 6]*

Physical character: *Spartina* saltmarsh bordered by open estuary and marina.
Attending species: Curlew and Redshank.
Historical changes: None apparent. This is presumably roost 6 designated by Collins (1985). If so, then the numbers of waders attending the roost seem to have declined.
Threats: None apparent, although possible disturbance from Cobb's Quay marina or Hamworthy housing estate cannot be discounted.

82. Upton Lake central *Collins, not listed*

Physical character: *Spartina* saltmarsh bordered by open estuary and conurbation.
Attending species: Curlew and Redshank.
Historical changes: Unknown.
Threats: During the survey, bait diggers were noted digging to the west of Upton Lake. Access to this area is through the roost site from Hamworthy housing estate. However, due to the activity occurring at low tide, the threat caused to the roost is thought to be minimal.

83. Upton Lake north *Collins, not listed*

Physical character: *Spartina* saltmarsh bordered by open estuary, planted woodland belt, conurbation and railway to the north.
Attending species: Curlew and Redshank.
Historical changes: Unknown.
Threats: During the survey, bait diggers were noted to the west of Upton Lake. Access to this area is through the roost site from Hamworthy housing estate. However, due to the activity occurring at low tide the threat caused to the roost is thought to be minimal.

84. Holes Bay north-west ***Collins, roost 7***

Physical character: *Spartina* saltmarsh bordered by open estuary and primary/secondary woodland with footpath.
Attending species: Avocet, Curlew, Spotted Redshank and Redshank.
Historical changes: None apparent since Collins (1985).
Threats: None immediately apparent, although disturbance caused by people using the footpath is likely but minimal.

85. Pergrin's Island ***Collins, not listed***

Physical character: *Spartina* saltmarsh bordered by open estuary and island with primary/secondary woodland.
Attending species: Avocet, Dunlin and Redshank.
Historical changes: None apparent.
Threats: None apparent.

86. Holes Bay north-east ***Collins, not listed***

Physical character: Mud and gravel shoreline with scattered *Spartina* sp. saltmarsh bordered by open estuary, footpath, and dual carriageway.
Attending species: Occasionally includes Dunlin and Redshank.
Historical changes: Other than recent construction of dual carriageway, unknown.
Threats: Some disturbance caused by people walking the footpath adjacent to the shoreline. However, the number of passer-bys is relatively low.

87. Holes Bay railway bridge ***Collins, not listed***

Physical character: Man-made concrete embankment forming part of railway bridge.
Attending species: Oystercatcher.
Historical changes: None since its construction.
Threats: None apparent. Public access is prohibited to this site.

88/88a. Sterte ***Collins, not listed***

Physical character: Roost 81: mown grass area bounded by open estuary, planted copses, dual carriageway and public paths. Roost 81a: mown grass recreational area bounded by conurbation and dual carriageway.
Attending species: Oystercatcher.
Historical changes: Land was reclaimed for construction of dual carriageway in the mid 1980's. The area was then landscaped. Roost 81 is the main roost but when birds are continually disturbed they will fly to roost 81a, if that area is free of disturbance.
Threats: Public disturbance caused by people walking through the area at roost 81, while roost 81a suffers from minor recreational activities.

89. Dolphin Haven breakwater *Collins, not listed*

Physical character: Man-made concrete/stone breakwater.
Attending species: Oystercatcher, Dunlin, and Turnstone.
Historical changes: The breakwater was reconstructed during 1999/2000. This site should probably be considered as an extension of **roost 89a**
Threats: None apparent. Access by people along the breakwater is the only likely disturbing effect.

89a. Baiter south-west jetty *Collins, roost 4*

Physical character: Man-made jetty jutting out from gravel/mud beach.
Attending species: Turnstone and occasionally Dunlin.
Historical changes: Unknown.
Threats: Public disturbance caused by general recreational activities, and dogs.

90. Baiter recreation ground south *Collins, roost 3*

Physical character: Mown grass recreation ground bounded by paths, open sea and car park.
Attending species: Oystercatcher.
Historical changes: None to the site since Collins (1985) but increased human usage may is probably the reason for the decline in attendant Dunlin, Redshank and Turnstone (Brent Goose was also a regular visitor but no longer).
Threats: Public disturbance caused by general recreational activities, and dogs.

91. Poole Park south *Collins, not listed*

Physical character: Flooded pools (excess rainwater) over mown grass area bordered by planted copses, car park, with Poole Park to the north.
Attending species: Redshank when pools full and not disturbed.
Historical changes: Unknown.
Threats: Minor public disturbance caused by general recreational activities, and dogs.

92. Whitecliff Park *Collins, roost 2*

Physical character: Mown grass recreation ground bounded by paths, open sea and car park.
Attending species: Oystercatcher when not disturbed.
Historical changes: None apparent since Collins (1985).
Threats: Public disturbance caused by general recreational activities, and dogs.

93/93a. Whitley Lake ***Collins, roost 1***

Physical character: *Spartina* saltmarsh bounded by open estuary to south, and sea defences and road.
Attending species: Occasionally Oystercatcher, Ringed Plover, Dunlin, Bar-tailed Godwit, Curlew, Redshank, and Turnstone.
Historical changes: From the late 1980's onward and increase in recreational use, combined with *Spartina* die back, has resulted in the near abandonment of the site. Indeed, the author recorded no birds at this site during five visits, although birds were recorded by K. Cook (*in. litt.*). This roost was regularly attended by Oystercatcher, Ringed Plover, Grey Plover, Sanderling, Dunlin, Bar-tailed Godwit, Curlew, Redshank, and Turnstone; occasionally Little Stint. When birds are recorded, numbers are generally lower than in the past with the exception of Bar-tailed Godwit. However, their irregular attendance is more acute.
Threats: Current threats are *Spartina* die back reducing the area available to roost. Approximately 80% of the saltmarsh has disappeared. However, birds still currently attend the reduced salt marsh, if not disturbed. The main threat is the great increase in public recreation, particularly in water sports. The number of users/bystanders present in the area at high tide on one date in November amounted to 134, while counts between late morning and late afternoon throughout the winter exceeded ca.20. In the mid 1980's, between 5 and 10 people in the area was considered high (*pers. obs.*). The number of people would vary greatly between week and weekend, the latter invariably higher, and in accordance to weather conditions. It is likely that this roost will cease to be used in the near future.

94. Brownsea Lagoon ***Collins, roost 45***

Physical character: Shallow lagoon with sandy substrate, sand bars, shore with *Salicornia* sp. vegetation predominant bounded by sea wall, reedbed, and primary/secondary woodland.
Attending species: Regularly includes Oystercatcher, Avocet, Ringed Plover, Grey Plover, Knot, Dunlin, Bar-tailed Godwit, Black-tailed Godwit, Curlew, and Greenshank, with smaller numbers of Redshank and Turnstone.
Historical changes: Little apparent change. During 1994, a sluice was installed, which enabled the water level of the lagoon to be regulated. This made it more conducive for roosting waders and is perhaps one of the reasons why waders started to use this site, as opposed to the disturbed site of Studland Bay. This is now the main roost site in Poole Harbour.
Threats: None apparent. Leased to the Dorset Wildlife Trust by The National Trust, so its future is seemingly secure.

95. Seymer's Marsh ***Collins, not listed***

Physical character: Gravel and sand beach adjacent to pools surrounded by open estuary and primary/secondary woodland.

Attending species: Occasionally Oystercatcher.
Historical changes: None apparent. Waders occasionally attend this roost during very high tides and have included Grey Plover, Dunlin, and Curlew. Other waders may also occasionally occur.
Threats: None apparent. Leased to the Dorset Wildlife Trust by The National Trust so future protection of the roost should be secure.

96. Brownsea Island south shore ***Collins, roost 41***

Physical character: Predominantly sandy beach bordered by open estuary to the south, low cliff, open camping areas, secondary woodland and scrub.
Attending species: None recorded during the survey.
Historical changes: No apparent change since Collins (1985) when he noted Oystercatcher. This wader may now be a casual visitor.
Threats: None apparent. The island is owned by The National Trust and is closed during the winter months.

97. North Haven and South Haven slipways/sea defence ***Collins, not listed***

Physical character: Man-made concrete slipway and sea defence at North Haven and concrete slipway at South Haven.
Attending species: Purple Sandpiper.
Historical changes: Little change since construction but in 1995 and 1996, sea defences in the form of natural limestone blocks were put in place below the South Haven Hotel. In addition, the South Haven slipway was reconstructed at around the same time. No further development has occurred. The main area of occupation for the only attendant species, Purple Sandpiper, was the slipway, and sea defence adjacent to the slipway. Here birds fed and roosted. Occasional excursions were made to South Haven slipway usually as a result of excessive human disturbance or spring high tides.
Threats: None apparent to the roost site. The effect of the construction of sea defences resulted in the birds taking up permanent residence at South Haven over the winter 1995/96. However, there is now seemingly a greater area available to this wader, although the quality of habitat may not be suitable. Although the birds are tame, human disturbance is the main threat. Birds arrive in October and leave in May, so miss the main period of disturbance. Further survey work is required to assess the present threat of disturbance, which seems to have increased.

DISCUSSION

In addition to the threats listed above, duck shooting was noted in Wych Creek south-east and opposite Middlebere Point at Grip Heath, encompassing roosts 32 to 37. Shooting is intermittent with the result that roosting waders will take flight but return relatively quickly to the roost. However, birds remain agitated for up to five minutes but then settle down. More frequent shooting results in the same behaviour but with the birds remaining agitated for longer. If shooting is too close to a roost site the roost is abandoned.

With the apparent continuing die back of Cord-grass *Spartina anglica* in Poole Harbour, all roosts currently located on such *Spartina* dominated saltmarsh are potentially under threat (Edwards, 2004). To what extent the die back will continue is not known. Some areas seem to be more affected than others, while some sites are apparently unaffected. It is advised that the roosts located on *Spartina* saltmarsh are kept under observation and any effects upon roosting behaviour recorded.

The areas most affected are Whitley Lake, Brand's Bay, Newton Bay, Green Island, Fitzworth Point and Holes Bay central. This has consequently affected the roost sites identified by Collins (1985). At Whitley Lake, the die back has now resulted in a much smaller area available to waders. This, and the increase in disturbance, has resulted in its irregular use. No birds were encountered by the author at this site during the survey but the co-ordinated counts produced the traditional flock of Bar-tailed Godwit amongst much smaller numbers of Dunlin, Turnstone and Redshank on both occasions.

The die back in Brand's Bay has not affected the numbers attending the roost but it has seemingly fragmented it. The area of *Spartina* to the north of Drove Island used to hold the majority of Curlew, Redshank, and Black-tailed Godwit that fed within Brand's Bay and Newton Bay. Dunlin, Grey Plover and Knot were often encountered, if disturbed from the Shell and Studland Bay roost in species-specific flocks. However, during the survey, fragmentation of the *Spartina* was noted to be significant. This has resulted in a fragmentation and spreading out of the roost area. Waders no longer occur in species-specific groups to the north of the island due to the fragmented nature of the saltmarsh, although Curlew still occurred in tight flocks where other waders could not roost on the north edge of the island. All birds were scattered on the fragmented islands.

A similar situation has occurred in Newton Bay, although numbers were always lower than recorded at Brand's Bay. More significantly, the die back has resulted in the complete loss of the roost on the northern edge of Vitower. This roost was also attended by Curlew, but with lesser numbers of Redshank, Black-tailed Godwit, Dunlin, and Grey Plover. The *Spartina* saltmarsh at Green Island has completely disappeared along with the roost.

A similar situation will seemingly occur off Fitzworth Point where waders have already deserted the roost. Indeed, Curlew, which feed in the area at low tide, and were one of the main attendees, now roost to the west on saltmarsh and agricultural pasture on and around the Middlebere peninsula.

A further complication resulting from *Spartina* die back is the potential for the demise of many roost sites because of the lack of hinterland on which to establish alternative roosts. The

hinterland around Poole Harbour is dominated by urbanisation in the north and north-east of the Harbour (Poole). No hinterland exists to accommodate wader roosts here although the recreation grounds at Hamworthy Park and Baiter (roosts 77/77a and 90-92 respectively) could be viewed as such, albeit man-made and principally attended only by Oystercatcher. Elsewhere, hinterland has been developed principally for agriculture. At present, low disturbance on the pasture hinterland in the southern area of the Harbour, allows species such as Curlew and Lapwing to roost, as well as feed. During spring high tides, Oystercatcher, Grey Plover, Dunlin, Knot, and Redshank will use agricultural pasture to roost, although at present only one site has been clearly identified, at Cleavel Point (roost 20). Pasture is likely to be a good substitute habitat to saltmarsh, although the potential for predation is increased. Also, disturbance, currently low at these sites, is more than that found on saltmarshes. It is probable that in the event of further, extensive *Spartina* die back, waders will adopt the same roosting behaviour as observed during spring high tides when their normal roost sites are not available.

One of the effects of the Harbour's "double" high tide upon roosting waders is that they remain at roost for much longer periods, compared with more open estuaries. The reduction in feeding time availability places a potential physical stress on most waders by preventing them from replenishing their energy reserves. This is most evident during extreme weather conditions or during human disturbance. In these conditions, energy use may outstrip overall energy accumulation and can be extremely detrimental to a bird. Indeed, during a spell of extremely cold weather in the late winter of 1984/85, Dunlin roosting at Studland Bay were continually disturbed by walkers and spent most of their time in flight. Eventually a number of birds literally fell out of the sky exhausted; two of these later died that day (*pers. obs.*). Such conditions will affect birds regardless of site but the prolonged high tide exacerbates the problem in Poole Harbour. The effect of human disturbance is therefore regarded as more significant for Poole Harbour than for most other estuaries.

The principal difference between the surveys undertaken by Collins in 1985 and the present survey is the demise of the Shell and Studland Bay roost. Human use of the site during the winter has increased significantly over the last 10 to 15 years (*pers. obs.*). Indeed, a count of people present on Studland Bay beach, at any one time, on a Sunday afternoon (12.00 to 15.00 G.M.T.) in January 1984 came to 152. On a Sunday afternoon (12.00 to 15.00 G.M.T.) in January 1999, a similar count under similar conditions gave a total of 1,232. The difference in totals is an example of the general increase in usage of the beach throughout the winter season. When periods of low usage coincided with high tide during weekday mornings, the presence of waders was regular. These periods are now rare due to the regular presence of humans during the morning and daily pressure is now relatively constant. This has placed continual, rather than intermittent, pressure on the roost apparently leading to its decline.

Elsewhere, human disturbance has also increased at Whitley Lake where water sports, in particular, have become a more popular activity, especially at weekends.

Human disturbance has also resulted in the decreased use of Baiter recreation ground, as a high tide roost for waders. This site now only holds Oystercatcher (and occasionally a few Redshank around rain-pools), where previously Dunlin, Turnstone, and Brent Goose were frequent.

Attendance at roosts is most prevalent between Brand's Bay and Patchins Point, including Brownsea Lagoon. The reason is likely to be the availability of roosts close to the feeding grounds and lack of human disturbance. Casual observations show that these roosts attract birds

that feed outside this area at Wareham Channel, Whitley Lake and occasionally some birds from Lytchett Bay and Holes Bay. These and other areas of the Harbour seem not to have as many available roost sites, such as Wareham Channel, or are prone to human disturbance and development, as is the case in the north and north-east of the Harbour adjacent to the Poole conurbation.

SPECIES ACCOUNTS

The following accounts summarise each species that regularly roost in the Harbour. The summary is divided into two groups: (a) Species occurring in significant numbers and (b) Species occurring in insignificant numbers. The existing roost sites for the important species are shown in Figures. 3 to 17, they also show sites where a species was recorded by Collins (1985) but currently was not observed.

Several of the roosting species that are present in the Harbour occur in National and Internationally important numbers and are shown in Table 1

Table 1 Species occurring in Poole Harbour in Nationally and Internationally Importance numbers, with qualifying thresholds (Musgrove *et al.* 2001).

Species	Nationally Important	Internationally Important	National threshold	International threshold
Avocet		●	10	700
Dunlin	●		5300	14000
Black-tailed Godwit		●	70	700
Curlew	●		1200	1500
Redshank	●		1100	1500

Presented in Table 2 is the maximum number of birds recorded at each roost during the survey, and figures in **bold** show that they were recorded on the co-ordinated counts. The number of roosts attended by each species is also given.

Table 2. Peak count of species recorded at each roost site and maximum potential numbers using the roost over the winter period 2002/03 in Poole Harbour (figures in bold were recorded on co-ordinated count dates).

Roost no.	Oystercatcher	Avocet	Ringed Plover	Grey Plover	Lapwing	Knot	Sanderling	Dunlin	Ruff	Black-tailed Godwit	Bar-tailed Godwit	Curlew	Spotted Redshank	Redshank	Greenshank	Turnstone	Maximum Potential Numbers
1	6	-	-	-	-	-	8	c.150	-	-	-	-	-	-	-	-	c.164
2	9	-	26	-	-	-	1	-	-	-	-	-	-	-	-	-	36
3	-	-	21	-	-	-	-	-	-	-	-	-	-	-	-	-	21
4	-	-	-	-	-	4	-	11	-	-	-	-	-	-	-	-	15
5	-	-	-	-	22	-	-	-	-	-	-	13	-	-	-	-	35
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
7	14	-	-	-	-	-	-	7	-	10	-	-	-	6	-	-	37
8	-	-	-	-	-	-	-	-	-	-	-	-	-	c.18	1	-	c.19
9	-	-	-	16	-	-	-	c.220	-	-	-	25	-	42	-	-	c.303
10	16	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	26
11	-	-	-	-	-	-	-	-	-	-	-	-	-	c.50	1	-	c.51
12/12a	-	-	-	c.75	-	c.10	-	c.1500	-	-	-	c.260	-	c.110	-	-	c.1955
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
14	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	12
15	15	-	-	-	-	-	-	-	-	-	-	-	-	13	-	-	28
16	-	-	-	7	-	-	-	-	-	-	-	-	-	c.30	-	-	0
17	c.280	-	-	c.80	-	-	-	-	-	-	-	-	-	-	-	-	c.360
18	c.350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	c.350
19	c.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	c.50
20	25	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	40
21	-	-	-	151	-	4	-	c.150	-	-	-	3	-	-	-	-	c.308
22	-	-	-	-	64	-	-	-	-	-	-	-	-	-	-	-	64
23	-	-	-	-	16	-	-	-	-	-	-	-	-	-	-	-	16
24	-	-	-	-	-	-	-	-	-	-	-	-	-	8	1	-	9
25	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	3
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
27	-	-	-	7	-	-	-	-	-	-	-	-	-	c.30	-	-	c.37
28	-	-	-	2	-	-	-	-	-	-	-	-	-	4	-	-	6
29	-	-	-	-	-	-	-	-	-	-	-	86	-	-	-	-	86
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
31	-	-	-	-	-	-	-	-	-	-	-	25	-	-	-	-	25
32	-	-	-	-	-	-	-	-	-	-	-	c.15	-	c.50	-	-	c.65
33	-	-	-	-	-	-	-	-	-	-	-	c.40	-	c.50	-	-	c.90
34	-	-	-	-	-	-	-	-	-	-	-	-	-	c.30	-	-	c.30
35	-	-	-	-	-	-	-	-	-	-	-	c.25	-	c.45	-	-	c.70
36	-	-	-	-	c.110	-	-	-	-	-	-	18	-	-	-	-	c.128
37	-	-	-	-	97	-	-	-	-	-	-	12	-	-	-	-	109
38	-	-	-	-	c.70	-	-	-	-	-	-	-	-	-	-	-	c.70
39	-	-	-	-	42	-	-	-	-	-	-	7	-	-	-	-	49
40	-	-	-	-	c.130	-	-	-	1	4	-	-	-	c.45	-	-	c.180
41	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	14
42	-	-	-	-	355	-	-	-	-	-	-	c.100	-	-	1	-	c.456
43	-	c.800	-	c.160	c.600	22	-	c.740	-	c.450	8	c.80	-	-	1	1	c.2862
44	-	c.800	-	-	58	-	-	-	-	-	-	7	1	c.45	-	-	c.911
45	-	-	-	-	403	-	-	-	-	-	-	-	-	-	-	-	403
46	c.120	-	-	76	-	c.10	-	c.250	-	-	-	c.200	-	24	-	-	c.680
47	c.400	-	-	7	-	-	-	c.30	-	-	-	c.50	-	12	-	-	c.499
48	c.90	-	-	c.76	-	-	-	c.150	-	c.126	-	7	-	2	-	-	c.449
49	46	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	90
50	25	c.125	-	c.150	-	c.15	-	c.500	-	c.250	-	c.25	-	c.15	-	-	c.1105

Roost no.	Oystercatcher	Avocet	Ringed Plover	Grey Plover	Lapwing	Knot	Sanderling	Dunlin	Ruff	Black-tailed Godwit	Bar-tailed Godwit	Curlew	Spotted Redshank	Redshank	Greenshank	Turnstone	Maximum Potential Numbers
51	c.20	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	c.27
52	-	-	-	-	-	-	-	-	-	9	-	c.5	-	2	-	-	c.16
53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
54	-	-	-	-	-	-	-	-	-	-	-	63	-	-	-	-	63
55	-	-	-	-	341	-	-	c.175	-	136	-	13	-	-	-	-	c.665
56	-	-	-	-	456	-	-	-	-	6	-	19	-	-	-	-	481
57	-	-	-	-	34	-	-	-	-	-	-	-	-	-	-	-	34
58	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	8
59	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	2
60	3	-	-	-	14	-	-	19	-	-	-	c.350	-	9	-	-	c.395
61	1	-	-	-	8	-	-	-	-	-	-	57	-	-	-	-	66
62	1	-	-	-	3	-	-	22	-	-	-	148	-	-	-	-	174
63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
64	-	-	-	-	-	-	-	-	-	42	-	22	-	c.35	-	-	c.99
65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
66	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
67	-	-	-	-	c.65	-	-	-	-	-	-	-	-	-	-	-	c.65
68	-	-	-	-	c.200	-	-	-	-	-	-	-	-	-	-	-	c.200
69	-	-	-	-	c.200	-	-	-	-	-	-	-	-	-	-	-	c.200
70	-	-	-	-	c.255	-	-	-	-	c.53	-	2	-	4	-	-	c.314
71	-	-	-	-	c.80	-	-	-	-	-	-	-	-	14	-	-	c.94
72	-	-	-	-	c.30	-	-	c.15	-	-	-	-	-	2	-	-	c.47
73	-	-	-	-	-	-	-	c.150	-	-	-	c.43	4	c.175	-	-	c.372
74	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
75	58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	58
76	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
77	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16
78	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	2
79	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	9
80	-	47	-	-	-	-	-	c.350	-	-	-	c.25	-	c.65	-	-	c.487
81	-	-	-	-	-	-	-	-	-	-	-	c.25	-	c.10	-	-	c.35
82	-	-	-	-	-	-	-	-	-	-	-	28	-	c.75	-	-	c.103
83	-	-	-	-	-	-	-	-	-	-	-	2	-	c.20	-	-	c.22
84	-	51	-	-	-	-	-	c.45	-	-	-	-	-	c.50	-	-	c.146
85	-	c.20	-	-	-	-	-	-	-	-	-	5	-	12+	-	-	c.37
86	-	-	-	-	-	-	-	c.30	-	-	-	-	2	3	-	-	c.35
87	144	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	144
88/88a	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20
89	17	-	-	-	-	-	-	c.3500	-	-	-	-	-	-	-	91+	c.3608
90	116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	116
91	10	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	22
92	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17
93	10	-	1	-	-	-	-	6	-	-	79	3	-	3	-	6	108
94	c.328	c.1155	c.25	c.200	-	c.20	-	c.4000	-	951	86	30	-	6	3	1	c.6801
95	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
96	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
No. of roosts attended	32	7	3	12	27	6	2	22	1	11	3	40	3	38	6	5	

SPECIES OCCURRING IN SIGNIFICANT NUMBERS

Oystercatcher *Haematopus ostralegus* Figure 3

All roosts were located on open ground generally devoid of any vegetation. These sites included sand beach, mixed sand/gravel beach, mown recreation ground, and a concrete bridge.

On Brownsea Lagoon, it has been noted that birds remain faithful to a roost site, in this case in an area of Glasswort *Salicornia* sp. for the last 20 or more years (C. Thain *in. litt.*). This site fidelity is readily apparent at other roost sites within the Harbour. This may in part be due to the lack of suitable roost sites.

One roost no longer extensively used is Shell and Studland Bay. The site was never important for this species within the Harbour, usually no more than 50 birds but occasionally large numbers were recorded such as 188 in 1979/80 (Morrison, 1999). Increased public usage has seemingly resulted in its demise.

The most important roosts are those at Green Island (roosts 17 and 18), Shipstal Point (roost 46), Long Island (roost 47), Holes Bay (roost 84), Baiter recreation ground (roost 87), and Brownsea Lagoon (roost 91). All held over 100 birds but Green Island and Long Island held a maximum of ca.350 and ca.400 respectively.

Avocet *Recurvirostra avosetta* Figure 4

High tide roosts were located at Brownsea Lagoon, Middlebere Creek, Patchin's Point and Holes Bay. Numbers were highest at Brownsea Lagoon and Middlebere Lake where it is well known that there is much movement between these two sites.

Numbers of this bird have increased markedly in the last few years (Pickess & Underhill-Day, 2002). This increase has seemingly led to records of roosting elsewhere in the Harbour away from the traditional site of Brownsea Lagoon and Middlebere Lake. Regular roosting occurred at Holes Bay with a maximum total of 71+ birds using three roosts (roosts 77, 81 and 82) and occurred during the latter half of the winter, as they have done in the past. Elsewhere, up to ca.125 birds were recorded at Patchin's Point (roost 50) but on a less regular basis. Largest numbers were encountered at the main roosts at Brownsea Lagoon (roost 91) and Coombe Heath/Middlebere Lake (roost 43/44) with 1,155 and ca.800 birds respectively.

No specific habitat requirements seemed to be associated with traditional and other roosts; all used open mudflat, lagoon, *Spartina* saltmarsh, and sandy shoreline. However, this wader seems to be more wary of human disturbance and is frequently the first species to take flight in response to such disturbance. This was observed in Holes Bay south when ca.47 were disturbed by the R.N.L.I. hovercraft and subsequently left the bay.

Ringed Plover *Charadrius hiaticula* Figure 5

High tide roosts were found only at Gravel Point, Brand's Bay and Shell Bay. It is possible that a roost for this species exists on the outer spit of Blue Lagoon but this site was not visited during

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High tide roosts were found only at Gravel Point, Brand's Bay and Shell Bay. It is possible that a roost for this species exists on the outer spit of Blue Lagoon but this site was not visited during

the survey and has not previously been recognised as a roost site.

A former high tide roost existed at Whitley Lake, Sandbanks. However, the apparent increase in human disturbance and the die back of *Spartina*, the latter reducing the area available to roost, has seemingly resulted in only occasional usage.

The increase in human usage of Shell and Studland Bay (*pers. obs.*) has certainly been the cause for the demise of this suitable site where up to 131 birds have been recorded (in winter 1990/91). Although numbers occasionally reach 40 at present, it is significant to note that attendance has clearly declined and is no longer the main roost site for this species.

Grey Plover ***Pluvialis squatarola*** **Figure 6**

The main roosts were located at Brownsea Lagoon and Green Island, and the fields at Ower Point are regularly attended during spring high tide.

Significant numbers were frequently encountered at Shell and Studland Bay (maximum recorded being 397 during the 1985/86 winter) but an increase in human usage of the area over the last decade has resulted in the wader's complete disappearance. Indeed, no birds were recorded at the site during the present winter. Another reason for its disappearance may also be the establishment of an automatic sluice at Brownsea Lagoon enabling the water level to be artificially maintained. Consequently, this site, also without human disturbance, seems to be a more attractive alternative. In addition, the *Spartina* die back has resulted in sand or gravel beaches within the Harbour gaining favour as seemingly recorded at Green Island (roost 17), Long island (roost 47), Arne Spit (roost 48), and Patchin's Point (roost 50).

Lapwing ***Vanellus vanellus*** **Figure 7**

This plover does not roost, as do other waders within the Harbour. Most birds feed in areas of open, short-cropped grass on agricultural land, usually in association with livestock and/or where damp grassland, where sufficient prey may be found. However, such areas are apparently traditional and thus need to be documented.

The roosts can be split into three areas; Lytchett Matravers, Middlebere, and Wareham water-meadows, the latter probably part of the River Frome valley wintering population. Roosts counts suggest that up to ca.1200 wintered within the vicinity of Poole Harbour at any one time, ca.600 of these at Middlebere alone. Lytchett Matravers held ca.200 and Wareham water-meadows held up to 456. Visual observations during the day seemingly show little change-over between these sites, at least not on a great scale. However, nocturnal movements invariably involve birds leaving the roost for feeding sites close by and occur on mass. Other large movements between the three areas may also occur at this time.

Dunlin ***Calidris alpina*** **Figure 8**

The commonest wader within the Harbour attending any roost that provides a foothold, principally sand beach, lagoon and the exposed edges of, and open areas within *Spartina* saltmarsh.

The main roost was surprisingly the Dolphin Haven breakwater (roost 86) where up to ca.3500 were recorded, although frequently much lower numbers were present. It is difficult to say if this is due to a lack of suitable natural roosts within the Harbour since the loss of the Studland Bay roost. However, numbers at Brownsea Lagoon (roost 91) are also similar but not regular, which suggests some interchange between these two roosts. Elsewhere, no other roost was observed to hold more than ca.500 birds, except Brand's Bay south-east (roost 12), which held up to ca.1500, Middlebere Creek (roost 43) up to ca.740, and Patchin's Point (roost 50), upwards of ca.500.

Historically, Shell and Studland Bay held the majority of the Harbour population, perhaps the whole Harbour population on occasions. Numbers at mean high tide were frequently between 3000 and 4500, while higher tides produced higher numbers, notably ca.8300 in 1991/92. This site is now infrequently used during which much smaller numbers attend, typically less than 1000.

It is apparent that birds now use the *Spartina* roosts more frequently than they used to. The more open patches of bare mud exposed during the die back process may be more conducive to roosting Dunlin. However, the die back process, along with human disturbance, has meant that the roost at Whitley Lake is no longer used.

Black-tailed Godwit ***Limosa limosa*** **Figure 9**

Other than Brownsea Lagoon and Middlebere Creek (where the birds roost at the edge of the water or partly immersed), this wader normally roosts on *Spartina* saltmarsh with occasional small groups occurring on wet agricultural land.

In early winter, large numbers of birds frequented Wareham water-meadows. It seemed likely that the birds were taking advantage of large quantities of prey, due to flooding of the meadows. These birds remained in the area for some time before moving on into the Harbour, once the area became apparently unproductive (P. St Pierre, *pers. comm.*). Consequently, few birds were recorded at any of the Harbour roosts at this time (the water-meadows are non-tidal).

Additionally, lower numbers were recorded in the Harbour this winter seemingly due to suitable feeding conditions along the Stour valley along the Dorset and Hampshire border. No site held large numbers of birds except Brownsea Lagoon where 951 were recorded on the 17th Feb 2003. Other counts included ca.450 at Middlebere Lake (roost 43) and ca.250 at Patchins Point (roost 50).

Normally, this is a rather nomadic species within the Harbour. Flocks tend to congregate in one bay to feed for a numbers of days or weeks before moving on to another bay or creek. Their roost attendance is thus limited to the area in which they are feeding. Figure 9 may illustrate this because it shows that many past roosts are unoccupied during the periods of survey but this may be just a reflection of this winters feeding pattern.

Bar-tailed Godwit ***Limosa lapponica*** **Figure 10**

Traditionally, the largest concentrations are found feeding at Whitley Lake (roost 90) and consequently these birds, in the past, tended to roost on the *Spartina* saltmarsh at Whitley Lake. However, during very high tides, birds roosted at vegetation-free sites such as Studland Bay

(roost 1) and Brownsea Lagoon (roost 91).

Over the past decade, there has been a significant decrease in the Whitley Lake saltmarsh and accordingly a decrease in the area available to roost. In addition, the increase in water sports at the site (*pers. obs.*) has also resulted in increased disturbance of the much diminished roost. As a result, Bar-tailed Godwit now roosts regularly at Brownsea Lagoon, although they will still roost at Whitley Lake, if not disturbed. During the survey, the only times birds were recorded at the latter site were during the two co-ordinated counts. This apparently revealed that numbers roosted at both Brownsea and Whitley at the same time, e.g., 30 at Brownsea and 65 at Whitley Lake on the 20th December 2002. (95 total) and 85 and 79 respectively on the 17th February 2003, although the timing of the latter counts did not match exactly, so some, if not all, may have moved from one site to the other. Elsewhere, a small number of birds (up to 12) were occasionally observed roosting at Middlebere Creek (roost 43) where they also remained to feed at low tide.

Shell and Studland Bay was previously the second most important site for the species, often with 70 birds attending but 265 were noted in February 1985. This site is no longer used.

Curlew ***Numenius arquata*** **Figure 11**

The principal roost sites within the Harbour were on exposed *Spartina* saltmarsh where many roosts were found (Table 2), presumably a combination of widespread available habitat and the large numbers of Curlew that occur in the Harbour. Birds also attend roosts on open meadow adjacent to the Harbour edge. Their distribution is clearly shown in Fig. 11.

Although widely distributed, this wader appears to rely on *Spartina* saltmarsh more than most waders. This preference has resulted in a change in roosting behaviour because of the current *Spartina* die back. The most noticeable of these changes is the apparent adoption of agricultural pasture and saltmarsh on and around the Middlebere peninsula because of the abandonment of the Fitzworth Point roost (roost 26) and Green Island south roost (roost 17a). Birds that fed at low tide between Vitower and Newton Bay now have to fly further to roost.

Many Curlew found roosting in agricultural pasture, were also noted feeding. Collins (1985) had noted this but did not list these congregations as roosts. Considering their regular use and the large numbers of birds that attend some of these sites, it would be wiser to regard such congregations as roosts (indeed, birds will feed at any roost site, if practical).

The most important roosts were located on *Spartina* saltmarsh at Brand's Bay south-east (roost 12) with up to ca.260 birds, Slepe Farm (roost 42) with ca.100, Shipstal Point south (roost 46) with ca.200, Keysworth Point (roost 60) with ca.350, and Keysworth north-east and north (roosts 61 and 62 respectively) with a total of ca.200. A spring high tide roost of 86 was noted at Vitower (roost 29) but was located on agricultural land.

Redshank ***Tringa totanus*** **Figure 12**

During the survey, this species roosted solely on *Spartina* saltmarsh, and the number of roosts attended, as with Curlew, presumably is because of this habitat being widespread in the Harbour. Up to six birds were noted feeding at rain-pools on the recreation ground at Baiter but it is debatable whether this can be regarded as a roost, as during wet conditions, it is effectively an

extension of Poole Park Lake. Birds are frequently encountered roosting up-channel on the *Spartina* margins of creeks where no other wader, except Greenshank, regularly roost.

The wader is widely distributed with no great concentrations of birds except perhaps at Otter Island (roost 70) where up to ca.175 birds were noted and seemingly included all birds that fed within the bay. Elsewhere, the principal sites which held 50 or more birds were Drove Island (roost 11), Brand's Bay south-east (roost 12), Wych Lake south (roosts 32 and 33), Creekmoor Lake (roost 77) and Upton Lake central (roost 79) but none held more than ca.110 birds.

No change in roost distribution has been noted since Collins (1985).

Figure 3. Location of Oystercatcher Roosts in Poole Harbour
Key
Roosts attended during winter 2002/03
Roosts attended during winter 2002/03 at spring high tide only
Roosts attended prior to winter 2002/03 but not during survey
Dorset Environmental Records Centre

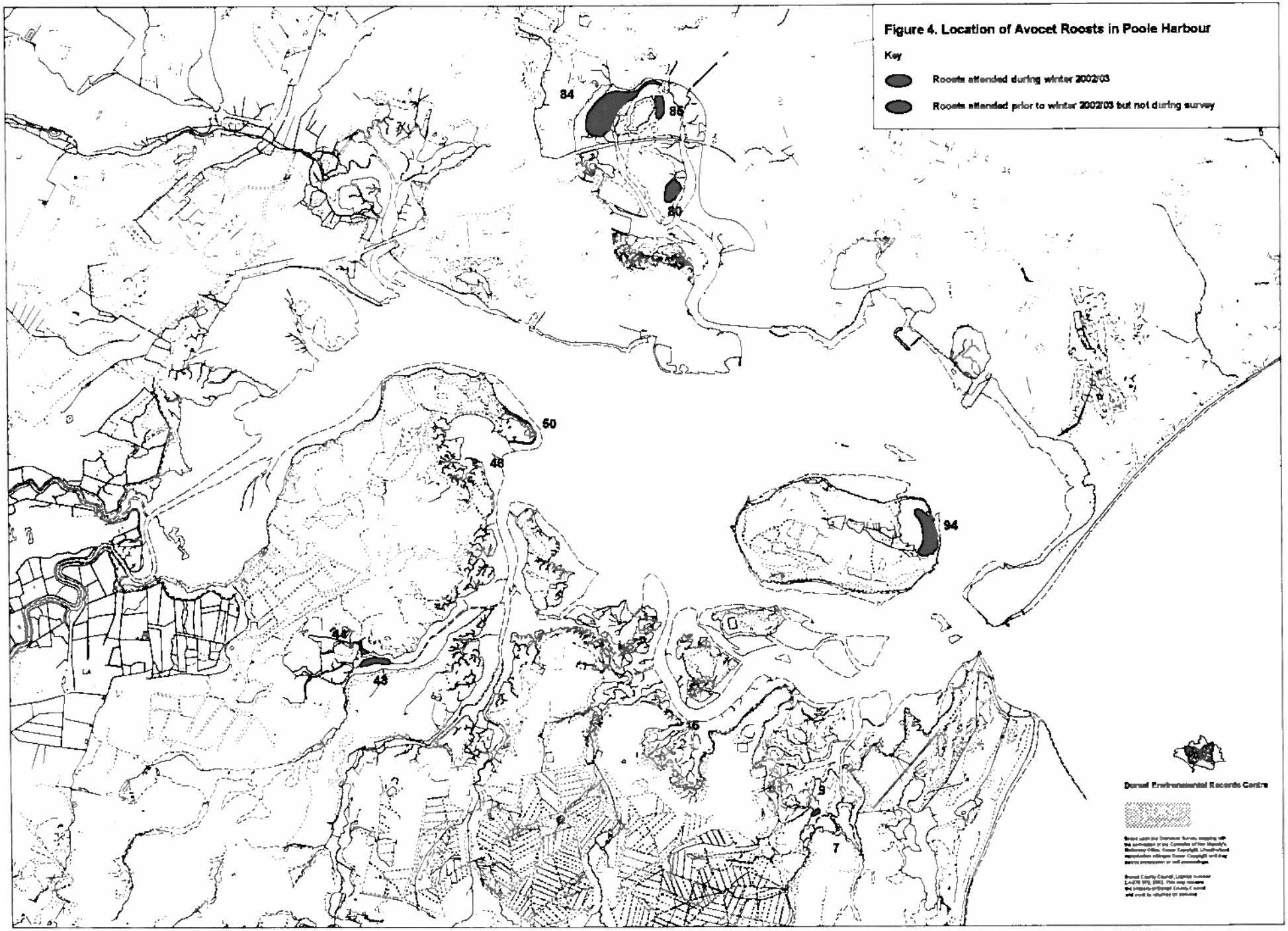
Figure 4. Location of Avocet Roosts in Poole Harbour
Key
Roosts attended during winter 2002/03
Roosts attended prior to winter 2002/03 but not during survey
84
85
80
50
48
94
44
43
15
9
7
Dorset Environmental Records Centre

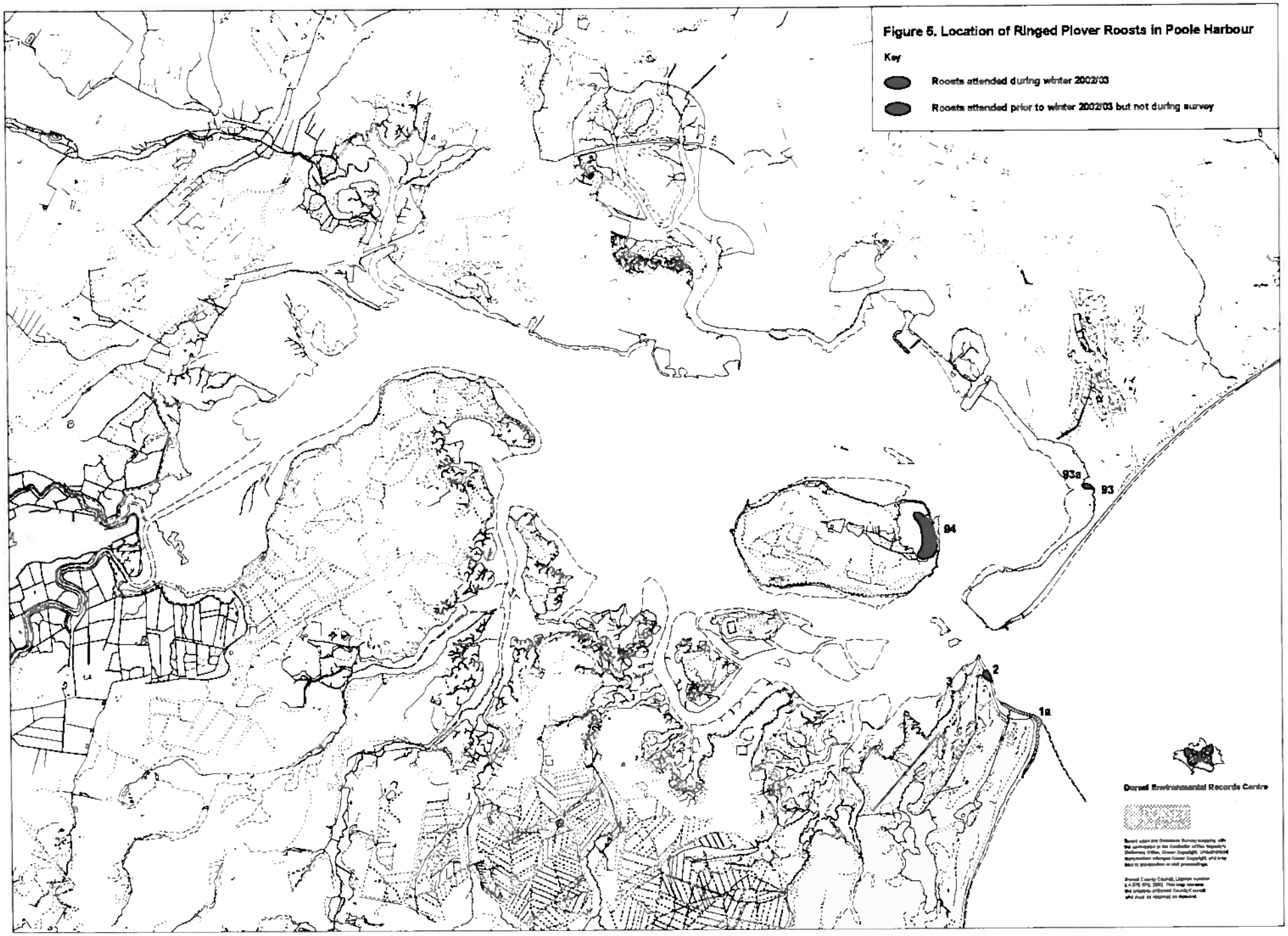
Figure 5. Location of Ringed Plover Roosts in Poole Harbour
Key
Roosts attended during winter 2002/03
Roosts attended prior to winter 2002/03 but not during survey
93a
93
94
2
1a
Dorset Environmental Records Centre

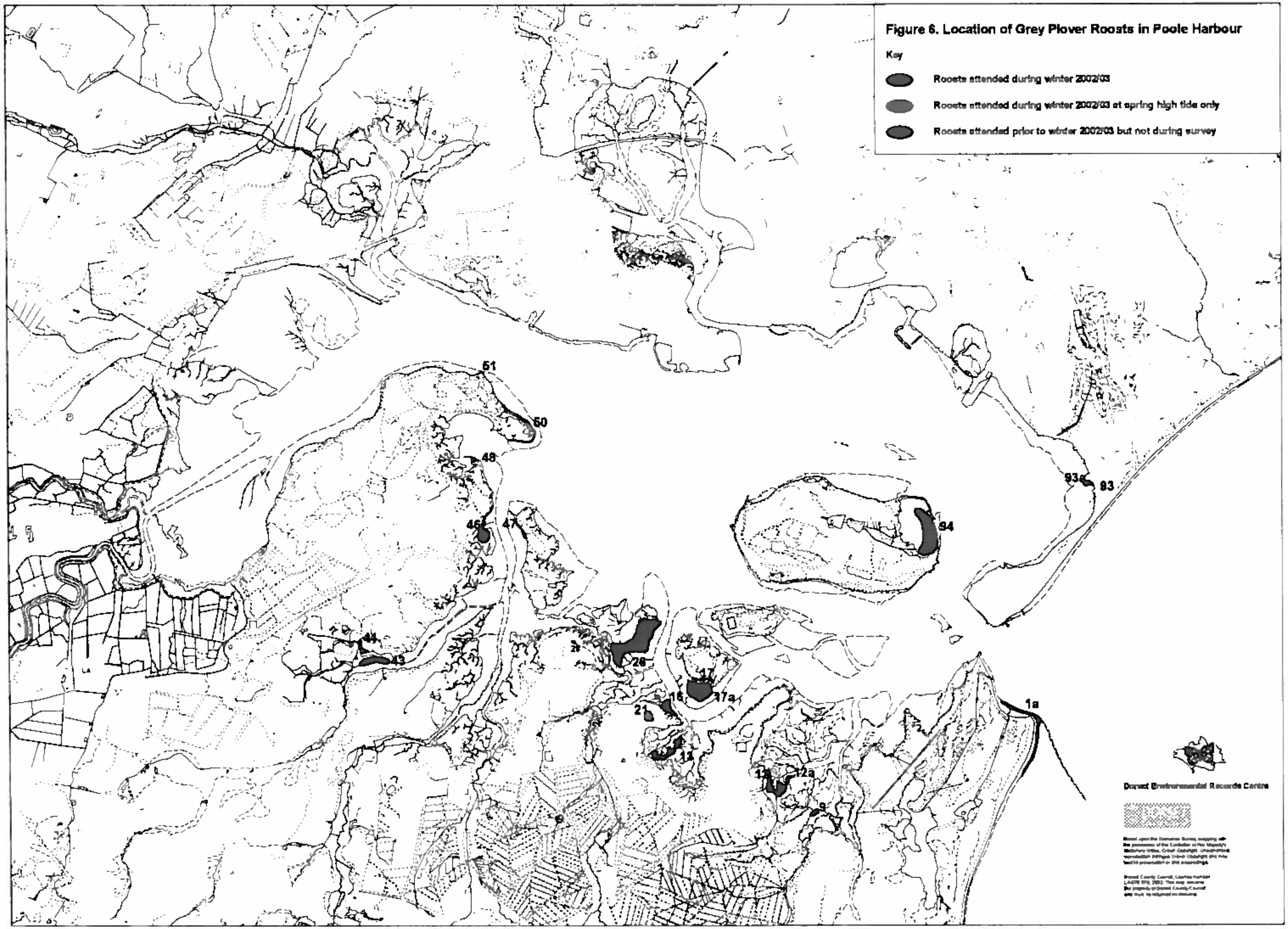

Figure 6. Location of Grey Plover Roosts in Poole Harbour

Figure 7. Location of Lapwing Roosts in Poole Harbour

Figure 8. Location of Dunlin Roosts in Poole Harbour
Key
Roosts attended during winter 2002/03
Roosts attended during winter 2002/03 at spring high tide only
Roosts attended prior to winter 2002/03 but not during survey
Dorset Environmental Records Centre

Figure 9. Location of Black-tailed Godwit Roosts in Poole Harbour
Key
Roosts attended during winter 2002/03
Roosts attended prior to winter 2002/03 but not during survey
Dorset Environmental Records Centre

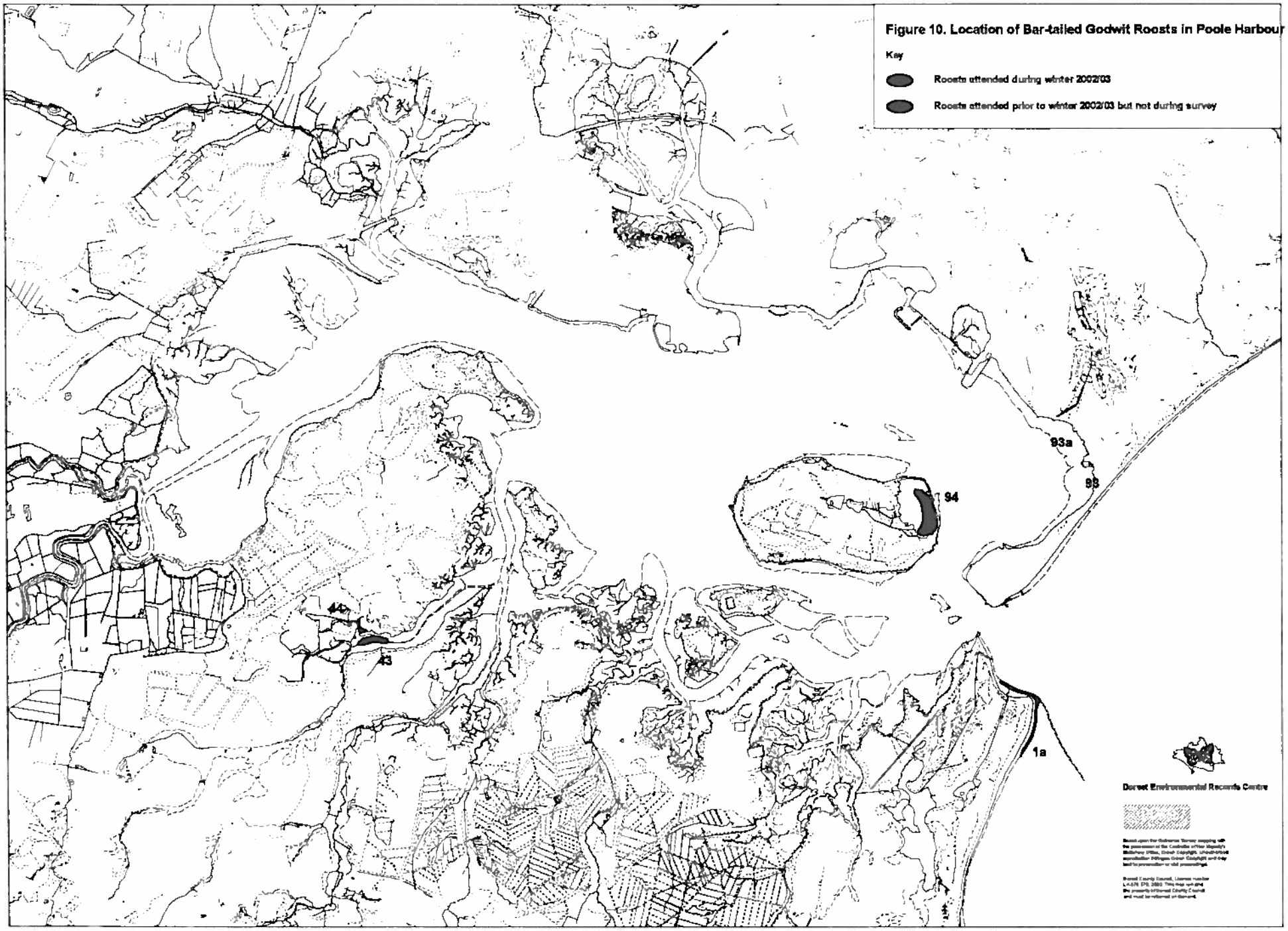
Figure 10. Location of Bar-tailed Godwit Roosts in Poole Harbour
Key
Roosts attended during winter 2002/03
Roosts attended prior to winter 2002/03 but not during survey
93a
93
94
1a
Dorset Environmental Records Centre

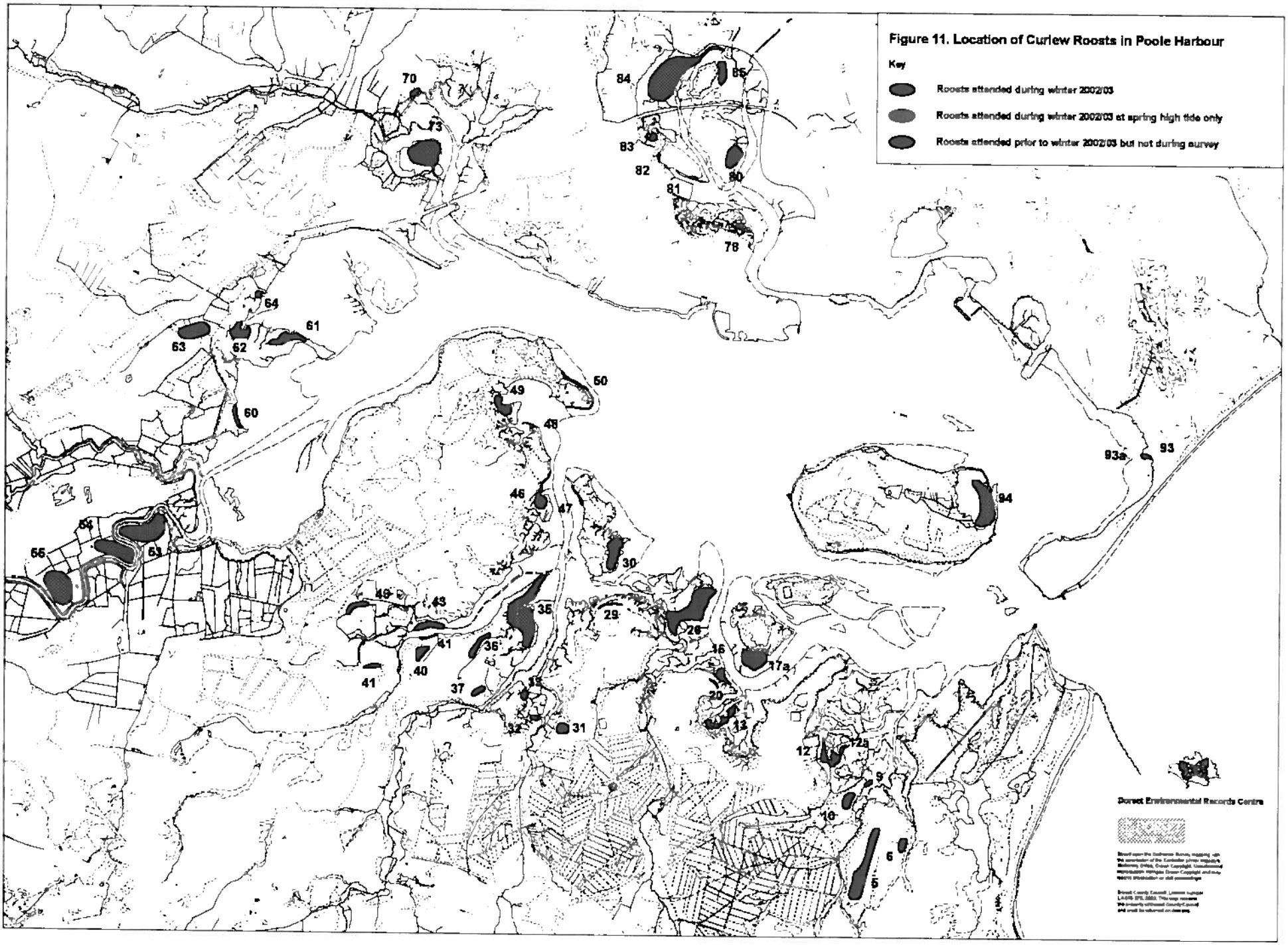
Figure 11. Location of Curlew Roosts in Poole Harbour
Key
Roosts attended during winter 2002/03
Roosts attended during winter 2002/03 at spring high tide only
Roosts attended prior to winter 2002/03 but not during survey
Dorset Environmental Records Centre

Figure 12. Location of Redshank Roosts in Poole Harbour
Key
Roosts attended during winter 2002/03
Roosts attended during winter 2002/03 at spring high tide only
Roosts attended prior to winter 2002/03 but not during survey
Dorset Environmental Records Centre

SPECIES OCCURRING IN SMALL NUMBERS

WeBS have set no national qualifying threshold for Jack Snipe *Lymnocryptes minimus* and Snipe *Gallinago gallinago*, both species are summarised under this section.

Knot *Calidris canutus* **Figure 13**

Prior to the survey, the best-known roost site was Shell and Studland Bay. However, as stated under Grey Plover, this roost is no longer used due to the increase in human disturbance.

During the survey, birds were found with Grey Plover and Dunlin in fields at Ower Point (roost 21) during spring high tide. During normal tidal conditions, birds were noted attending roosts in the south-east part of the Harbour between Arne and Brand's Bay. A maximum of 22 birds was recorded at any one roost during the survey. Records of roosting birds prior to the survey, and away from Shell and Studland Bay, suggest that *Spartina* saltmarsh is the preferred habitat. In addition, birds were noted associating with Grey Plover and were encountered flying in mixed flocks to the roost at Brownsea Lagoon.

Sanderling *Calidris alba* **Figure 14**

This species is nearly always restricted to Shell and Studland Bay at high tide and feed along the tide line throughout the beach's length. Occasionally, birds are found roosting in Bramble Bush Bay, Brand's Bay if disturbed from the former site. The substrate used for roosting, as well as feeding, is invariably sand and this wader is seemingly intolerant of mud.

Shell and Studland Bay has always been regarded as the site for this species where up to 18 birds have been recorded. Much higher numbers are recorded during the spring migration at this site where up to 100 have been noted. However, eight were recorded during the survey.

Birds were occasionally found at Whitley Lake but the area now suffers from increased human disturbance and *Spartina* die back.

Purple Sandpiper *Calidris maritime*

This wader has always been restricted to North Haven and South Haven slipways and sea defences (roost 97) in small numbers, usually up to eight. However, the placement of sea defences in 1995 and 1996 at North Haven created much disturbance at that time. This resulted in a displacement of birds to the limited area at South Haven slipway and occasionally Shell and Studland Bay, where previously they only occurred during very high tides that temporarily ousted them from North Haven. Despite an increase in feeding area at North Haven, birds have not been recorded there since, although they may have been overlooked. However, birds are still recorded feeding at South Haven slipway. Here, roosting takes place on the east bank of the slipway where access is inconvenient for people. However, numbers have declined in recent years, three being the maximum count. None were recorded during the survey.

It should be noted that the population wintering in southern England, which presumably includes the Poole Harbour birds, belongs to a separate population to the larger population wintering further north in Britain. They are separable on biometrics and have different migration patterns

(Nicoll, *et al*, 1988, Summers & Rogers, 1991). This population breeds in an unknown locality, and may conceivably be low in number. It may be wise to consider the numbers wintering in Poole Harbour, although still small, as a little more than "insignificant" until further research shows otherwise. This would place greater importance on their roost and feeding areas of the North Haven and South Haven slipways.

Ruff *Philomachus pugnax*

A single bird was noted with Lapwing on the Middlebere Peninsula on 11th December 2002.

This wader was previously a frequent and relatively common winter visitor to the water-meadows along the river Frome and river Piddle in nationally important numbers. Since the building of the Wareham by-pass, this bird has disappeared from the Piddle water-meadows although, when flooded, migrant birds are encountered attending the Piddle water-meadows roost (no. 59) lower down the valley. Birds are now rarely recorded along the Frome water-meadows. Unaffected by tidal conditions, this species roosted where it fed.

Jack Snipe *Lymnocryptes minimus*

None were recorded during the survey but birds were known to have occurred during the survey period. The habitats occupied by this species are apparently similar to Snipe.

Snipe *Gallinago gallinago*

Unlike the majority of waders, this bird is not as reliant on specific roosts sites. Essentially, the bird roosts in areas of wet marsh providing sufficient area and cover, such areas are typified by Slepe Moor, The Moors and Keysworth. Birds feed in these areas but at dusk many leave to feed in more open and exposed areas such as wet, agricultural grassland and ploughed fields. These can be close to the Harbour margin or inland. A small number of birds are frequently encountered along the *Spartina* fringes of the Harbour and are seemingly not affected by tidal conditions, presumably, as they feed above, as well as below the high tide line within the saltmarsh.

Although placed under this sub-section, numbers are probably much higher along the Harbour margins than currently recorded, due to the secretive nature of the species. Numbers beyond the Harbour fringe, associating with its tributaries, may number several hundred (*pers. obs.*)

Spotted Redshank *Tringa erythropus* **Figure 15**

A single bird was noted at Middlebere Creek and around the Vitower peninsula throughout the winter, roosting with Redshank. Up to four birds were seen at the Otter Island roost (no. 70), a traditional site in Lytchett Bay. Elsewhere, up to two birds were regularly encountered at Holes Bay north.

All birds roosted with Redshank on *Spartina* saltmarsh.

Greenshank ***Tringa nebularia*** **Figure 16**

Birds were occasionally recorded by the author throughout the winter. These tended to roost in *Spartina* in the secluded back channels, such as Mead Creek (roost 8) and Shotover Creek (roost 24), and often in association with Redshank. However, numbers were highest at Brownsea Lagoon where three birds were recorded.

Larger numbers are encountered during autumn migration and are usually found in the back channels. Occasionally many birds may attend the larger *Spartina* roosts (e.g., 47 at Brand's Bay south-west [roost 12] on the 12th August. 1984).

Green Sandpiper ***Tringa ochrupus***

Up to four birds were noted at Slepe Moor. However, their roosting activity was less dependant on the tidal state. All remained within this area or made excursions to the Middlebere peninsula where freshwater pools were available, or to Wych Lake.

Turnstone ***Arenaria interpres*** **Figure 17**

This wader roosts on areas devoid of vegetation and thus is usually found on sand and gravel beaches within the Harbour or occasionally on recreation grounds adjacent to the estuary.

The only roost regularly located was found near Baiter, where birds roosted on the artificial structure of Dolphin Haven breakwater or on the groyne and gravel beach on the south side of Baiter. Numbers were regularly up to ca.30 during the survey period but a flock of 91+ waders, apparently all this species, was noted on the breakwater on the 17th February, 2003. (K. Cook, *pers. comm.*). This figure would be a new county record.

Elsewhere birds were noted at Gravel Point and Whitley Lake but numbered no more than seven and six respectively. Shell and Studland Bay was the primary roost for this wader, where a maximum count of 44 was recorded on the 12th December 1982. Since 1995-96, four has been the maximum recorded, reflecting the declining status of other waders at this roost, while none were recorded during the survey.

Due to the *Spartina* dieback, much gravel substrate has been exposed which is now being exploited by this species at low tide. This may consequently affect the distribution of the roost sites for this species within the Harbour.

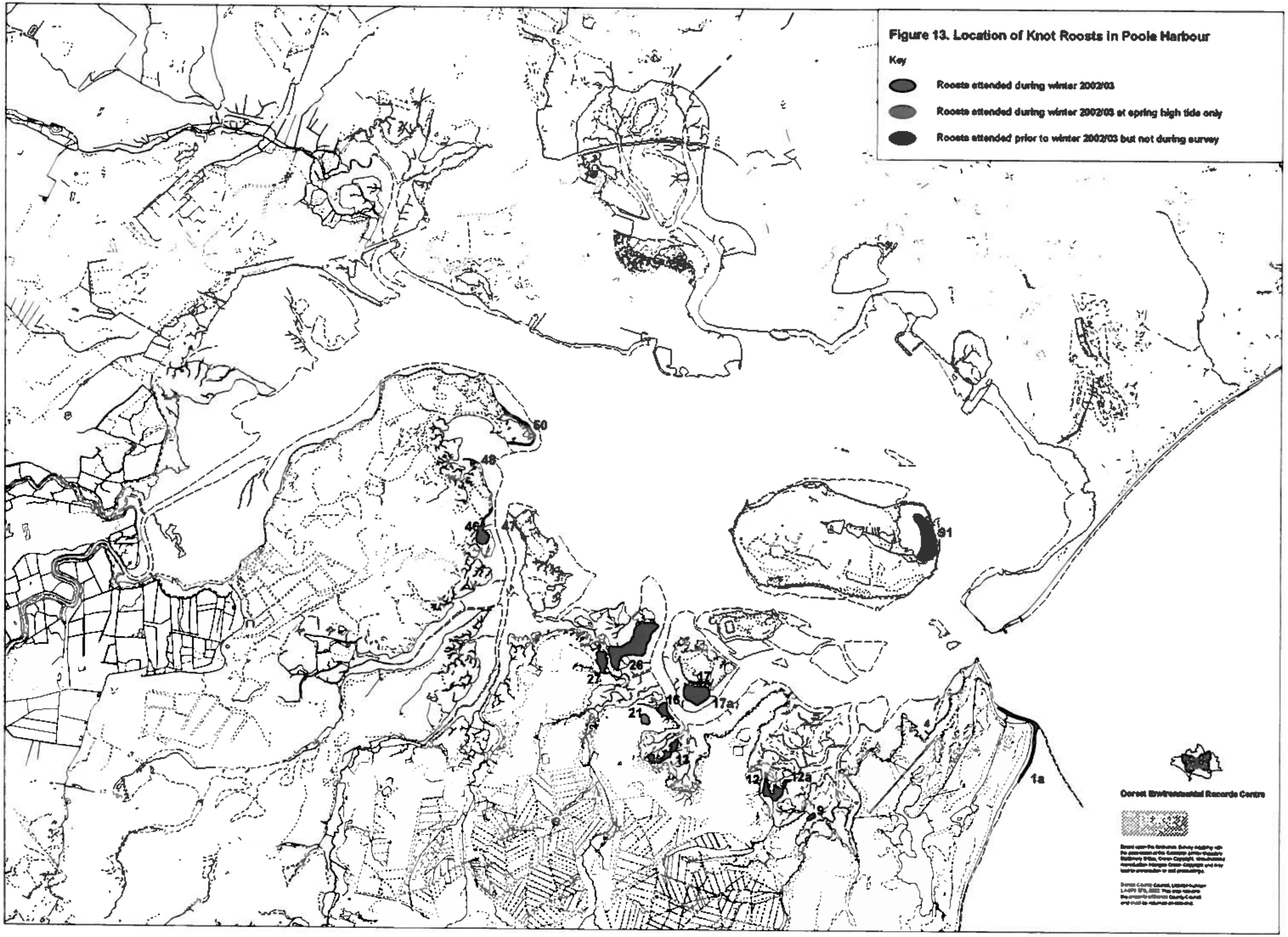

Figure 13. Location of Knot Roosts in Poole Harbour

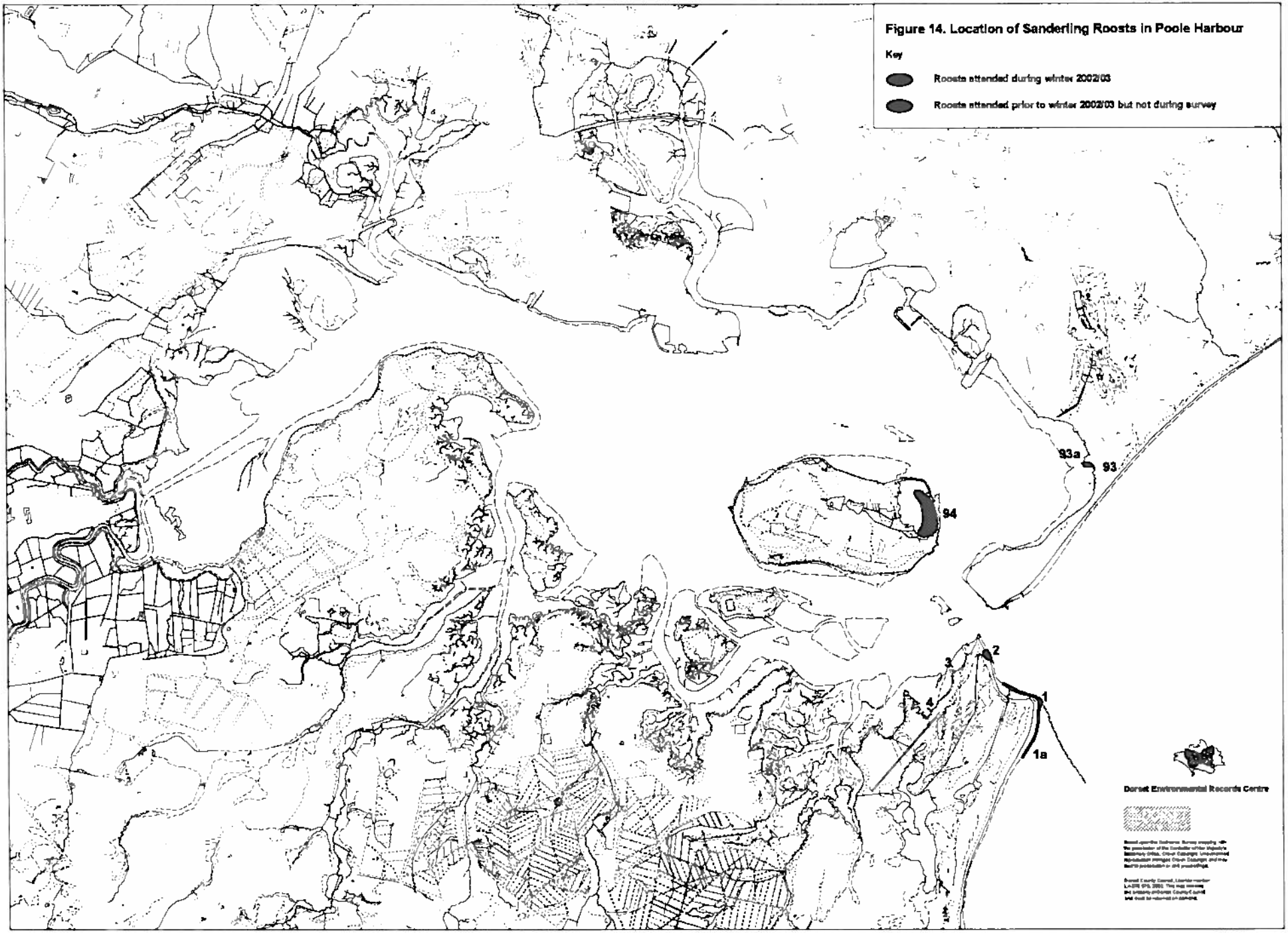
Figure 14. Location of Sanderling Roosts in Poole Harbour
Key
Roosts attended during winter 2002/03
Roosts attended prior to winter 2002/03 but not during survey
93a
93
94
1
1a
2
3
4
Dorset Environmental Records Centre

Figure 16. Location of Spotted Redshank Roosts in Poole Harbour
Key
Roosts attended during winter 2002/03
Roosts attended prior to winter 2002/03 but not during survey
Dorset Environmental Records Centre
86
85
84
13
27

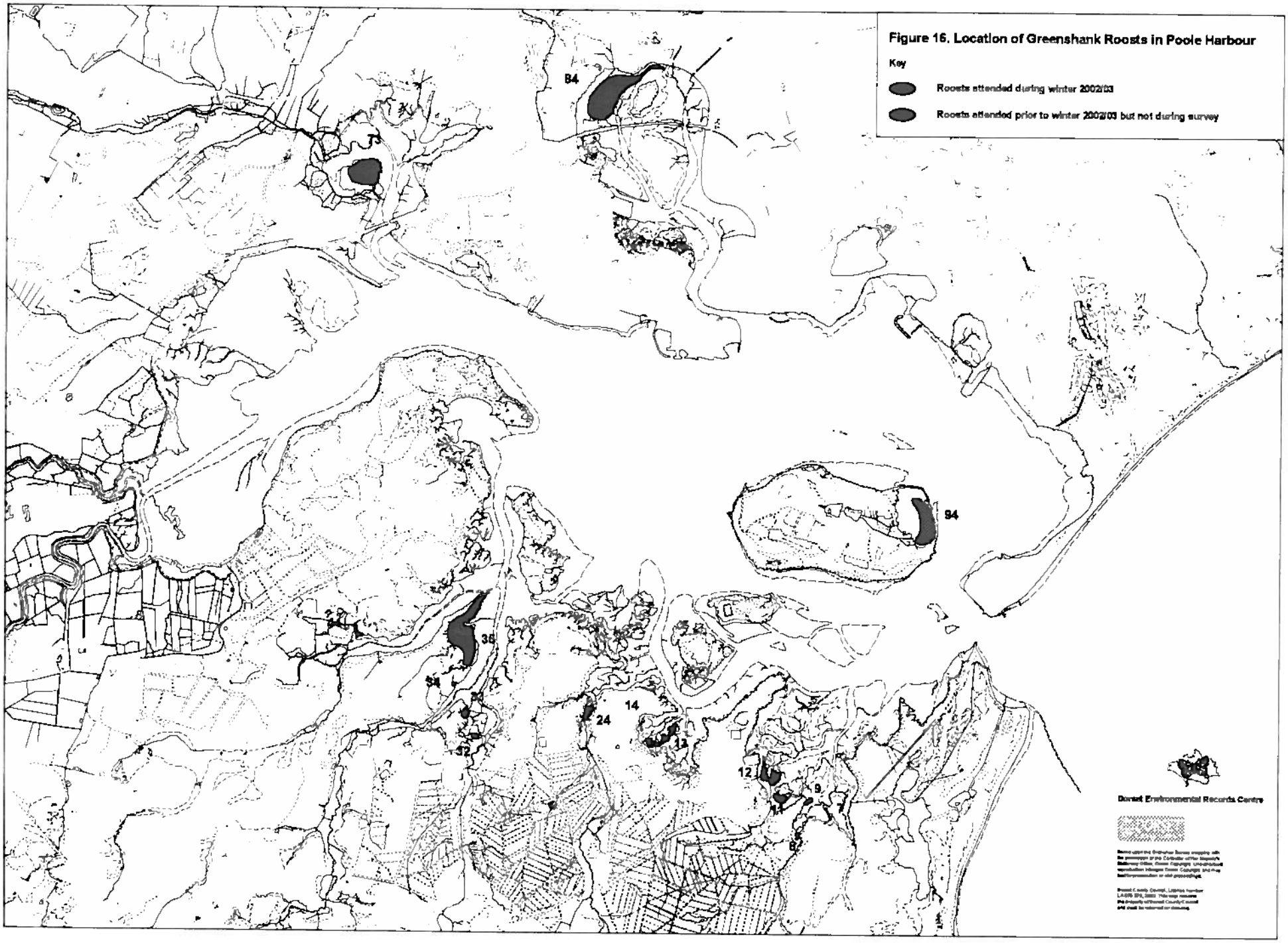
Figure 16. Location of Greenshank Roosts in Poole Harbour
Key
Roosts attended during winter 2002/03
Roosts attended prior to winter 2002/03 but not during survey
84
94
36
34
32
24
14
13
12
9
8
Dorset Environmental Records Centre

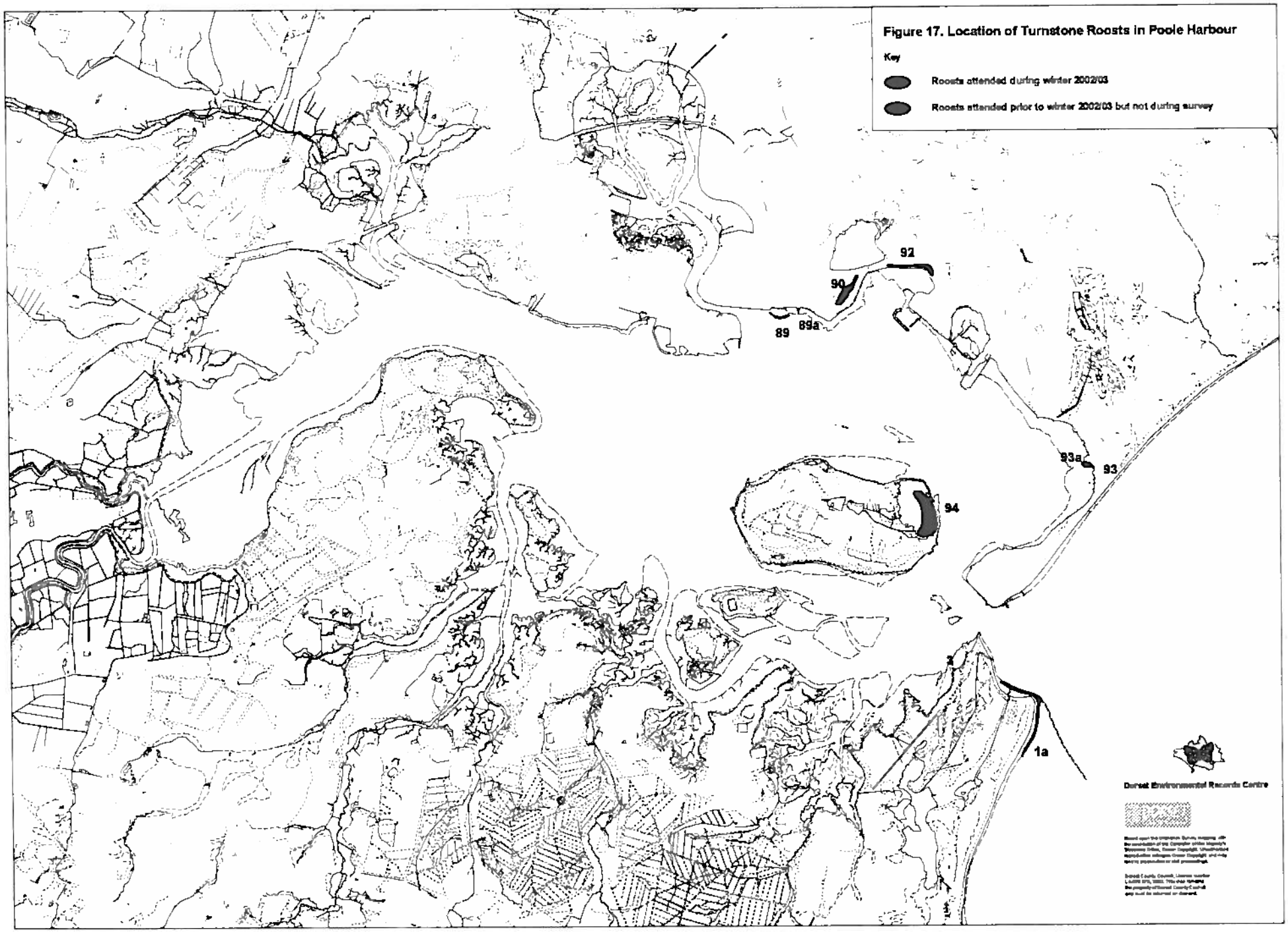
Figure 17. Location of Turnstone Roosts in Poole Harbour
Key
Roosts attended during winter 2002/03
Roosts attended prior to winter 2002/03 but not during survey
92
90
89
89a
93a
93
94
1a
Dorset Environmental Records Centre

Waterfowl Roosts

INTRODUCTION

Between the 11th November 2002 and the 3rd March 2003, a total of 13 visits were made to locate and survey the waterfowl roosts within Poole Harbour. These roosts sites are shown in Figure 18.

Collins (1985) noted that a large number of waterfowl roosted off Fitzworth (actually Vitower), with some other locations listed solely for Goldeneye. However, these counts were made at dusk. Morrison (1999) noted that Goldeneye using the Little Sea roost could arrive, well after dark. Dawn counts at this site are considerably higher, than those undertaken at dusk, the previous day. In addition, small 'pre-roosting' flocks of Goldeneye were encountered in Brand's Bay at dusk but were never seen to fly off before dark, which suggested roosting. Subsequent observations at dawn revealed that the birds had apparently moved on during darkness.

A similar method was used for the extant roost off Vitower/Round Island. The roost was visited prior to dusk and the location noted and the species attending the roost counted. A return was made the next dawn and again the roost location noted and the species attending the roost counted. An attempt was made to do this under different tidal and weather conditions. The results for each species are given below.

Red-breasted Merganser and Eider were also noted flying out of Poole Harbour entrance at dusk to the known roost site in Studland Bay. Red-breasted Merganser, possibly also roost further east off Bournemouth. Coverage of these movements was beyond the remit of the survey. Grebe roosts in Studland Bay are also omitted.

ROOST ACCOUNTS

Dusk observations showed the Round Island roost flock to be compact, usually occurring immediately east of Round Island. However, dawn observations showed that the roost flock would break up into smaller flocks overnight and could cover a much larger area, than at dusk. At its furthest, it would extend north-west to Patchin's Point at Arne, east to Ramshorn Lake off Brownsea Island, and south to just off Fitzworth Point at Vitower (Figure 18). The extent of the roost at dawn would also depend on the general weather. Calm conditions resulted in a larger area being used, while inclement conditions with strong wind resulted in less expansion of the roost. A roost at Wych Lake north was frequented by Great Crested Grebe and Red-breasted Merganser. This roost could be considered an extension of the Round Island roost, as occasionally birds observed at dusk were not observed the following dawn, so had presumably joined the Round Island roost overnight.

Elsewhere, roosts were frequently found on the east side of Brand's Bay between, or in, Bramble Bush Bay and Dyke Bay. The attendant birds were invariably grebes but also included on occasion, pre-roosting Goldeneye and Red-breasted Merganser, although these flocks were often independent of the grebes. Both Red-breasted Merganser and Goldeneye would begin to move into the roosts before darkness. It was also apparent that roosts in Brand's Bay were more frequented early in the winter (November and December), than later in the season. This was also noted for the main Round Island roost and concurs with similar observations in previous winters.

The reasons for this exodus of birds from the Harbour over the latter half of the season is unknown.

Only Goldeneye attended the well-known roost at Little Sea

A roost at Poole Park Lake held small numbers of Goldeneye and occasionally a few Red-breasted Merganser. This roost was located in the north-east part of the lake where least disturbance occurred.

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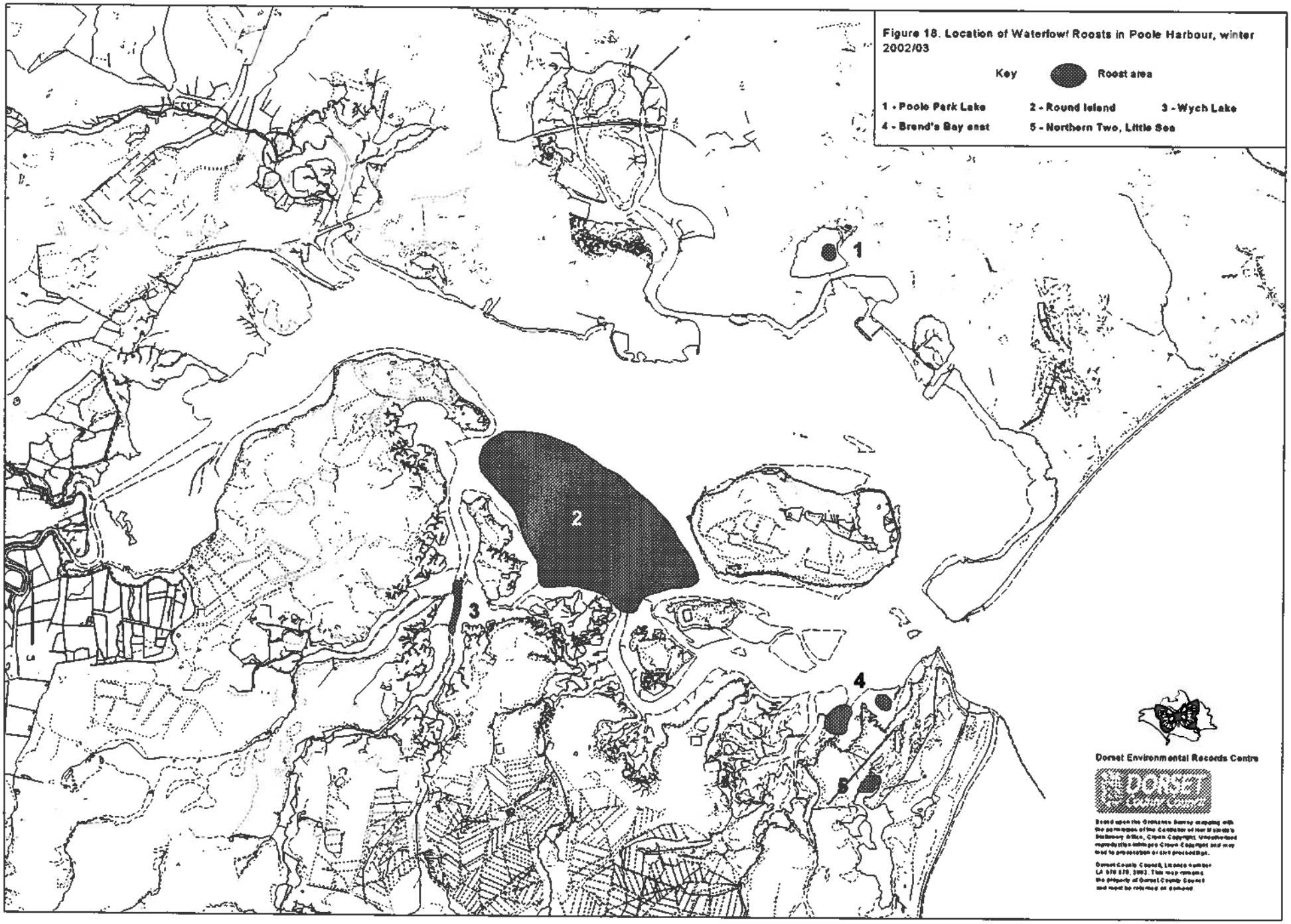
Figure 18. Location of Waterfowl Roosts in Poole Harbour, winter 2002/03
Key
Roost area
1 - Poole Park Lake
2 - Round Island
3 - Wych Lake
4 - Brand's Bay east
5 - Northern Two, Little Sea
1
2
3
4
5
Dorset Environmental Records Centre

SPECIES ACCOUNTS

This account is in into two sections. The first summarises the status of species that occur within Poole Harbour in Nationally Important numbers and the second those species that do not occur in qualifying numbers.

Table 3 summarises the species that occur in Nationally or Internationally Important numbers, as given by Musgrove *et al.* (2001). Note that Shag has not been designated a qualifying threshold and thus does not appear under species occurring in Nationally Important numbers.

Table 3 Species occurring in Poole Harbour in Nationally and Internationally Important numbers, with qualifying thresholds (Musgrove *et al.* 2001).

Species	Nationally Important	Internationally Important	National threshold	International threshold
Great Crested Grebe	?[1]		100	1500
Red-necked Grebe	●*		1	150
Slavonian Grebe	●*	?[2]	4	50
Black-necked Grebe	●*		1	1000
Cormorant	●		130	1200
Goldeneye	●		170	3000
Red-breasted Merganser	●		100	1250

* Numbers recorded nationally are so low that the national 1% qualifying threshold does not apply.

[1] There is an interchange of birds between Shell and Studland Bays with the Harbour, and combined counts outside of the WeBS dates would suggest that the 'site' might be of National Importance.

[2] Counts outside the WeBS dates suggest that the Harbour population, combined with those of Shell and Studland Bays might be of International Importance.

SPECIES OCCURRING IN NATIONALLY IMPORTANT NUMBERS

Numbers of Red-necked Grebe *Podiceps grisegena*, Slavonian Grebe *P. auritus* and Black-necked Grebe *P. nigricollis* recorded nationally on the WeBS survey are low, so the 1% qualifying threshold does not apply. However, WeBS recognises a site that holds more than the arbitrary figure of one for Red-necked Grebe and Black-necked Grebe, and four for Slavonian Grebe as Nationally Important.

Although many roost outside the Harbour, Cormorant is included here as an unknown, but significant number roost overnight on Brownsea Lagoon. Numbers of this species recorded during the day are Nationally Important.

The number of Red-breasted Merganser that occur within the area make Poole Harbour the most important site for this species in England and account for just over 10% of the British wintering population (Musgrove *et al*, 2001)

Great Crested Grebe *Podiceps cristatus*

Although not officially recognised as occurring in Nationally Important numbers, Great Crested Grebe is included here for the reasons given above.

The main roost located for this species was that off Round Island. 73+ birds were noted attending. Up to 12 birds attended a roost at Brand's Bay but during the current survey, their attendance was very intermittent and seemed to have declined as the winter progressed. The reason for this is unknown. Elsewhere, up to five birds attended the roost at Wych Lake north, effectively an extension of the Round Island roost.

At dawn, birds dispersed from the Round Island roost area in one's and two's but occasionally small groups. Most swam to their feeding sites, while birds, apparently feeding further away, flew. Dispersal was in all directions suggesting that perhaps a large proportion of the Harbour population, if not all at times, roost off Round Island.

Red-necked Grebe *Podiceps grisegena*

Although up to two birds were recorded during the day in the eastern area of Poole Harbour, none were noted attending a roost.

Slavonian Grebe *Podiceps auritus*

Two roosts were located in Poole Harbour, at Brand's Bay and the main Round Island roost. It is also possible that a roost will form between the two sites, dependant on feeding conditions and weather conditions.

A maximum of seven birds attended the Round Island roost, while up to nine were observed in Brand's Bay. It is very likely that there is much movement between roost sites but perhaps less so with the main roost in Studland Bay (where up to 30 birds attend).

Dispersal from the main Round Island roost was always eastward through South Deep channel, implying their feeding areas were located off Green Island, Goathorn and in Brand's Bay. Dispersal from the Brand's Bay roost was localised.

Black-necked Grebe *Podiceps nigricollis*

As with Slavonian Grebe, birds were noted attending a roost in Brand's Bay and the main Round Island roost. Numbers were much lower, with three occurring in Brand's Bay and two at the main Round Island roost.

Dispersal also reflects that of Slavonian Grebe, with Round Island birds moving east and Brand's Bay birds dispersing locally.

Cormorant *Phalacrocorax carbo*

As expected with a species that habitually roosts on land, none were recorded to roost on the open water within the Harbour. Over 250 now remain to roost over night on the 'tern islands' or amongst the *Salicornia* in the Brownsea Island Lagoon (C. Thain *pers. comm.*). Many of the birds that feed within the Harbour during the day fly to roost on the cliffs at Ballard, as well as some remaining to roost on Brownsea Island.

Goldeneye *Bucephala clangula*

The two roost sites located at Northern Two, Little Sea and off Round Island recorded by Collins (1985) are still extant. At Little Sea, a count of over373 on the 19th-20th February 1999 is still the record count form one site in Poole Harbour. Currently, a small roost was found at Poole Park Lake.

At Northern Two, Little Sea, dawn counts were aggravated by disturbance caused by contractors working next to the roost site (work in this area was restricted to the 2002/03 winter). Subsequently, no meaningful counts were obtained from late November to January. However, the maximum November count was 152, lower than counts undertaken in recent winters. A February count was also relatively low with ca.190 birds but this count was also hampered by the presence and disturbance from two birdwatchers.

At Northern Two the steep land, rising to ca.5 metres, combined with a woodland strip on the west side of Northern Two affords good protection from prevailing winds. Sallow carr on the northern and southern edge and a woodland strip along the eastern edge additionally provides a windbreak. Thus, birds roost here in all weather conditions except when the lake is frozen. Recent scrub removal around the southern edge of Northern Two, and to a lesser extent the eastern edge, has apparently compromised the roost site to some extent by exposing at least the southern part of the roost area to prevailing weather. This has had the effect of decreasing the area available for roosting during such conditions. However, it is not known if the numbers attending this roost have been affected. It is known that numbers are generally greater during inclement weather, suggesting that the more exposed Round Island roost becomes less suitable at such times and birds move to Little Sea. With the recent removal of the scrub, the roost is more prone to human disturbance.

Off Round Island, the maximum recorded was ca.240 on the 13th January 2003. The varying numbers attending the Round Island and Little Sea roosts suggests frequent interchange occurs that may be dependant on prevailing weather, tidal conditions and human disturbance. It is possible that some birds, because of these changeable conditions, will move between roosts over night.

Elsewhere, a small roosting flock was noted at Poole Park Lake, maximum 19 on the 23rd January 2003. However, numbers attending this roost may have been higher, as up to ca.65 birds have been recorded during the day in the past (*pers. obs.*) and may have remained to roost. No apparent roost has been recorded here in the past but it possibly has been overlooked.

Co-ordinated dawn counts need to be undertaken to assess the numbers occurring at all three roosts, in particular Little Sea and off Round Island. It is very likely that figures will be much

higher than those recorded by the WeBS during the day. It is estimated that the peak Harbour population may have reached ca.500 during the 2002-03 winter.

Red-breasted Merganser *Mergus serrator*

This sea duck was regularly recorded roosting off Round Island with much smaller numbers in Poole Park, where it perhaps only roosts occasionally. Birds were also observed at dusk leaving the Harbour to roost in Studland Bay and perhaps off Bournemouth. A more concentrated movement of returning birds occurs at dawn.

The roost off Round Island was attended throughout the winter but numbers declined during the latter half. The maximum count was of 382+ on the 24th November 2002 but numbers never rose above ca.50 during three counts in January and February. This is the main roost for this species within the Harbour. Elsewhere, 13 birds were recorded at Wych Lake north (but are included in the Round Island totals) and up to three birds roosted at Poole Park Lake and remained to feed during the day.

The presence of roosts outside the Harbour in Studland Bay and possibly off Bournemouth is likely to have been the reason for the low numbers recorded later in the winter. However, roost counts outside the Harbour or flight counts at the Harbour entrance were not undertaken, so this cannot be confirmed. Further work is needed to clarify the situation.

Other Species

Common Scoter *Melanitta nigra*, Velvet Scoter *M. fusca* and Smew *Mergellus albellus* occur within the Harbour on an annual basis during the winter but their numbers are normally very low and their occurrence rather intermittent. None were recorded but all three species were known to have occurred during the survey period.

Additionally, up to two Red-throated Diver *Gavia stellata* and a single Black-throated Diver *G. arctica* were recorded during the day but none were noted attending any roosts.

Great Northern Diver *Gavia immer*

Morrison (1999) considered that this was the only diver to take up winter residence in the Harbour, while records of the other two species of diver, particularly Red-throated, are of birds staying only for a few days before moving on to other locations.

Observations of the roost off Round Island support this view, with up to four Great Northern Diver's using the Round Island roost during the first part of the winter (November and December).

Observations during January and February failed to produce any further records of this diver using the roost, although single birds were recorded during the day.

Shag *Phalacrocorax aristotelis*

Although present during daylight hours, none were observed to roost within the Harbour. Apparently, all birds roost outside the Harbour (Collins, 1985; Morrison, 1999).

Eider *Somateria mollissima*

Small numbers were seen to fly into the Round Island roost area soon after dawn in late December and were presumably birds that had flown through the Harbour entrance from the usual roost site of Studland Bay north. However, on the 13th January. 2003, 12 birds were present at the roost at dawn and coincided with an increase in numbers within the Harbour. It is likely that an influx occurred and birds new to the Harbour attended the Round Island roost, perhaps temporarily, rather than attending the Studland Bay roost which normally holds the entire Harbour population when numbers are high (e.g., 129 in Jan. 1976).

Long-tailed Duck *Clangula hyemalis*

One female was noted at the Round Island roost on the 24th November 2002. Other birds may have been present at other times amongst the Goldeneye at this site but distance, combined with low light conditions, precluded identification.

DISCUSSION

The main roost off Round Island, located by Collins in 1985, is clearly well established. The only other main waterfowl roost is that of the Goldeneye at Little Sea, Studland Heath that has been in existence since records began in 1962. A small roost of Goldeneye, and occasionally Red-breasted Merganser, at Poole Park Lake also occurs but its history is unknown.

Due to the nature of night roosts, they are not as prone to as much disturbance as wader roosts are during the day. The only human activity noted at the Round Island roost was the occasional dawn movement of small fishing vessels (maximum three at any one time) through the area from Poole. The pace of the vessels was relatively slow allowing any birds in their path to swim away rather than fly. No disturbance from watercraft was noted at dusk, as nearly all are back in port before darkness. Any training activity by the military (Royal Marine Corps) out of Hamworthy was not recorded. However, it is unlikely that it is a threat to the main roost, although this will need verification.

The habitat management, determined by The National Trust and English Nature, around the Goldeneye roost at Northern Two, Little Sea has partly exposed the area to prevailing weather, with the effect that the roosting flock contracts north during such conditions. No observations were made during strong easterly winds so any potential compromise, if any, of the shelterbelt on the eastern edge of Northern Two was not recorded. No further scrub clearance is planned for this area and it is not thought that the roost will be further affected. However, the main effect of the scrub clearance is the potential increase of human disturbance. The Sallow scrub to the south of the roost, which screened the roost for at least the last 30 years or so, has been cleared and the area opened up to view. Unlike 30 or so years ago, it is now very prone to disturbance by the

presence of walkers and birdwatchers, whose numbers visiting the area have increased over the intervening period. Additionally, the open areas may encourage people to wander to the lake edge. This roost should be monitored for any effects of such disturbance. In time, the scrub should regenerate and screen the roost once more.

The disturbance at Poole Park Lake is continuous and always present in the form of walkers and other park users. However, it seems that the Goldeneye have become used to this and at present, there is no direct threat to this small roost. Poole Park Lake is occasionally drained and this would obviously affect any roost here.

Overall, the present human activity within the Harbour is unlikely to cause any detrimental affects on the roosts. Indeed, human disturbance to feeding birds during the day is more of a concern than those currently affecting roosting birds. Nonetheless, there are potential threats to both main roosts. The large Round Island roost could seriously be affected, should there be an increase in boat traffic. The Goldeneye roost on Little Sea is now more prone to human disturbance and has the potential to increase until it is screened again by scrub.

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APPENDIX I

METHODOLOGY AND INFORMATION REQUIRED OF VOLUNTEERS UNDERTAKING A CO-ORDINATED HIGH TIDE WADER ROOST COUNT IN POOLE HARBOUR, 2002/03.

Wader Roost Site Survey

Method of work

A. The observer will need to position themselves at a location overlooking a known roost site.

B. Due to the frequent difficulty of assessing the species and numbers, as well as the actual location of the roost, it is necessary to remain for a prolonged period in the hope of some form of disturbance (e.g., in the form of a bird of prey or aircraft) to briefly flush the birds into flight giving the chance of a count

C. See also instructions for completion of the questionnaire.

Instructions for completion of the questionnaire.

Please fill in the observer details to allow us to contact you. Next, fill in the roost site(s) being surveyed. The questionnaire is designed to record details of three roosts. If other roosts are also surveyed please ask for the appropriate number of questionnaires. Finally, record the date and the times observation of the roost started and ended.

The following paragraphs relate to the corresponding paragraphs in the questionnaire:

1. **Description of roost site**: Record details of general habitat type (e.g., in *Spartina* saltmarsh, on sandy beach, on water-meadows, etc). Please draw the location of the roost(s) and its/their approximate boundary on the map provided.

2. **Species using roost site(s)**: Note down species of wader attending the roost site(s). Assuming that birds do give an opportunity for you to count it is not expected that counts should be precise. Although this would be useful, estimated numbers will do. However, when estimating please give a range (e.g., 8 to 12 or 200 to 300). This is more practical and would take into account varying discrepancies including relative accuracy of the count.

3 **Additional Notes**: Please provide observations of:

   a. any factors affecting your observation and count of the roost.
   b. cause of any potential and/or actual disturbance and it's affects on the wader roost.
   c. movement of waders between roosts.
   d. effects of vegetation on wader selection and distribution at the roost.
   e. presence of other species such as wildfowl.
   f. any other information pertaining to the roost (e.g., where do the waders attending the roost feed at low tide; any feeding activity noted at the roost; etc.).

Wader Roost History

If you have historical information on the high tide roosts within your area we would be very interested in receiving details.

Instructions for completion of the questionnaire.

Please fill in the observer details to allow us to contact you. Next, fill in the roost site for which you have information. The questionnaire is designed to record details of one roost only. If details of other roosts are being provided please ask for the appropriate number of questionnaires.

The following paragraphs relate to the corresponding paragraphs in the questionnaire:

1. **Description of roost site**: Record details of general habitat type (e.g., in *Spartina* saltmarsh, on sandy beach, on water-meadows, etc). Please draw the location of the roost(s) and its/their approximate boundary on the map provided.

2. **Species using roost site(s)**: Emphasis should be made on species using the roost. Attending numbers should be approximated based on your past field notes.

3. **Additional Notes**: Please provide information on the following:
   a. changes to roost site and roosting behaviour.
   b. causes of any disturbance and its effects on the wader roost.
   c. changes in habitat (please note that there has been recent die back of *Spartina* [Cord-grass] in Poole Harbour in the last few years. If the current roost site has been affected, please give details of any observed effects this has had on roosting waders).
   d. changes in species use and numbers (include seasonal changes).
   e effects of weather.
   f. any other change.

4. **Location of other roost sites**: Please provide the location of roost sites (whether presently used or not) that do not appear in the Collins (1985) map provided.