The collation of bird use data from Ryde Sands SSSI (and the equivalent parts of the SPA and Ramsar) for nine selected wintering species

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1. Introduction

1.1 Natural Enterprise has been commissioned by the Isle of Wight Council to bring together into one database the available published survey information on the numbers and locations of selected winter birds feeding at low tide on Ryde Sands SSSI. The purpose of this work is to aid the identification and delivery of mitigation requirements for the European and equivalent Ramsar site within the Ryde Area Action Plan. A steering group of IWC, RSPB and Natural England has received progress reports and advised on final outputs throughout the project.

1.2 The database is to be compatible with, and interrogatable by the LPA's GIS systems such that it can depict the relative significance of different parts of the project area by target bird species and by month within a September to March winter period.

1.3 The survey area covers approximately 400 Ha along a 10km stretch of intertidal and extends between Wootton Creek in the West and Seaview Duver in the East, comprising units 7 to 14 of the Ryde Sands and Wootton Creek SSSI[1] and the coterminous portions of the Solent and Southampton SPA[2] and Ramsar[3] designations.

1.4 The survey data compiled to create the project database was taken from the following sources:

- Monkton Mead Flood Alleviation Scheme Environmental Statement. October 2000. Bullen Consultants. Environment Agency Regional project no. 99C615.
- Extracts from the Environmental Statement for the Proposed Coast Protection at the Duver, Seaview. Posford Haskoning. April 2004.
- Quarr to Ryde Pier Bird Survey 2006 – 2007. Street Ecology for Ryde Port Ltd.
- Quarr to Ryde Pier Bird Survey 2007. Street Ecology for Ryde Port Ltd.

[1] http://www.sssi.naturalengland.org.uk/special/sssi/unitlist.cfm?sssi_id=2000222
[2] http://jncc.defra.gov.uk/page-162
[3] http://jncc.defra.gov.uk/page-161

- Ryde Sands East Bird Survey 2007. Street Ecology for Solent Sculpture Park.
- Quarr to Ryde Pier Bird Survey 2007 – 2008. Street Ecology for Civic Networks Ltd.
- An appraisal of bird populations in the vicinity of the Wightlink ferry at Fishbourne, Wootton Creek 2007 – 2008. Street Ecology for Civic Networks Ltd.
- Wootton Creek WeBS[4] count data 1989 – 2009.
- Ryde Sands WeBS count data 1993 – 2009.
- Isle of Wight Ornithology Group/Isle of Wight Natural History and Archaeological Society annual bird reports 1990 – 2009.
- Additional contextual and specific information regarding target species and the various sections of Ryde Sands received from local bird recorders.

The Solent Waders and Brent Goose Strategy (2010) was also consulted. However, as it is a standalone report with its own GIS layer held by IWC, it was considered unnecessary to add this data to the current work.

1.5 The nine bird species selected by IWC for inclusion in the data collation were:

- Dark-bellied Brent Goose *Branta bernicla bernicla*
- Eurasian Oystercatcher *Haematopus ostralegus*
- Common Ringed Plover *Charadrius hiaticula*
- Sanderling *Calidris alba*
- Dunlin *Calidris alpina*
- Eurasian Curlew *Numenius arquata*
- Common Redshank *Tringa totanus*
- Ruddy Turnstone *Arenaria interpres*
- Mediterranean Gull *Larus melanocephalus*

[4] The Wetland Bird Survey (WeBS) is the scheme which monitors non-breeding waterbirds in the UK. The principal aims of WeBS are to identify population sizes, determine trends in numbers and distribution and to identify important sites for waterbirds.

1.6 Brent, oystercatcher, ringed plover and Mediterranean gull are listed in the citation for the Solent and Southampton SPA.

1.7 Sanderling, curlew and redshank are noted in the citation for the Ryde Sands and Wootton Creek SSSI.

1.8 This selection provides a set of larger species following dispersed feeding and roosting patterns (brent, oystercatcher, curlew, redshank) and a set of smaller species (ringed plover, sanderling, dunlin, turnstone) exhibiting more defined behaviour and movement within the sections of the Ryde Sands study area.

2. Database Construction and mapping

2.1 The data to be mapped have been drawn from a range of sources as set out in paragraph 1.4 above. These data have been collected by different surveyors and at different times and inevitably by means of differing methodologies.

2.2 The sources between them cover the whole of the Ryde Sands study area but not continuously. There are detailed surveys that map the foreshore in 'artificial' blocks of less than 1 km. There are others that provide records broadly at the level of the SSSI units because these correlate to visible geographical and substrate boundaries.

2.3 In order to bring together all the available survey information into a coherent whole and build a database that has the capacity to output meaningful aggregated information for a species the following proposals for data handling were agreed with IWC and the other partners involved in the project during initial consultations.

2.4 Data has been mapped in two categories and as two GIS shape files:

2.4.1 The finer scale surveys provide the basis for a compartmentalisation of the whole study area which leaves just two small sections unallocated. One shape file of GIS has therefore been constructed based on these individual survey compartments linked to a data table showing the following for each target species:

a. Average count by month (Sep-Mar). This is an average of all counts in the study in the given month, and may include multiple counts in the same month, counts over multiple years, or both.
b. Maximum count recorded.
c. Month and year in which maximum count is recorded.

Meta-data[5] describe the surveys used in each case and note limitations in the data, including the fact that different areas use data collected at different times and with differing methodologies.

2.4.2 Data from other sources (predominantly WeBS) are available at a less detailed level and have been mapped as larger zones which correspond, as closely as possible, to multiples of the compartments. These data have been combined with data in the compartments and average counts mapped across four zones as another GIS shape file. No maximum counts are included in this data as there is no way to aggregate this data in a meaningful way. Average counts have been obtained by adding together the figures each compartment in the zone and counts from other surveys which fall within the same zone, and dividing by the number of counts used.

2.5 Each has an associated data table in excel format which can be linked to the GIS shape file, along with a description of which fields should be linked.

[5] Data which describes and explains other data

3. Database and Mapping Limitations

3.1 The purpose of the data collation and its representation has been to provide a means by which to discriminate between the relative significance of different parts of the Ryde Sands intertidal for key wintering bird species.

3.2 To this end data from different surveyors and obtained by differing methodologies has been combined first in a way that makes best use of the volume of real survey information and across the longest reasonable timescale.

3.3 This being the case it is important to realize that the mapped outputs cannot reliably be used as a tool by which to predict actual numbers of birds likely to be seen at a certain spot at a certain time. On the other hand the underlying database can be consulted for examples of equivalent past survey records and in this way only may provide a guide to future numbers.

4. Maps

4.1 In the sequence of maps that follows there is first the project area compartment map, then a map for each target species; then the overall zone map and finally a zone map for each species.

4.2 It should be noted that compartment 11 overlaps with all of compartments 12, 13 and 14 and part of compartment 15. The extent of compartment 11 is however clearly visible and is particularly significant for that part of Ryde Sands east not otherwise covered, the area between Ryde Pier and the boating lake. The layout has therefore been left as shown as the best option for reconciling the different survey data sources.

4.3 It will be seen that the zone map (figure 10) includes a greater extent of Wootton Creek that the compartment map; this is due to the wider reach of the WeBS count data incorporated into the zone maps.

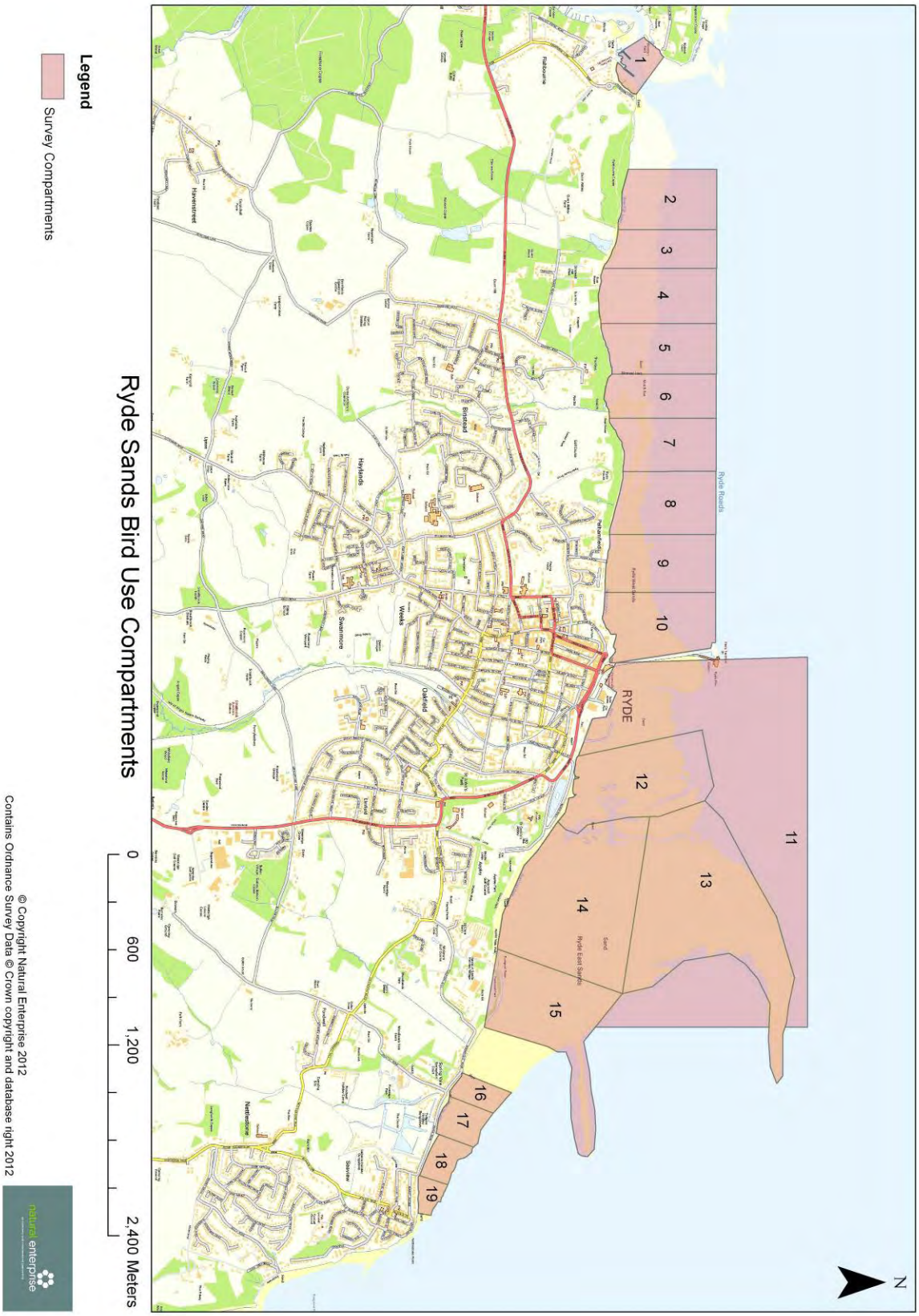

Figure 1. Survey compartments

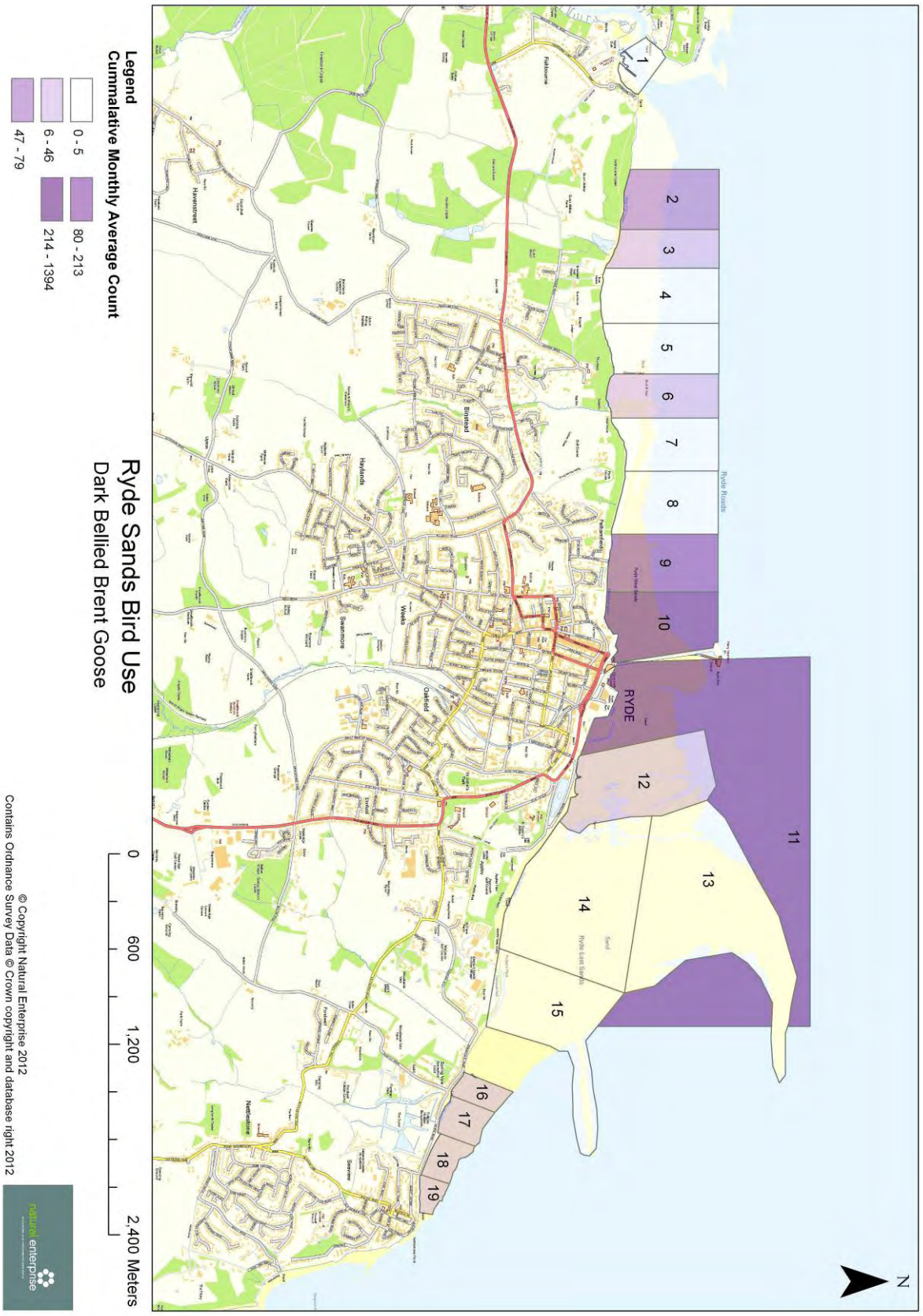

Figure 2. Brent goose compartment map

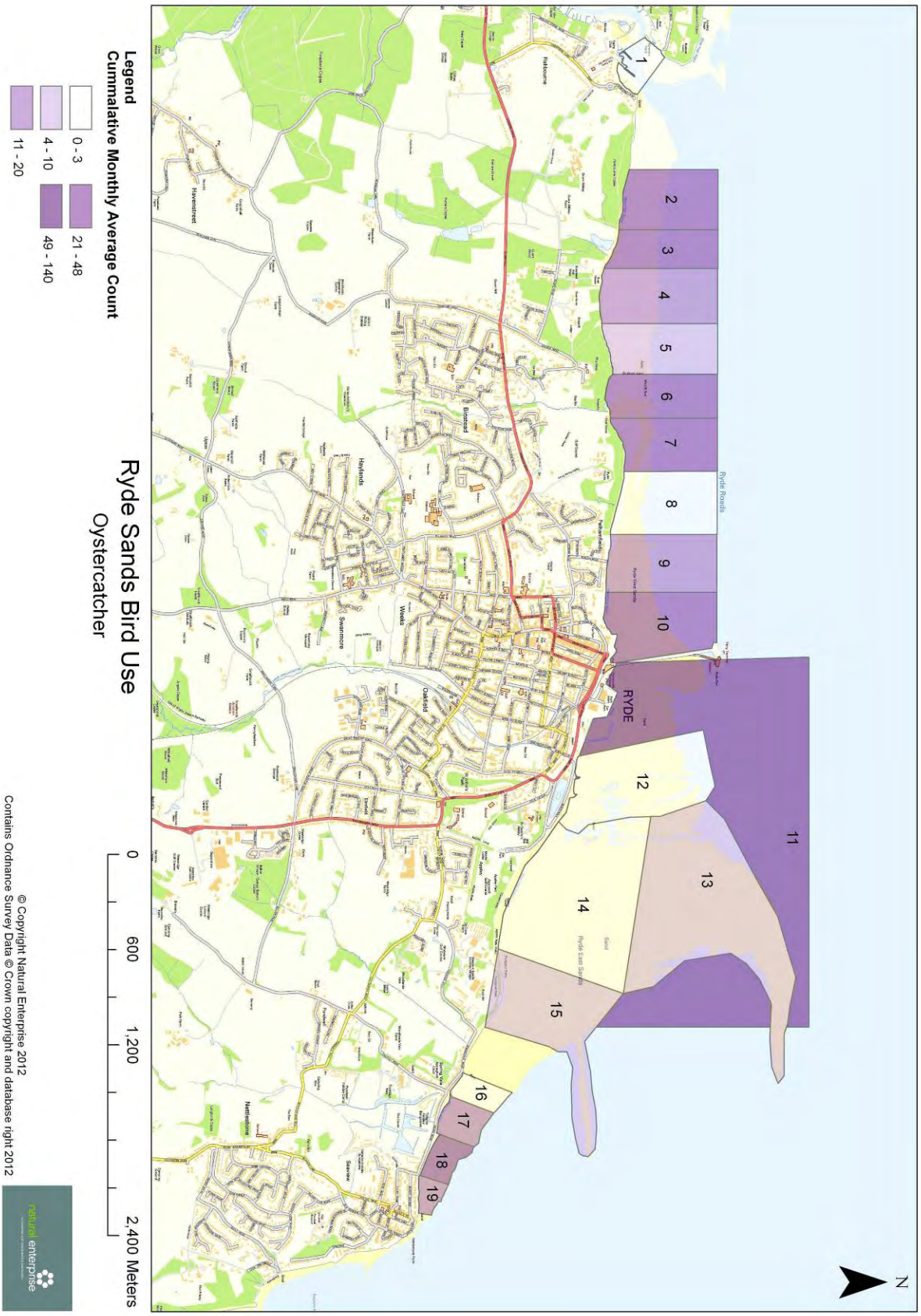

Figure 3. Oystercatcher compartment map

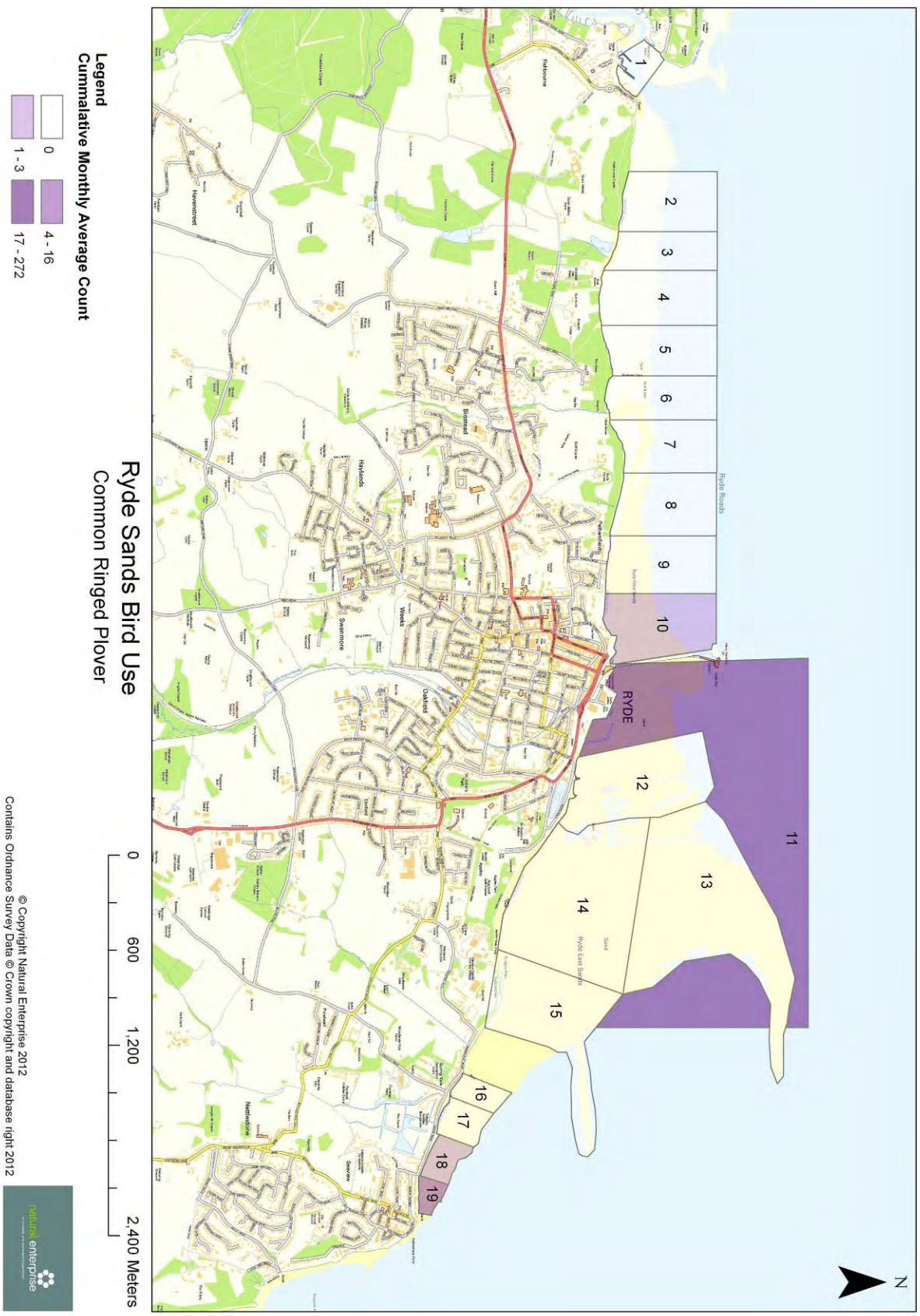

Figure 4. Ringed plover compartment map

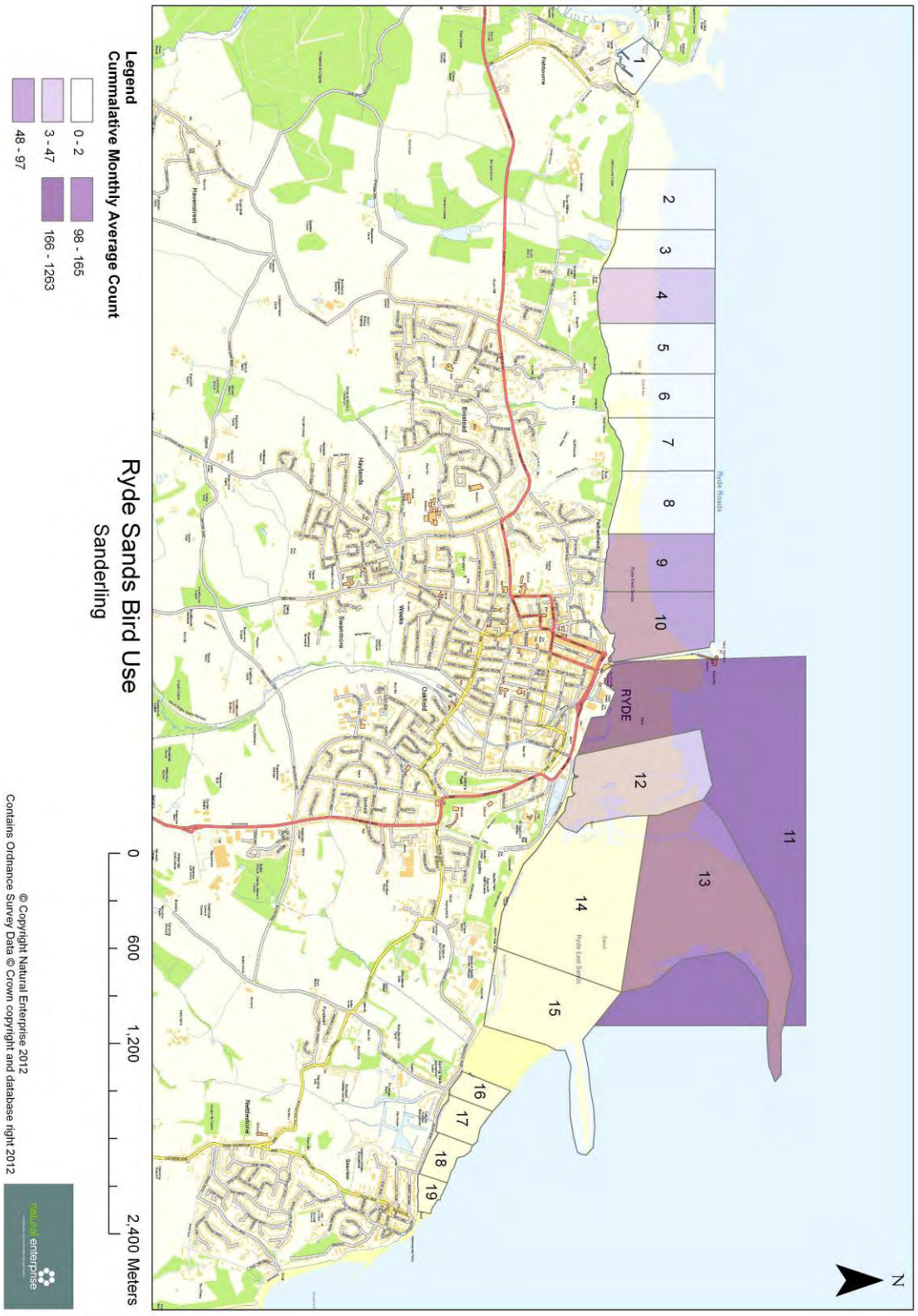

Figure 5. Sanderling compartment map

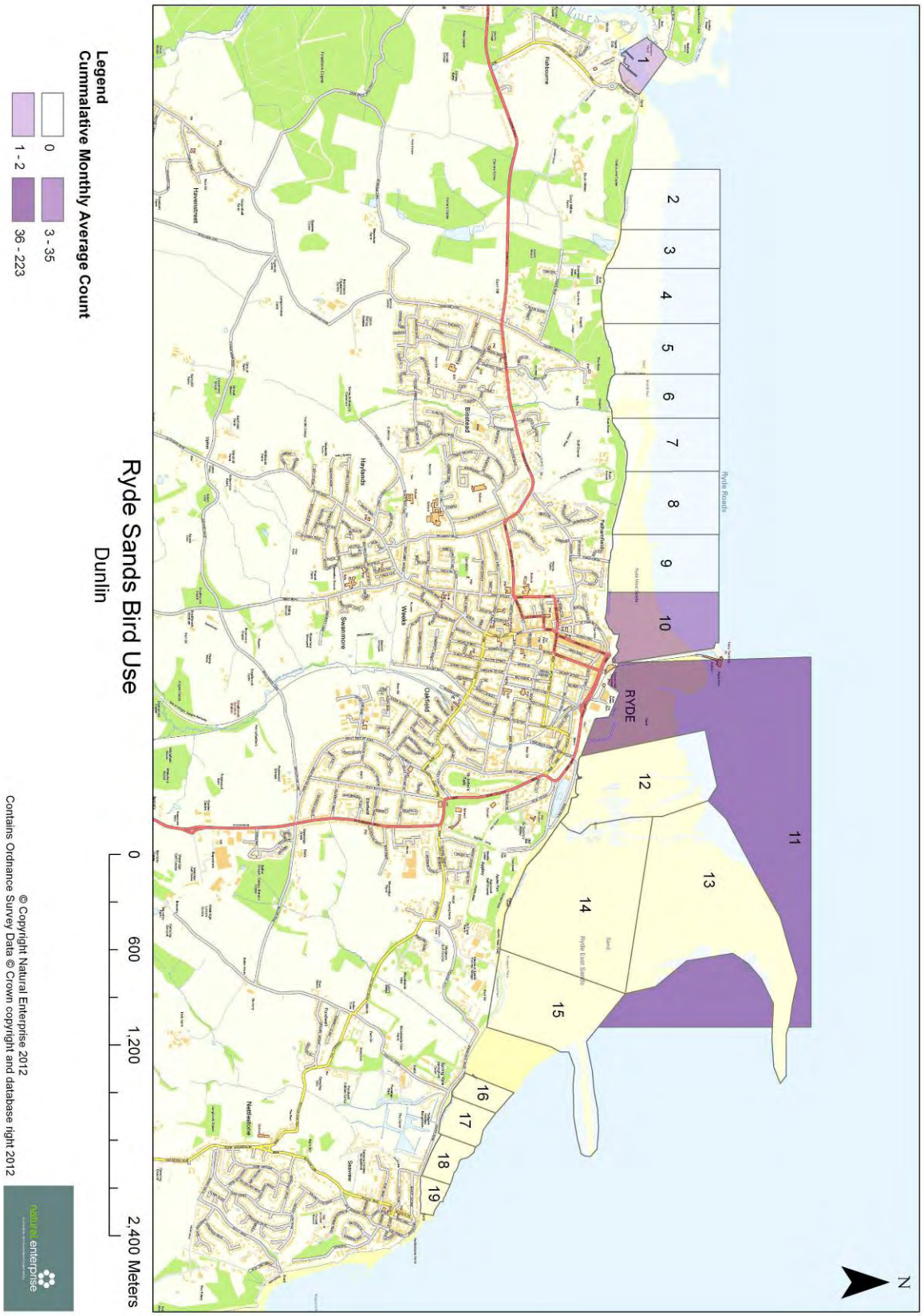

Figure 6. Dunlin compartment map

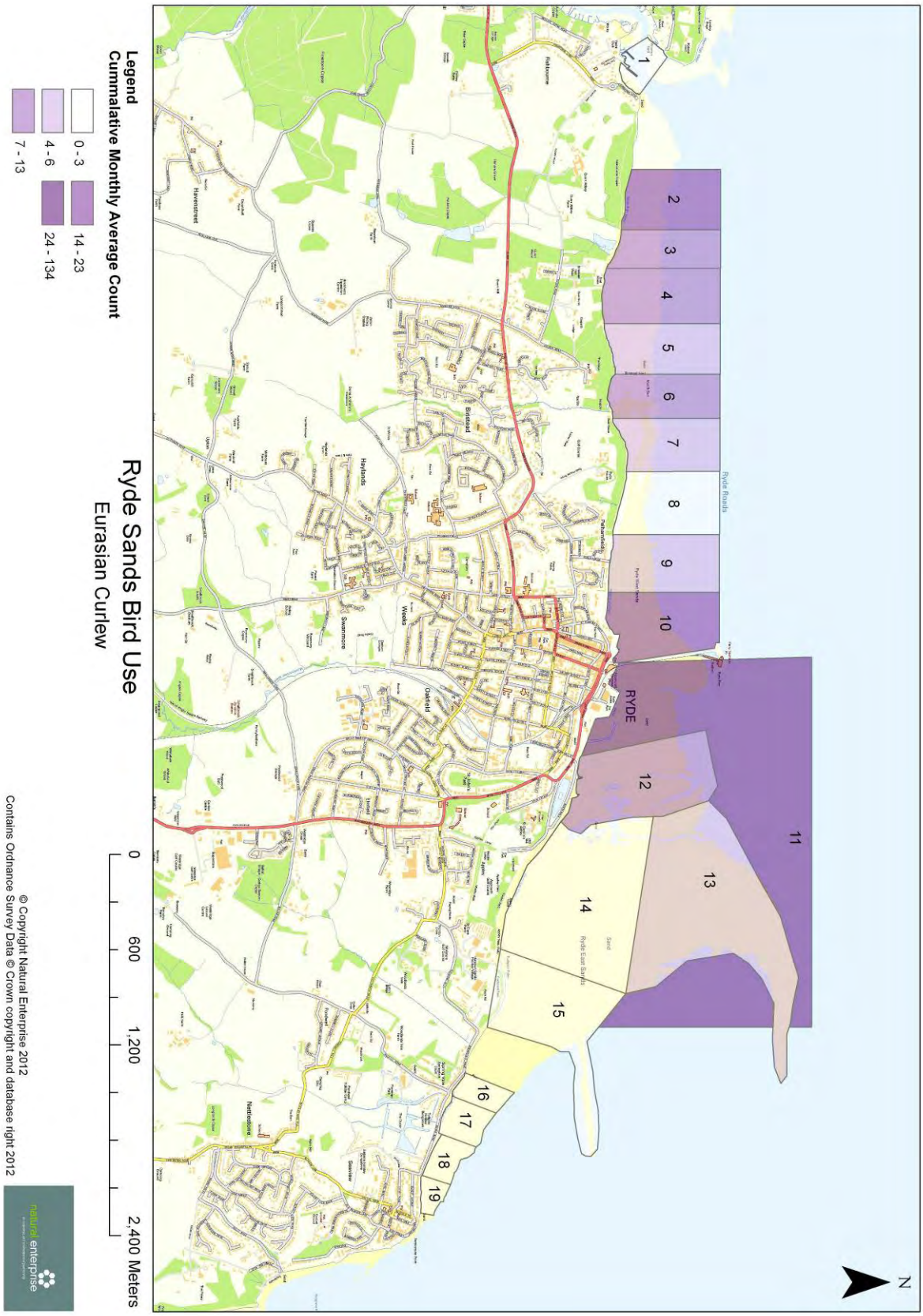

Figure 7. Curlew compartment map

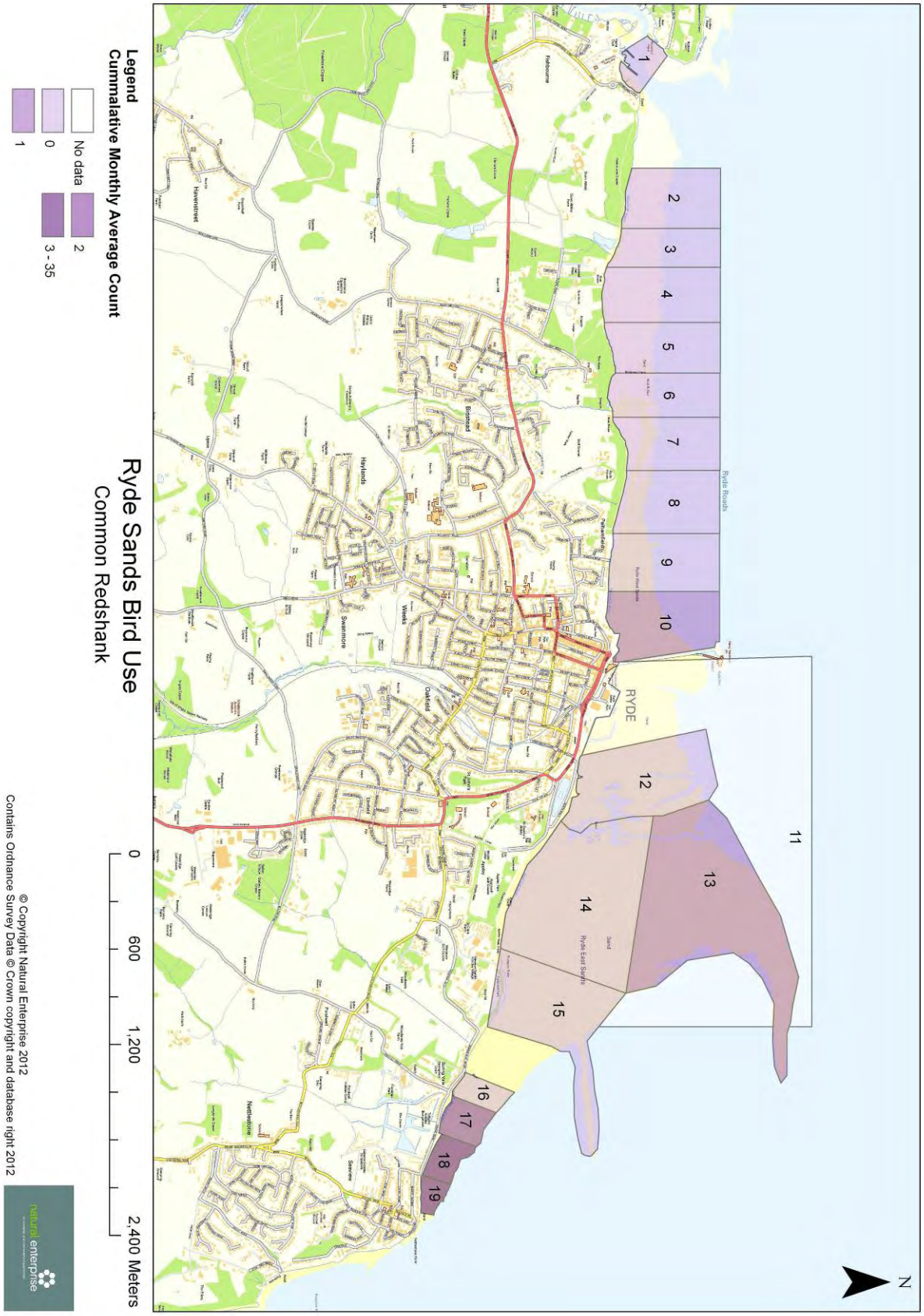

Figure 8. Redshank compartment map

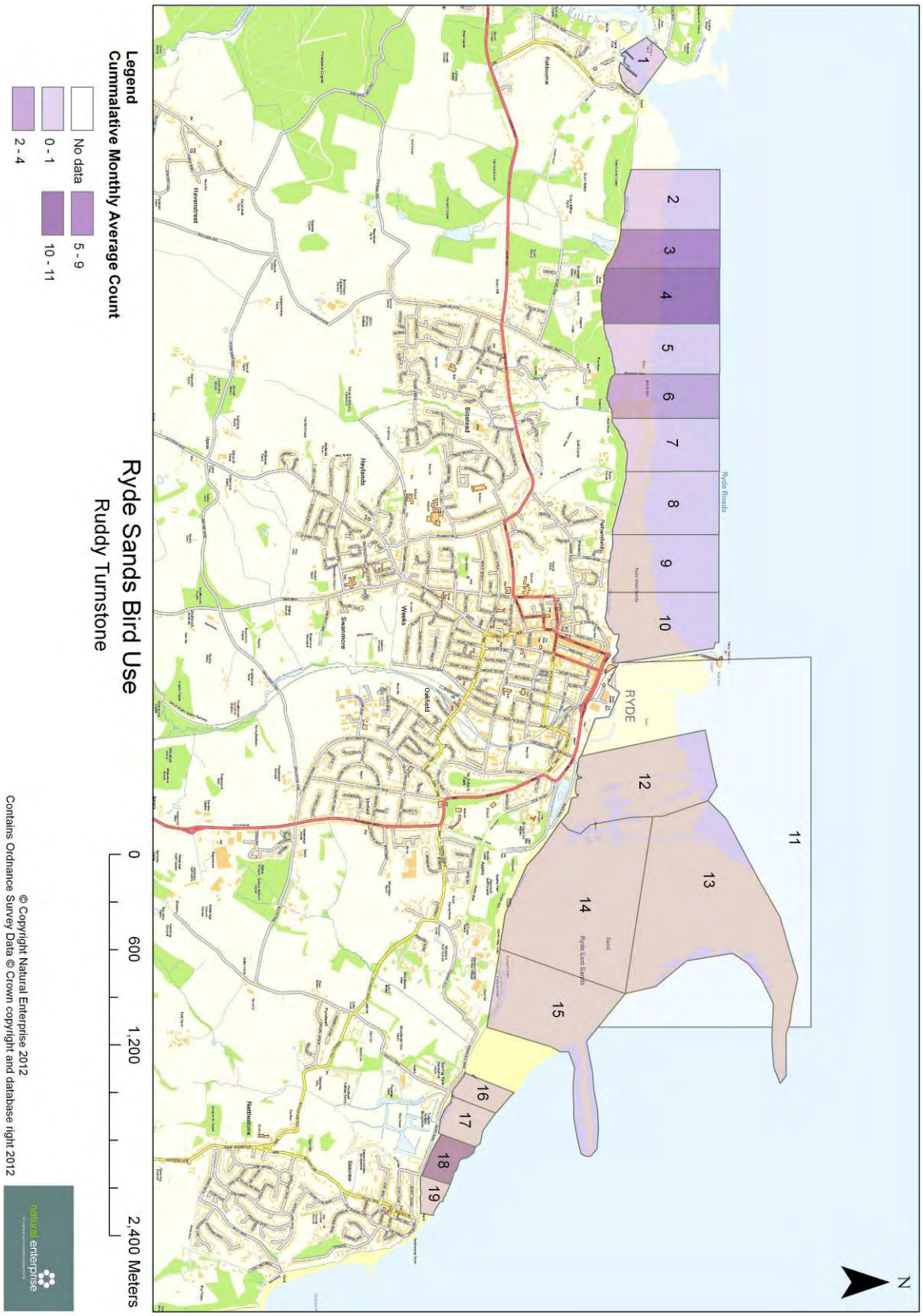

Figure 9. Turnstone compartment map

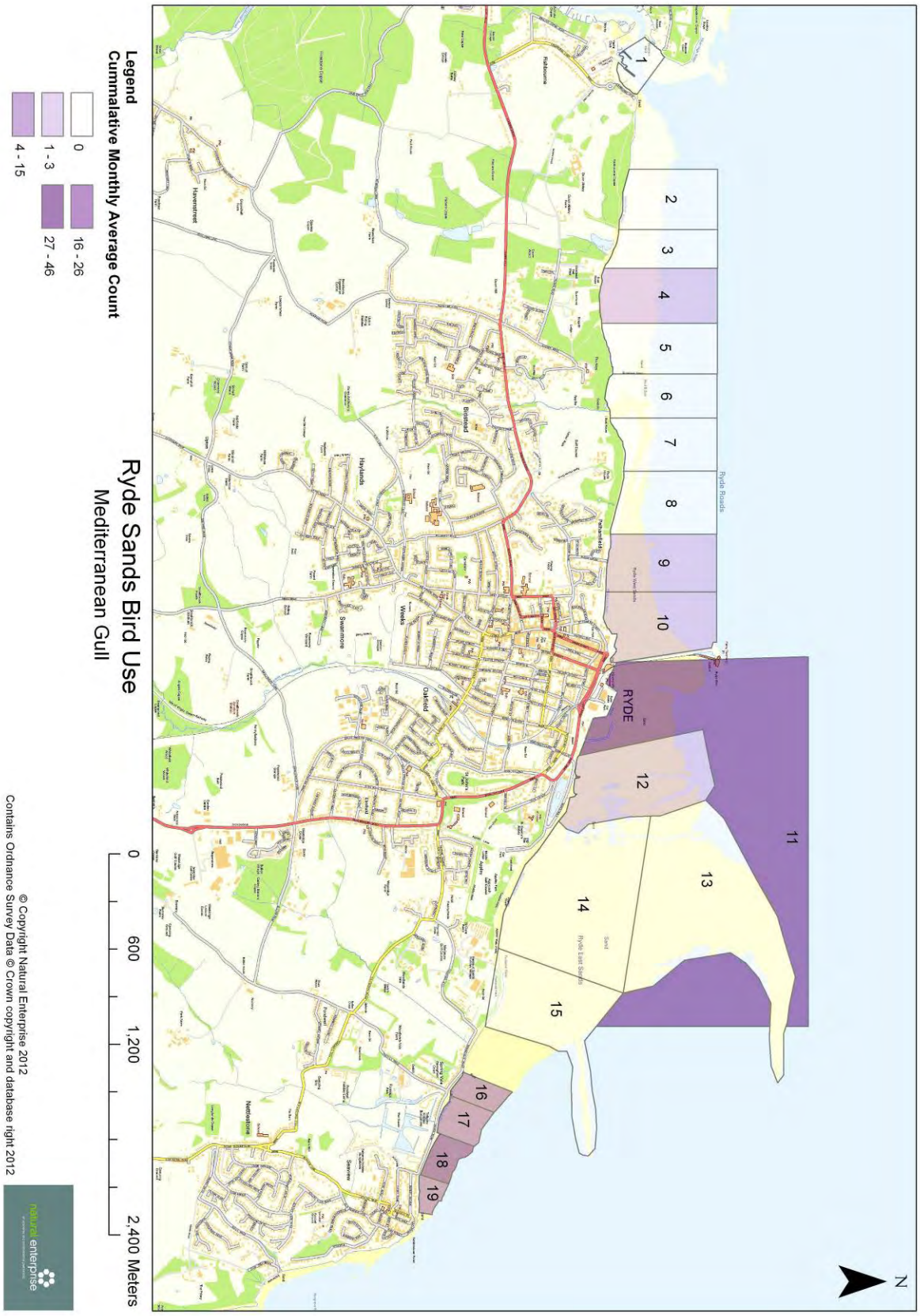

Figure 10. Mediterranean gull compartment map

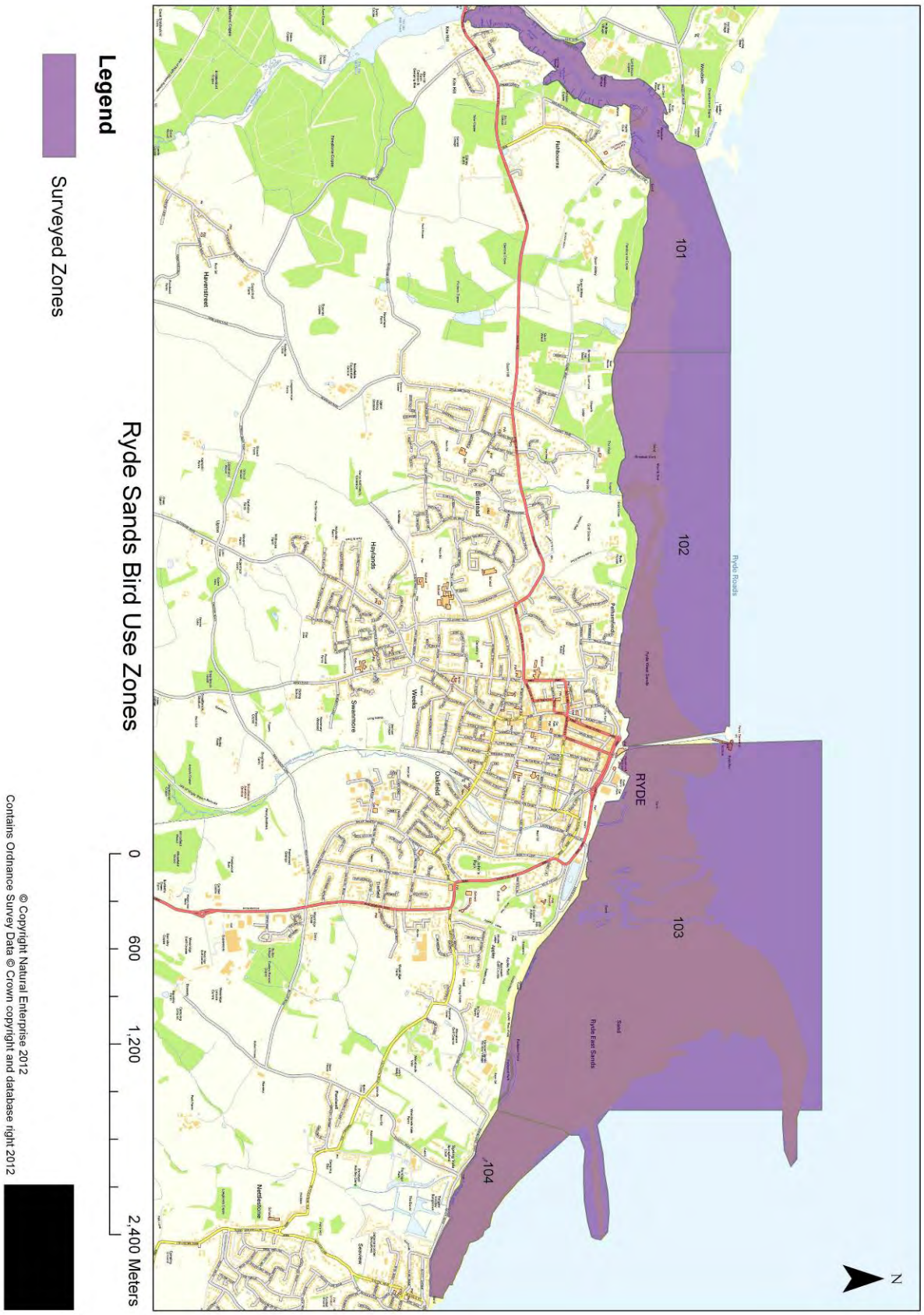

Figure 11. Survey zones

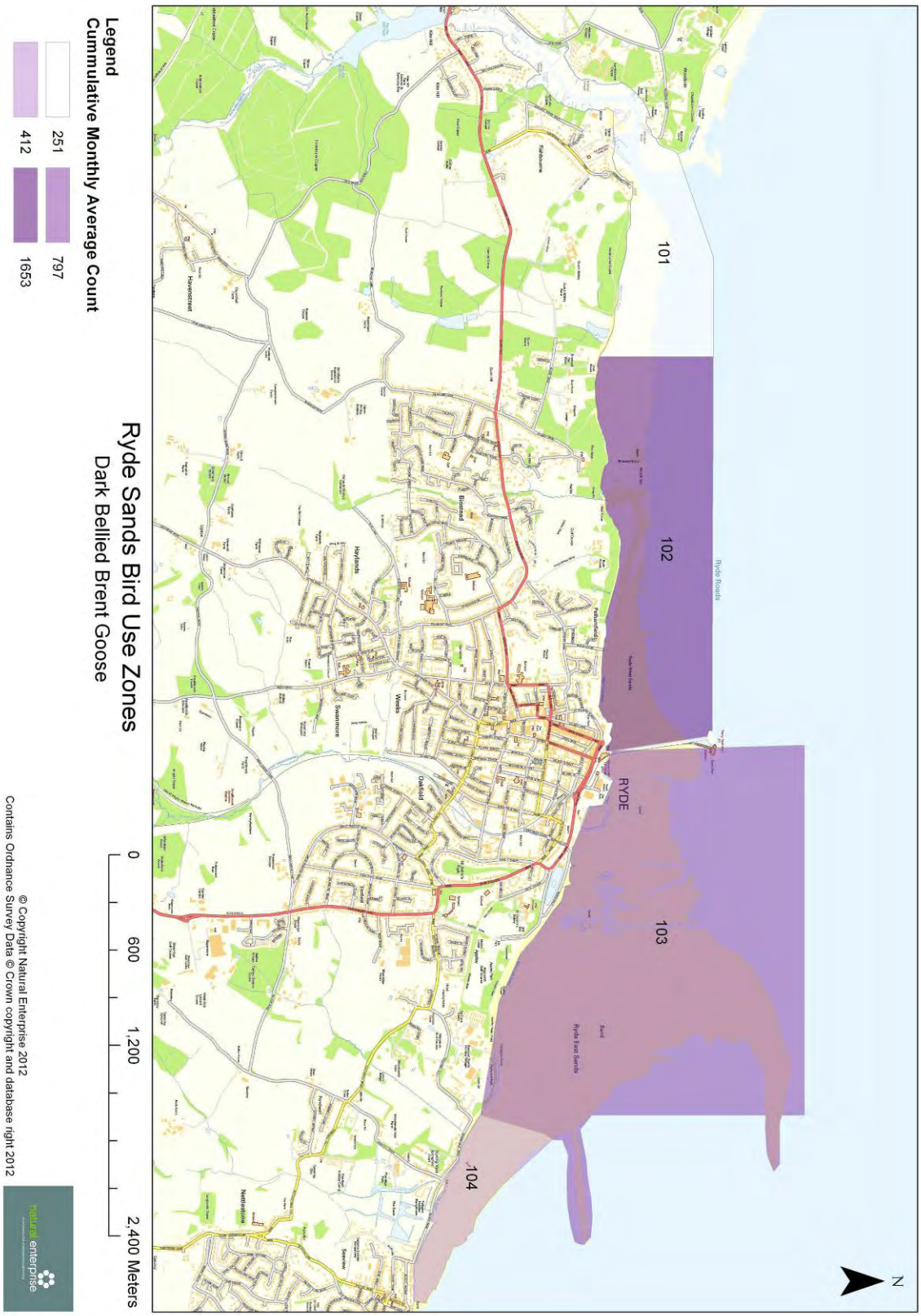

Figure 12. Brent goose zone map

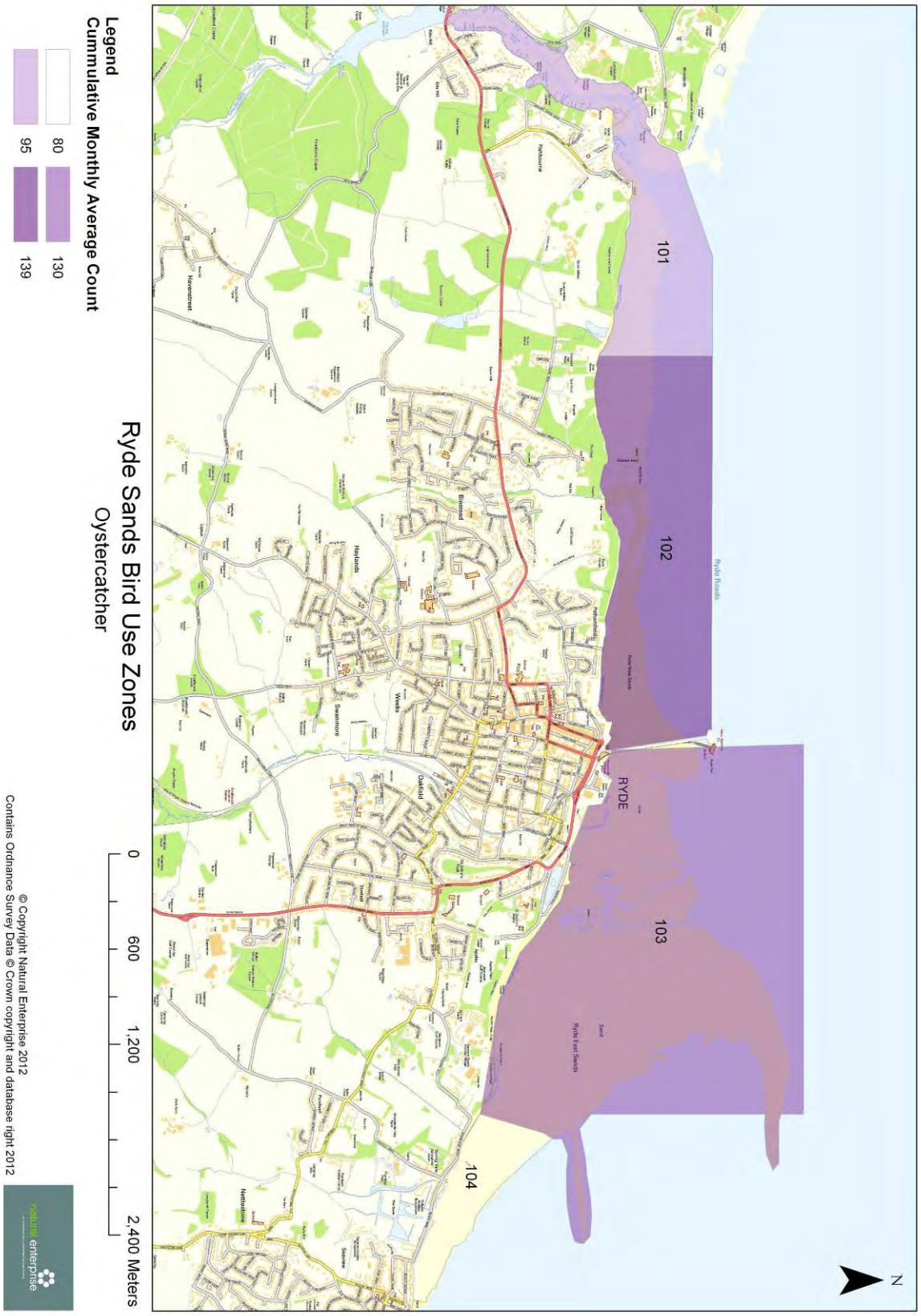

Figure 13. Oystercatcher zone map

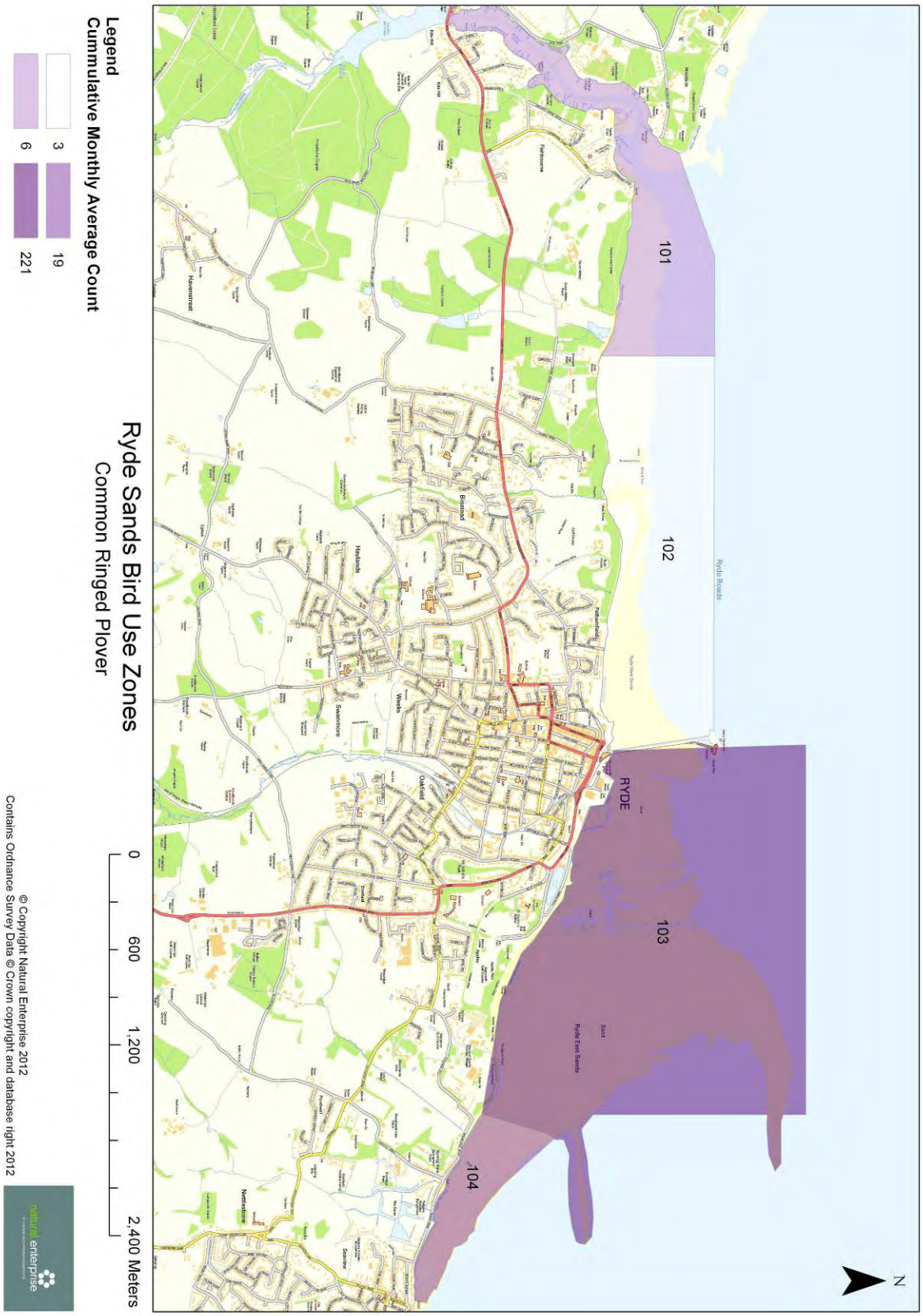

Figure 14. Ringed plover zone map

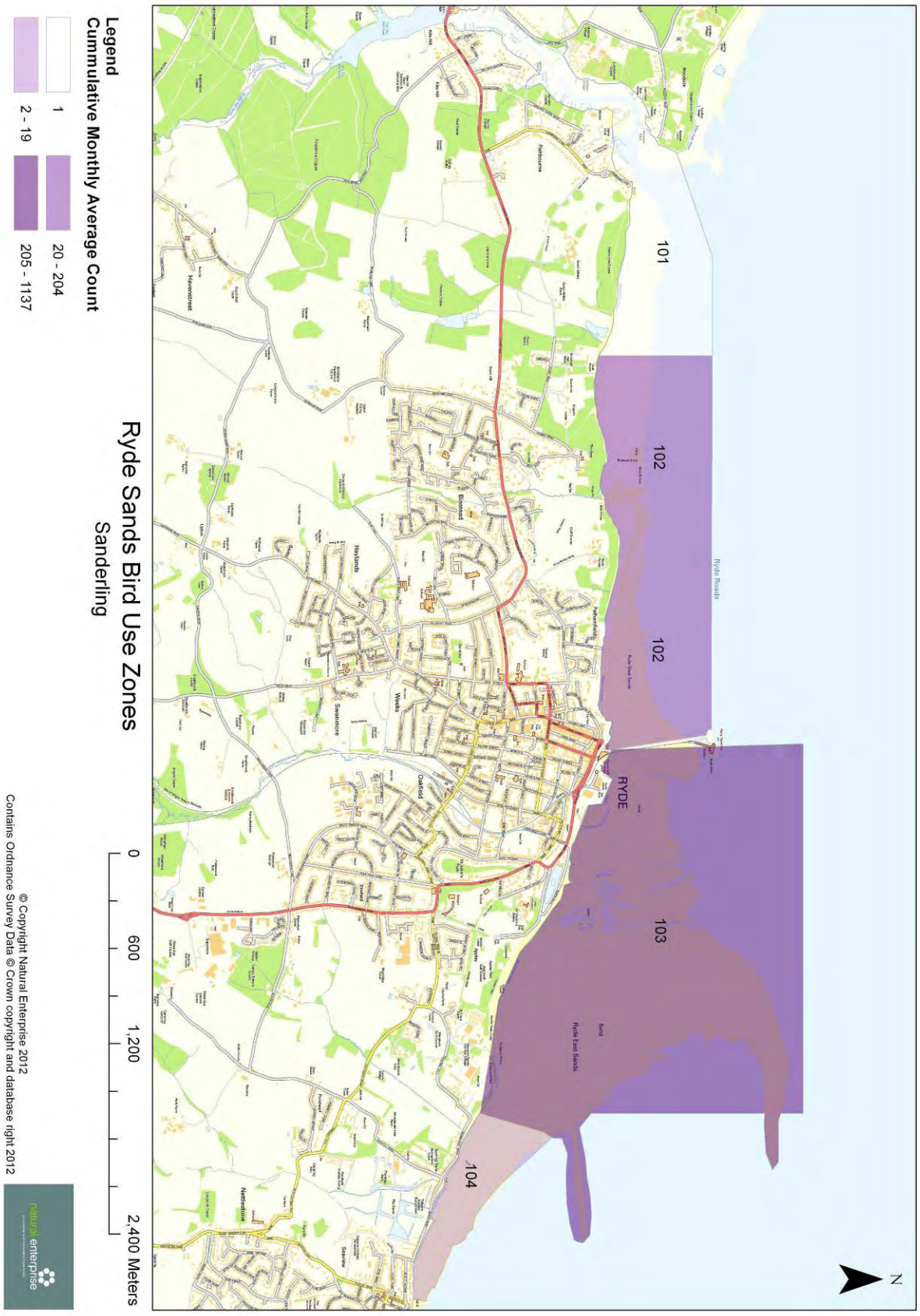

Figure 15. Sanderling zone map

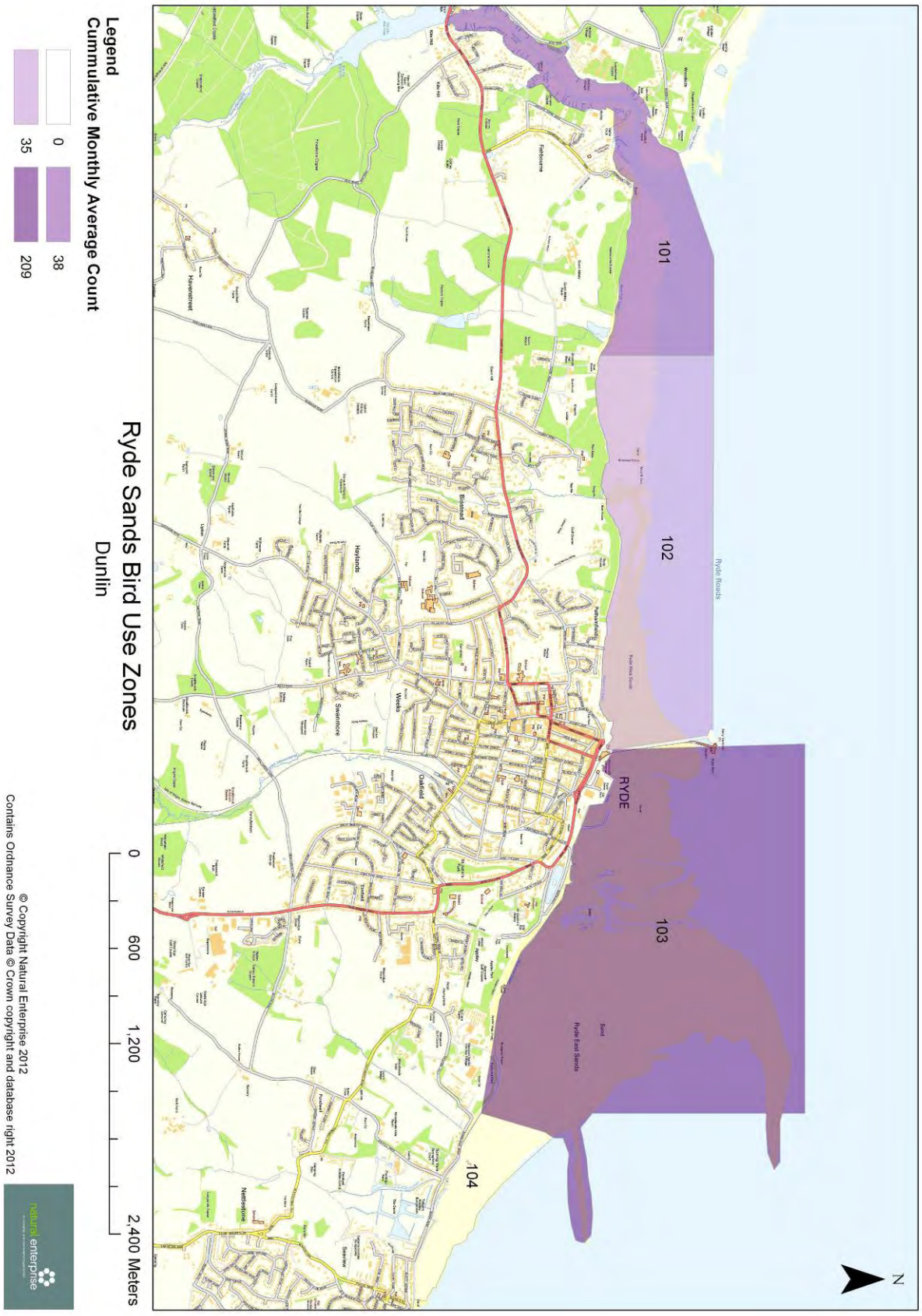

Figure 16. Dunlin zone map

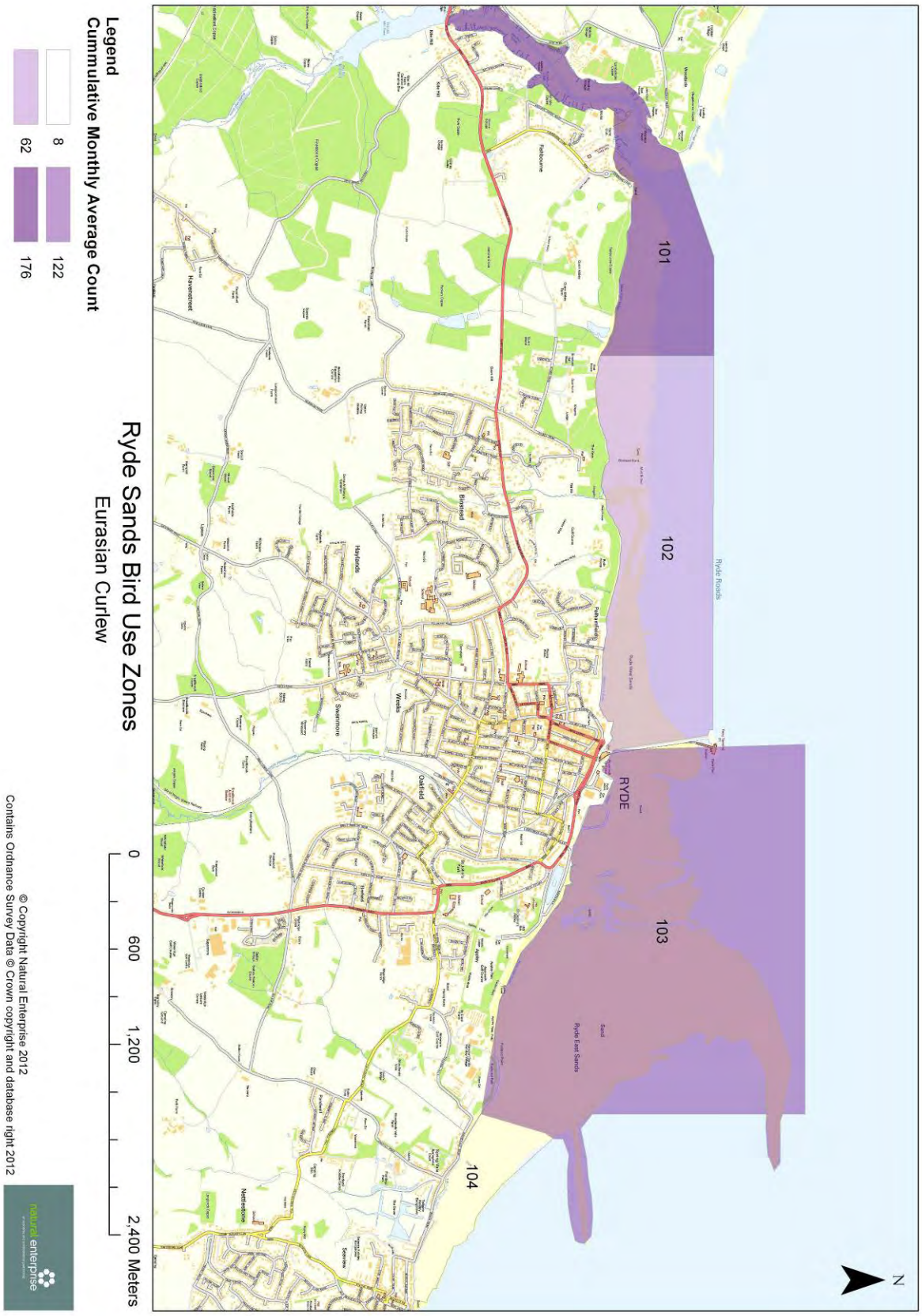

Figure 17. Curlew zone map

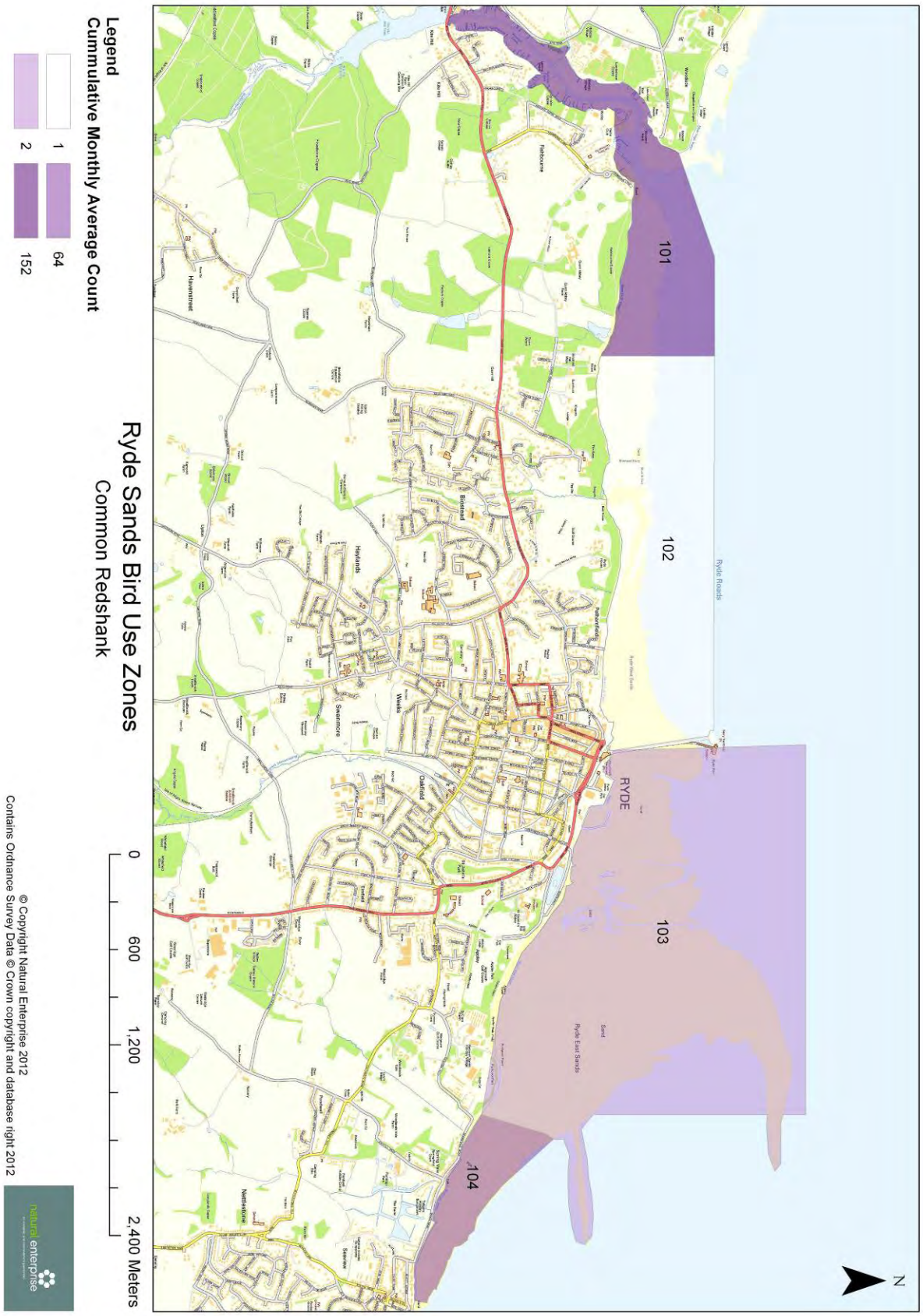

Figure 18. Redshank zone map

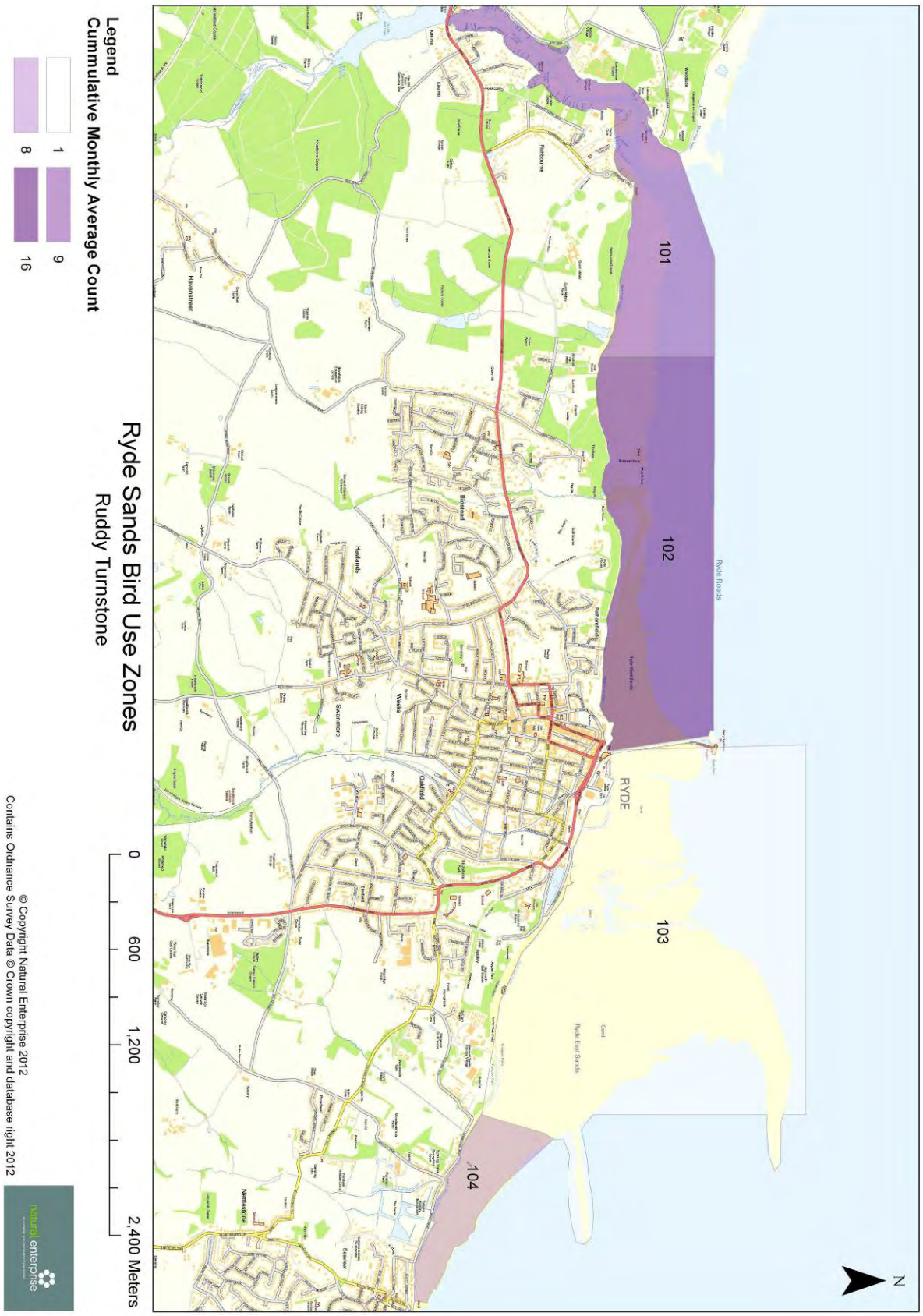

Figure 19. Turnstone zone map

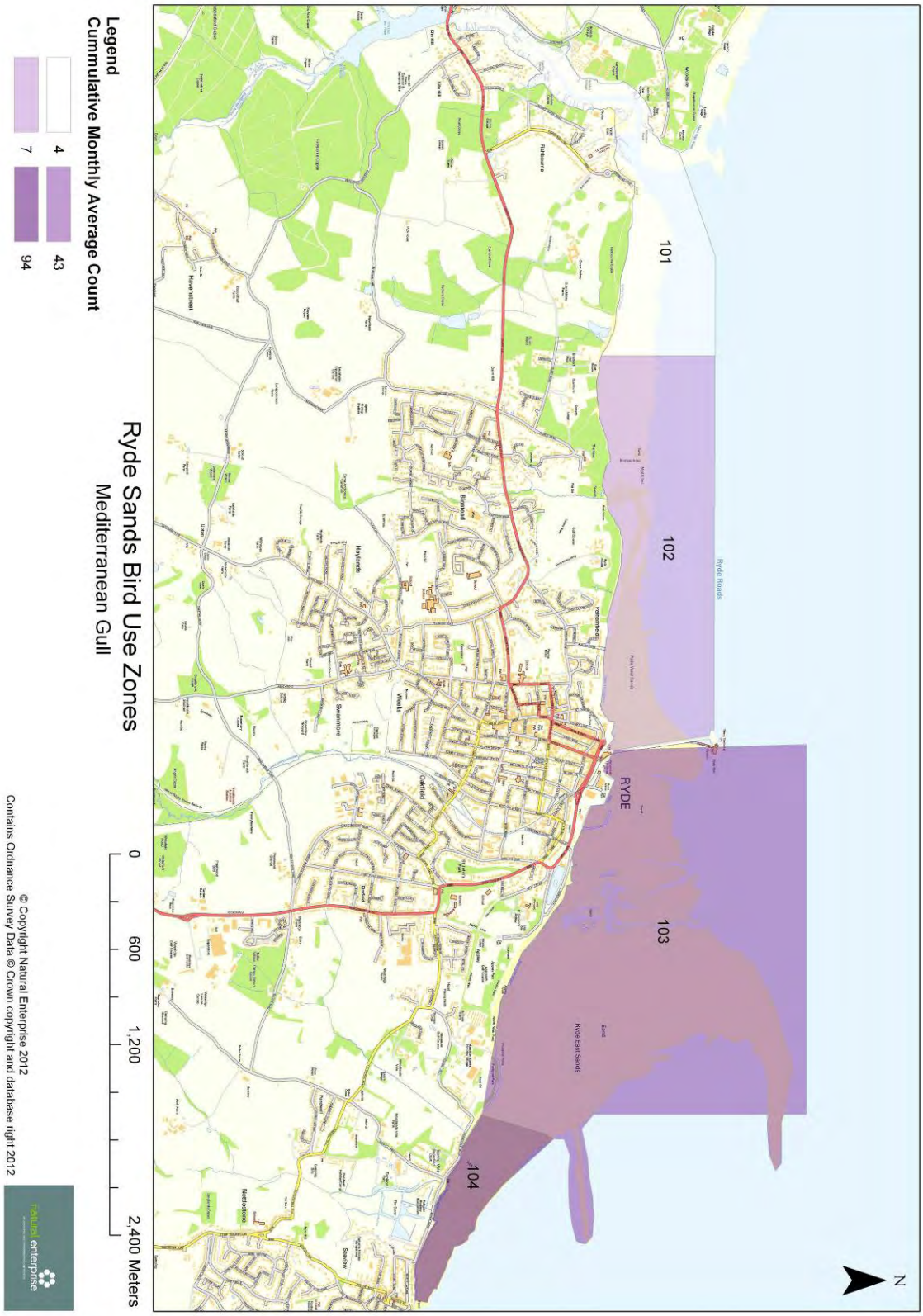

Figure 20. Mediterranean gull zone map

5. Graphs

5.1 The preceding maps provide a spatial summary of bird use across the SSSI. To depict the equivalent temporal pattern it is simpler to construct line graphs of the September to March survey period for each species. The examples given below use the four zones as the locations but add also a summed overall time distribution.

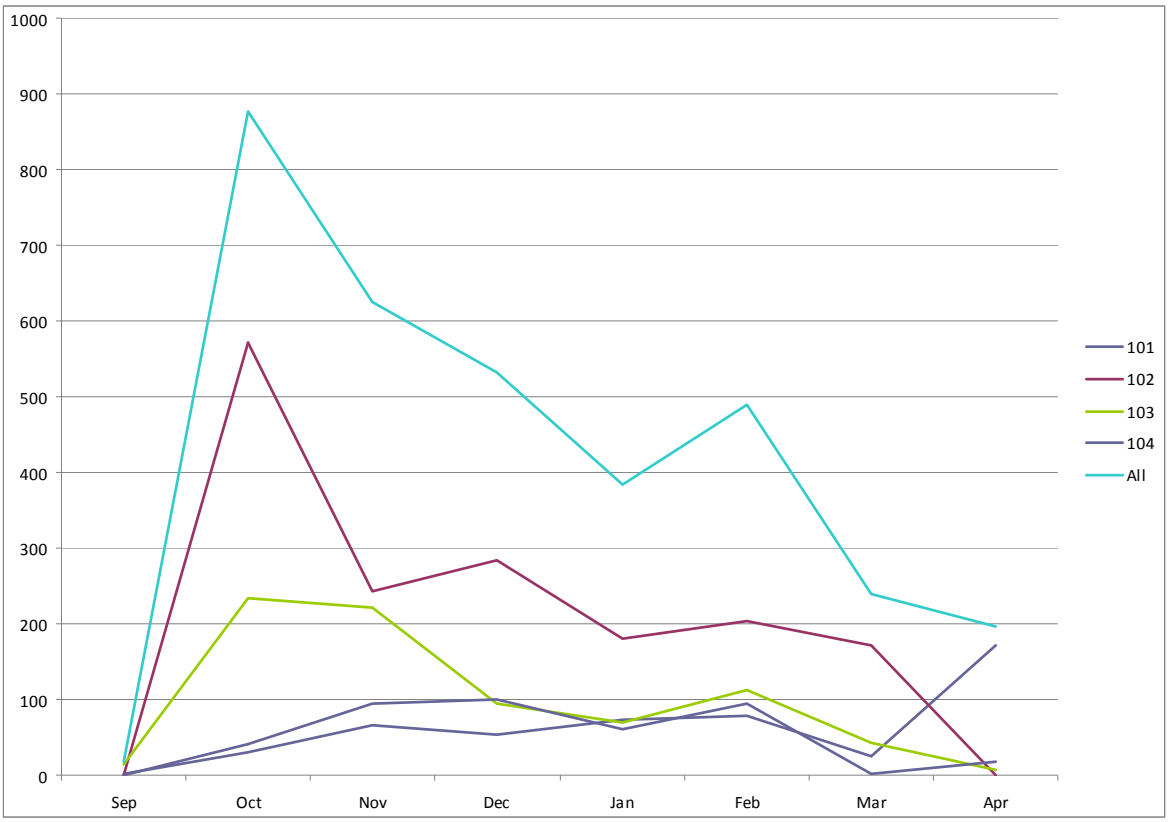

Figure 21. Brent goose numbers by month across Ryde Sands

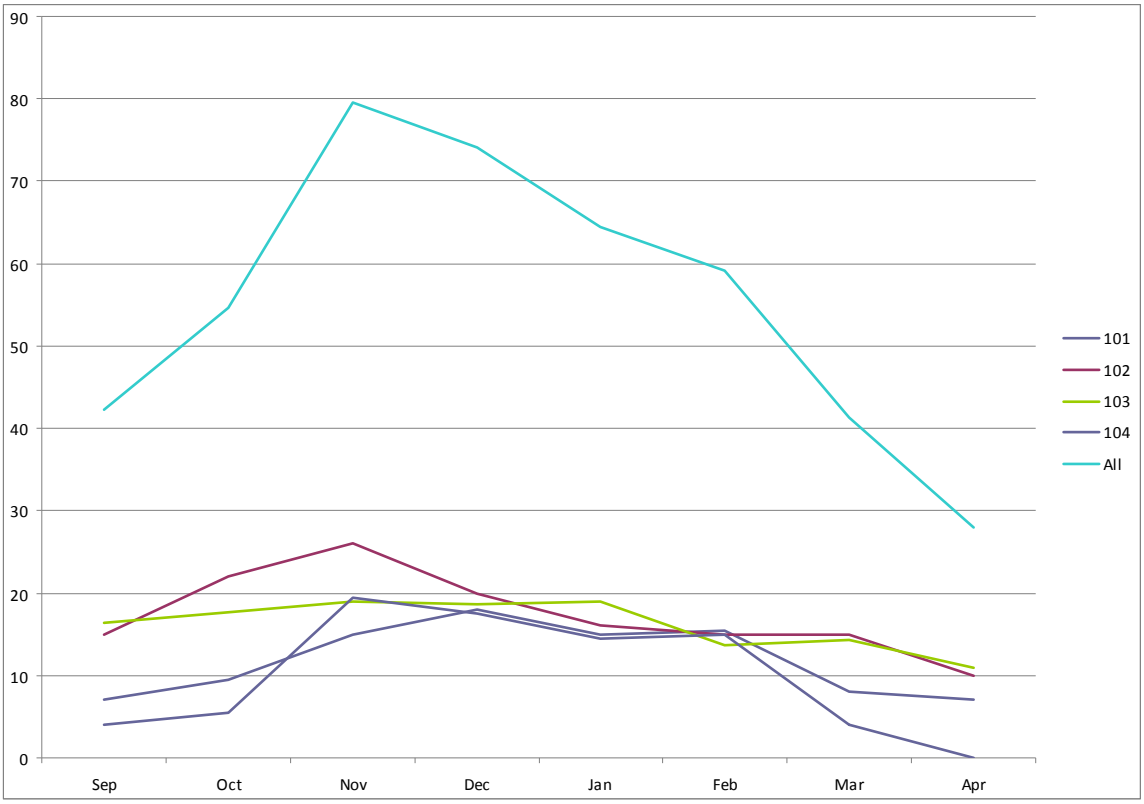

Figure 22. Oystercatcher by month

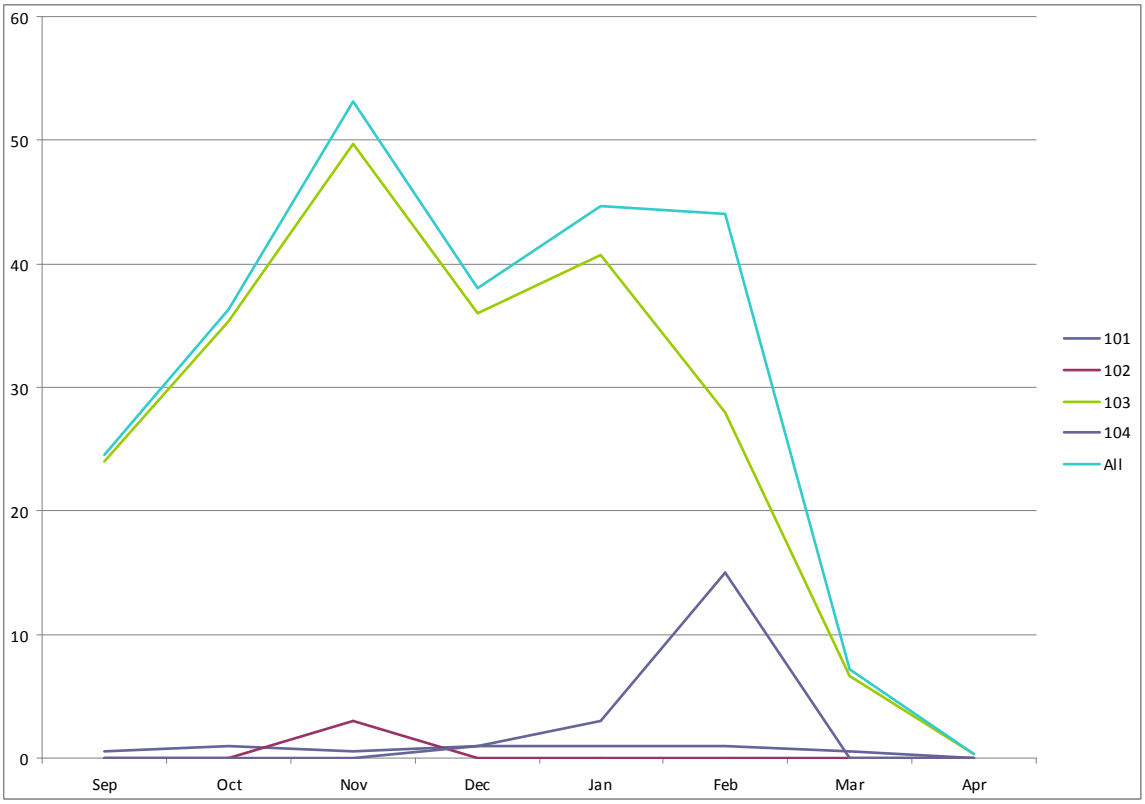

Figure 23. Ringed plover by month

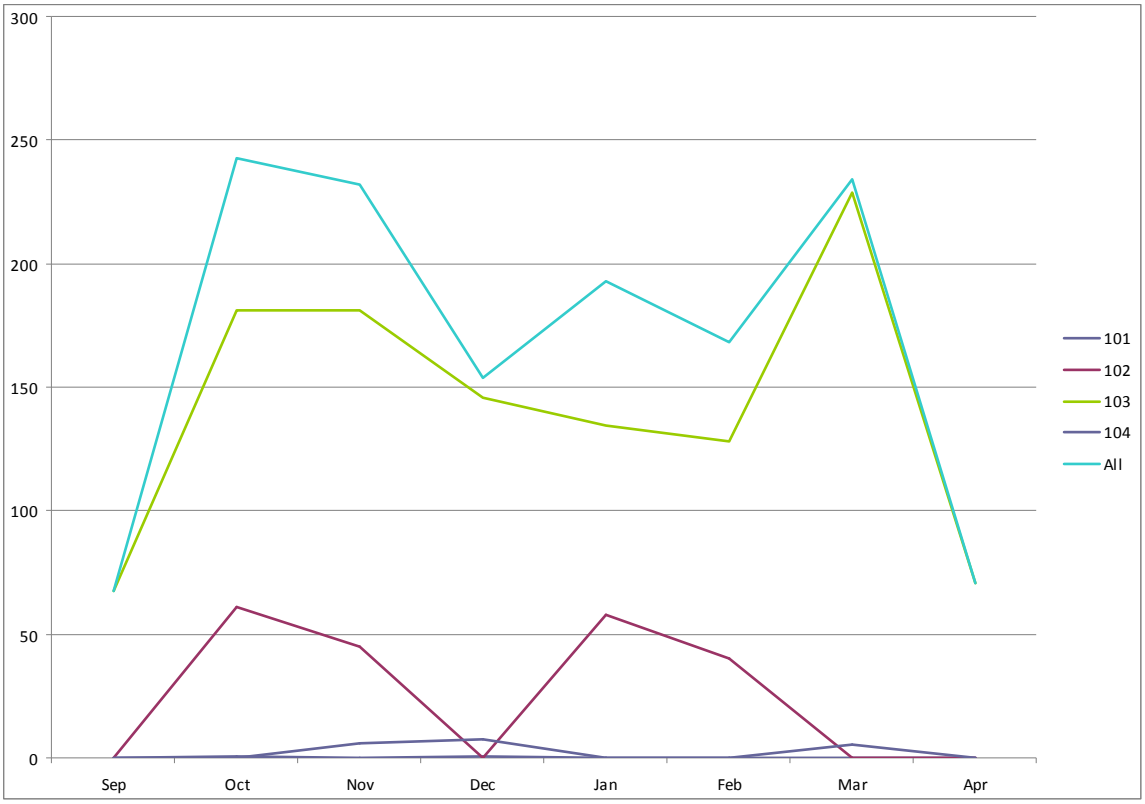

Figure 24. Sanderling by month

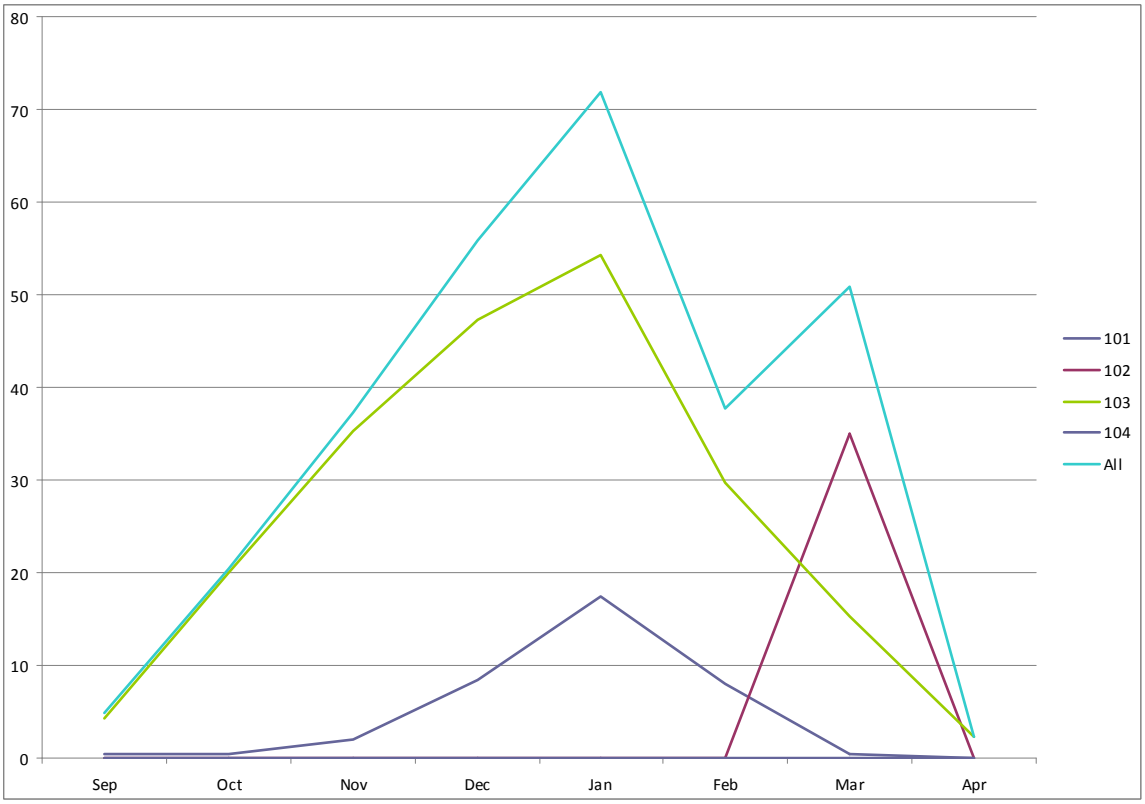

Figure 25. Dunlin by month

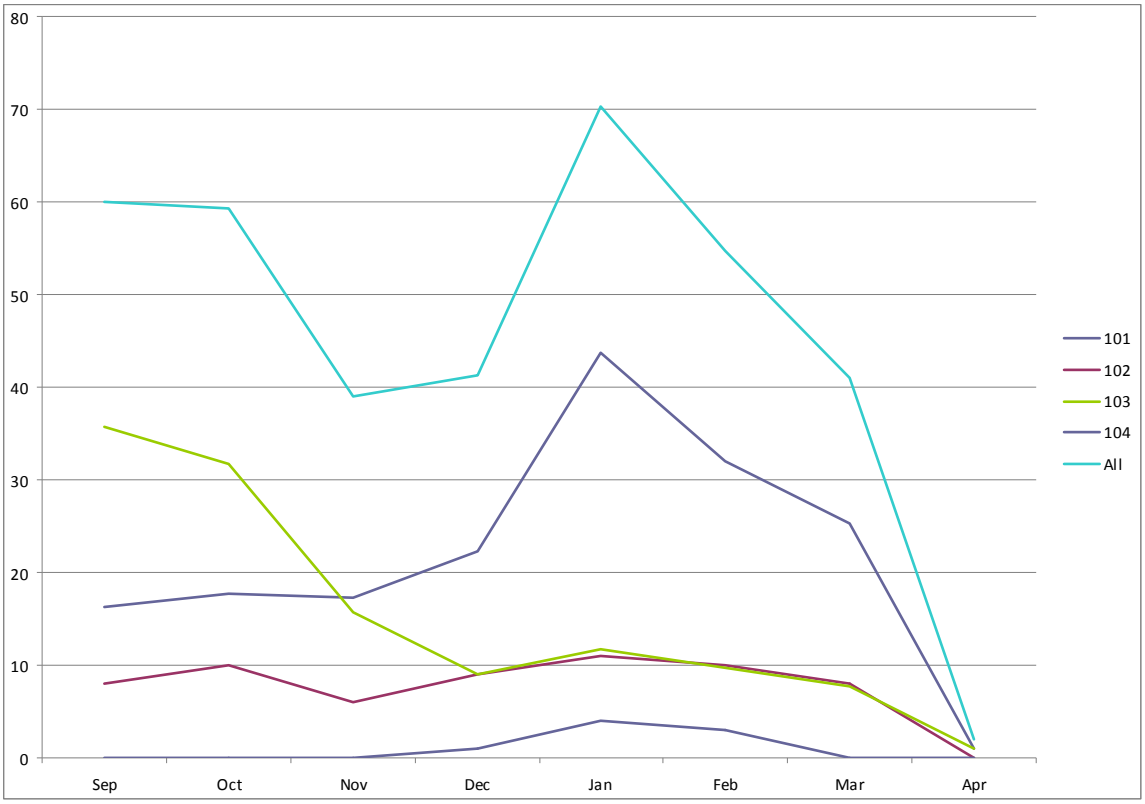

Figure 26. Curlew by month

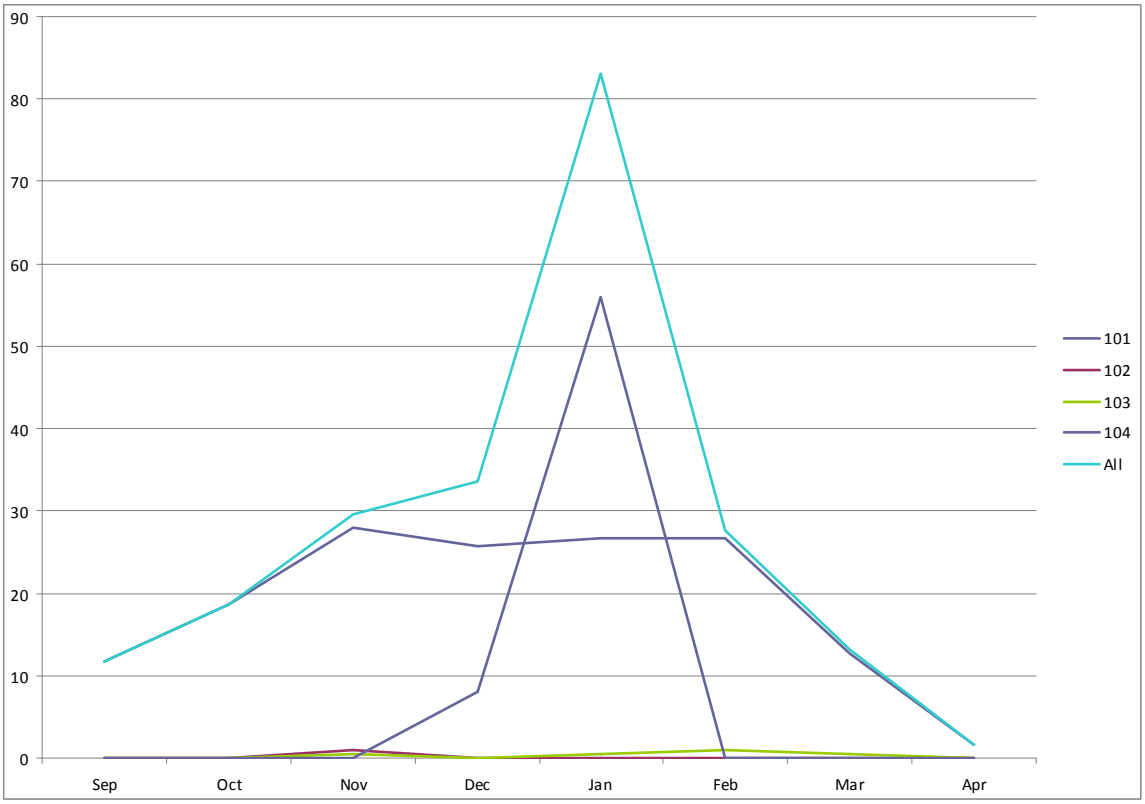

Figure 27. Redshank by month

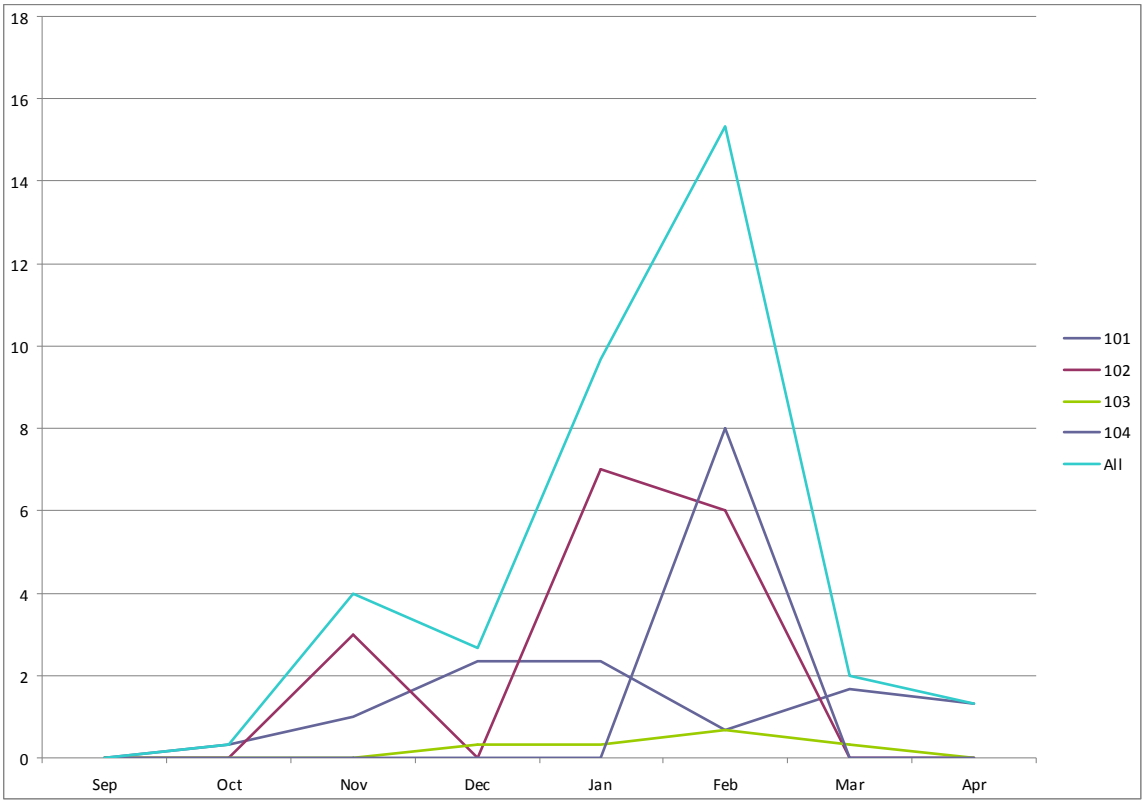

Figure 28. Turnstone by month

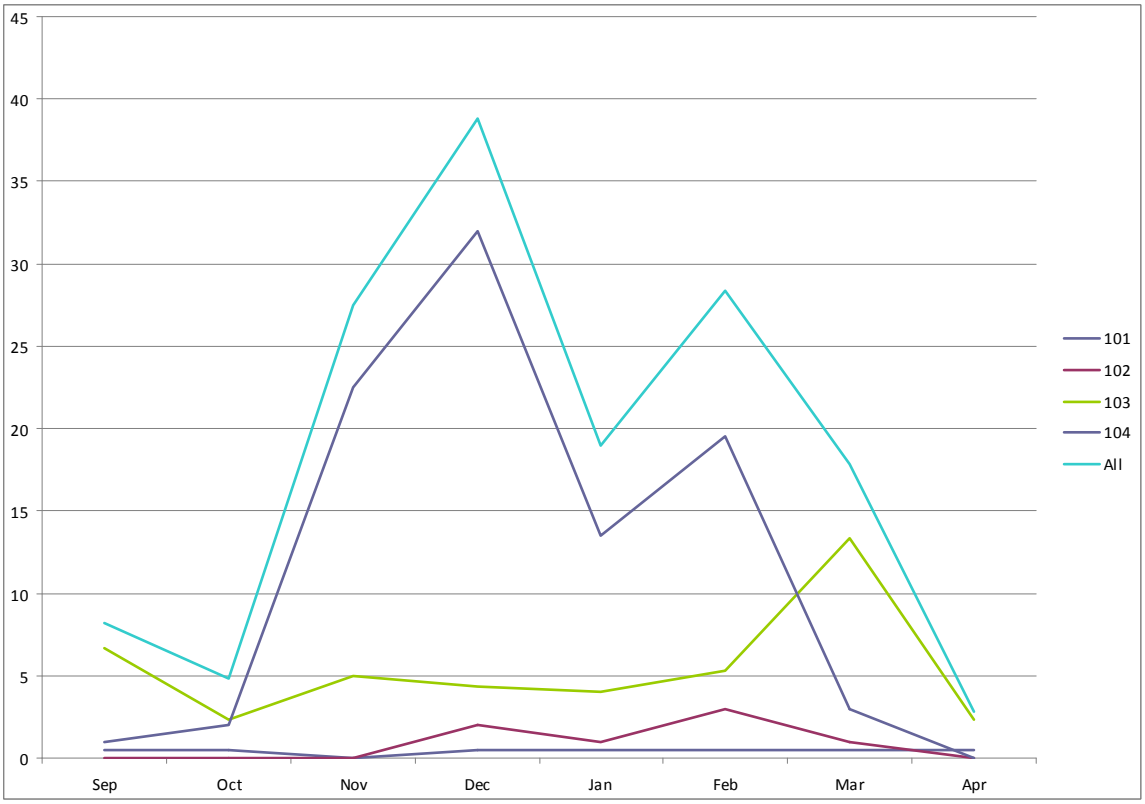

Figure 29. Mediterranean gull by month

6. Commentary

6.1 There is no intention here to fully analyse the data compiled beyond the output of example maps and graphs for the selected target species. The database is available to be interrogated as required by IWC and others who may wish to access it.

6.2 It may be helpful however to provide a brief description of the overall behaviour and movement of target species across Ryde Sands as revealed by the collation of data from reports and through discussion with local bird recorders familiar with the study area.

6.3 Brent Goose

Dark-bellied brent numbers have generally been increasing, particularly for the period around early November when the counts have doubled to 600+ in recent years. Numbers from December to January however have generally dropped to a maximum of 100-200 birds. Reasons could be associated with food availability and disturbance. At high tide birds disperse west along Ryde Sands, Spithead and Hayling; north to Langstone Harbour and east to Bembridge Harbour.
In recent winters there have been annual sightings of 1-2 pale-bellied brent *Branta bernicla hrota* in the eastern part of Ryde Sands.

6.4 Oystercatcher

Numbers have remained fairly static at up to 30. Birds are recorded across the whole area but in larger numbers at Puckpool with up to 20 birds roosting on the Hersey Reserve (Seaview) at high tide. Continual disturbance can cause part of the population to move west to Quarr and even further round into the Medina estuary or east as far as Foreland.

6.5 Curlew

Curlew autumn numbers have shown a decrease over the last thirty years and particularly during the last ten years in line with national trends, while the wintering population has remained stable. High numbers are generally seen in the autumn (September-October) with migratory birds, probably bound for Africa, joining the returning wintering population which then remains. The birds generally feed on the tideline and are solitary; the key feeding sites are east of Ryde Pier to the Wimpy kiosk. Curlew are prone to disturbance from recreational activities (dogs, walkers, kite surfers, horses) and, depending upon the tidal conditions, will move west of the pier to Fishbourne or roost at Woodside and possibly west into the Medina estuary. Alternatively birds in the East of the Sands will occasionally roost at Hersey Reserve or move around to Bembridge Harbour and Brading Marshes.

6.6 Redshank

Relatively rare in the main block of Ryde Sands East. Birds may feed on the beach at Seaview and use the Hersey Reserve. There are higher numbers recorded West of Quarr and into Wootton Creek.

6.7 Turnstone

Like Redshank, rarely present on Ryde Sands East. Most sightings occur during spring and autumn migration although winter records have coincided with storms when seaweed has been washed up in larger than normal amounts. This species, like the redshank, rarely goes further east than Quarr.

6.8 Ringed Plover

Maximum numbers are now recorded in the autumn and early winter (c.30-50) with the Africa-bound migrants using the area to rest and feed. There has been an overall decline in the numbers overwintering, twenty years ago numbers over 100 birds were not uncommon. Recreational activity seems to be a factor in this particularly at the high tide roost by the Wimpy kiosk. If disturbed, birds will move to Bembridge Harbour or across to the mainland.

6.9 Dunlin

Populations have dramatically declined over the past 20 years, from c.100-200 in January compared to numbers of 20 or fewer in recent years. Nationally numbers have fallen although it is worth noting that the Newtown NNR population has not reduced by the same proportion. Like the sanderling, this species seems prone to disturbance when attempting to feed and roost at Ryde.

6.10 Sanderling

Ryde Sands East is identified as a Site of National Importance for this species for WeBS reporting. 200 birds can be present in the autumn when migrant birds will feed up before dispersing and being replaced by a smaller wintering population. Birds move out to feed on the receding tide along the east of Ryde Esplanade before heading west out to the tidal limit. Sanderling attempt to roost at the Wimpy kiosk, approximately one hour either side of high water, but suffer from the high level of disturbance from people and dogs often resulting in them moving off the beach and flying across to the mainland. They have also been recorded as gathering on the Ryde marina wall as the tide is ebbing. The Wader Study Group[6] is currently conducting a Sanderling survey and several colour-ringed birds have been noted on Ryde Sands in 2011/2012.

[6] http://www.waderstudygroup.org/res/project/sanderling.php

6.11 Mediterranean Gull

Ryde Sands is a Site of National Importance for this species for WeBS reporting. Numbers have increased significantly during the past thirty years. Numbers peak in the autumn with in excess of 100 birds and again in March when birds can be see displaying. A number of birds have been identified with rings mainly of European origin; James Gloyn, BTO Regional Representative has collated the details of ringing recoveries. As with the other gull species, these birds are tolerant of disturbance.

6.12 Bar-tailed Godwit

Though not a target species as it now occurs in very low numbers, this is a species that has undergone very significant changes in its usage of Ryde Sands and is included here as a point of comparison.

The wintering population of the nominate race has reduced significantly across the UK since 1995 due to the recent milder winters; this has resulted in birds choosing to over-winter in the Wadden Sea area of the Netherlands. The wintering population twenty years ago was c.100-150 with birds returning to Langstone Harbour at high tide. Now there is an occasional single bird, and perhaps up to 10 might be seen in the late summer-early autumn as birds move through on their way to Africa (sub species *tamyrensis*).

6.13 Feeding Areas

As a broad guide to the study area, the sections of Ryde Sands most important for feeding birds are:

- Compartments 2 and 3, Wootton Creek to Quarr
- Compartments 9 and 10, sandflats immediately west of Ryde Pier
- Compartments 11 (Ryde Marina section) and 12, sandflats between Ryde Marina and the eastern end of the Canoe Lake.

6.14 Roosting Areas

The majority of the target species have their main roosts outside the study area but three: sanderling, ringed plover and dunlin roost regularly between the two breakwaters immediately east of the Monkton Mead outfall and immediately behind the Wimpy kiosk, an area very vulnerable to disturbance from recreational beach use, even at high tide.

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Page 38 Dunlin courtesy of Aigledayres
Page 38 Sanderling courtesy of Mike Baird
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Page 39 Bar Tailed Godwit courtesy of Omarrun