Annex 11.6

Able Humber Ports Facility, Killingholme: Coastal Bird Survey

(Just Ecology)

ABLE HUMBER PORTS FACILITY, KILLINGHOLME:

Coastal Birds Survey – Main Report

Strictly Confidential

Report to Able UK Ltd

by

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1. Executive Summary

Low Tide Survey

1.1 A low tide coastal bird survey was undertaken along the littoral edge of an 800ha study site at Killingholme on the Humber estuary. Standard WeBS recording methods were used with visits taking place monthly from May 2006 until February 2007.

1.2 During this period a total of 25 waterbird species and five gull species were recorded using the littoral edge of the study area at low tide. Totals for the three areas combined ranged from 45 birds in June 2006 to a peak of 3068 in December 2006. Distribution throughout the three sectors was uneven with factors such as wind strength and disturbance influencing the results. Generally, most birds were found in Sector A and the fewest in Sector B, the SSSI site at North Killingholme Haven.

1.3 Three 'hot spot' areas for birds are identified, these supporting the majority of mudflat feeding waterbirds: an area of mudflat directly north of the Able UK Port Facility; a 400 metre stretch of mudflat directly north of the Conoco pipline infrastructure; and, the entire area between the coal loading wharf and the Humber Terminal LPG Gas Caverns pipeline.

High Tide Survey

1.4 A high tide coastal bird survey was undertaken along the same littoral edge of an 800ha study site at Killingholme on the Humber estuary. Standard WeBS recording methods were used with visits taking place monthly from May 2006 until February 2007.

1.5 During this period a total of 28 waterbird species and five gull species were recorded using the study area at high tide.Totals for the three areas combined ranged from 186 birds in June 2006 to a peak of 4500 in October 2006. Distribution throughout the three sectors was uneven with factors such as wind strength and disturbance influencing the results. Generally, most birds were found in Sector B and the fewest in Sector A.

1.6 Three high tide 'hot spot' areas for birds are identified, including the North Killingholme Haven Pits SSSI site. The two others are used when the mudflats are still exposed at high tide; one is an area of mudflat directly north of the Able UK Port Facility, and the other a 400 metre stretch of mudflat directly north of the Conoco pipline infrastructure.

2. Introduction

2.1 JUST ECOLOGY has been commissioned by Able UK Limited to carry out ecological surveys and assessments that will inform the preparation of an Environmental Statement for a proposed ports facility at Killingholme, Humber Estuary, North Lincolnshire. The application site is shown in Figure 2.1

2.2 Important ecological receptors have been identified on the basis of desk research and Extended Phase 1 field survey (Kirby *et al.* 2006), this including the presence of a diversity of waterbirds, including Red- and Amber-listed Birds of Conservation Concern in the UK (Gregory *et al.* 2002). A coastal waterbirds survey was therefore recommended.

2.3 Here we present the results of a low-tide waterbird survey and a high tide waterbird survey, each undertaken along the whole length of the application site.

Figure 2.1: Site location map (courtesy Able UK)

3 Methods

3.1 Background

3.1.1 Coastal birds

The wetland areas of the UK are vitally important for millions of migrant waterbirds which either over-winter here or use the UK as a 'staging post' on the way to and from wintering grounds further south.

Many types of habitats in the UK can be classified as wetlands, including rocky coastlines, lakes, reservoirs, ditches, marshes *etc.* However, in terms of sheer numbers of birds supported, the UK's estuaries are clearly the outstanding sites.

Many species of waterbirds use estuaries for roosting and feeding during the non-breeding season (October-March). Their numbers and distribution can be assessed by counting feeding or roosting birds on the mudflats during the low tide period and also counting roosts at the peak of the high tide.

3.1.2 Monitoring of estuarine waterbirds

To determine which sites are of importance for estuarine birds, it is first necessary to gather information on the numbers of individuals of each species using each site. However, in order to place a site's importance into its proper national and international context, the numbers present in the country and the size of the relevant international bio-geographical population, respectively, also need to be determined. A site is considered internationally important if it regularly holds at least 1% of the individuals in a population of one species or subspecies of waterbirds or if it regularly supports 20,000 or more individual waterbirds (Ramsar Convention Bureau 1988). Similarly, a site is considered nationally important if it regularly holds 1% or more of the estimated (British or all-Ireland) population of a species or subspecies of waterbird. These criteria are referred to in this report when mentioning 'nationally' or 'internationally important' populations.

Within the UK, there is a tradition of voluntary monitoring of estuarine birds dating from the late 1960s. For most of the ensuing period, two monitoring schemes were in place. Firstly the Birds of Estuaries Enquiry (BoEE) and then, since 1993, the Wetland Bird Survey (WeBS). These generally consisted of Core Counts made on high tides and at roost and, to gain a picture of feeding activity at low tide, the WeBS Low Tide Counts scheme commenced in 1992/93, with most of the major estuaries being covered.

3.1.3 Study site Low Tide sectors

Figure 3.1 shows the positions of the 43 sectors counted for the BTO Low Tide survey. The three sections used in the Low Tide survey (ISI, ISJJ and

ISJ1) cover the same area as the present survey and this current survey uses the same count areas exactly. In the current survey, Low Tide Area A equals ISI, Low Tide Area B equals ISJJ and Low Tide Area C equals ISJ1.

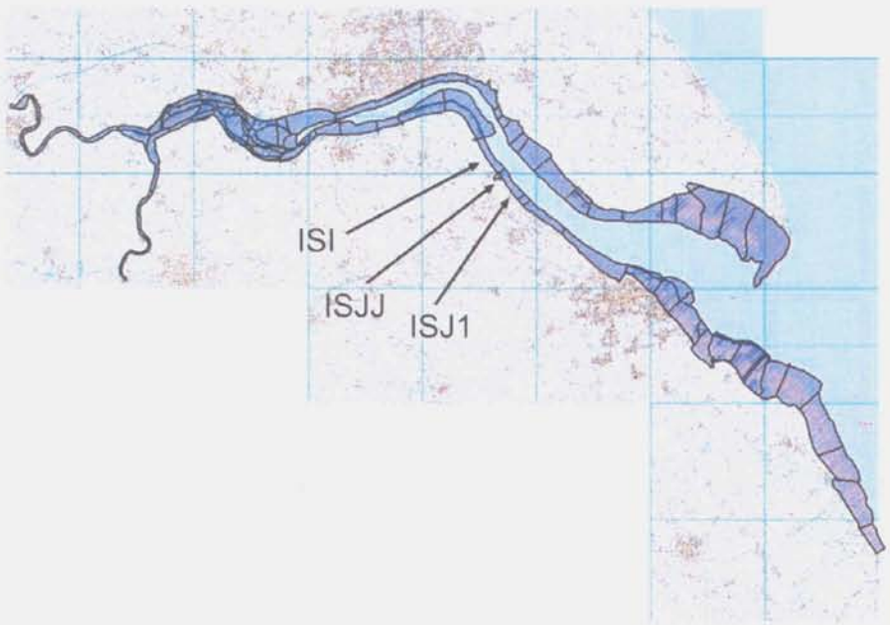


Figure 3.1: Positions of the sectors counted for the Humber Estuary Low Tide counts. The three areas covered by the current study are marked.

3.1.4 Study site High Tide sectors

Figure 3.2 shows the sectors used by the WeBS Core Counts on the Humber Estuary. The sectors 38407, 38201 and 38406 cover the area of the present survey and this current survey uses the title High Tide Area A which matches 38407, High Tide Area B (matching 38201) and High Tide Area C (matching 38406).

3.1.5 Buffer zone

Beyond the study area is a buffer zone of 500 metres and birds have been recorded in this area. For low tide and high tide counts the buffer zone was seen as commencing from the low tide mark out into the Humber.

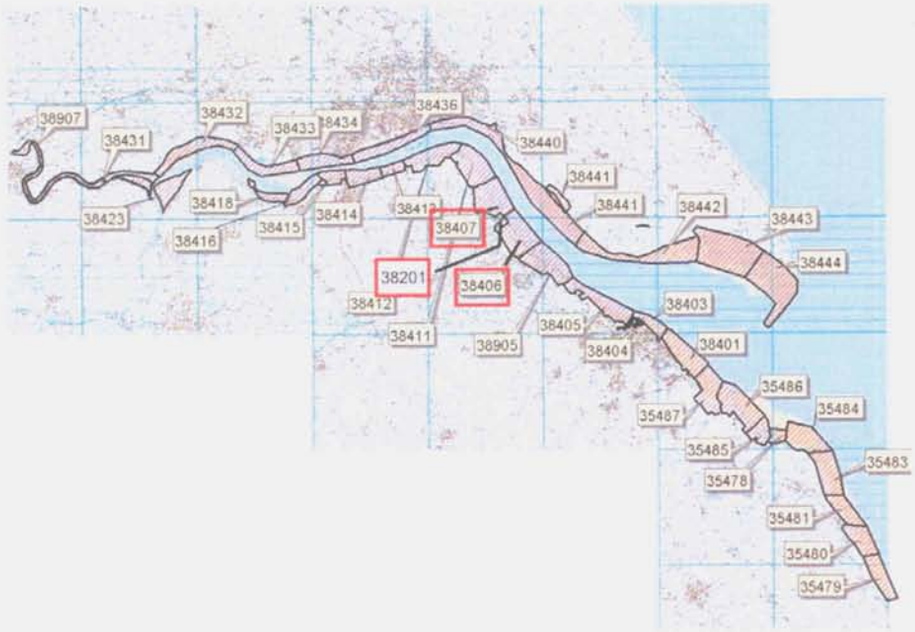


Figure 3.2: Positions of the sectors counted for the Humber Estuary Core counts. The three areas covered by this current study are marked.

3.2 Field methods for low tide counts

A standard methodology was chosen and is the same approach as that used for the Low Tide WeBS counts, where the observer walks a specified route through the study area which gives good views of the mudflats and saltings Using binoculars and telescope the observer identifies the species and counts their numbers, whilst also noting the bird's activity, *i.e.* feeding or roosting. Numbers and the bird's positions are marked onto survey maps. When walking on this route through the study area care must be taken not to disturb birds otherwise they could fly to a new position and maybe 'double-counted'.

Counts began in May 2006 and continued until February 2007. The counts were carried out during two hours either side of low water on Spring tides. Spring tides occur at two weekly intervals, so counts were undertaken every other set of tides, *i.e.* each four week period. When possible, the highest and lowest tides in the cycle were chosen but weather conditions sometimes influenced this choice.

Counts were undertaken when wind force did not exceed Force 4 and there was no heavy rain.

During this survey, although not strictly part of the low tide methodology, inland fields that could be seen from the low tide transect were also scanned for waterbirds either feeding or at roost.

3.3 Field methods for high tide counts

A standard methodology was used and is the same as that used by the national WeBS counts. This entails the observer walking a set route through the study area so that the water's edge and the inland fields, which make up the High Tide count areas, are well in view and are covered with the aid of binoculars and telescope, for any roosting flocks or individual birds. Numbers and the bird's positions are marked onto survey maps. When walking on the route through the study area care must be taken not to disturb birds otherwise they could fly to a new position and maybe 'double-counted'.

Counts began in May 2006 and continued until February 2007. The counts were carried out during two hours either side of high water on spring tides. Spring tides occur at two weekly intervals, so counts were undertaken every other set of tides, *i.e.* each four week period. When possible the highest and lowest tides in the cycle were chosen but weather conditions sometimes influenced this choice.

Counts were undertaken when wind force did not exceed Force 4 and there was no heavy rain.

4. Results for low tide counts

4.1 Overview

4.1.1 A total of 25 species of waterbird and five species of gull were recorded using Low Tide Areas A, B and C during the low tide period (Table 4.1). In general they are a good representative suite of estuarine birds found on the Humber estuary. Some are common but others are afforded a special conservation status and are presented in detail later in this report.

Figure 4.1.1 Low tide monthly totals of waterbirds and gulls per sector.

MONTH	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB
WATERBIRDS										
Sector A	17	25	20	36	869	206	984	2607	946	24
Sector B	17	4	22	66	1111	2034	263	110	379	235
Sector C	81	7	15	59	138	236	1068	342	112	102
GULLS										
Sector A	0	0	4	45	67	8	0	0	0	0
Sector B	0	0	11	44	0	0	2	2	0	0
Sector C	9	0	0	18	24	25	4	7	2	14

4.1.2 Low tide waterbird distribution was uneven across the sectors and is discussed here.

Sector A

A small number of waterbirds were recorded around the freshwater outflow of the East Halton Skitter; behaviour includes washing in the freshwater flow. Small numbers of waterbirds were recorded from the next 2.5 kms of the river edge going south towards the Conoco pipeline installation. The mudflat is at its narrowest here and is perhaps subject to some scour effect. Generally, only Curlew and Redshank were recorded in this part of the sector. Although, of significance, was a feeding flock of over 800 Black-tailed Godwits (40% of the month's total godwits recorded), were observed feeding along a 300 metre stretch of mudflat directly in front of the derelict brick kiln site.

At the southern most part of Sector A, the mudflat area is wider and it is here that the majority of the feeding and roosting waterbirds are found at low tide. The sector's peak month was December 2006 when 85% of the waterbirds recorded in all three sectors were found in Sector A.

Percentage of all waterbirds recorded at low tide that were found in Sector A

MONTH	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB
Sector A	15%	69%	35%	22%	41%	8%	42%	85%	66%	7%

Sector B

This sector consists of the SSSI site immediately behind the Able UK Port Facility at North Killingholme Haven. At low tide this held between 11% and 82% of the total number of waterbirds recorded in the three sectors. The peak count of 82% in October is due to a total of 1750 Black-tailed Godwits at roost on the site.

Percentage of all waterbirds recorded at low tide that were found in Sector B

MONTH	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB
Sector B	15%	11%	39%	41%	52%	82%	12%	4%	26%	65%

Sector C

This sector starts just south of the Able UK Port Facility. The mudflat is narrow here and few birds are recorded. A small freshwater outflow (Killingholme Marsh Drain Outfall), 200m north of the Conoco installation, has one or two waders associated with it. At the southern end of the sector, either side of the Conoco pipeline installation, the mudflat is wider and flatter and probably consists of a softer substrate. Most feeding and roosting birds are found in this area. The peak month was November when 47% of the total birds recorded in all three sectors were found in Sector C.

Percentage of all waterbirds recorded at low tide that were found in Sector C

MONTH	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB
Sector C	70%	20%	26%	37%	7%	10%	47%	11%	8%	28%

During this survey inland fields were scanned for waterbirds, but none were recorded except for two small groups of Curlew in November 2006 in the fields in Area 2a.

4.1.2 For the months of October, November and December 2006 and January 2007, the distribution and abundance of the key species (Lapwing, Dunlin, Black-tailed Godwit, Curlew and Redshank) are shown on distribution maps in Appendix 1. In general the maps show a dispersed distribution for each species throughout their chosen feeding habitat, whilst a few areas show a more clustered distribution and indicate favourite feeding areas or 'hot spots'. Three areas are of note, one just straddling the buffer zone, and the other two within the buffer zone.

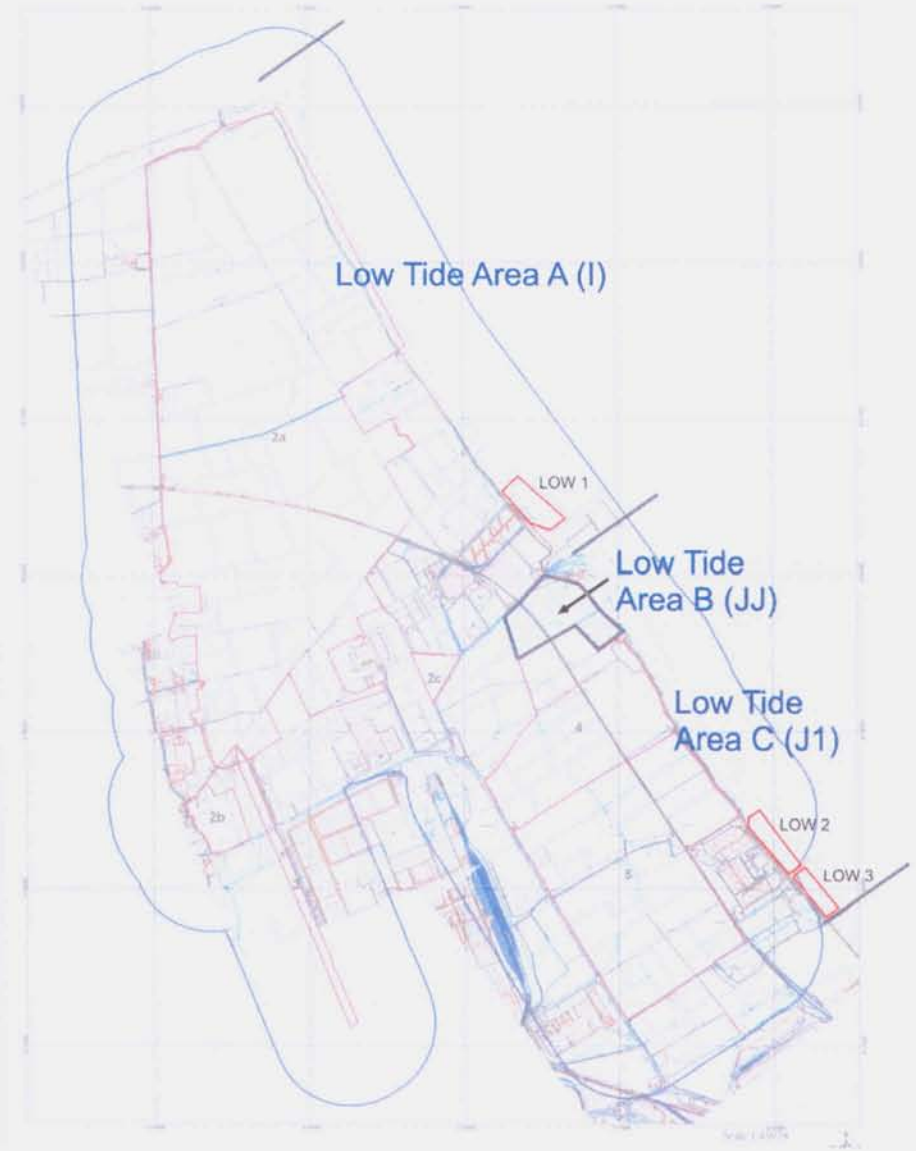
Table 4.1: The 25 species of waterbird and five species of gull found during the survey and their abundance within the three count sectors.

COUNT SECTION	**Area A**									
COUNT MONTH	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB
Waterbirds										
Cormorant	0	0	0	0	0	1	2	0	1	0
Grey Heron	0	0	0	0	1	0	0	0	0	0
Mute Swan	0	0		0	0	1	0	0	0	0
Shelduck	9	16	10	27	0	2	0	2	7	9
Mallard	0	0	0	0	0	2	19	25	19	0
Teal	0	0	0	0	0	0	0	0	20	11
Oystercatcher	0	2	1	0	0	6	0	0	0	1
Avocet	4	4	0	0	0	0	0	0	0	0
Ringed Plover	0	0	0	0	0	1	0	0	0	0
Lapwing	0	0	0	0	0	177	600	2100	885	0
Dunlin	0	0	0	0	0	0	313	435	0	0
Black-tailed Godwit	0	0	0	0	824	0	0	0	0	0
Curlew	2	5	5	9	11	2	41	24	1	1
Redshank	1	7	0	0	19	14	11	21	13	2
Common Sandpiper	0	0	4	0	0	0	0	0	0	0
Turnstone	0	0	0	0	15	0	0	0	0	0
Gulls										
Black-headed Gull	0	0	4	37	65	8	0	0	0	0
Herring Gull	0	0	0	8	2	0	0	0	0	0
TOTAL	16	34	24	81	937	214	984	2607	946	24

COUNT SECTION	**Area B**									
COUNT MONTH	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB
Waterbirds										
Grey Heron	1	0	0	2	0	2	3	0	1	0
Shelduck	0	0	0	0	0	0	0	0	0	3
Teal	0	0	0	0	4	38	16	23	90	17
Mallard	0	0	6	5	8	47	87	0	27	6
Shoveler	0	0	0	0	0	53	35	6	19	46
Tufted Duck	0	0	0	0	0	4	0	0	0	0
Moorhen	2	0	0	0	0	6	0	0	0	0
Coot	0	0	2	3	0	0	0	0	0	0
Oystercatcher	0	0	4	2	0	0	0	0	0	0
Water Rail	0	0	0	0	0	0	0	0	0	0
Avocet	0	4	2	0	0	0	0	0	0	0
Ringed Plover	3	0	0	0	0	0	0	0	0	0
Lapwing	0	0	0	7	2	121	0	11	74	35
Golden Plover	0	0	0	0	0	0	0	0	0	1
Snipe	0	0	0	0	0	3	0	0	0	0
Black-tailed Godwit	0	0	0	17	1050	1750	0	0	0	0
Curlew	4	0	1	7	2	0	2	9	3	0
Redshank	7	0	7	23	45	10	120	61	156	127
Gulls										
Black-headed Gull	0	0	11	44	0	0	0	2	0	0
Great Black-backed Gull	0	0	0	0	0	0	2	0	0	0
TOTAL	17	4	33	110	1111	2034	265	112	370	235

COUNT SECTION	Area C									
COUNT MONTH	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB
Waterbirds										
Cormorant	0	0	0	1	0	0	0	0	0	0
Grey Heron	1	0	0	3	0	0	0	0	0	0
Shelduck	10	0	4	15	51	11	11	23	72	40
Mallard	2	2	0	0	0	0	0	0	0	0
Oystercatcher	0	4	0	2	0	0	0	0	0	2
Ringed Plover	20	0	0	3	12	3	0	0	0	0
Golden Plover	0	0	0	0	1	0	0	0	0	0
Lapwing	0	0	0	2	0	3	603	0	0	0
Dunlin	15	0	0	0	23	0	365	250	0	0
Black-tailed Godwit	0	0	0	0	7	195	0	0	0	21
Curlew	33	1	11	21	21	6	74	11	38	14
Redshank	0	0	0	12	17	18	15	58	2	25
Turnstone	0	0	0	0	6	0	0	0	0	0
Gulls										
Black-headed Gull	8		0	12	20	21	2	6	2	11
Common Gull	1	0	0	0	0	0	0	0	0	0
Lesser Black-backed Gull	0	0	0	4	0	2	0	0	0	0
Herring Gull	0	0	0	2	2	2	0	0	0	3
Great Black-backed Gull	0	0	0	0	2	0	2	1	0	0
TOTAL	90	7	15	77	162	261	1072	349	114	116

Figure 4.1: Study area showing three 'hot spot' areas for waterbirds feeding at low tide – Low 1, 2 and 3.



4.2 Key species of the low tide counts

4.2.1 Certain bird species have been afforded a high conservation status in the UK, usually because of their threatened or declining status.

4.2.2 Birds of Conservation Concern (BoCC) in the UK have been listed under a partnership of Governmental and non-governmental organisations. Every five years the listings are reviewed for the 247 species included, with species categorised as – red, amber or green. Forty species are currently on the red-listed or most threatened category.

4.2.3 Also important are species flagged as a priority under the UK Biodiversity Action Plan. This Plan combines new and existing conservation initiatives with an emphasis on a partnership approach. It contains 59 objectives for conserving and enhancing species and habitats as well as promoting public awareness and contributing to international conservation efforts. Also included are 391 Species Action Plans (SAPs) and 45 Habitat Action Plans (HAPs) for the UK's most threatened (i.e. "priority") species and habitats. These plans describe the status of each habitat and species, outline the threats they face, set targets and objectives for their management, and propose actions necessary to achieve recovery.

4.2.4 In additional there are approximately 150 Local Biodiversity Action Plans, including one for Lincolnshire and Humberside, and these define species of local importance, i.e. Local BAP species.

The key species discussed below are the species found within the study site that have priority status under one or more of the provisions mentioned above

Shelduck *Tadorna tadorna*

BoCC Amber Listed

The Shelduck is perhaps the most conspicuous of England's estuary birds. The numbers of birds wintering on English estuaries has steadily increased and several sites support numbers of international importance. The species moults in Autumn in large gatherings on the German Waddensea, which includes many English breeding birds. Other notable moult areas include: Bridgwater Bay, the Wash, Mersey and the Humber. Shelduck gradually begin to move away from their moulting areas in early September, moving to wintering areas, mainly on estuaries with extensive intertidal sands and mudflats.

The Humber estuary
Internationally important numbers of Shelduck are found on the Humber. The current five year mean count is 5,666. This is species that is seen as widespread throughout the estuary (Musgrove *et al* 2003).

The study site
Shelduck have been recorded from both Area A and C for each month since May 2006 except for September in Area A. Sector B, the SSSI at North Killingholme Haven, did not hold any Shelduck at low tide. At low tide, feeding Shelduck tend to favour the southern most area of Sector A and the area between the Conoco pipeline and the coal wharf at the southern most end of Sector C. January 2007 was the peak month with 79 individual birds recorded from the three sectors.

In June 2006 a roosting flock of nine birds were recorded from a field in Area 2A immediately below the derelict railway line.

Total counts of Shelduck recorded at low tide

MONTH	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB
Sector A	10	16	10	27	0	2	0	2	7	9
Sector B	0	0	0	0	0	0	0	0	0	3
Sector C	10	0	4	15	51	11	11	23	72	40

Lapwing *Vanellus vanellus*

BoCC Amber Listed; Lincolnshire Local BAP species

Many native breeding Lapwing over winter in England. These are supplemented in winter by a large percentage of the mainland European population, with birds from Scandinavia, Germany and The Netherlands arriving, principally in mid-October and staying until February/March.

The Humber estuary
The Humber estuary has over 24,000 (five year mean) birds over wintering, which means it is of national and international importance for this species. It is recorded as widespread throughout the estuary (Musgrove *et al* 2003).

The study site
Lapwings appear to use the areas Low 1 and Low 2 as roosting sites at low tide. The 600 birds recorded in Area A would represent 2.5% of the estuary's population; the 2,100 in December would represent 8.5% and the January 2007 total of 885 would represent 3.7% of the estuary's total. The number of Lapwing recorded in Area B at low tide has not reached 1% of the estuary's total. In Area C, the total of 603 recorded in November represented 2.5% of the estuary's population.

Lapwing used the mudflats for roosting at low tide. The largest numbers were found in Sector A, usually around the Humber Port Facility (see Appendix 1 for monthly distribution maps).

No lapwings were recorded from inland fields whilst conducting this low tide survey.

Total counts of lapwing recorded at low tide

MONTH	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB
Sector A	0	0	0	0	0	177	600	2100	885	0
Sector B	0	0	0	7	2	121	0	11	74	35
Sector C	0	0	0	2	0	3	603	0	0	0

Dunlin *Calidris alpina*

BoCC Amber Listed

Movements on passage of the various races of Dunlin are complex. Birds of the *alpina* race that have bred in the Arctic gather on the Wash and other eastern England estuaries to moult from July onwards; they are joined from late October by large numbers which have moulted on the Wadden Sea. Thereafter, birds which have moulted on both the Wash and the Wadden Sea disperse to their winter quarters, which include most of the estuaries of England. Over the past five years the numbers of British wintering Dunlin have fallen to the lowest level for 17 years (Banks *et al.* 2006).

The Humber estuary
The Humber estuary holds internationally important numbers of Dunlin, the total population of which has shown a decline during the past three years. The present five year mean is 21,558. The species is widespread throughout the estuary (Musgrove *et al* 2003).

The study site
Dunlin have only been recorded from Area A and C, which appear to be supporting around 680 birds during the low tide period, which would represent around 3.2% of the estuary's total. During the survey period, Dunlins were recorded feeding on the mudflats both in Sector A and C. No Dunlins were recorded from the SSSI site at North Killingholme Haven. The two favoured sites for Dunlin were at the southernmost end of Sector A, just north of the Humber Port facility, and also at the southernmost end of Sector C around the Conoco pipeline installation (see Appendix 1 for monthly distribution maps).

Total counts of Dunlin recorded at low tide

MONTH	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB
Sector A	0	0	0	0	0	0	313	435	0	0
Sector B	0	0	0	0	0	0	0	0	0	0
Sector C	15	0	0	0	23	0	365	250	0	0

Black-tailed Godwit *Limosa limosa*

BoCC Red Listed

The vast majority of wintering Black-tailed Godwit in England originates from Iceland. This population, *Limosa limosa islandica*, has seen a dramatic increase in the past 25 years and is now estimated at 35,000 birds (Delany & Scott 2002a). The present international criteria threshold of 350 and 150 respectively is now clearly out of date and is due to be updated shortly.

The Humber estuary
The Humber estuary holds internationally important numbers of Black-tailed Godwit. The estuary's peak totals for the past five years are: 2000/01 – 545,

2001/02 – 921, 2002/03 – 1,311, 2003/04 – 914 and 2004/05 - 615 (Banks *et al.* 2006). The species is seen as localised and particularly abundant around the Pyewipe area (Musgrove *et al.* 2003).

The study site

Black-tailed Godwits were recorded on the study site both feeding at low tide and at roost on the high tides. Their peak numbers were recorded in the narrow window of September and October (although a January 2007 high tide count indicates many birds are over wintering), which suggests the birds were using the study area as a 'staging site' – feeding up before moving on further south. This phenomenon is further supported by recording the colour sequences of 17 individual Black-tailed Godwits whilst at roost. These ring sequences have been sent the BTO who will send details of the country of origin where the birds were ringed, but no information is available at present. Some birds had dark green colour rings, which is known by the observer to be the scheme colour used in Portugal. Other birds probably had rings attached in Iceland.

The count in September of 1,881 birds, and the slightly higher total of 1,945 in October, indicates that the study site hosts internationally important numbers of Black-tailed Godwit on passage. The two favoured sites for Black-tailed Godwits were at the southernmost end of Sector A, just north of the Humber Port facility, and also at the southernmost end of Sector C, around the Conoco pipeline installation (see Appendix 1 for monthly distribution maps).

Total counts of Black-tailed Godwits recorded at low tide

MONTH	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB
Sector A	0	0	0	0	824	0	0	0	0	0
Sector B	0	0	0	17	1050	1750	0	0	0	0
Sector C	0	0	0	0	7	195	0	0	0	21

Curlew *Numenius arquata*

BoCC Amber Listed

Curlews are widely distributed outside the breeding season, both inland in damp river valleys, on pastures and along the upland fringe, and on the coast. Over 50% of the wintering population is associated with the coast. Curlews favour extensive estuarine mudflats: ten sites in England have regularly supported internationally important numbers in successive five-year periods since 1970/71, the Humber estuary has been one of those sites (Brown & Grice 2005).

The Humber estuary

The wintering Curlew population on the estuary has continued to increase during the past 30 years and the present five year means stands at 3,909.

This is another species that is seen as widespread throughout the estuary with no particular 'hot spots'.

The study area
Curlews have been recorded from each section of the study area in every month since May 2006, with the exception of June 2006 in Area B. The peak number of 74 birds recorded in Area C during November 2006 would represent 1.9% of the estuary's total. Curlew were found throughout Sectors A and C with the highest concentrations being at the southernmost end of Sector A, just north of the Humber Port facility, and also at the southernmost end of Sector C, around the Conoco pipeline installation, which was the most favoured site (see Appendix 1 for monthly distribution maps).

In November 2006, two birds were recorded from the most northerly field in Area 2a and a further 36 were on the permanent pasture field belonging to the brick kiln site and immediately adjacent to Area 2a (see Appendix 1 for distribution maps for this species).

Total counts of Curlew recorded at low tide

MONTH	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB
Sector A	2	5	5	9	11	2	41	24	1	1
Sector B	4		1	7	2	0	2	9	3	0
Sector C	33	1	11	21	21	6	74	11	38	14

5. Results for high tide counts

5.1 Overview

5.1.1 A total of 28 species of waterbird and five species of gull were recorded using High Tide Areas A, B and C during the high tide period. In general they are a good representative suite of estuarine birds found on the Humber estuary. Some are common but others are afforded a special conservation status and are presented in detail later in this report.

High tide monthly totals of waterbirds and gulls per sector

MONTH	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB
WATERBIRDS										
Sector A	37	36	29	66	30	121	770	1448	543	122
Sector B	115	23	32	324	1709	4204	431	487	2405	231
Sector C	40	127	103	113	70	175	581	1781	41	151
GULLS										
Sector A	0	0	10	12	1	0	11	0	0	0
Sector B	14	0	9	125	80	0		3		0
Sector C	0	0	13	30	27	0	247	4	10	69

During this survey inland fields were scanned for waterbirds but very few were recorded, consisting of one group of nine Shelduck in June 2006 (Area 2a) and two small groups of Lapwing in October 2006 (Areas 2a and 5) and again in January 2007 (Area 2a). On the February high tide count, 27 Curlew were recorded moving from the permanent pasture area of the derelict brick kiln site to a field adjacent to the estuary (see Appendix 2 for species distribution maps).

5.1.2 Waterbirds were distributed unevenly across the sectors, as discussed now.

Sector A
From the East Halton Skitter freshwater outflow south for 2.5 km, only the occasional Redshank or Curlew was recorded at roost on high tide on the concrete revetments of the river wall. A Common Sandpiper was also recorded roosting on the concrete wall in May 2006.

At the southern end of Sector A, immediately north of the Able UK Port Facility, flocks of Lapwing were observed roosting on the mudflats. When the mud is finally flooded by the tide, the birds crowd onto a derelict wharf nearby or fly to Sector B but soon return when the mudflat is exposed again.

Sector B
Consists of the SSSI site immediately behind the Able UK Port Facility at North Killingholme Haven. At high tide, this area generally held the highest total numbers of waterbirds recorded in the three sectors, with impressive numbers of Black-tailed Godwit in particular.

Sector C
At the northernmost extent of this sector (just south of the Humber Port Facility), there is a small area of high marsh which is covered in tall grass. No birds were recorded roosting in this area. A few waders roost along the concrete river wall but most appear to move either to the SSSI site at North Killingholme Haven or other roost sites. Shelduck were recorded roosting on the water in this area at high tide.

5.1.3 For the months of October, November, December 2006 and January 2007, the distribution and abundance of the key species (Lapwing, Dunlin, Black-tailed Godwit, Curlew and Redshank) are shown on distribution maps in Appendix 2. In general the maps show the favoured roosting areas for many species that feed on the estuary at low tide. Three roost areas are of note: first the High Tide Area B which is the SSSI site at North Killingholme Haven Pits; secondly, just above the Able UK Port Facility, which is used by birds on the tides that do not cover all the mudflat area (there is also a derelict wooden pier that is used by birds as a roost site); and, finally, the area in front of the Humber Terminal LPG Gas Caverns pipeline is also used as a roosting area on the tides that do not totally cover the mudflats.

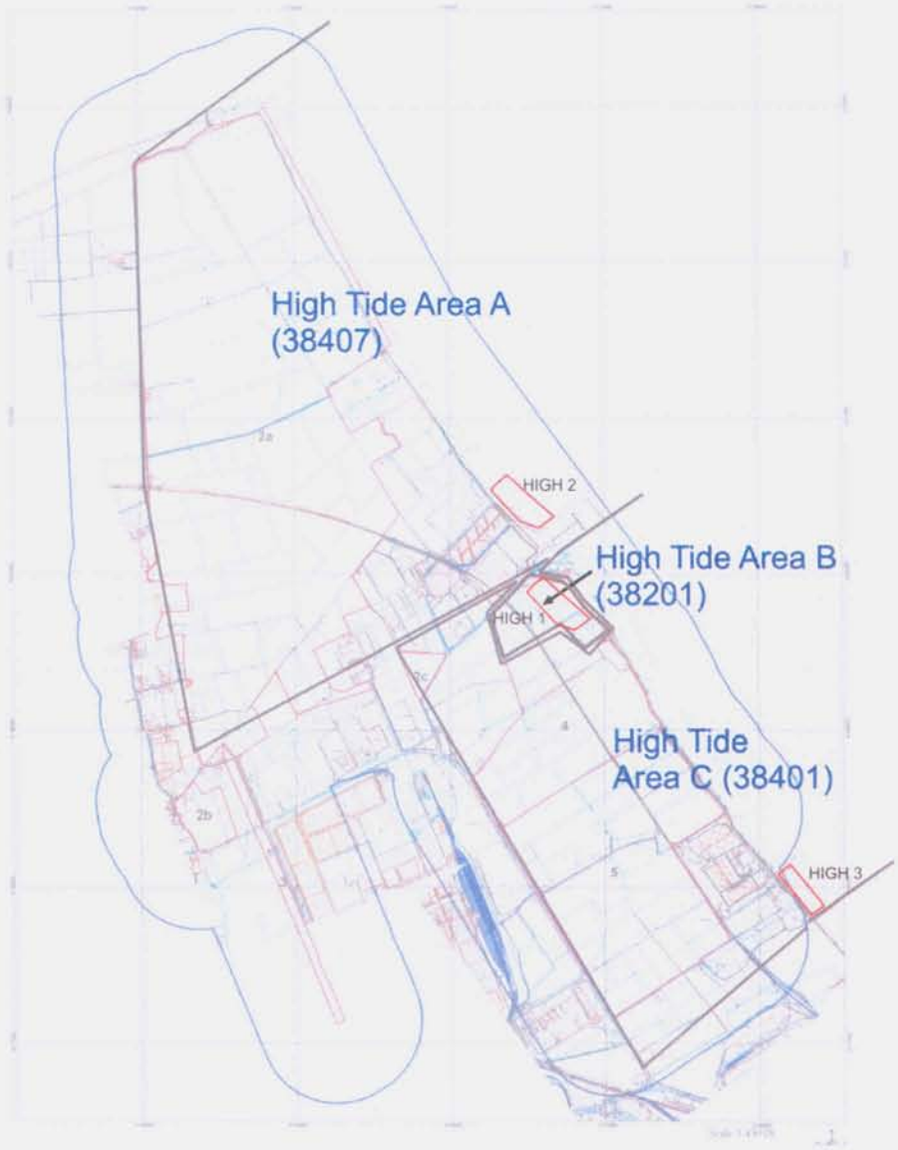
Table 5.1: The 28 species of waterbird and five species of gull found during the survey and their abundance within the three count sectors.

COUNT SECTION	High Tide Area A									
COUNT MONTH	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB
Waterbirds										
Gt. Crest. Grebe				1		1			1	1
Cormorant	0	0	0	0	0	7	3	8	2	2
Grey Heron	0	3	0	0	0	0	0	0	0	0
Mute Swan	2	2	0	1	0	0	0	4	6	4
Greylag Goose	0	0	0	5	0	0	0	0	0	0
Shelduck	11	11	7	13	0	2	0	3	0	5
Teal	0	0	0	0	0	0	0	0	1	19
Mallard	5	0	0	8	0	13	6	0	4	2
Pintail	0	0	0	0	4	0	0	0	0	0
Tufted Duck	0	0	0	4	0	0	0	0	0	0
Ruddy Duck	3	0	0	0	4	4	0	0	0	4
Water Rail	1	0	0	0	0	0	0		0	0
Moorhen	9	6	8	16	8	32	0	0	6	6
Coot	1	6	4	7	7	8	0	42	40	35
Oystercatcher	1	1	0	0	2	0	0	0	0	2
Ringed Plover	0	0	0	0	0	0	14	0	0	0
Lapwing	3	7	6	5	0	47	560	1200	484	12
Dunlin	0	0	0	0	0	0	180	150	0	0
Black-tailed Godwit	0	0	0	0	0	0	0	0	0	4
Curlew	0	0	4	6	5	2	0	35	0	27
Redshank	0	0	0	0	0	6	1	6	0	0
Common Sandpiper	1	0	0	0	0	0	0	0	0	0
Turnstone	0	0	0	0	0	0	6	0	0	0
Gulls										
Black-headed Gull	0	0	10	12	1	0	11	0	0	0
TOTAL	37	36	39	77	31	121	781	1448	543	122

COUNT SECTION	High Tide Area B									
Tide Status	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB
Waterbirds										
Cormorant						3	1			
Grey Heron	1	3	1	3	1	3	1	2	1	
Mute Swan		6								
Greylag Goose		4								
Waterbirds										
Shelduck		8	4	4					3	4
Gadwall	0	0	0	0	0	0	4	0	0	0
Teal	0	0	0	0	10	125	43	4	30	22
Mallard	0	7	2	8	10	0	87	38	5	31
Shoveler	0	0	0	0	0	39	65	18	49	27
Tufted Duck	0	0	0	4	0	0	0	0	0	0
Moorhen	3	3	0	23	1	6	1	1	0	0
Coot	4	1	1	13	0	0	1	0	0	0
Oystercatcher	0	0	4	8	0	0	0	0	0	0
Water Rail	0	0	0	0	0	0	1	0	0	0
Avocet	6	4	2	0	0	0	0	0	0	0
Ringed Plover	36	0	0	0	0	0	0	0	0	0
Lapwing	0	0	0	7	5	375	5	303	478	54
Dunlin	22	0	0	0	0	1300	0	0	40	0
Jack Snipe	0	0	0	0	0	0	0	0	0	1
Ruff	0	0	0	0	0	2	0	0	0	0
Black-tailed Godwit	0	0	0	223	1570	2250	0	0	1680	0
Bar-tailed Godwit	0	0	0	0	0	2	0	0	0	0
Curlew	26	0	0	3	8	3	4	0	3	10
Redshank	18	0	19	31	105	102	220	123	117	86
Gulls										
Black-headed Gull	4	0	9	123	80	0	0	2	0	0
Common Gull	0	0	0	0	0	0	0	1	0	0
Lesser Black-backed Gull	2	0	0	0	0	0	0	0	0	0
Herring Gull	8	0	0	2	0	0	0	0	0	0
TOTAL	129	15	37	445	1789	4204	431	490	2402	231

COUNT SECTION	High Tide Area C									
Tide Status	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB
Waterbirds										
Little Grebe										4
Cormorant			1	7						
Grey Heron	2			2						
Mute Swan	0	0	0	0	0	2	0	0	0	0
Shelduck	0	17	33	10	6	33	46	13	29	18
Mallard	0	5	0	0	0	7	0	0	4	10
Teal	0	0	0	0	0	0	0	0	0	4
Gadwall	0	0	0	0	0	0	0	0	0	6
Pochard	0	0	0	0	0	0	6	0	0	0
Tufted Duck	0	0	0	0	0	0	6	0	0	0
Water Rail	0	1	0	0	0	0	0	0	0	0
Moorhen	1	12	0	4	0	0	0	0	8	5
Coot	0	2	0	21	27	7	3	7	0	14
Oystercatcher	0	9	3	0	0	0	0	0	0	1
Lapwing	3	2	2	17	0	11	12	700	0	0
Dunlin	0	0	0	0	0	65	337	800	0	0
Black-tailed Godwit	0	0	0	0	0	0	0	1	0	0
Curlew	34	76	64	40	6	12	81	49	0	89
Redshank	0	3	0	12	31	32	87	211	0	0
Turnstone	0	0	0	0	0	6	0	0	0	0
Gulls										
Black-headed Gull	0	0	13	30	21	0	247	4	10	57
Common Gull	0	0	0	0	0	0	0	0	0	12
Herring Gull	0	0	0	0	6	0	2	0	0	0
Great Black-backed Gull	0	0	0	0	0	0	1	0	0	0
TOTAL	40	127	116	143	97	175	828	1785	51	220

Figure 5.1: Study area showing three 'hot spot' areas for waterbirds roosting at high tide.



5.2 Key species of the high tide counts

5.2.1 Certain bird species have been afforded a high conservation status in the UK, usually because of their threatened or declining status.

5.2.2 Birds of Conservation Concern (BoCC) in the UK have been listed under a partnership of Governmental and non-governmental organisations. Every five years the listings are reviewed for the 247 species included, with species categorised as – red, amber or green. Forty species are currently on the red-listed or most threatened category.

5.2.3 Also important are species flagged as a priority under the UK Biodiversity Action Plan. This Plan combines new and existing conservation initiatives with an emphasis on a partnership approach. It contains 59 objectives for conserving and enhancing species and habitats as well as promoting public awareness and contributing to international conservation efforts. Also included are 391 Species Action Plans (SAPs) and 45 Habitat Action Plans (HAPs) for the UK's most threatened (i.e. "priority") species and habitats. These plans describe the status of each habitat and species, outline the threats they face, set targets and objectives for their management, and propose actions necessary to achieve recovery.

5.2.5 In additional there are approximately 150 Local Biodiversity Action Plans, including one for Lincolnshire and Humberside, and these define species of local importance, i.e. Local BAP species.

The key species discussed below are the species found within the study site that have priority status under one or more of the provisions mentioned above.

Lapwing *Vanellus vanellus*

BoCC Amber Listed; Lincolnshire Local BAP species

The Humber estuary
The Humber estuary has over 24,000 (five year mean) birds overwintering, which means it is of national and international importance for this species. It is recorded as widespread throughout the estuary (Musgrove *et al.* 2003).

The study site
This species uses the mudflats to roost (when exposed at high tide). Lapwing flocks have been recorded in the two areas identified as High 2 and High 3. The SSSI at North Killingholme Haven Pits (High 1) has also supported flocks of three or four hundred Lapwings during the period October 2006 to January 2007. The 1,200 birds recorded in December 2006 in High 1 would represent 5% of the Humber estuary's total population. During the period September 2006 until February 2007, no large numbers of lapwing were recorded roosting on inland fields in Area 2a. However, several small flocks were recorded; a roosting flock of 47 birds from a field in Area 2a and a feeding group of 11 from a pasture field in Area 5, both in October 2006. A small flock of eight birds was recorded from a field in Area 2a in January 2007 (see Appendix 2 monthly distribution maps for this species and exact locations).

Total counts of Lapwing recorded at high tide.

MONTH	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB
Sector A	3	7	6	5	0	47	560	1200	484	12
Sector B	0	0	0	7	5	375	5	303	478	54
Sector C	3	2	2	17	0	11	12	700	0	0

Dunlin *Calidris alpina*

BoCC Amber Listed

The Humber estuary
The Humber estuary holds internationally important numbers of Dunlin, the total population of which has shown a decline during the past three years. The present five year mean is 21,558. This is another species that is widespread throughout the estuary (Musgrove *et al* 2003).

The study site
The Dunlin is another species that uses the mudflat areas High 2 and High 3 at high tide if there is mudflat exposed. They continue to feed over this period. The 800 birds recorded in December 2006 from High 3 would represent 3.7% of the estuary's total population. Dunlin are occasionally recorded from High 1 (the SSSI at North Killingholme), usually on the very high tides, like October 2006 when 1300 birds were present. This would represent 6% of the estuary's population.

During the high tide survey period, Dunlin were recorded feeding on the mudflats both in Sector A and C. Dunlin were also recorded from the SSSI site at North Killingholme Haven, with a peak of 1,300 birds in October. The two favoured sites for Dunlin were at the southernmost end of Sector A, just north of the Humber Port facility, and also at the southernmost end of Sector C, around the Conoco pipeline installation. Dunlin used these areas to feed as the tide rose and would remain on the mudflat whilst mud was left exposed. The only high tide roost recorded was Sector B, the SSSI site at North Killingholme Haven (see Appendix 2 for monthly distribution maps).

Total counts of Dunlin recorded at high tide.

MONTH	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB
Sector A	0	0	0	0	0	0	180	150	0	0
Sector B	22	0	0	0	0	1300	0	0	40	0
Sector C	0	0	0	0	0	65	337	800	0	0

Black-tailed Godwit *Limosa limosa*

BoCC Red Listed

The Humber estuary
The Humber estuary holds internationally important numbers of Black-tailed Godwit. The estuary's peak totals for the past five years are: 2000/01 – 545, 2001/02 – 921, 2002/03 – 1,311, 2003/04 – 914 and 2004/05 (615) (Banks *et al.* 2006). The species is seen as localised and particularly abundant around the Pyewipe area (Musgrove *et al.* 2003).

The study site
This species appears only to use High 1 (the North Killingholme Haven Pits SSSI) as a high tide roost. Totals of 223 in August 2006, 1570 in September, 2250 in October, and 1680 in January 2007 indicate that the SSSI site has internationally important numbers of Black-tailed Godwits roosting at high tide, both at passage periods and mid-winter. During the high tide survey, Black-tailed Godwits were only recorded from Sector B, the SSSI site at North Killingholme Haven. Birds were recorded flying from the two favoured feeding sites (see Black-tailed Godwit low tide results) and flying directly to the SSSI site to roost (see monthly distribution maps Appendix 2).

Total counts of Black-tailed Godwit recorded at high tide.

MONTH	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB
Sector A	0	0	0	0	0	0	0	0	0	4
Sector B	0	0	0	223	1570	2250	0	0	1680	0
Sector C	0	0	0	0	0	0	0	1	0	0

Curlew *Numenius arquata*

BoCC Amber Listed

The Humber estuary
The wintering Curlew population on the estuary has continued to increase during the past 30 years and the present five year means stands at 3,909. This is another species that is seen as widespread throughout the estuary with no particular 'hot spots'.

The study area
Throughout the study area, Curlews are recorded roosting in low numbers. High Tide Area C is the favoured spot, with the highest totals. The November count of 81 birds would represent approximately 2% of the estuary's total. Curlew were found throughout Sectors A and C with the highest concentrations being at the southernmost end of Sector A, just north of the Humber Port facility, and also at the southernmost end of Sector C, around the Conoco pipeline installation, which was the most favoured site (see Appendix 2 for monthly distribution maps).

No birds were recorded from inland fields whilst conducting this high tide survey.

Total counts of Curlew recorded at high tide.

MONTH	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB
Sector A	0	0	4	6	5	2	0	35	0	27
Sector B	26	0	0	3	8	3	4	0	3	10
Sector C	34	76	64	40	6	12	81	49	0	89

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ABLE HUMBER PORTS FACILITY, KILLINGHOLME:

Coastal Birds Survey – Appendix 1

Strictly Confidential

Report to Able UK Ltd

by

Rodney West & Dr Jeff Kirby

February 2007

JUST ECOLOGY Limited
Woodend House, Woodend
Wotton-under-Edge, Gloucestershire, GL12 8AA

Notice to Readers

The advice contained in this report is based on the information available and/or collected during the period of study and within the resources available for the project. We cannot completely eliminate the possibility of important ecological features being found through further investigation and/or by survey at different times of the year or in different years. Reference to sections or particular paragraphs of this document taken out of context may lead to mis-representation. JUST ECOLOGY takes care to ensure that balanced advice is provided based on the information available at the time.

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Figure 7.2 Lapwing distribution and abundance – December 2006

Figure 7.3 Lapwing distribution and abundance – November 2006

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Figure 7.5 Dunlin distribution and abundance – December 2006

Figure 7.6 Dunlin distribution and abundance –November 2006

Figure 7.7 Dunlin distribution and abundance –October 2006

Figure 7.8 Black-tailed Godwit distribution and abundance –October 2006

Figure 7.9 Black-tailed Godwit distribution and abundance –September 2006

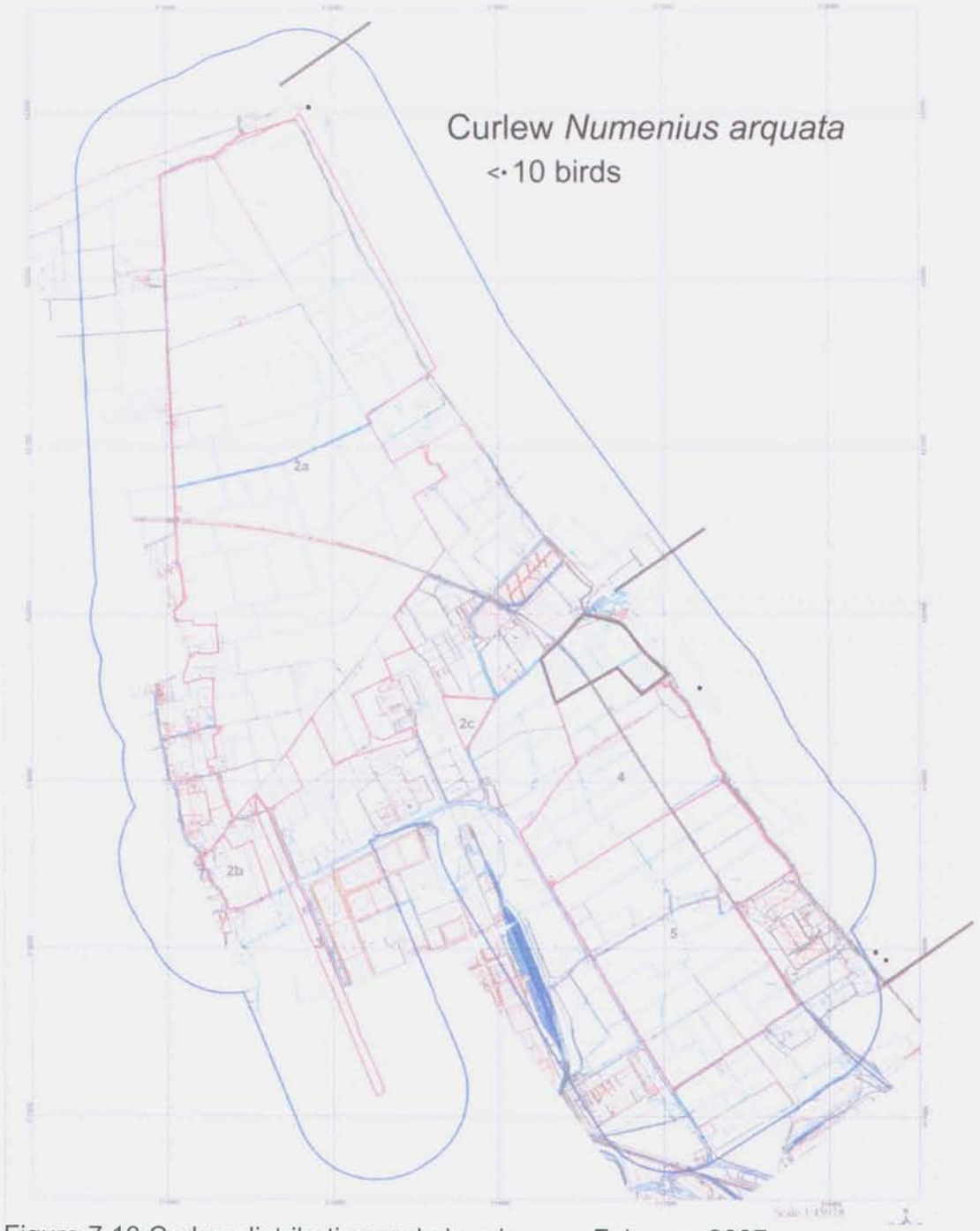

Figure 7.10 Curlew distribution and abundance – February 2007

Figure 7.10 Curlew distribution and abundance – January 2007

Figure 7.11 Curlew distribution and abundance – December 2006

Figure 7.12 Curlew distribution and abundance –November 2006

Figure 7.13 Curlew distribution and abundance –September 2006

Figure 7.14 Redshank distribution and abundance –February 2007

Figure 7.14 Redshank distribution and abundance –January 2007

Figure 7.15 Redshank distribution and abundance – December 2006

Figure 7.16 Redshank distribution and abundance – November 2006

Figure 7.16 Redshank distribution and abundance – October 2006

ABLE HUMBER PORTS FACILITY, KILLINGHOLME:

Coastal Birds Survey – Appendix 2

Strictly Confidential

Report to Able UK Ltd

by

Rodney West & Dr Jeff Kirby

February 2007

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Appendix 2. High tide distribution of key species

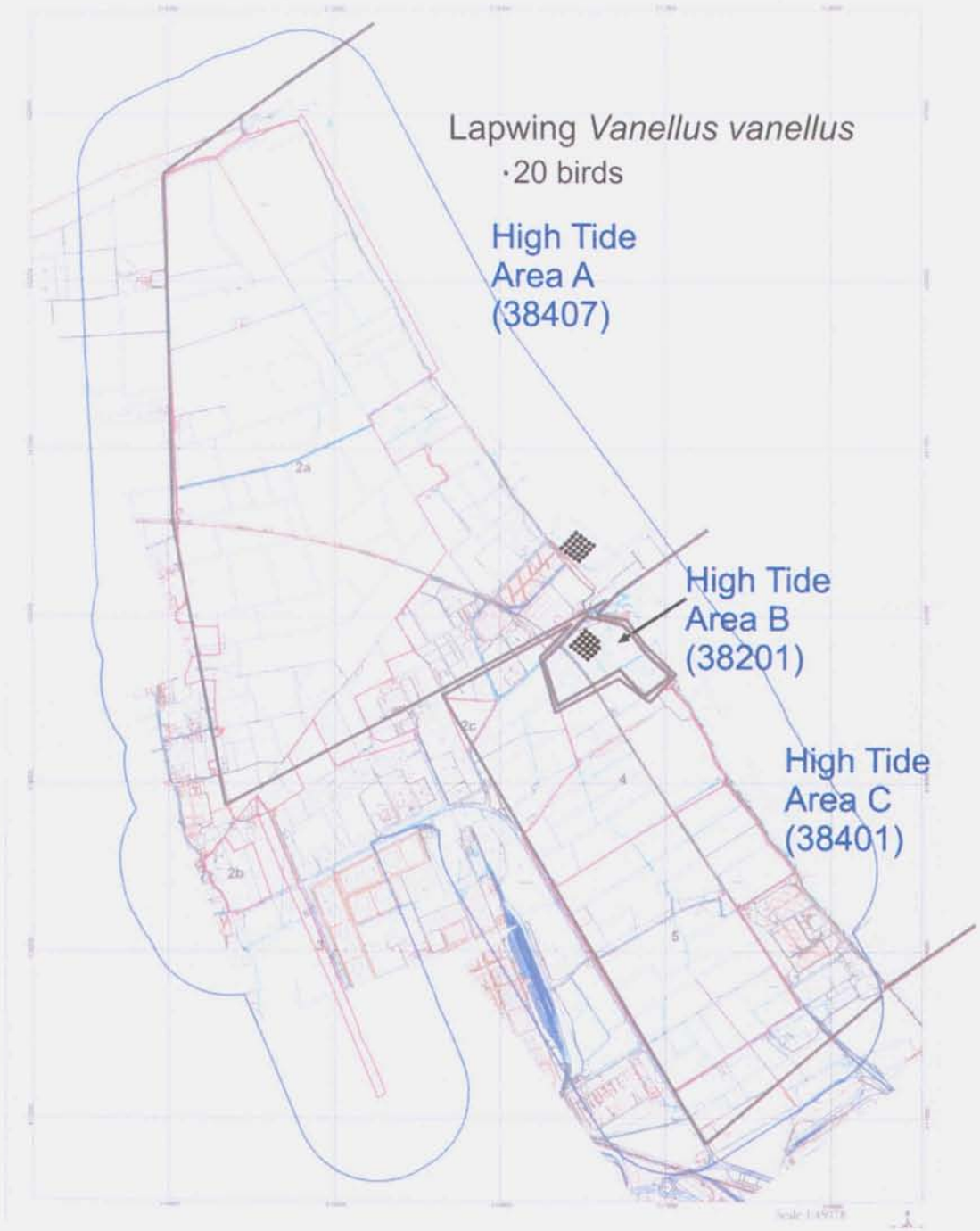

Figure 7.2.1 Lapwing distribution and abundance – January 2007

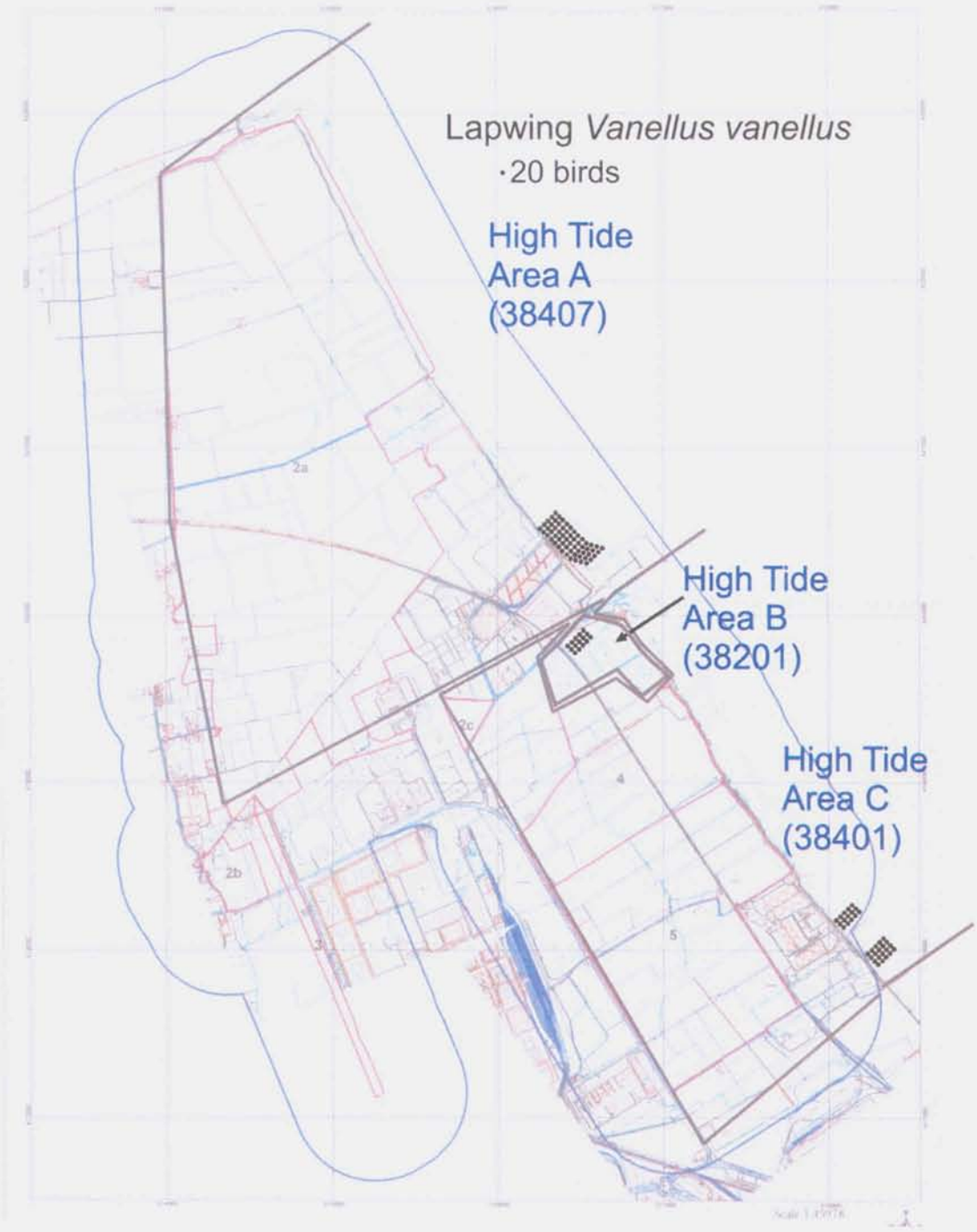

Figure 7.2.2 Lapwing distribution and abundance – December 2006

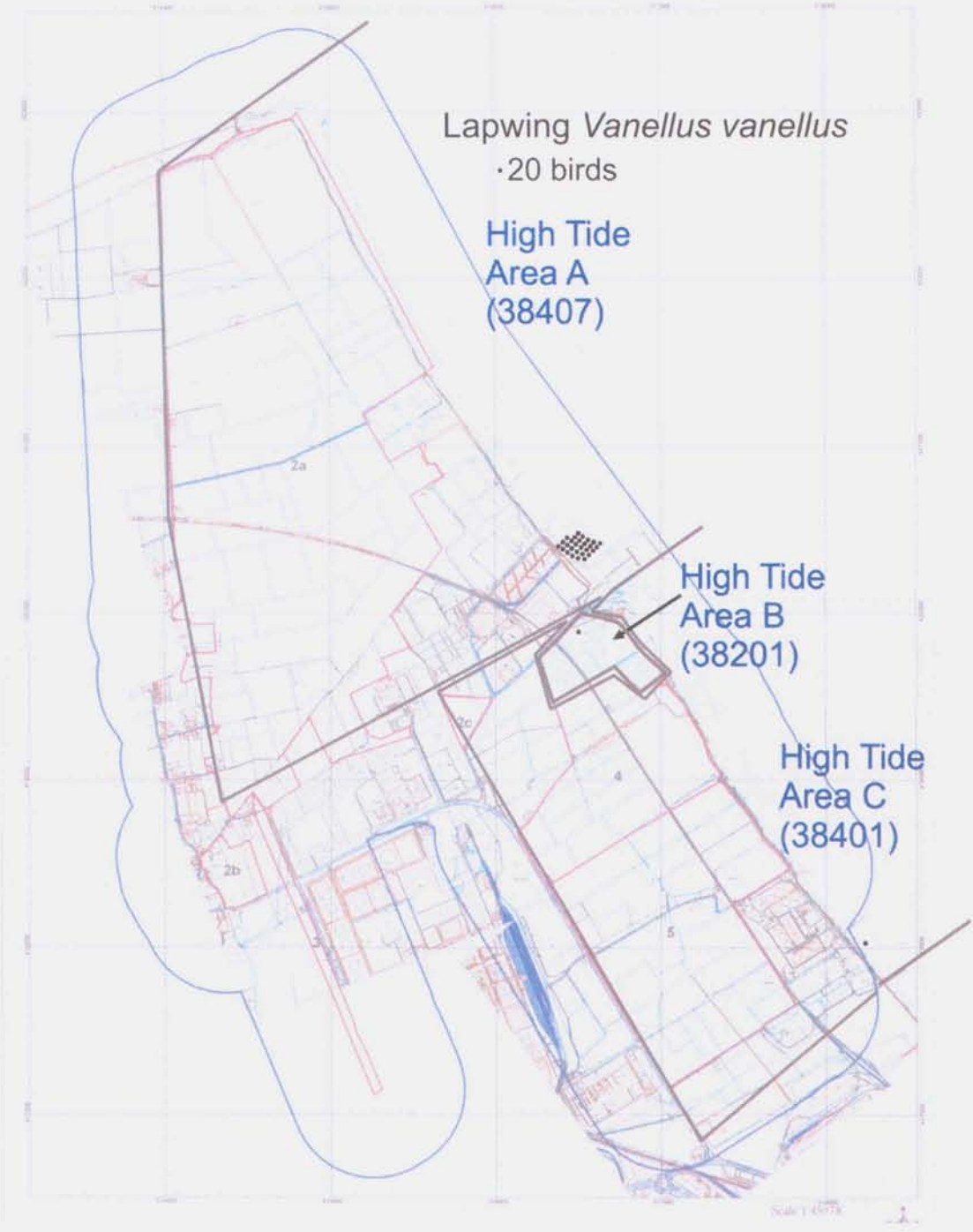

Figure 7.2.3 Lapwing distribution and abundance – November 2006

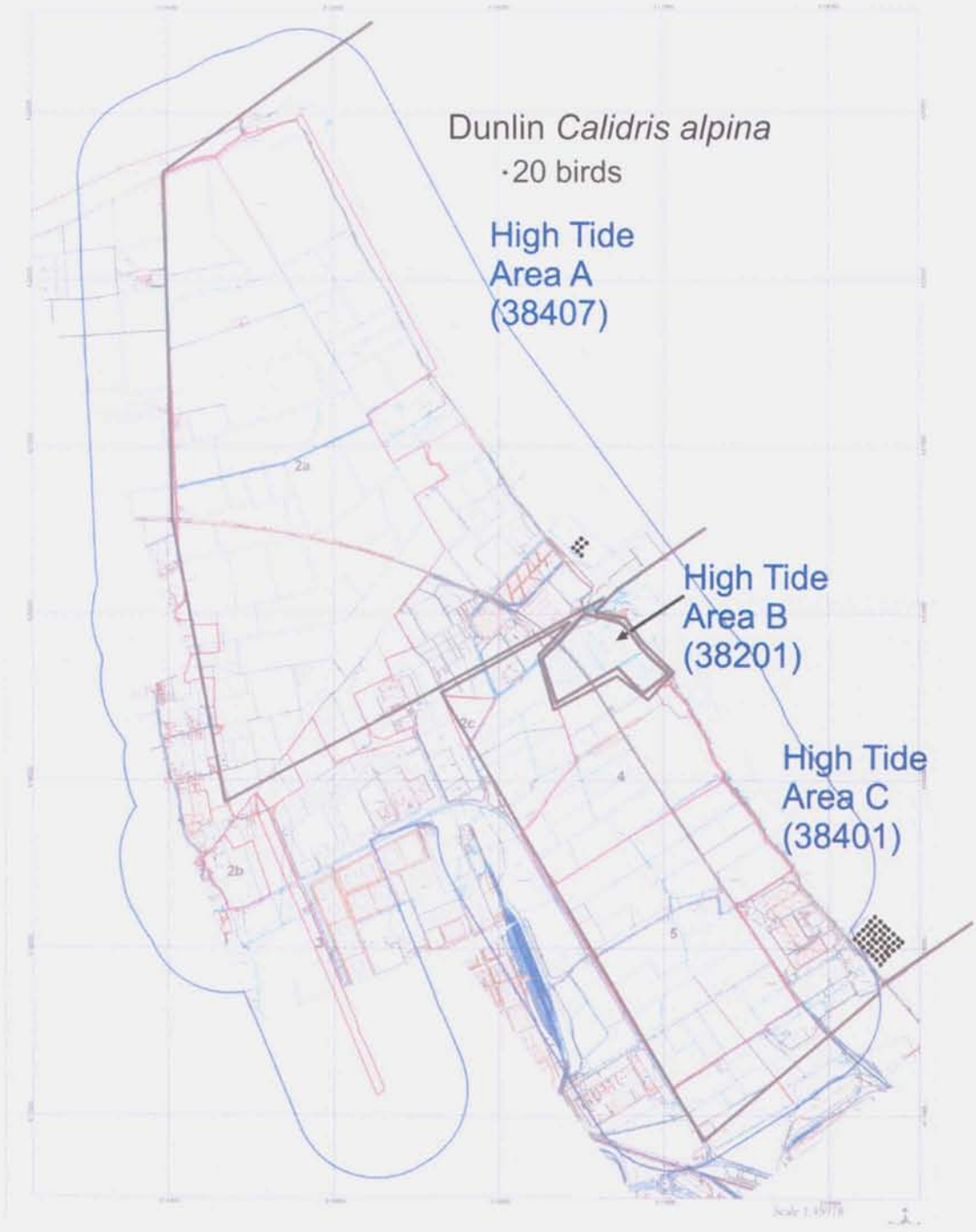

Figure 7.2.4 Dunlin distribution and abundance – December 2006

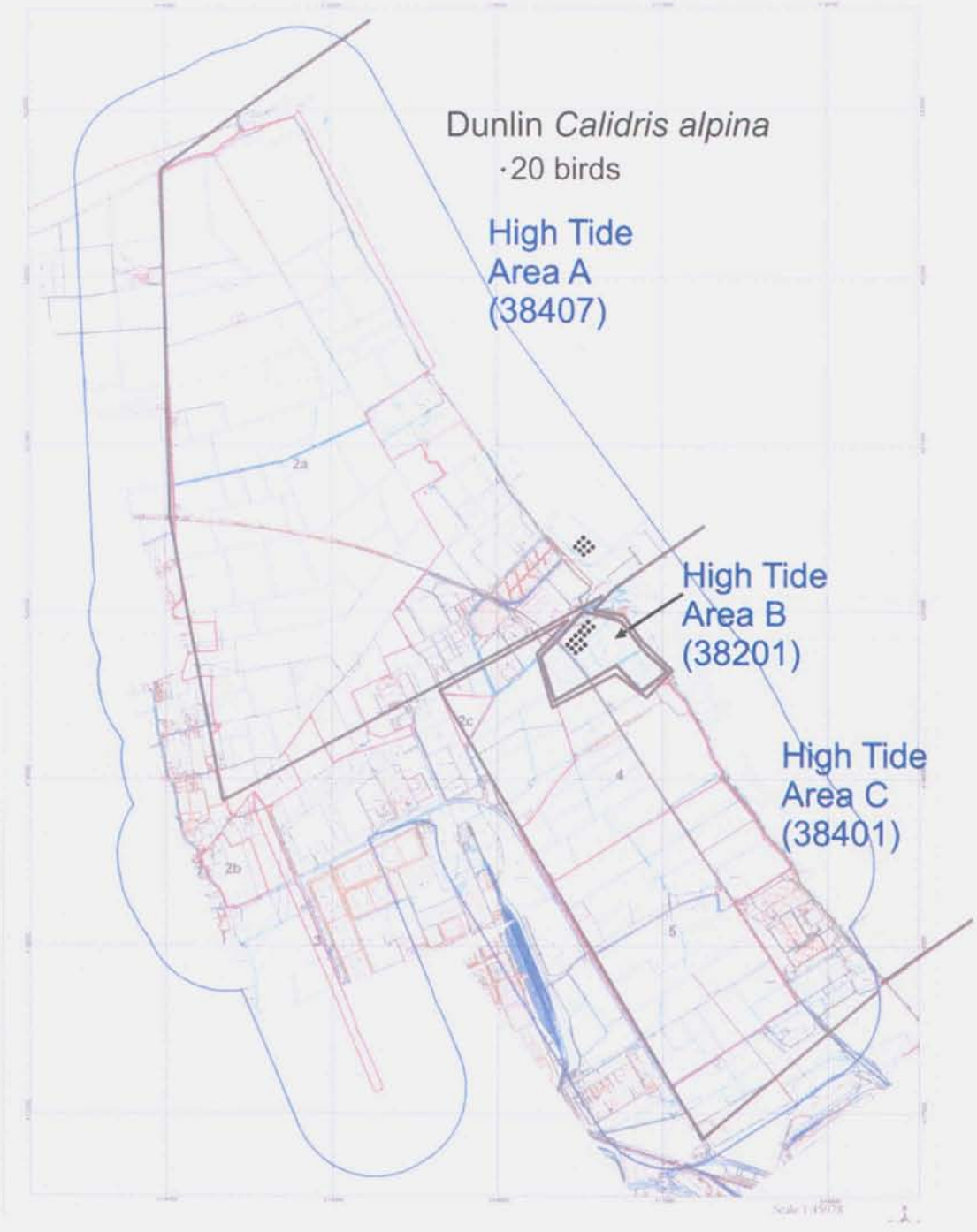

Figure 7.2.5 Dunlin distribution and abundance – November 2006

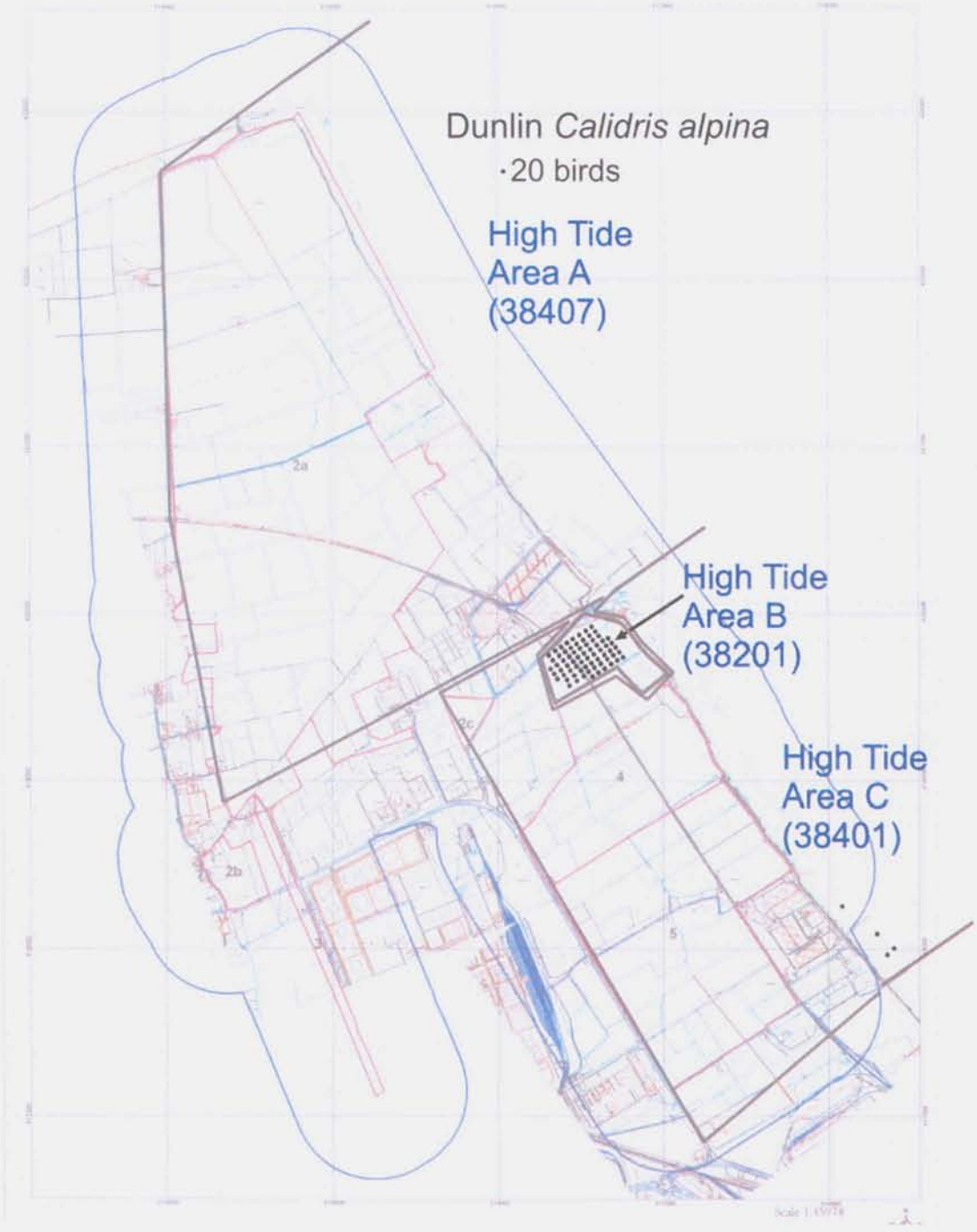

Figure 7.2.6 Dunlin distribution and abundance – October 2006

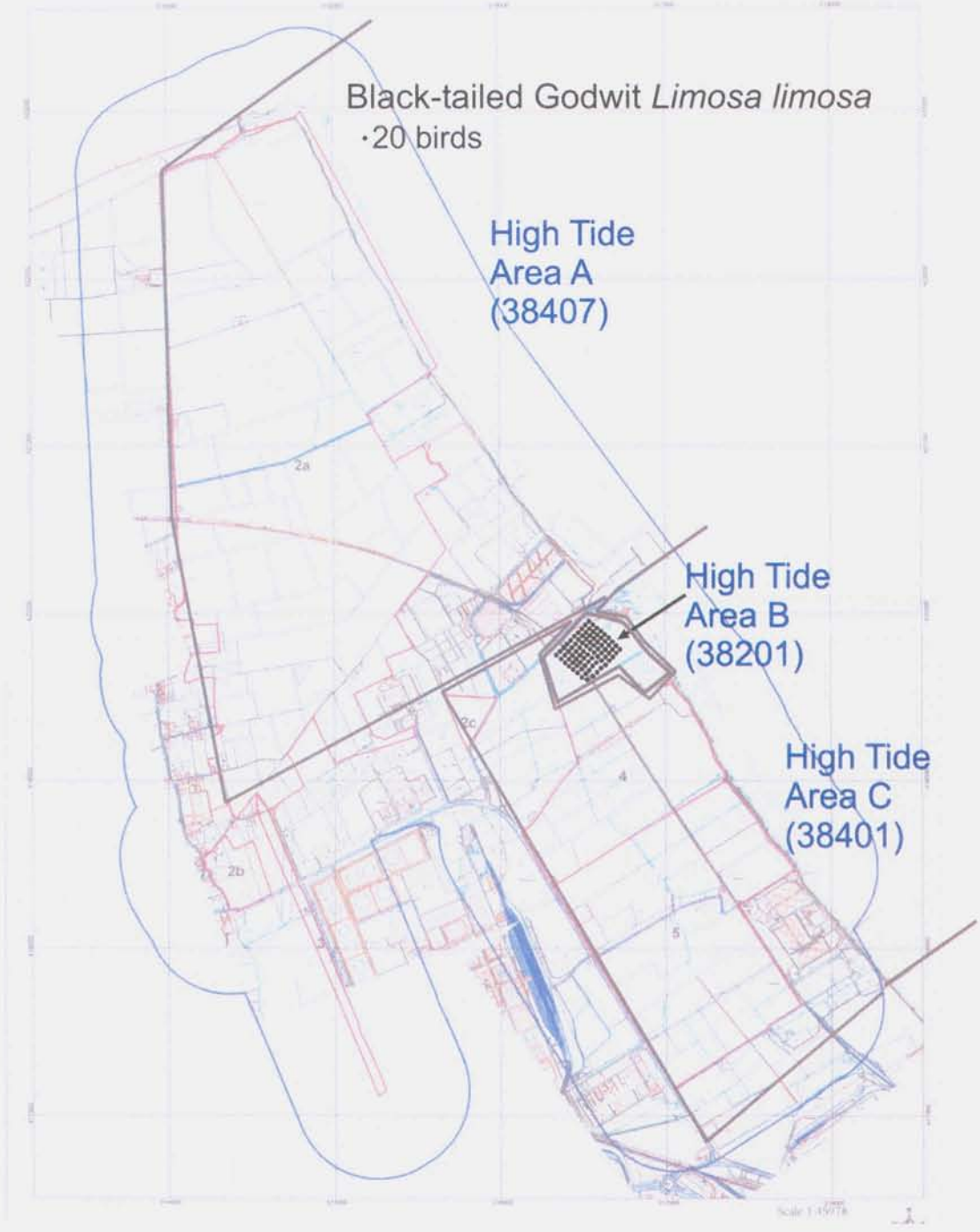

Figure 7.2.7 Black-tailed Godwit distribution and abundance – January 2007

Figure 7.2.7 Shelduck distribution and abundance – February 2007

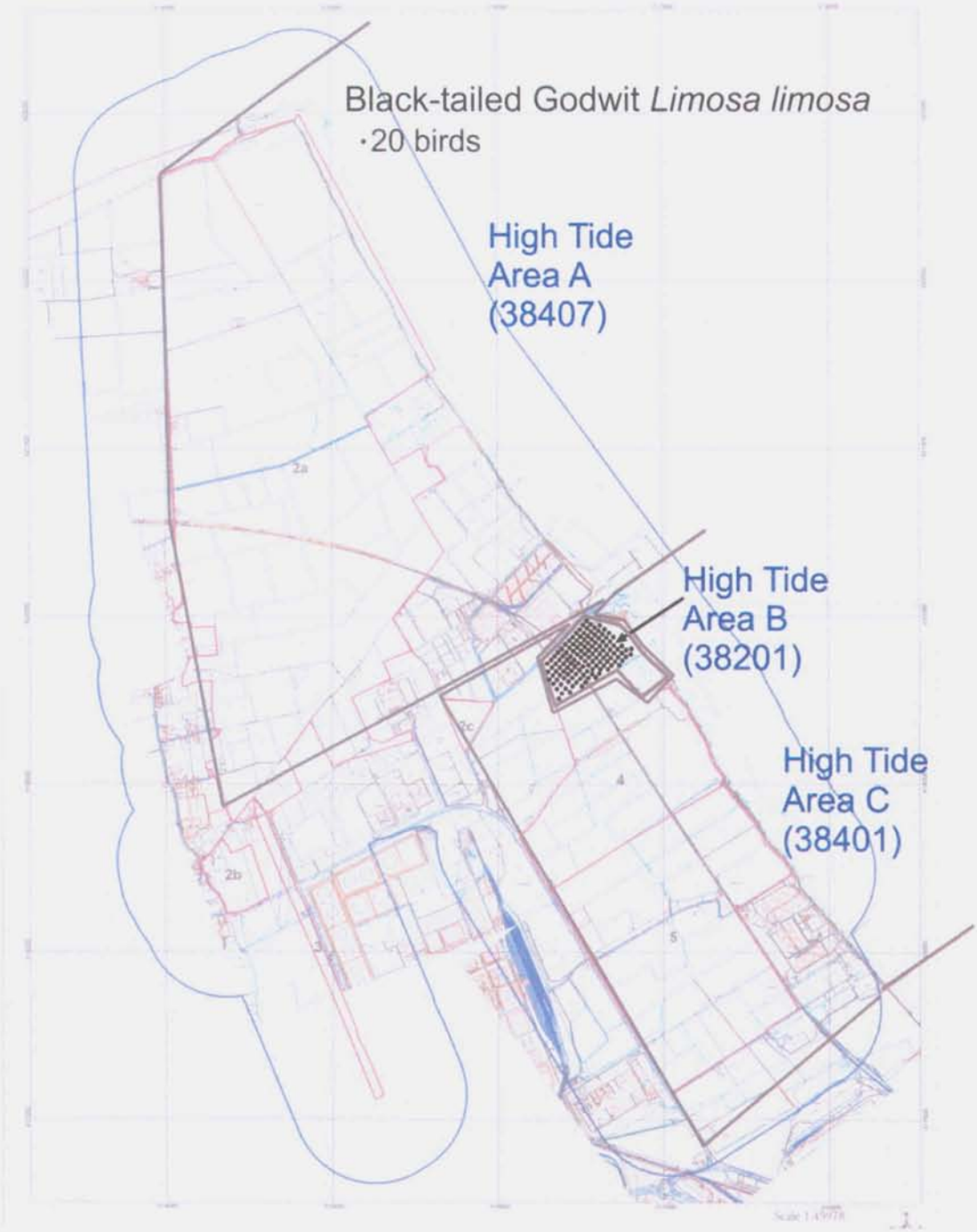

Figure 7.2.8 Black-tailed Godwit distribution and abundance – October 2006

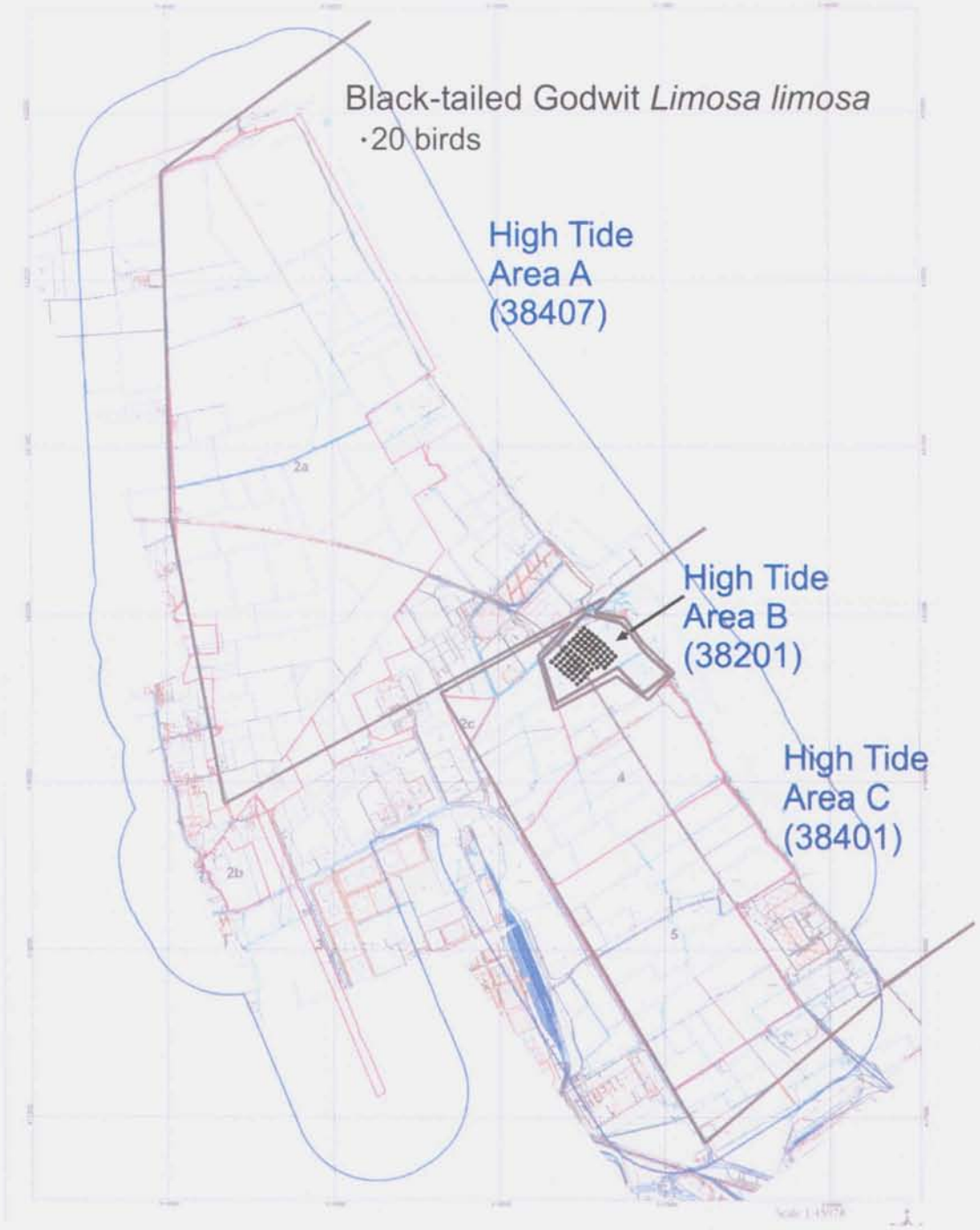

Figure 7.2.9 Black-tailed Godwit distribution and abundance – September 2006

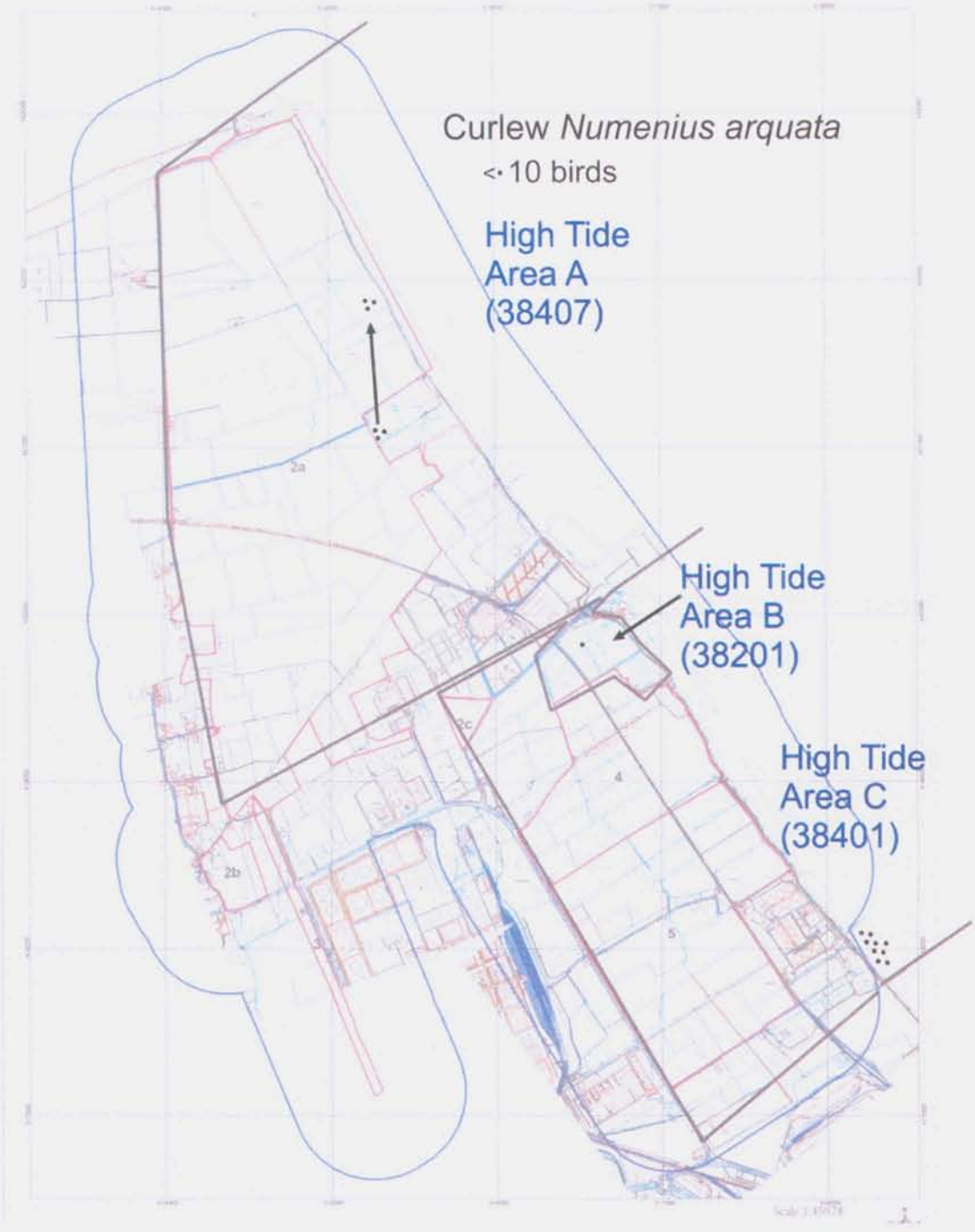

Figure 7.2.10 Curlew distribution and abundance – February 2007

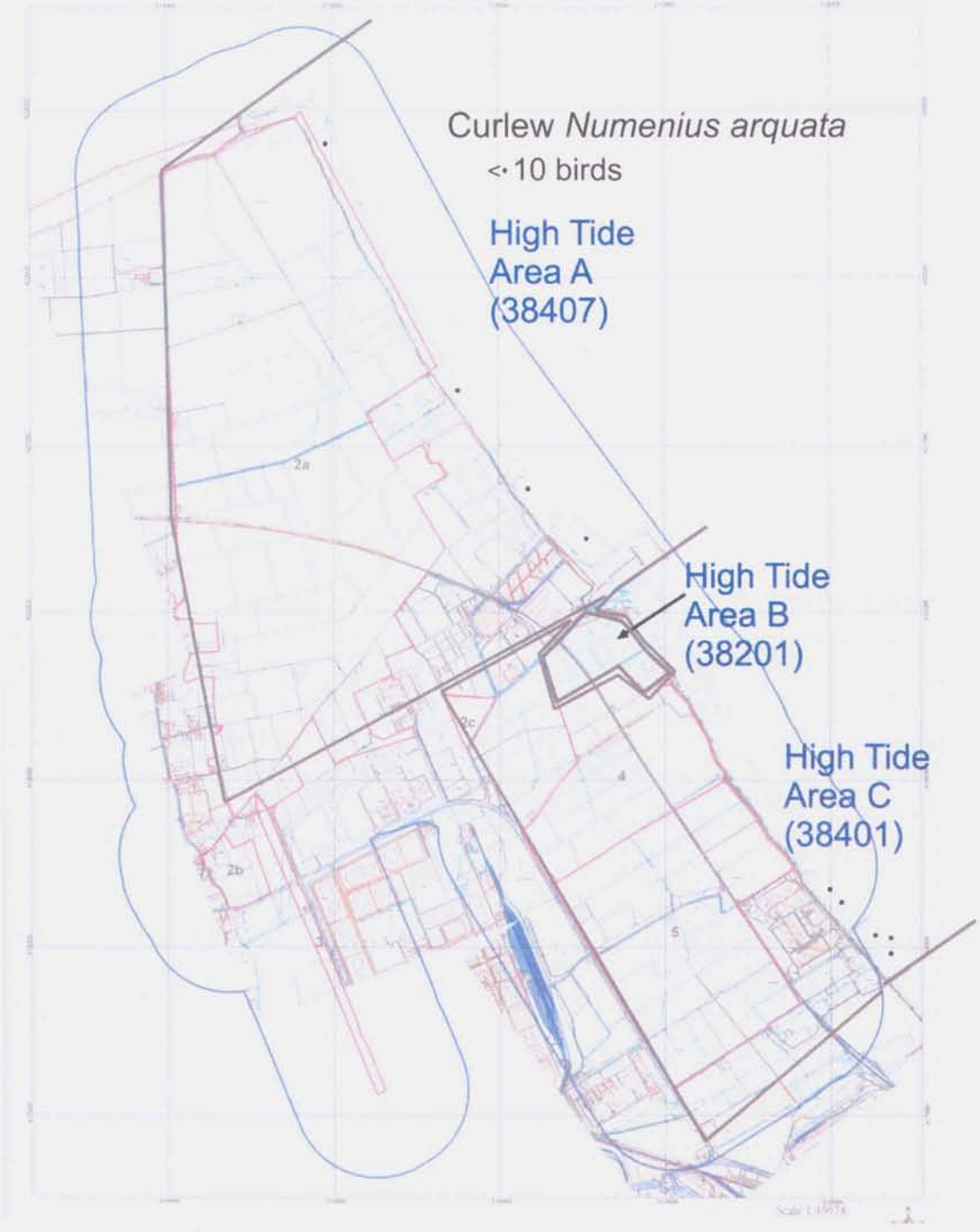

Figure 7.2.10 Curlew distribution and abundance – December 2006

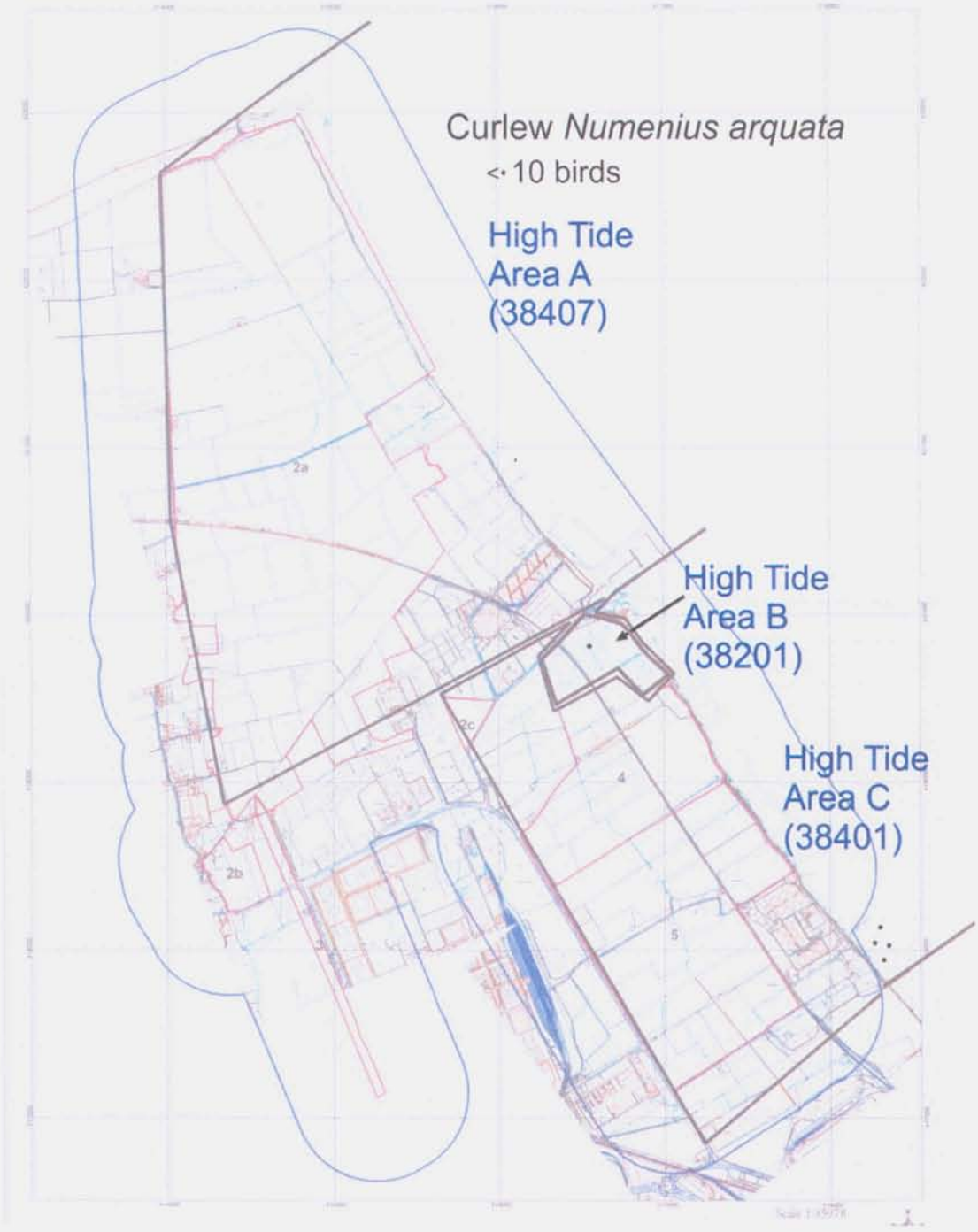

Figure 7.2.11 Curlew distribution and abundance – November 2006

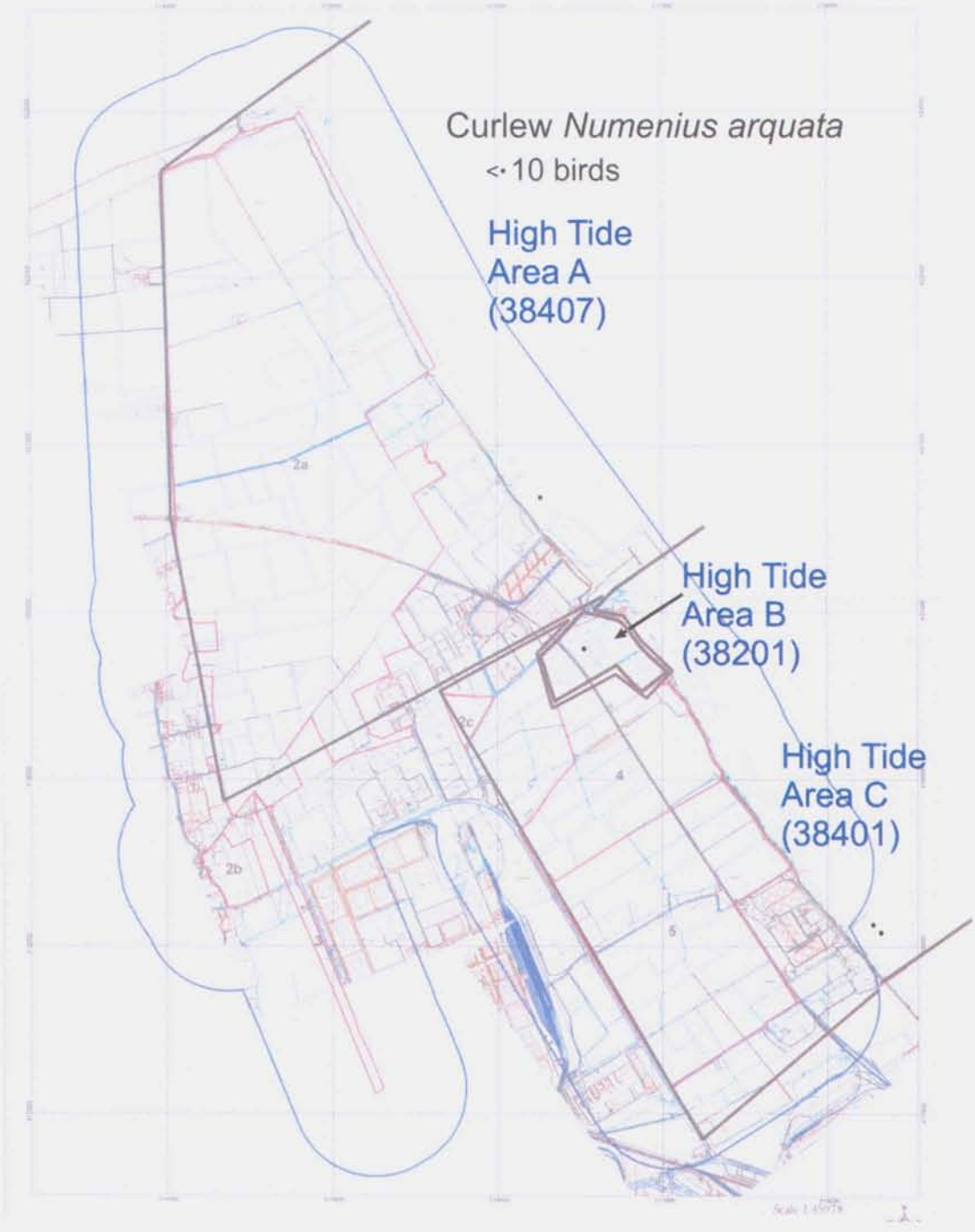

Figure 7.2.12 Curlew distribution and abundance – September 2006

Figure 7.2.13 Redshank distribution and abundance – February 2007

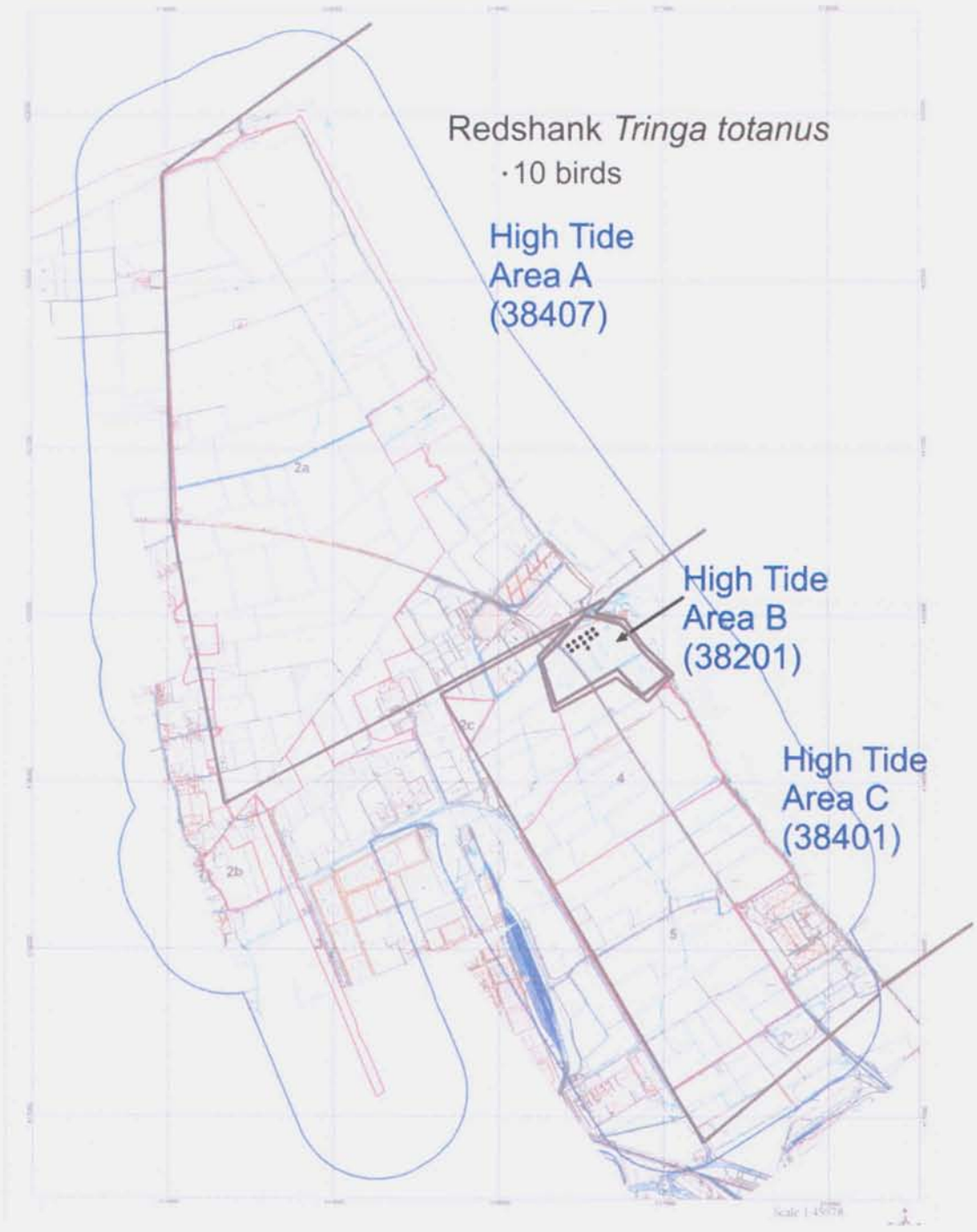

Figure 7.2.13 Redshank distribution and abundance – January 2007

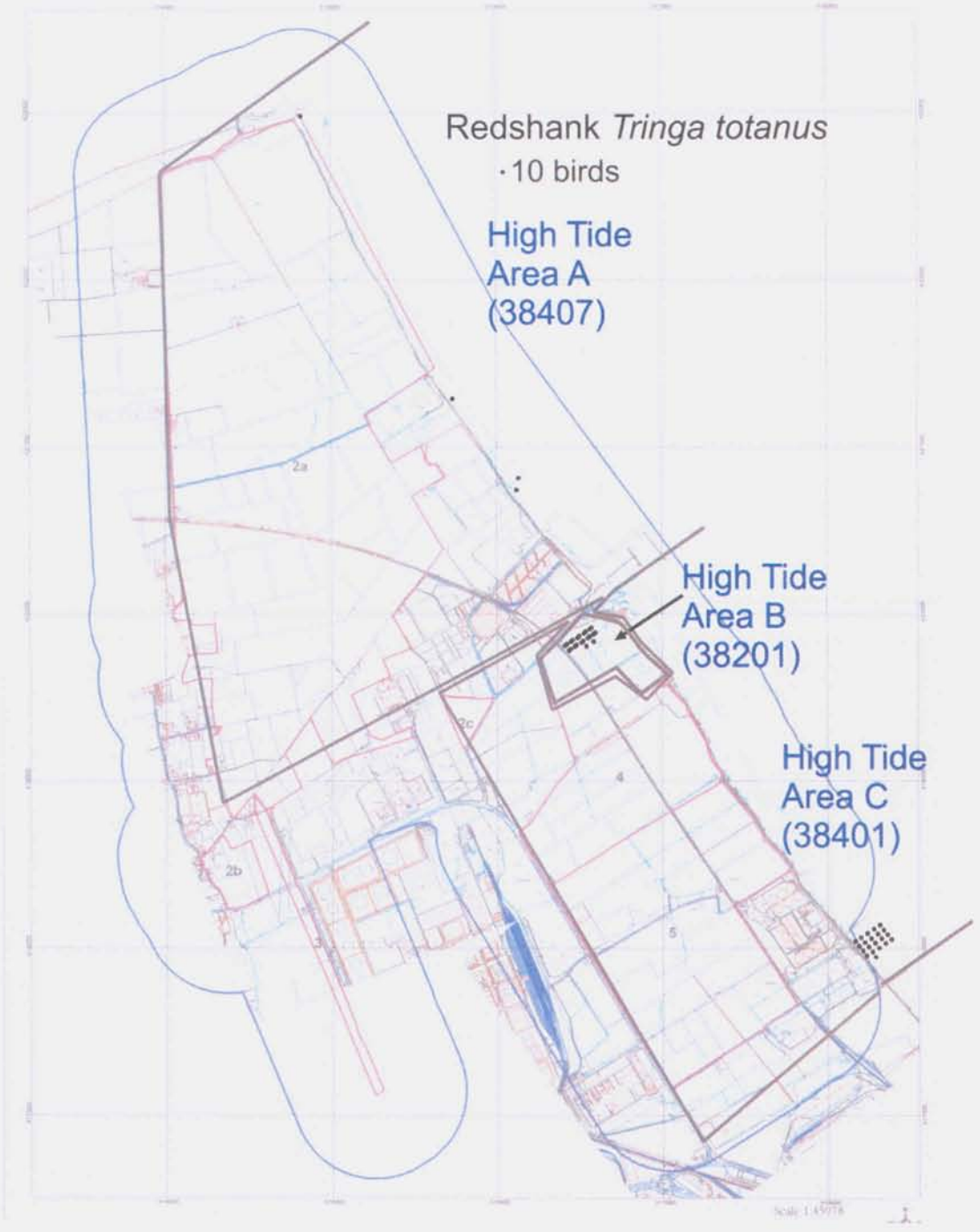

Figure 7.2.14 Redshank distribution and abundance – December 2006

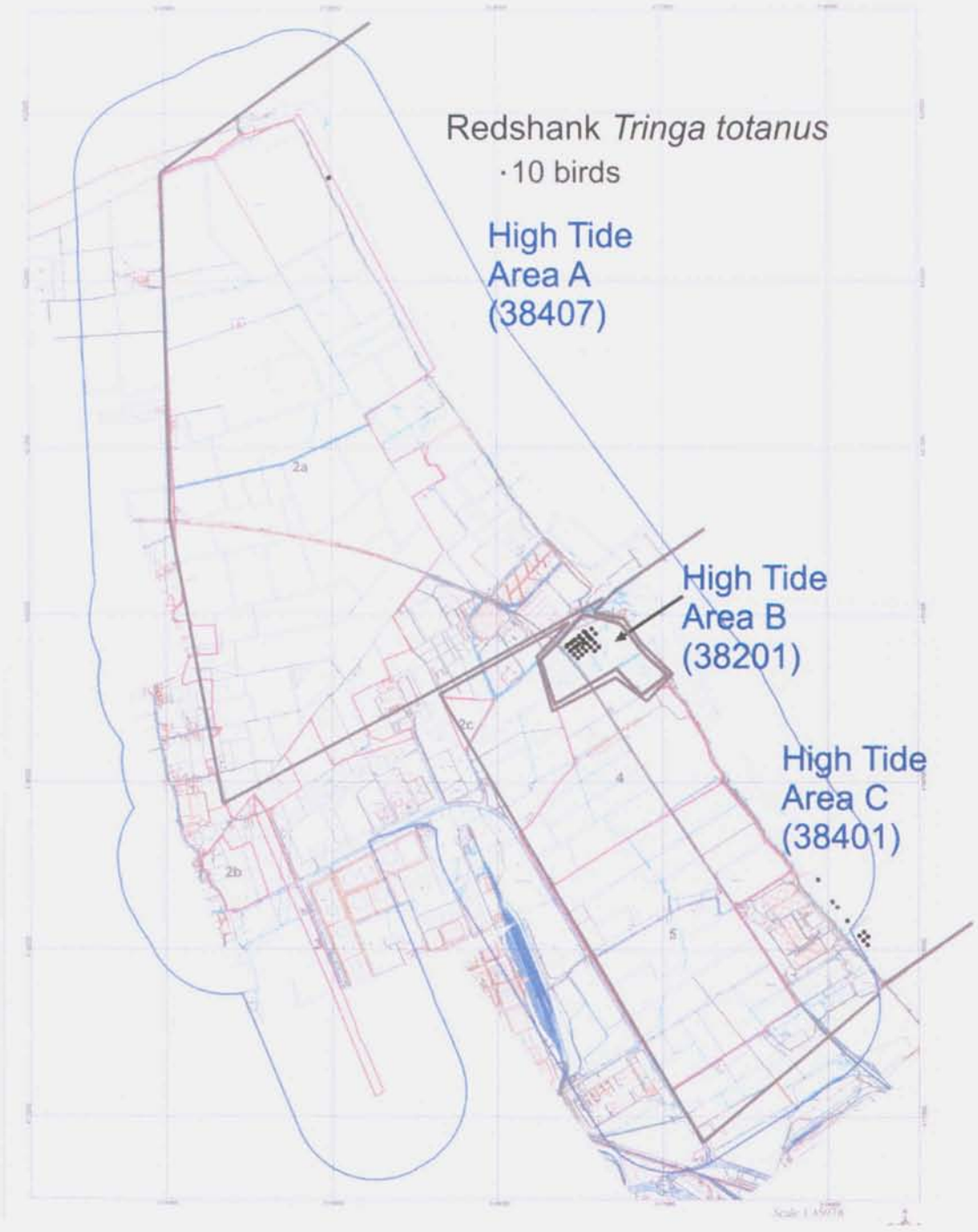

Figure 7.2.15 Redshank distribution and abundance – November 2006

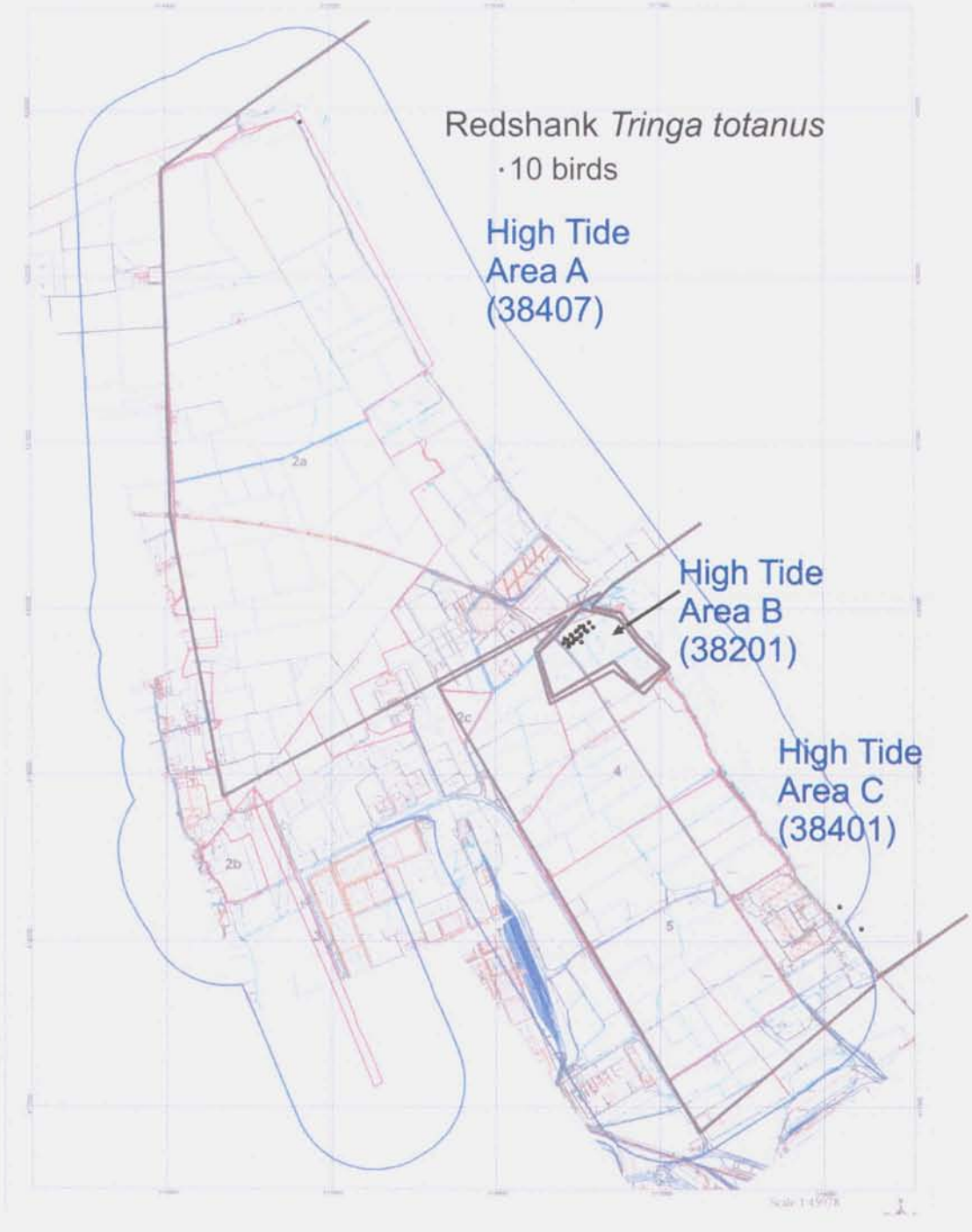

Figure 7.2.15 Redshank distribution and abundance – October2006