

The River Deben Estuary – Ornithological Importance and Status for Waterbirds

Summary Report to the Deben Estuary Partnership –
Environment, Landscape and Archaeology Group

April 2013

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A dawn flight of dark bellied brent geese on the River Deben. Photo by A.Excell



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Thanks to:

Nick Mason for readily supplying recent Wetland Bird Survey (WeBS) data for analysis at short notice, and for helping review the draft maps.

Michael Thomas for additional bird data for the estuary.

The 9 WeBS recorders for the estuary, for highly valued monthly bird data.

1. Background to waterbird Importance
2. Designations for the River Deben
3. Current Population Status and Species of Note
4. Species Summary and Discussion
 - Maps and Key Species Shown
 - Waterbirds of the River Deben – Summary Tables
 - i International Importance
 - ii National Importance
 - iii Other Species Noted in Significant Numbers
5. Appendices
 - Appendix 1 – References
 - Appendix 2 – Birds of Conservation Concern (BoCC)
 - Appendix 3 – Disturbance to Waterbirds – facts from research
 - Appendix 4 – Key to BTO Species Codes

Importance

Any site recognised as being of international ornithological importance is considered for classification as a SPA under the EC Directives on the Conservation of Wild Birds (EC/79/409), whilst a site recognised as an internationally important wetland qualifies for designation as a Ramsar site under the Convention on Wetlands of International Importance especially as Waterfowl Habitat.

Under criterion 6, a wetland is considered **internationally important** if it regularly holds at least 1% of the individuals in a population of one species or subspecies of waterbird, while criterion 5 states that any site regularly supporting 20,000 or more waterbirds also qualifies.

A wetland in Britain is considered **nationally important** if it regularly holds 1% or more of the estimated British population of one species or subspecies of waterbird.

Designations for the River Deben

The River Deben was designated as a **Special Protection Area** (SPA) for its wintering **avocet** numbers (for having 95 wintering individuals representing at least 7.5% of the national wintering population at the time - the 5 year mean peak between 1991/2 and 1995/6). From September 2012 this designation has been revised to include **dark bellied brent goose** as well. The estuary was also designated as **Site of Special Scientific Interest (SSSI)** in February 1991 under Section 29 of the Wildlife and Countryside Act 1981. As part of the designation, several bird species were selected as being of national or international importance. The following extract is taken from the designation at that time.

*“The numbers of redshank overwintering on the Estuary are of international importance and the summer breeding population of this species is of county significance. The site is of national importance for its winter populations of **dark-bellied brent goose**, **shelduck** and **black tailed godwit** with the numbers of **wigeon**, **pintail** and **grey plover** approaching this level in some years. The Estuary supports many other species including high numbers of **dunlin**, **curlew** and **mute swan**.”*

The estuary also has **Ramsar site** status since 1996, qualifying under Criterion 3c by “regularly supporting internationally important wintering numbers of **dark-bellied brent geese**. Notable also are nationally important numbers of the following migratory waterfowl, **shelduck**, **avocet**, **grey plover**, **black tailed godwit**, and **redshank**”.



Avocet roosting on the Deben Estuary mudflats. Photo by A.Excell

and Species of Note

There have been some inevitable population shifts on the estuary since these designations were established, partially reflecting international population levels and migratory patterns. However, the estuary clearly still supports internationally and nationally important numbers of bird species, as data from the ongoing national Wetland Bird Survey data (WeBS) testifies. An annual total of around 20,000 waterbirds are present in the estuary. Species accounts are given below for those birds that should be taken into account for revision of the SPA and SSSI features in particular.

Species Summary and Discussion

The species in the following tables are present on the Deben Estuary in either **internationally or nationally important** numbers (taken from the last 10 years of WeBS reports). The status of each species is also given as red, amber or green, classified as a Bird of Conservation Concern (BoCC). For classification criteria on BoCC birds, please see Appendix 2.

The importance of the full length of the estuary for these bird species, including the mudflats, saltmarsh, creeks, its hinterland and adjoining freshwater grazing marsh habitats cannot be overstated.



Dunlin feeding on the Deben Estuary mudflats – photo by A.Excell

In addition to the main feeding areas on the estuary (particularly the total estuary length of mudflat and saltmarsh habitat), the key high tide roosting areas are of great significance, as it is at these times and locations where disturbance to the birds is most likely. Disturbance at any time of year can be considered significant, and most damaging to bird ecology in winter months when the birds are requiring completely uninterrupted roost sites to conserve body heat and energy levels. For further information and research-based examples of disturbance setback distances, please see Appendix 3.



Waterbirds breeding on the estuary clearly also require safe, uninterrupted areas for success. As several of these species tend to favour habitat within the estuary hinterland for breeding, locations have not been shown on the maps, as land use changes can be more frequent. Encouraging a greater number of landowners to enter into agri-environment schemes within the estuary catchment is of great importance in the short term future.

Maps and Key Species Shown

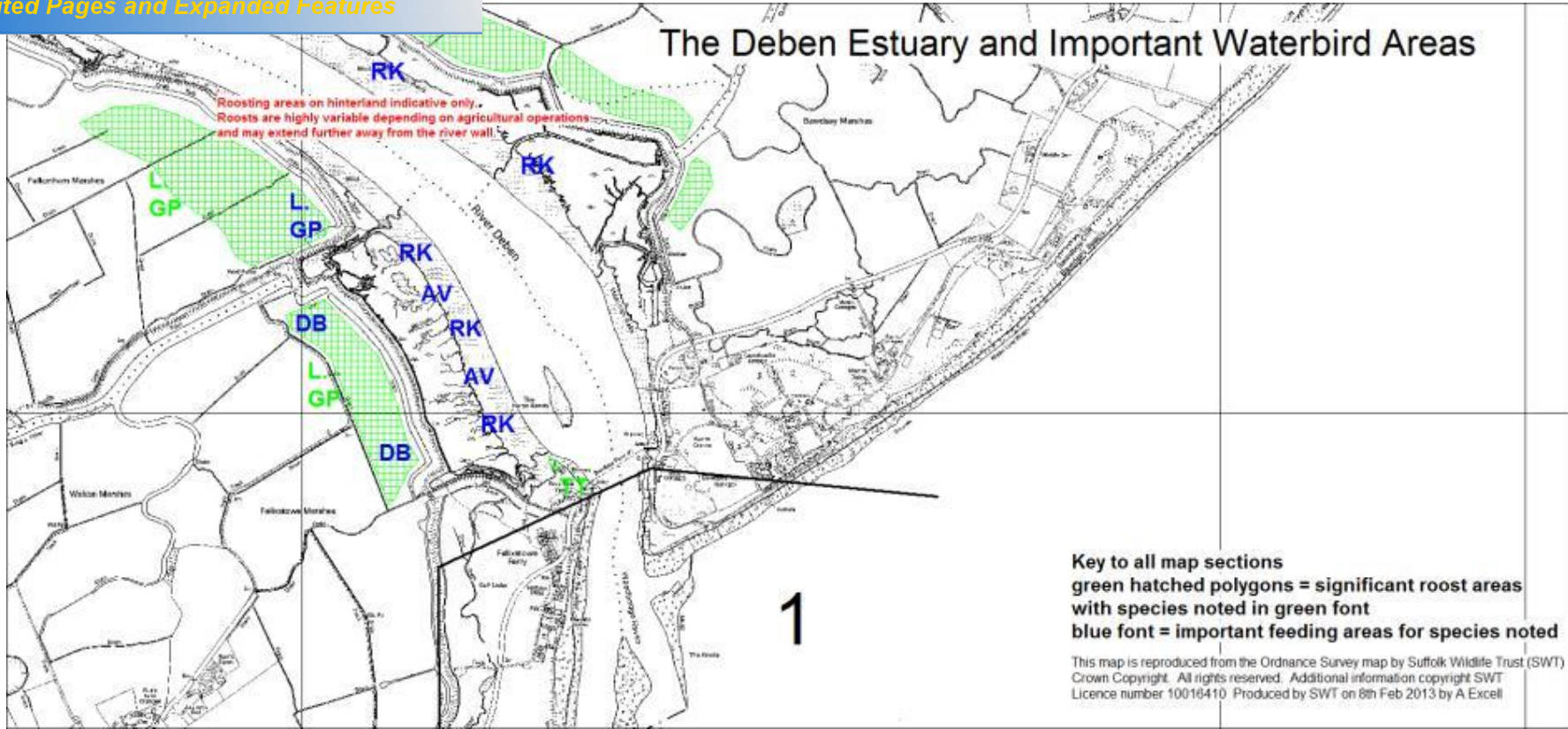
The bird maps developed as part of the Deben Estuary Partnership have flagged up feeding zones and several significant roost areas, identified from many years of monthly WeBS surveys and additional survey work conducted from boat. Particular attention should be paid to levels of current and proposed recreational activity in the vicinity of these areas, especially those areas noted as significant roosts. Without these refuges, the estuary could quickly lose much of its avifauna. Although these focal roost sites shown on the maps are of great significance, it is extremely important to note that a number of waterbird species also use the base of river wall sections to roost, and that these highly linear roost sites stretch along much of the estuary length. These linear roosting areas have not been shown on the maps, to aid clarity.

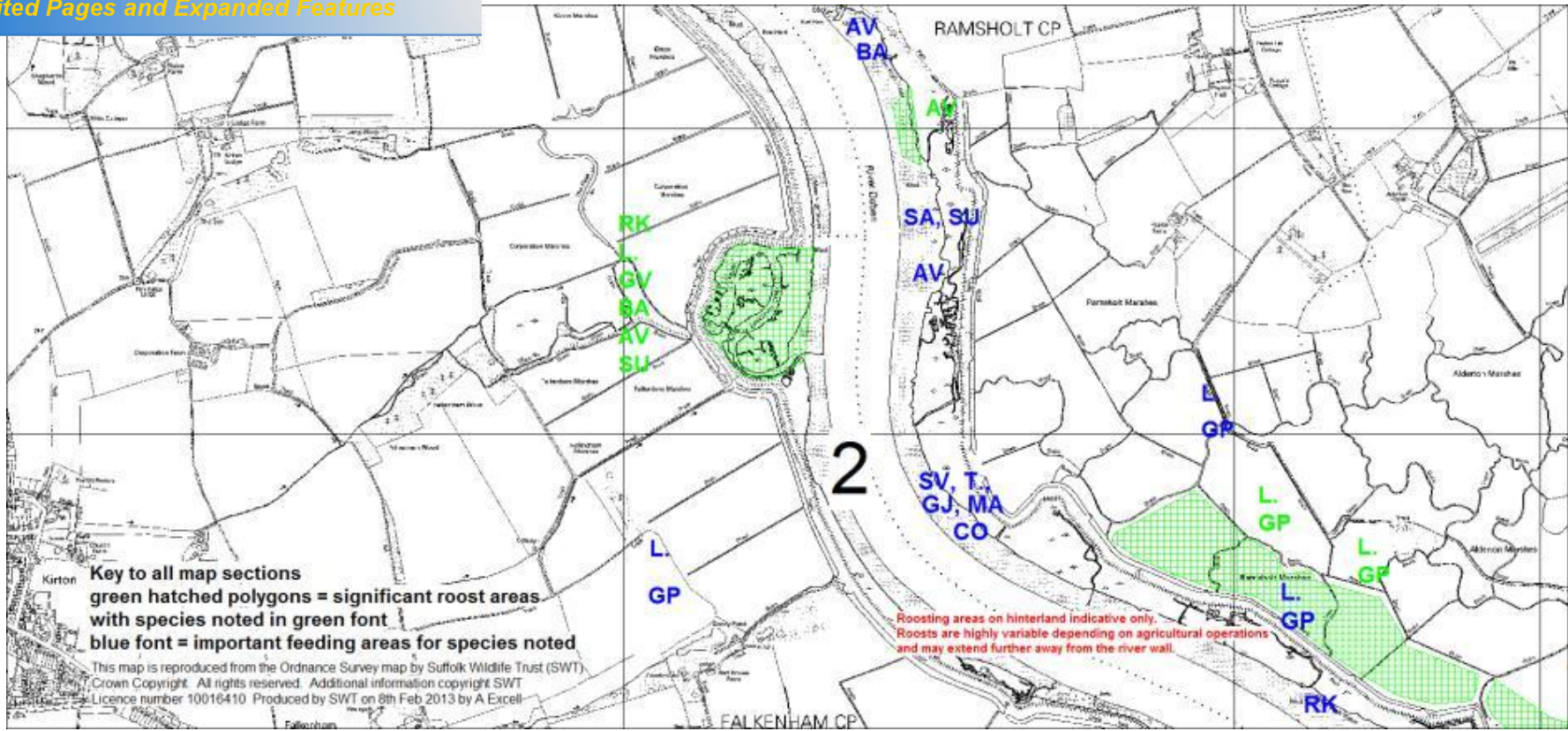
Key bird species in each roost area have been allocated their relevant BTO name codes. These can be seen in the tables within this report, and in Appendix 4. Maps have been split into sections (shown on 7 maps). These include visual divisions for the 5 DEP estuary sections, from section 1 at the mouth of the estuary at Felixstowe Ferry and Bawdsey, to section 5, upstream of Wilford Bridge, Melton. Unfortunately, reproduction of maps in 5 sections mirroring those developed by DEP proved difficult as those sections are of widely varying lengths. Too much detail would also have been lost from the maps in this report.

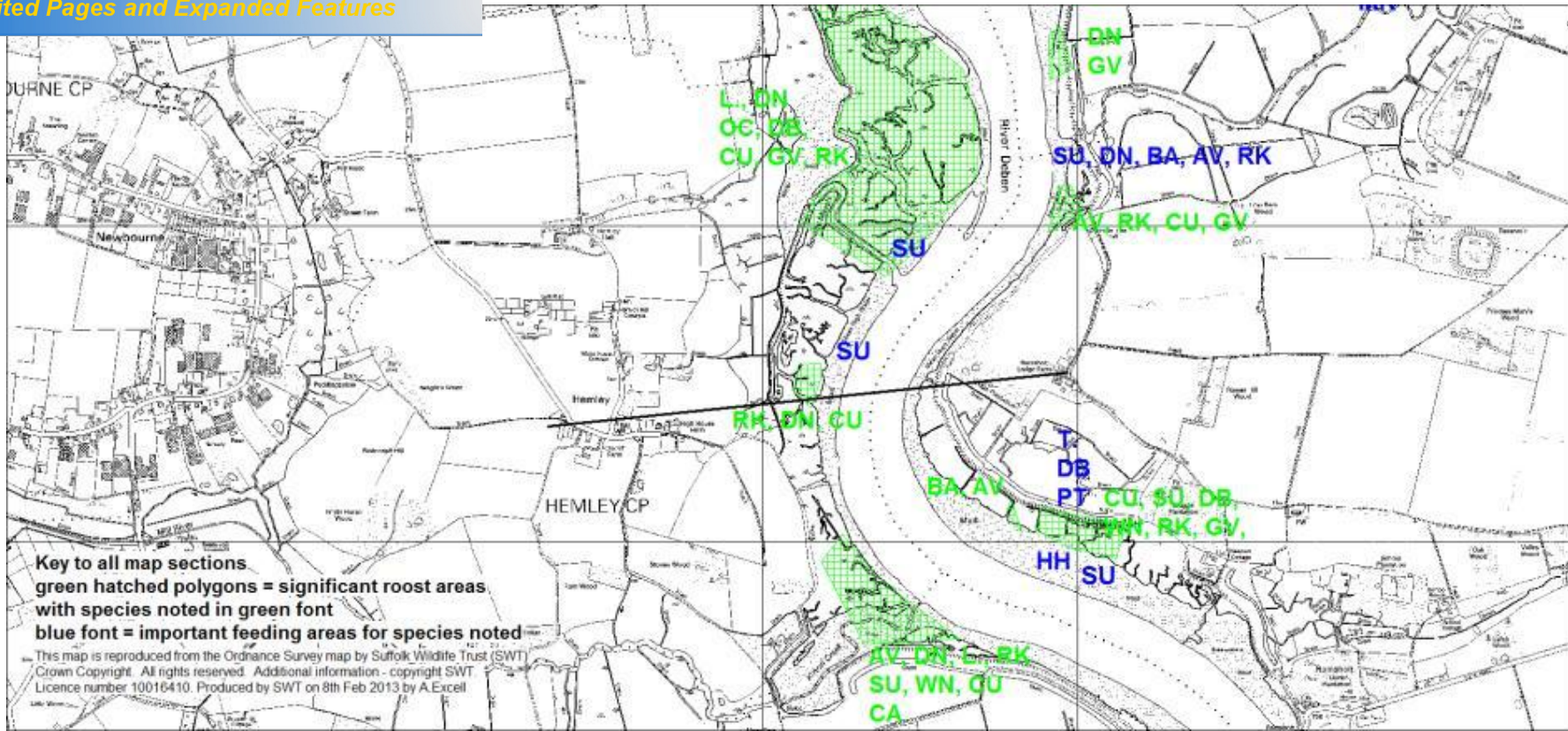
It is worth noting that many other birds have a strong association with the estuary, including iconic species such as barn owl, short eared owl, nightingale, common tern, little tern, twite, snow bunting, skylark and meadow pipit. None of these species have been shown on the maps, as they either have stronger associations with the hinterland zones of the estuary, or are otherwise not linked so completely with large roosting groups and risk of disturbance at similar levels.

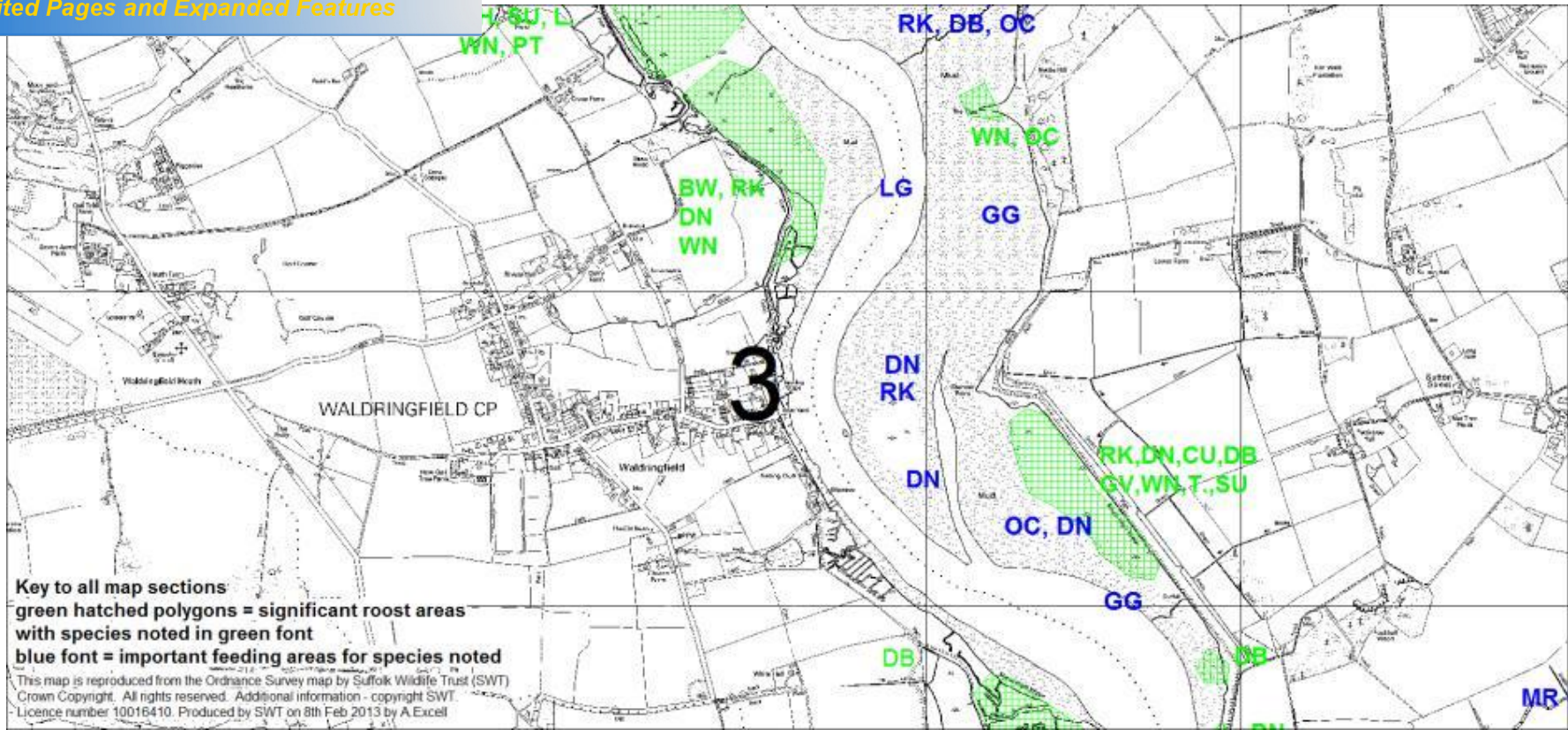
The information contained within this brief summary report must be considered as 'work in progress', and hopefully it will help inform the review process of the estuary's protected status. Contributions from other groups will be welcomed. The importance of collecting and analysing ongoing field data is paramount to the success of protecting the estuary's biodiversity.

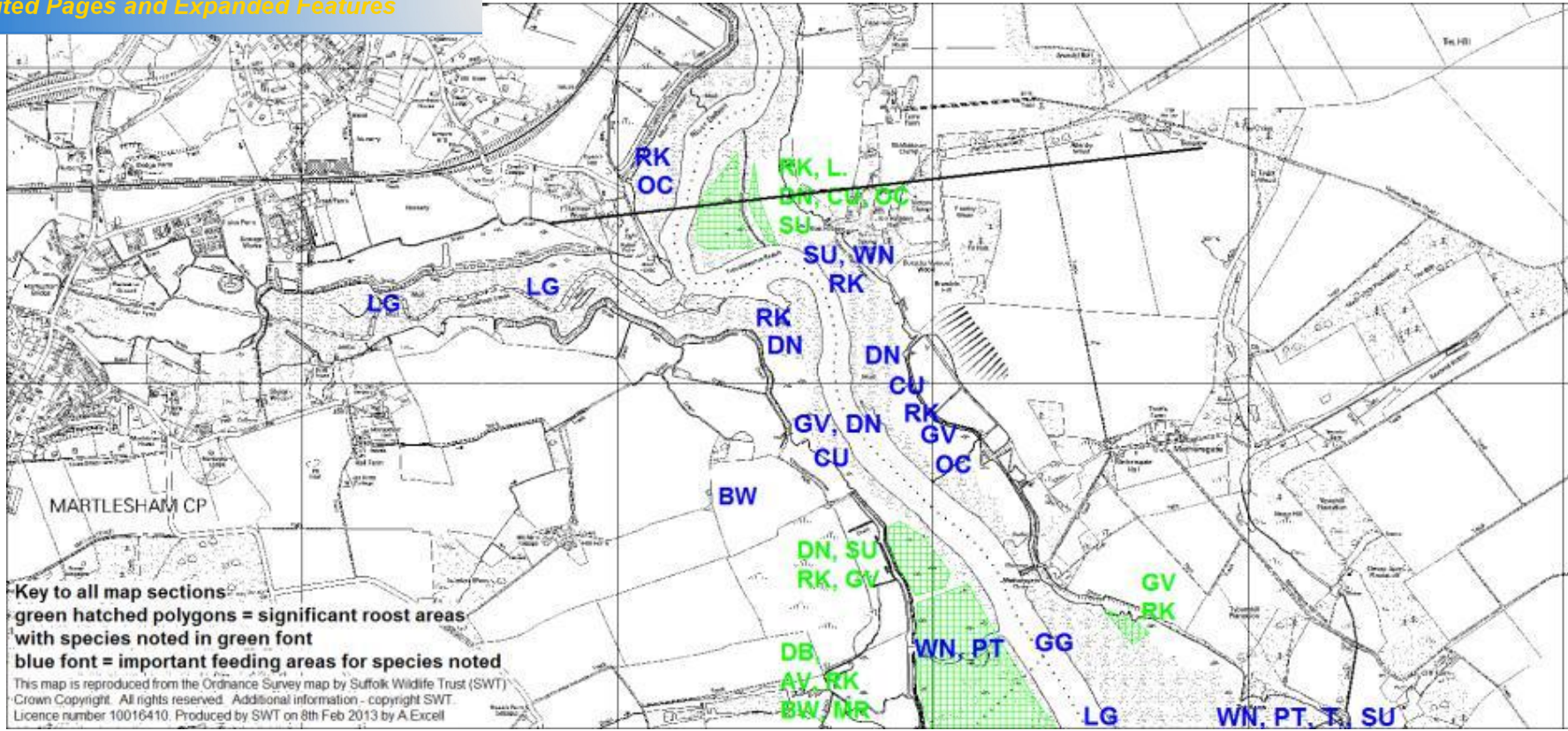
The Deben Estuary and Important Waterbird Areas

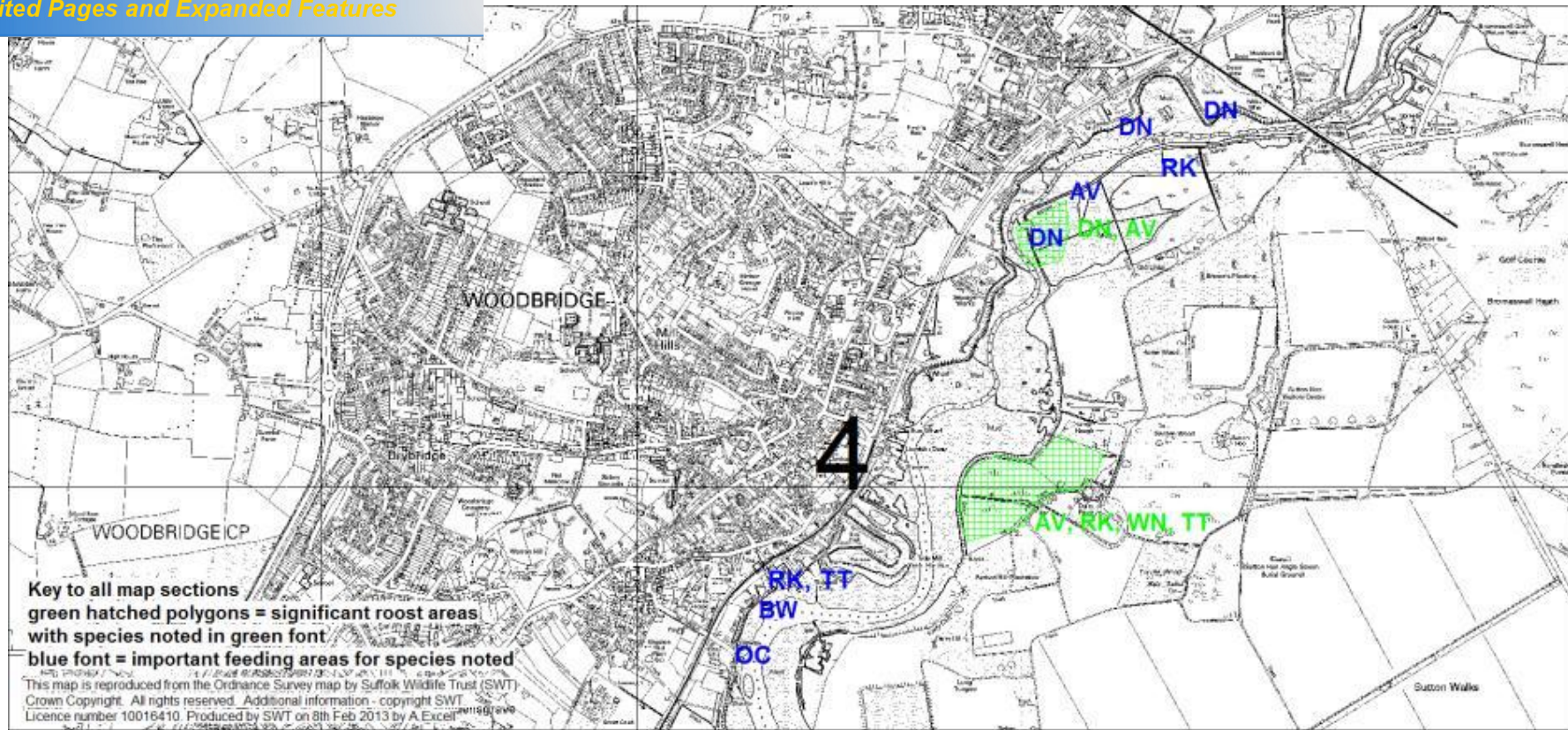


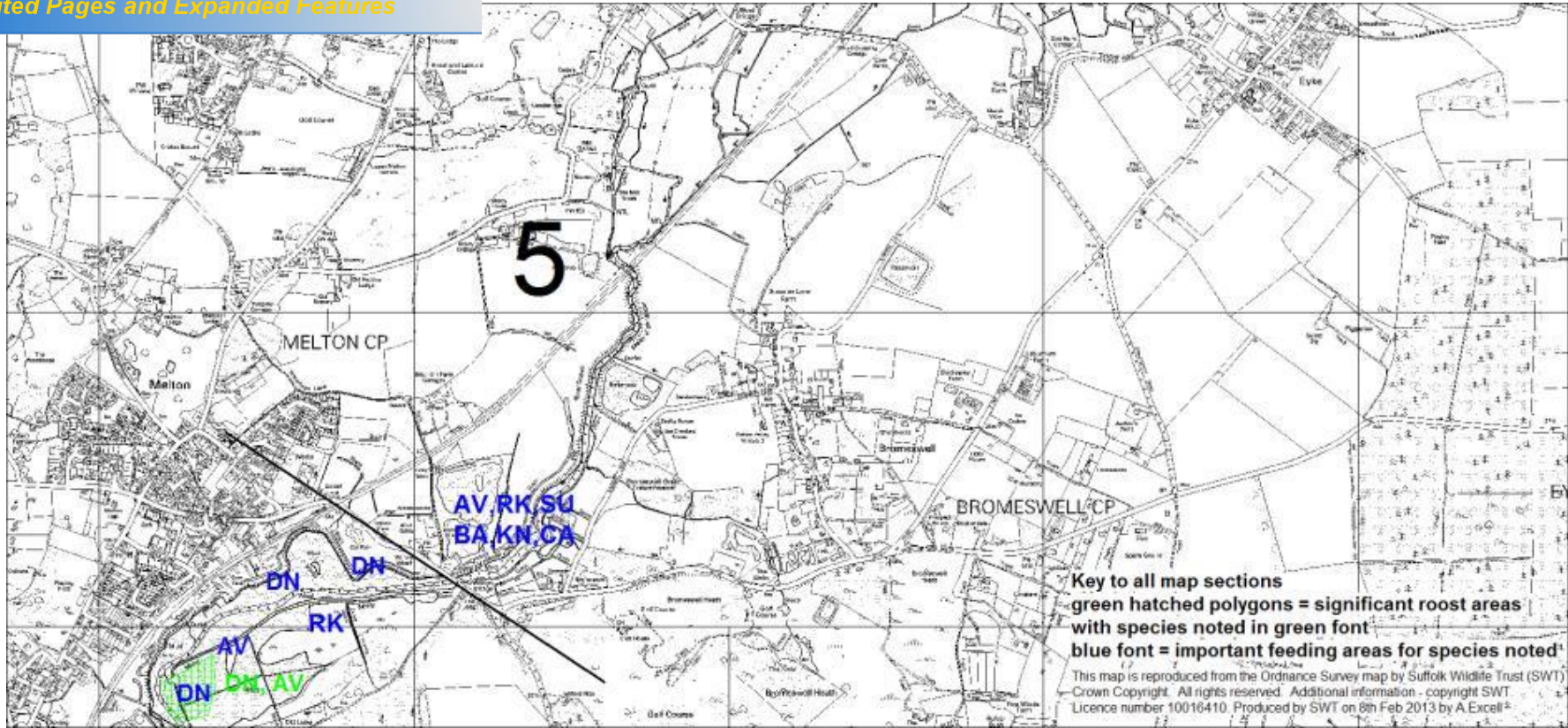












International Importance

Species	BoCC Status	Mean nos of birds on estuary between 2000/1 and 2004/5	Mean nos of birds on estuary between 2006/7 and 2010/11	Qualifying international threshold
<i>Black tailed godwit (BW)</i>	<i>Red</i>	<i>248</i>	<i>680</i>	<i>610</i>

National Importance

Species	BoCC Status	Mean nos of birds on estuary between 2000/1 and 2004/5	Mean nos of birds on estuary between 2006/7 and 2010/11	Qualifying UK threshold
<i>Avocet (Av)</i>	<i>Amber</i>	<i>241</i>	<i>299</i>	<i>75</i>
<i>Dark bellied brent goose(DB or BG)</i>	<i>Amber</i>	<i>1915</i>	<i>1463</i>	<i>910</i>
<i>Grey plover (GV)</i>	<i>Amber</i>	<i>537</i>	<i>485</i>	<i>430</i>
<i>Little egret (ET)</i>	<i>Amber</i>	<i>n/a</i>	<i>49</i>	<i>45</i>
<i>Redshank (RK)</i>	<i>Amber</i>	<i>2095</i>	<i>2140</i>	<i>1200</i>
<i>Shelduck (SU)</i>	<i>Amber</i>	<i>799</i>	<i>649</i>	<i>610</i>

Other Species Noted in Significant Numbers

Note that some of the species shown have peak counts close to, or in excess of the qualifying UK threshold.

Species	BoCC Status	Mean nos of birds on estuary between Jan 2010 and Dec 2012	Max nos of birds on estuary between Jan 2010 and Dec 2012	Qualifying UK threshold
<i>Bar tailed godwit (BA)</i>	<i>Amber</i>	<i>41</i>	<i>102 (Feb 2012)</i>	<i>380</i>
<i>Curlew (CU)</i>	<i>Amber</i>	<i>768</i>	<i>1032 (Oct 2011)</i>	<i>1400</i>
<i>Dunlin (DN)</i>	<i>Red</i>	<i>2919</i>	<i>3670 (Dec 2011)</i>	<i>3500</i>
<i>Golden plover (GP)</i>	<i>Amber</i>	<i>n/a</i>	<i>3813 (6449 in 2010/11)</i>	<i>4000</i>

		130	223 (Jan 2012)	3200
Lapwing (L.)	Red	2681	4478 (Jan 2011)	6200
Little grebe (LG)	Amber	68	102 (Feb 2012)	160
Pintail (PT)	Amber	102	176 (Jan 2011)	290

Worthy of additional note here are dunlin and lapwing, both red listed birds in serious decline. The Deben estuary supports occasional peak numbers of dunlin in excess of the UK qualifying threshold, and this species feeds and roosts along the entire estuary length. Lapwing numbers, although below UK threshold levels, are clearly significant, and would have the potential to be much higher with additional appropriate agricultural hinterland management. Golden plover numbers have recently exceeded the UK qualifying threshold, and this species may well be listed as nationally important in years to come. Species such as knot, little grebe and pintail have been listed above as they each tend to be concentrated in one section of the estuary only, and could be easily displaced from the estuary by increased recreational pressure.



A typical assemblage of waterfowl on the River Deben at 'The Tips' – photo by A.Excell



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Appendix 1

References

Banks, A. , Collier, M. et al (2006) *Waterbirds in the UK 2004/5 – The Wetland Bird Survey*. Published by BTO, WWT, RSPB & JNCC

Holt, C. , Austin, G et al (2012) *Waterbirds in the UK 2010/11 – The Wetland Bird Survey*. Published by BTO, RSPB, JNCC in association with WWT

JNCC (2001) *SPA Description – Deben Estuary*. – jncc.defra.gov.uk/default.aspx?page=2023 (28.01.2013)

JNCC (2008) Info Sheet on Ramsar Wetlands – River Deben. – jncc.defra.gov.uk/pdf/RIS/UK11017.pdf

Mason, N. et al (2010-2012) *Deben Estuary WeBS raw data for all nine estuary sectors Jan 2010-Dec 2012*. Unpublished data for WeBS UK reports.

Appendix 2

Conservation Status of Birds in the UK – and Birds of Conservation Concern (BoCC)

The conservation of birds in the UK involves a partnership of governmental and non-governmental organisations, including the Joint Nature Conservation Committee (JNCC), Natural England, the Royal Society for the Protection of Birds (RSPB), the British Trust for Ornithology (BTO) and the Wildlife Trusts. In 2002, the leading conservation organisations reviewed the population status of the birds that are regularly found here and placed each onto one of three lists – red, amber or green. This categorisation gives an indication of the relative priority that should be given to each species, and the lists will help to guide future conservation efforts in the UK.

Red list species are those that are globally threatened, whose population or range has declined rapidly in recent years (i.e. by more than 50% in 25 years), or which have declined historically and not recovered.

Amber list species are those whose population or range has declined moderately in recent years (by more than 25% but less than 50% in 25 years), those whose population has declined historically but recovered recently, rare breeders (fewer than 300 pairs), those with internationally important populations in the UK, those with localised populations, and those with an unfavourable conservation status in Europe.

Green list species are those remaining species that fulfil none of the criteria. The review excluded species that are not native to the UK and those that occur irregularly as vagrants or scarce migrants.

Information kindly supplied by Natural England

Examples of set-back distances

- 180m as the 'safe' distance for approach for pedestrians and boats for tern colonies, based on work in Florida (Rodgers & Smith 1995)
- 70m as a recommended distance to protect roosting cormorants, gulls and oystercatchers from disturbance from kayaks and motorboats off Vancouver Island (Chatwin 2010)
- 200m as the necessary zoning required to protect common tern colonies from disturbance (people on foot) at colonies in Virginia and New Carolina (Erwin 1989)
- 100m as the necessary zoning required to protect least (very similar to little) and royal tern colonies from disturbance (people on foot) at colonies in Virginia and New Carolina (Erwin 1989)
- 100m as the necessary distance to protect nesting common terns from disturbance effects of personal watercraft in New Jersey (Burger 1998)
- 200m as the approximate distance at which curlews roosting on saltmarsh in Holland could be approached before taking flight (Smit & Visser 1993)
- 25-550m as the distance at which different wader species and brent geese were recorded taking flight when approached by someone walking across mudflats at two different sites in Holland (Smit & Visser 1993)
- 5-178m (median 52m) as the distance at which brent geese responded to a potential disturbance event on the Solent. Data from 20 locations (Liley, Stillman, & Fearnley 2010).
- 10-200m (median 46m) as the distance at which oystercatchers responded to a potential disturbance event on the Solent. Data from 20 locations (Liley *et al.* 2010).
- 75-150 (median 44.5m) as the distance at which redshanks responded to a potential disturbance event on the Solent. Data from 20 locations (Liley *et al.* 2010).
- 25-200m (median 75m) as the distance at which curlews responded to a potential disturbance event on the Solent. Data from 20 locations (Liley *et al.* 2010)

The figures above are taken from the following research papers

Burger, J. (1998) Effects of Motorboats and Personal Watercraft on Flight Behaviour over a Colony of Common Terns. *Condor*, **100**, 528-534.

Chatwin, T. (2010) Set-back distances to protect nesting and roosting seabirds off Vancouver Island from boat disturbance, <http://dspace.royalroads.ca/docs/handle/10170/375>

Erwin, R.M. (1989) Responses to Human Intruders by Birds Nesting in Colonies: Experimental Results and Management Guidelines. *Colonial Waterbirds*, **12**, 104-108.

Liley, D., Stillman, R.A. & Fearnley, H. (2010) *The Solent Disturbance and Mitigation Project Phase II. Results of Bird Disturbance Fieldwork, 2009/10*. Footprint Ecology / Solent Forum.

Rodgers, J.A. & Smith, H.T. (1995) Set-Back Distances to Protect Nesting Bird Colonies From Human Disturbance In Florida. *Conservation Biology*, **9**, 89-99.

Smit, C.J. & Visser, G.J.M. (1993) Effects of Disturbance on Shorebirds: a Summary of Existing Knowledge from the Dutch Wadden Sea and Delta Area. *Wader Study Group Bulletin*, **68**, 6-19.

AC Arctic Skua	GA Gadwall	LE Long-eared Owl	SM Sand Martin
AE Arctic Tern	GX Gannet	LT Long-tailed Tit	SS Sanderling
AV Avocet	GW Garden Warbler	MG Magpie	TE Sandwich Tern
BO Barn Owl	GY Garganey	MA Mallard	VI Savi's Warbler
BY Barnacle Goose	GC Goldcrest	MN Mandarin Duck	SQ Scarlet Rosefinch
BA Bar-tailed Godwit	EA Golden Eagle	MX Manx Shearwater	SP Scaup
BR Bearded Tit	OL Golden Oriole	MR Marsh Harrier	CY Scottish Crossbill
BS Berwick's Swan	GF Golden Pheasant	MT Marsh Tit	SW Sedge Warbler
BI Bittern	GP Golden Plover	MW Marsh Warbler	NS Serin
BK Black Grouse	GN Goldeneye	MP Meadow Pipit	SA Shag
TY Black Guillemot	GO Goldfinch	MU Mediterranean Gull	SU Shelduck
BX Black Redstart	GD Goosander	ML Merlin	SX Shorelark
BJ Black Tern	GI Goshawk	M. Mistle Thrush	SE Short-eared Owl
B. Blackbird	GH Grasshopper Warbler	MO Montagu's Harrier	SV Shoveler
BC Blackcap	GB Great Black-backed Gull	MH Moorhen	SK Siskin
BH Black-headed Gull	GG Great Crested Grebe	MS Mute Swan	S. Skylark
BN Black-necked Grebe	ND Great Northern Diver	N. Nightingale	SZ Slavonian Grebe
BW Black-tailed Godwit	NX Great Skua	NJ Nightjar	SN Snipe
BV Black-throated Diver	GS Great Spotted Woodpecker	NH Nuthatch	SB Snow Bunting
BT Blue Tit	GT Great Tit	OP Osprey	ST Song Thrush
BU Bluethroat	GE Green Sandpiper	OC Oystercatcher	SH Sparrowhawk
BL Brambling	G. Green Woodpecker	PX Peafowl/Peacock	AK Spotted Crake
BG Brent Goose	GR Greenfinch	PE Peregrine	SF Spotted Flycatcher
BF Bullfinch	GK Greenshank	PH Pheasant	DR Spotted Redshank
BZ Buzzard	H. Grey Heron	PF Pied Flycatcher	SG Starling
CG Canada Goose	P. Grey Partridge	PW Pied Wagtail	SD Stock Dove
CP Capercaillie	GV Grey Plover	PG Pink-footed Goose	SC Stonechat
C. Carrion Crow	GL Grey Wagtail	PT Pintail	TN Stone-curlew
CW Cetti's Warbler	GJ Greylag Goose	PO Pochard	TM Storm Petrel
CH Chaffinch	GU Guillemot	PM Ptarmigan	SL Swallow
CC Chiffchaff	FW Guineafowl (Helmeted)	PU Puffin	SI Swift
CF Chough	HF Hawfinch	PS Purple Sandpiper	TO Tawny Owl
CL Cirl Bunting	HH Hen Harrier	Q. Quail	T. Teal
CT Coal Tit	HG Herring Gull	RN Raven	TK Temminck's Stint
CD Collared Dove	HY Hobby	RA Razorbill	TP Tree Pipit
CM Common Gull	HZ Honey Buzzard	RG Red Grouse	TS Tree Sparrow
CS Common Sandpiper	HC Hooded Crow	KT Red Kite	TC Treecreeper
CX Common Scoter	HP Hoopoe	ED Red-backed Shrike	TU Tufted Duck
CN Common Tern	HM House Martin	RM Red-breasted Merganser	TT Turnstone
CO Coot	HS House Sparrow	RQ Red-crested Pochard	TD Turtle Dove
CA Cormorant	JD Jackdaw	FV Red-footed Falcon	TW Twite
CB Corn Bunting	J. Jay	RL Red-legged Partridge	WA Water Rail
CE Corncrake	K. Kestrel	NK Red-necked Phalarope	W. Wheatear
CI Crested Tit	KF Kingfisher	LR Redpoll (Lesser)	WM Whimbrel
CR Crossbill (Common)	KI Kittiwake	RK Redshank	WC Whinchat
CK Cuckoo	KN Knot	RT Redstart	WG White-fronted Goose
CU Curlew	LM Lady Amherst's Pheasant	RH Red-throated Diver	WH Whitethroat
DW Dartford Warbler	LA Lapland Bunting	RE Redwing	WS Whooper Swan
DI Dipper	L. Lapwing	RB Reed Bunting	WN Wigeon
DO Dotterel	TL Leach's Petrel	RW Reed Warbler	WT Willow Tit
DN Dunlin	LB Lesser Black-backed Gull	RZ Ring Ouzel	WW Willow Warbler
D. Dunnock	LS Lesser Spotted Woodpecker	RP Ringed Plover	OD Wood Sandpiper
EG Egyptian Goose	LW Lesser Whitethroat	RI Ring-necked Parakeet	WO Wood Warbler
E. Eider	LI Linnet	R. Robin	WK Woodcock
FP Feral Pigeon	ET Little Egret	DV Rock Dove (not feral)	WL Woodlark
ZL Feral/hybrid goose	LG Little Grebe	RC Rock Pipit	WP Woodpigeon
ZF Feral/hybrid mallard type	LU Little Gull	RO Rook	WR Wren
FF Fieldfare	LO Little Owl	RS Roseate Tern	WY Wryneck
FC Firecrest	LP Little Ringed Plover	RY Ruddy Duck	YW Yellow Wagtail
F. Fulmar	AF Little Tern	RU Ruff	Y. Yellowhammer