REPORT

Boston Alternative Energy Facility

Final Waterbird Survey Report Summary of Data

Client:	Alternative Use Boston Projects Ltd
Planning Inspectorate Reference:	EN010095
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baef
Boston Alternative Energy Facility

Royal HaskoningDHV
Enhancing Society Together

Note / Memo

HaskoningDHV UK Ltd.
Industry & Buildings

To:	National Infrastructure Planning
From:	Alternative Use Boston Projects Limited
Date:	15 March 2022
Our reference:	PB6934-RHD-ZZ-XX-NT-Z-4114
Reference:	9.91
Planning Inspectorate Reference:	EN010095
Classification:	Project related
Checked by:	Chris Adnitt
Approved by:	Paul Salmon

Subject: **Boston Alternative Energy Facility: Deadline 8 – Final Waterbird Survey Report Summary of Data**

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1 Introduction

1.1.1 Baseline ornithology surveys for the proposed Boston Alternative Energy Facility, focusing on The Haven shipping channel concluded in March 2022. In order to disseminate the outstanding baseline survey data among Interested Parties in the Examination, ahead of production of the final report from the field surveyor later in March 2022, bird baseline data is provided in full for the winter 2021/22 surveys in **Table 4-1**, and peak counts of waterbirds at all sections of the Haven across all key used data sources are provided in **Table 4-2** and **Table 4-3**.

2 Baseline Survey Effort Summary

2.1.1 Between 2019 and 2021, The Haven at the Principal Application Site has been surveyed in January to June, and October, of two calendar years; and August, September, November and December in one calendar year. In the breeding season (April to June), surveys have been at low tide, and were part of Breeding Bird Surveys. In all other months surveyed there have been both low and high tide surveys, adapted from British Trust for Ornithology (BTO) Wetland Bird Survey (WeBS) methodology (see Environmental Statement (ES) Chapter 17 Marine and Coastal Ecology and Appendix 17.1 Habitat Regulations Assessment – Ornithology Addendum (document reference 9.13, REP1-026), hereafter 'Ornithology Addendum'). The Haven from the downstream limit of the Principal Application Site to the boundary of The Wash Special Protection Area (SPA) at Hobhole Drain, has been surveyed in December to March of the winter 2021/22, at high and low tides following the same adapted WeBS methodology (**Table 4-1**, C). This was the remaining stretch of shipping channel to be

surveyed which is not designated within the National Sites Network (formerly Natura 2000 European sites network).

2.1.2 The Haven within The Wash SPA, from Hobhole Drain to HMP North Sea Camp, has likewise been surveyed from December to March of the winter 2021/22 following the same adapted WeBS methodology (**Table 4-1**, D).

2.1.3 As outlined in the Ornithology Addendum, the mouth of The Haven (MOTH) has previously received 'Changes In Waterbird Behaviour…' surveys as part of establishing the ornithological baseline. These surveys have been carried out at high tide when one or more large commercial vessels were scheduled to pass through the MOTH (as confirmed with the Port of Boston), in January, February, March and November in two calendar years; and in May-October and December of one calendar year. The MOTH has since been surveyed at high and low tide during December to March of the winter 2021/22 following the adapted WeBS methodology applied in sections A-D (peak data across both survey types in **Table 4-1**, E). Changes in Waterbird Behaviour surveys were also completed for the Principal Application Site, generally simultaneously to winter count methodology. For full report on these surveys see Deadline 6 submission Change In Waterbird Behaviour Report (document reference 9.71, REP6-034).

3 Baseline Data

3.1.1 Peak high-water counts of waterbird species in successive sections of The Haven from the Principal Application Site to the Mouth of The Haven are shown in **Table 4-2**. High water is the period in which vessel traffic relating to the project is mobile, and vessel-based disturbance can potentially occur. Peak counts of waterbirds on successive sections of The Haven across all tides are shown in **Table 4-3**.

4 Baseline data for intervening sections of The Haven

4.1.1 Winter surveys of the intervening section of The Haven (sections C and D) at high and low water have overall shown that SPA feature species are present at high water (when cargo vessels are moving) generally in low numbers (in context of their The Wash SPA populations) on the intervening length of The Haven between the Principal Application Site and HMP North Sea Camp. Only gadwall and redshank have occurred in numbers exceeding 1% of their The Wash SPA 5-year peak mean BTO WeBS population in section C, and in section D only dark-bellied brent goose and gadwall.

4.1.2 Section C lies outside The Wash SPA. While numbers of redshank at both high and low tide were higher than for other shorebirds (typically around 40 birds throughout the site at high water, 20 at low water), the occurrence of a high tide roost, or a count above 1% of The Wash SPA 5-year mean peak WeBS count, were single occasions across surveys. Dark-bellied brent goose were generally absent or in low numbers during high water but on one occasion there was a gathering of 43. All other SPA birds (black-tailed godwit, bar-tailed godwit, curlew, grey plover, shelduck, gadwall, oystercatcher, turnstone) were present at 14 individuals or less throughout the site at high or low water. Mixed gulls and ruff are named within The Wash SPA assemblage and were generally present in numbers similar to at the Principal Application Site. Disturbance was recorded at high tide due to pilot boat (100% of 43 brent geese and 100% of mixed gull flock into flight and back to same spot, January), large commercial vessel (to 100% of 25 redshank, 1 turnstone and 5 ruff, displaced to on-Haven lagoons where a high tide roost has been noted on one occasion since) and recreation [quad bikes] (75% of 4 redshank flew 200m, December). Bird disturbance is therefore similar to at the Principal Application Site. More SPA species (9 across high tide surveys) have been recorded at the Principal Application Site over a longer period; and the Applicant assumes the diversity is similar in section C.

4.1.3 Section D lies within the SPA. A similar assemblage of species is present at high tide as in section C, but abundances are more generally low (all species except dark-bellied brent goose present at 14 individuals or less throughout the site across high tide surveys). No substantial or repeatedly used wader high tide roost was noted. Dark bellied brent geese were present at around 170 individuals on two high tides, chiefly on saltmarsh adjacent to The Haven. At low tide, a similar assemblage composition of waterbirds is present but in greater abundance, in particular due to large flocks of dark-bellied brent goose.

4.1.4 The Applicant notes that vessel-based disturbance (recorded in section C (i.e. outside the SPA) upon redshank (25), turnstone (1), ruff (5), and dark-bellied brent goose (43) on one occasion per species across all surveys) does not act upon significant numbers of individuals. Up to 173 dark-bellied brent geese were recorded aggregating on saltmarsh beside The Haven in section D, and up to 58 redshank have been recorded on a lagoon set back from The Haven in section C (both at high water). None of the birds in these aggregations were reported to be disturbed by vessels. Birds observed to be disturbed were generally species within the assemblage feature, broadly similar to those at the Principal Application Site: specifically, ruff (up to 15 present) and a mixed aggregation of gulls (up to approximately 150 present). However, as a percentage of the most recent SPA citation estimate of the SPA non-breeding waterbird assemblage

size (400,367 individuals at citation update in December 2015) this disturbance is not significant (as it is a fraction of 1% of the citation assemblage).

4.1.5 Higher diversity and numbers of SPA species (predominantly due to aggregations of dark-bellied brent geese) were recorded on this stretch at low water when project vessels are will not be transiting.

Table 4-1 Counts of waterbirds on sequential sections of The Haven, downstream of the Principal Application Site (survey areas A and B), from December 2021 to March 2022. H = high water, L = low water. The Wash SPA boundary on The Haven is at the confluence with Hobhole Drain.

	C – Downstream from B to The Wash SPA boundary								D – The Wash SPA boundary to HMP North Sea Camp								E – Mouth of the Haven (MOTH)							
	Dec		Jan		Feb		Mar		Dec		Jan		Feb		Mar		Dec		Jan		Feb		Mar	
	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L
Bar-tailed Godwit		1																						
Black-tailed Godwit	4	1	1																					
Common Scoter																								
Common tern																								
Curlew	5	7	8	6	11	14	5	12	7	7	1	5	2	5	4	5								
Dark-bellied Brent Goose			43	32	7		2	126	156	1612		278	173	972	12						4	435	2	900
Dunlin														1		5	500		210				1100	
Gadwall							2						2											
Goldeneye																								
Grey plover	1	5	1						2				1											
Knot																								
Little tern																								
Oystercatcher					10	8	7	9	7				4	6	2	5	14	6	157	2	14	2	2108	9
Pink-footed goose																								
Pintail																								
Redshank	42	17	17	22	42	29	58	15	6	12	9	6	9	6	14	20	3	1	1	2	1		2	2
Sanderling																								
Shelduck				2			2	10			6		2	5	8	7								
Turnstone	1		1		2	2	2				2						20			22			126	
Wigeon													3			2		5		115			1	
Avocet							4	7																
Black-headed gull	61	2	153	1	51	170	6	954	26	3	4	13	44	1	5	5	11	2		5				1
Canada goose									1															

	C – Downstream from B to The Wash SPA boundary								D – The Wash SPA boundary to HMP North Sea Camp								E – Mouth of the Haven (MOTH)							
	Dec		Jan		Feb		Mar		Dec		Jan		Feb		Mar		Dec		Jan		Feb		Mar	
	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L
Common gull	1		3					13					1			2	1							
Common sandpiper																								
Cormorant				1	2		2				6	5	1	1	3	1			1	1				
Eider																								1
Golden plover																		1000						
Great black-backed gull	2				1						1	1												
Great crested grebe																1								
Great northern diver																		1						
Green sandpiper																								
Greenshank																								
Grey heron	2	1	1		2	1		1				1												
Greylag goose																								
Herring gull	4		2		2	2	1			3		2	1		1					2				2
Jack snipe	1																							
Kingfisher																								
Lapwing																	52	860	625		56			
Lesser black-backed gull								1																
Little egret	1					1		3							1	1								
Little grebe			1				4		1	7				1										
Mallard	2	5		10	4	6	2	2	2	8	6			3	2	6		2	1	16	1	2	2	
Red-breasted merganser																								
Ringed plover														4		5	7							
Ruff	5		15				1					1												
Sandwich tern																								
Snipe																								

	C – Downstream from B to The Wash SPA boundary								D – The Wash SPA boundary to HMP North Sea Camp								E – Mouth of the Haven (MOTH)							
	Dec		Jan		Feb		Mar		Dec		Jan		Feb		Mar		Dec		Jan		Feb		Mar	
	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L
Teal										3			1		3	3								
Whimbrel																								
White-fronted goose																								

Key for Table 4-2 and Table 4-3

Key	
A and B	Winter survey areas at the Principal Application Site
C	Downstream from B to The Wash SPA boundary at Hobhole Drain
D	The Wash SPA boundary to HMP North Sea Camp
D E	D and E combined area covered by WeBS sectors
	Haven sections outside The Wash SPA
	Haven sections within The Wash SPA
Highlighted peak counts exceed 1% of The Wash SPA 5-year mean peak 2015/16 to 2019/20:	
	SPA Feature Species
	SPA Assemblage-only species
Data Sources:	
'Wint'	Winter bird surveys adapted from WeBS methodology
'CiWB'	Changes in waterbird behaviour surveys for bird responses to vessel movements
'WeBS'	BTO Wetland Bird Survey
'FNxx' and 'Witham xx'	WeBS sectors Frampton North and Witham

Table 4-2 Peak counts at high water of waterbirds on successive sections of The Haven, from proposed Principal Application Site to the mouth of The Haven with The Wash Embayment, and data sources used for each area.

Data source:	Wint 2019-21		Wint 2021-22		CiWB/Wint		WeBS (FN23,24,27,60, Witham 60)		WeBS
Species	A	B	C	D	E (MOTH)		D E		The Wash SPA 5-year mean peak 2015/16 to 2019/20
Bar-tailed Godwit	1	10	0	0	10		40		17509
Black-tailed Godwit	6	3	4	0	2000		268		8597
Common Scoter	0	0	0	0	0		1		1194
Common tern	0	0	0	0	10		74		583
Curlew	2	8	11	7	55		200		6061
Dark-bellied Brent Goose	0	0	43	173	1150		1202		11221
Dunlin	0	8	0	0	1100		1200		26150
Gadwall	0	0	2	2	0		4		122
Goldeneye	0	0	0	0	0		4		69
Grey plover	3	4	1	2	5		100		8313
Knot	0	0	0	0	500		200		188838
Little tern	0	0	0	0	0		8		106
Oystercatcher	4	3	10	7	2168		2150		26586
Pink-footed goose	0	0	0	0	0		900		34300
Pintail	0	0	0	0	1		5		376
Redshank	162	93	58	14	220		130		5087
Sanderling	0	0	0	0	0		0		10079
Shelduck	2	3	2	8	36		50		2374
Turnstone	2	1	2	2	126		155		755
Wigeon	0	0	0	3	400		1300		12226
Avocet	0	0	4	0	1		2		448
Black-headed gull	80	105	153	44	34		152		14541
Canada goose	49	27	0	1	0		0		522
Common gull	5	0	3	1	3		50		1489
Common sandpiper	1	1	0	0	3		8		33

Data source:	Wint 2019-21		Wint 2021-22		CiWB/Wint		WeBS (FN23,24,27,60, Witham 60)		WeBS
Species	A	B	C	D	E (MOTH)		D E		The Wash SPA 5-year mean peak 2015/16 to 2019/20
Cormorant	6	3	2	6	10		34		550
Eider	0	0	0	0	2		12		1049
Golden plover	0	0	0	0	3000		5		15212
Great black-backed gull	1	0	2	1	1		4		499
Great crested grebe	1	0	0	0	0		6		84
Great northern diver	0	0	0	0	0		0		1
Green sandpiper	1	2	0	0	0		1		15
Greenshank	0	1	0	0	0		0		72
Grey heron	3	2	2	0	0		1		19
Greylag goose	1	3	0	0	0		0		1363
Herring gull	3	1	4	1	3		100		5420
Jack snipe	0	1	1	0	0		0		
Kingfisher	0	0	0	0	0		3		3
Lapwing	2	6	0	0	1100		400		12976
Lesser black-backed gull	1	10	0	0	0		10		454
Little egret	1	4	1	0	0		100		463
Little grebe	0	0	4	1	0		3		69
Mallard	19	13	4	6	55		10		958
Red-breasted merganser	0	0	0	0	1		4		76
Ringed plover	2	15	0	0	40		118		1315
Ruff	27	24	15	0	0		0		80
Sandwich tern	0	0	0	0	8		33		1618
Snipe	0	4	0	0	0		5		39
Teal	0	0	0	3	54		20		2791
Whimbrel	0	0	0	0	1		15		154
White-fronted goose	1	0	0	0	0		0		15

Table 4-3 Peak counts across tides, of waterbirds on successive sections of The Haven, from proposed Principal Application Site to the mouth of The Haven with The Wash Embayment, and data sources used for each area.

Data source:	Wint 2019-21		Wint 2021-22		CiWB/Wint		WeBS (FN23,24,27,60, Witham 60)		WeBS
	A	B	C	D	E (MOTH)		D E		The Wash SPA 5 yr 2015/16 to 2019/20
Bar-tailed Godwit	3	10	1	0	10		40		17509
Black-tailed Godwit	20	3	4	0	2000		268		8597
Common Scoter	0	0	0	0	0		1		1194
Common tern	0	0	0	0	10		74		583
Curlew	9	8	14	7	55		200		6061
Dark-bellied Brent Goose	0	0	126	1612	1150		1202		11221
Dunlin	44	25	0	5	1100		1200		26150
Gadwall	0	0	2	2	0		4		122
Goldeneye	0	0	0	0	1		4		69
Grey plover	8	17	5	2	5		100		8313
Knot	0	0	0	0	500		200		188838
Little tern	0	0	0	0	0		8		106
Oystercatcher	4	3	10	7	2100		2150		26586
Pink-footed goose	0	0	0	0	0		900		34300
Pintail	0	0	0	0	1		5		376
Redshank	162	93	58	20	220		130		5087
Sanderling	0	0	0	0	0		0		10079
Shelduck	2	3	10	8	36		50		2374
Turnstone	2	1	2	2	126		155		755
Wigeon	0	0	0	3	400		1300		12226
Avocet	4	0	7	0	1		2		448
Black-headed gull	117	141	954	44	34		152		14541
Canada goose	49	27	0	1	0		0		522
Common gull	7	0	13	2	3		50		1489

Data source:	Wint 2019-21		Wint 2021-22		CiWB/Wint		WeBS (FN23,24,27,60, Witham 60)		WeBS
	A	B	C	D	E (MOTH)		D E		The Wash SPA 5 yr 2015/16 to 2019/20
Common sandpiper	1	1	0	0	3		8		33
Cormorant	6	4	2	6	10		34		550
Eider	0	0	0	0	2		12		1049
Golden plover	0	0	0	0	2500		5		15212
Great black-backed gull	3	0	2	1	1		4		499
Great crested grebe	1	0	0	1	0		6		84
Great northern diver	0	0	0	0	0		0		1
Green sandpiper	1	2	0	0	0		1		15
Greenshank	0	1	0	0	0		0		72
Grey heron	3	2	2	1	0		1		19
Greylag goose	1	3	0	0	0		0		1363
Herring gull	27	1	4	3	3		100		5420
Jack snipe	1	2	1	0	0		0		
Kingfisher	1	0	0	0	0		3		3
Lapwing	15	19	0	0	1100		400		12976
Lesser black-backed gull	8	21	1	0	0		10		454
Little egret	2	4	3	1	0		100		463
Little grebe	0	1	4	7	0		3		69
Mallard	19	23	10	8	55		10		958
Red-breasted merganser	0	0	0	0	1		4		76
Ringed plover	7	22	0	5	40		118		1315
Ruff	32	24	15	1	0		0		80
Sandwich tern	0	0	0	0	8		33		1618
Snipe	2	4	0	0	0		5		39
Teal	0	0	0	3	54		20		2791
Whimbrel	0	0	0	0	1		15		154

Data source:	Wint 2019-21		Wint 2021-22		CiWB/Wint		WeBS (FN23,24,27,60, Witham 60)		WeBS
	A	B	C	D	E (MOTH)		D E		The Wash SPA 5 yr 2015/16 to 2019/20
White-fronted goose	1	0	0	0	0		0		15

5 High tide roost locations

5.1.1 Locations of high tide roosts of redshank are shown in **Figure 5-1**. No other wader species displayed roosting aggregation, but other species roosted in small numbers within the redshank roosts (2 oystercatcher, 2 turnstone, 4 avocet, 1 ruff). Surveys of the intervening section of The Haven at sections C and D recorded single instances of redshank roosting at three locations (two under 10 birds, one of around 50 birds), with no recurrently used roost sites recorded. The recurrent roost sites therefore are at Areas A and B and at the mouth of The Haven, per the HRA.

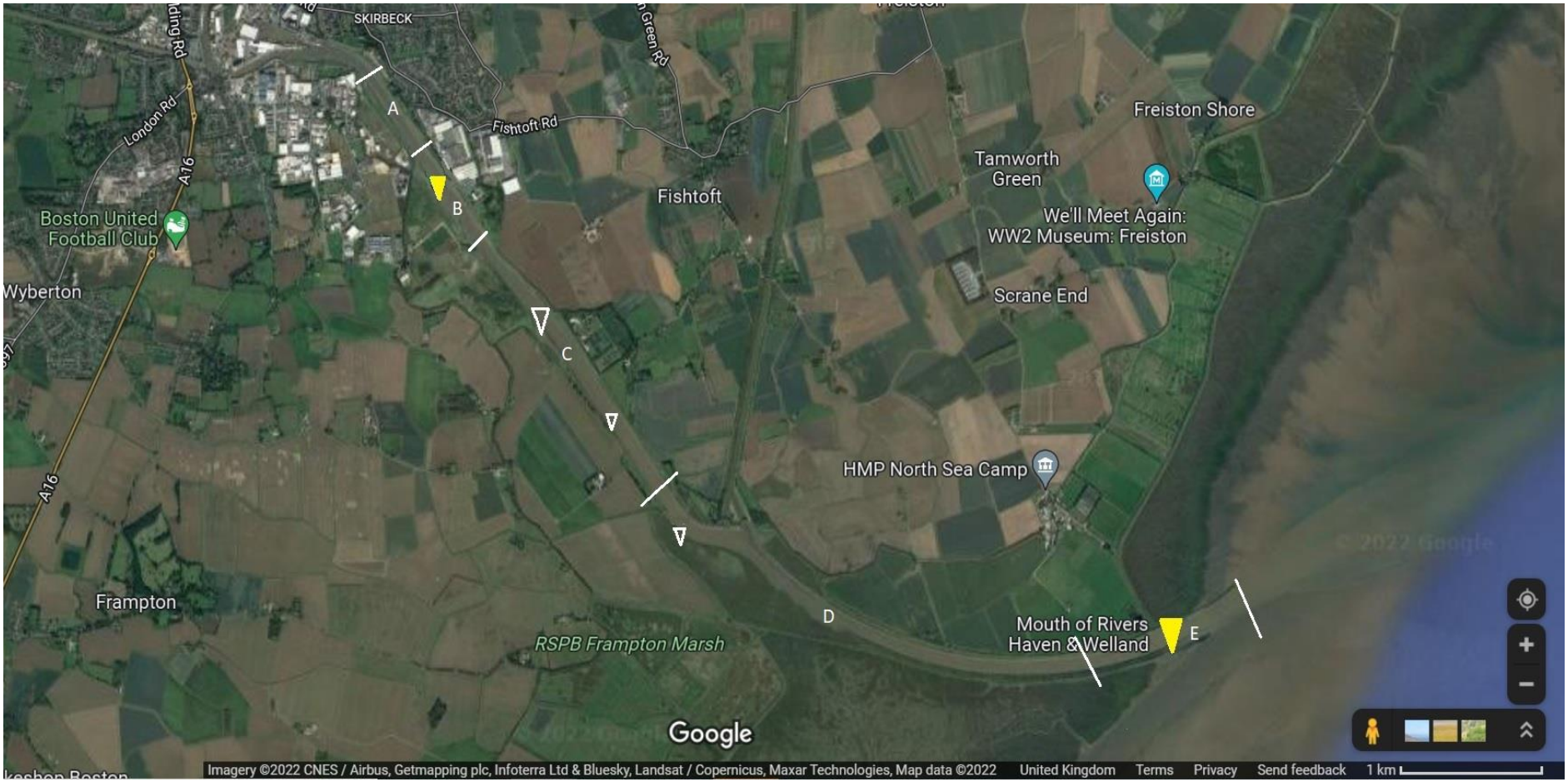

Figure 5-1 High tide (redshank) roost locations on The Haven (triangles). Letters A to E and divider lines indicate survey sections for ornithology baseline surveys reported in Table 4-1, Table 4-2 and Table 4-3. Symbol size indicates order of magnitude of bird numbers (approx. 10, approx. 100, approx. 1,000-10,000). Yellow solid symbols indicate routine use by birds. White open symbols indicate single occurrence over repeat surveys.