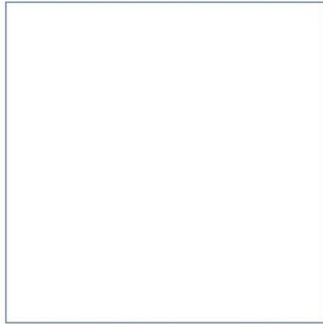
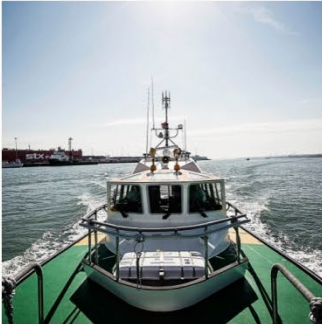
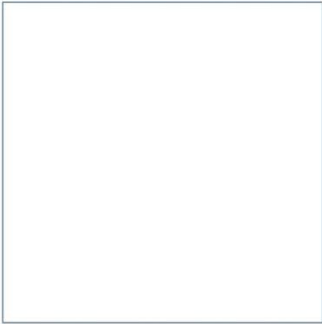
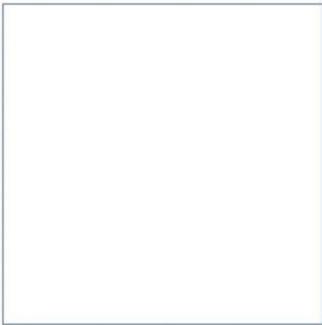


Port of Mostyn

Mostyn Energy Park Extension

Environmental Statement
Appendix 8.3: Bird Summary



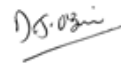
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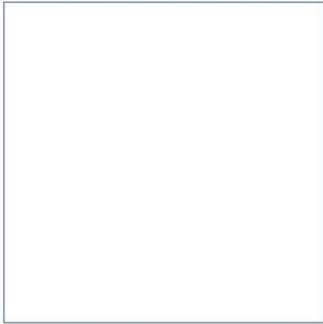
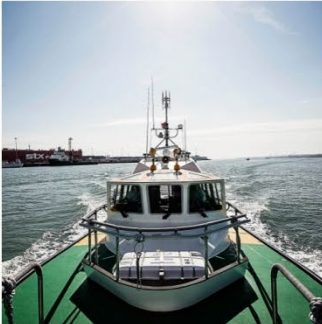
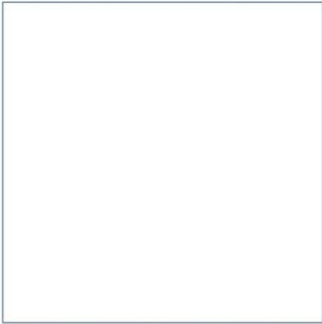
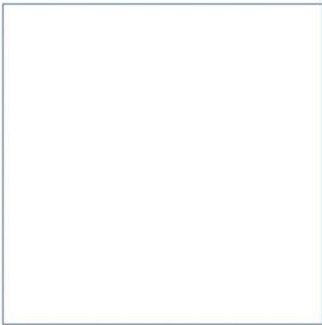
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Port of Mostyn

Port of Mostyn Coastal Bird Surveys

Summary Report (September 2017 to April 2021)

December 2022



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Port of Mostyn Coastal Bird Surveys




Summary Report (September 2017 to April 2021)

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1 Introduction

1.1 Project background

ABPmer has been commissioned by the Port of Mostyn to coordinate a series of marine ecological surveys in the Dee Estuary for a potential tidal lagoon development. The surveys also provide relevant baseline data for the MEPE project. This report summarises the results of coastal waterbirds surveys obtained from September 2017 to April 2021 to describe the baseline coastal waterbird populations within and around the Port of Mostyn.

These surveys were originally due to end in August 2021 (giving three years of monthly data). However, due to the first COVID-19 lockdown and concerns over the health risks to the surveyors, the survey work was put on hold from April to August 2020 and subsequently extended to cover the 2020/21 winter period instead (i.e. four years of winter data).

This report presents abundance data for the most commonly recorded bird species during the surveys as well as distribution patterns for key species. The report also describes the area's importance in an international, national and regional context.

The methods used in these surveys are described in more detail in Section 1.2 and the results are summarised in Section 2. A summary overview is then provided in Section 3.

1.2 Survey methods

The methods adopted for these coastal bird surveys were based on standardised British Trust for Ornithology (BTO) Wetland Bird Survey (WeBS) protocols. They involved taking counts of bird numbers, along with records of their behaviour, during both high water and low water across discrete areas or 'count sectors' across the survey area.

The high water surveys involved four hourly bird counts, two hours before and two hours after high water. The low water surveys involved four hourly bird counts, two hours before and two hours after low water. The surveys were undertaken across the following four established WeBS Core Count sectors (as shown in Figure 1):

- Point of Ayr (PoA);
- Ffynnongroyw Bay North (FBN);
- Ffynnongroyw Bay South (FBS); and
- Mostyn Dock Shore (MDS).

In addition to these four main WeBS Core Count Sectors, the areas around the Port included eight smaller sub-sections (also shown in Figure 1). These smaller count areas indicate established or potential roosting areas local to the Port estate that were also counted during previous ornithology monitoring programmes.

This previous monitoring work was pursued to inform earlier developments at the Port (ABPmer, 2010; Port of Mostyn, 2013)¹.

¹ This included monthly ornithology surveys undertaken from November 2009 to March 2016 as commissioned by the Port of Mostyn. These surveys (which recorded counts on an hourly basis through either a flooding or ebbing tide period) included counts of the entire FBS and MDS WeBS Core Count counts sectors as well as subdivision sectors

The smaller areas labelled C, D, G and Breakwater (East) are located within the MDS WeBS sector and I, H, E and Breakwater (West) located within the FBS sector. The sectors were surveyed concurrently on the same day during each of the surveys.

The frequency of surveys across these areas is also adjusted on a seasonal basis as follows:

- **Autumn, winter and spring:** To capture overwintering and passage migrants, monthly high and low water counts were carried out during the September to May period (involving two surveys each month separately covering high and low water); and
- **Summer:** To capture foraging breeding birds, monthly high water counts were undertaken during the summer months (June to August). This were undertaken to understand, particularly, the extent to which nesting terns use the area for foraging during this period.

The surveys focused on counting waterbirds, although anecdotal observations of other species (such as raptors) and marine mammals were recorded where possible. For recording of any birds using the open water (such as diving ducks or grebes) the foreshore compartments were taken to extend out into the Dee Estuary. The surveys were undertaken at different times of day and under tidal ranges from spring to neap tides.

During each of the surveys, records of all observations were made on standardised data sheets including the distribution and abundances of each species observed and behavioural state. The three broad behavioural states used during these surveys were defined as:

- **Foraging:** Bird actively engaged in feeding behaviour;
- **Loafing:** Short term resting behaviour typically within foraging areas; and
- **Roosting:** Resting for prolonged periods of time following active movement to the location.

On each survey, three surveyors are positioned at strategic vantage point locations which allowed the full spatial extent of the count sectors to be viewed with the counts undertaken using spotting scopes and binoculars.

which focused on roosting and foraging areas around the Port. These subdivision sectors were also consistent with previous surveys carried out at the Port between 1997 and 2003.



Figure 1. WeBS and Port count sectors surveyed for the Port of Mostyn bird surveys

2 Results

To summarise the findings from the survey work, the average of the annual peak counts for each species (referred to as the Mean of Peak (MoP))² is presented in Table 1 and Table 2 for high water and low water counts respectively. The MoP for each of the individual count sectors and for the whole survey area 'Survey Area MoP' is shown in the tables³.

Table 1. High water 4-year MoP counts of key waterbirds in WeBS areas (September 2017 to April 2021)

Species	4-year MoP per WeBS Count Sector				Survey Area MoP		Thresholds*		
	MDS	FBS	FBN	PoA	4-year MoP	Peak Month(s)	% National Threshold**	% 5-Year WeBS Mean Peak	% Dee Estuary SPA Citation
Light-bellied Brent Geese		11	1	36	36	Jan, Feb	225	11	
Greylag Goose			< 1	97	98	Sep	7	19	
Shelduck	18	450	648	800	1,196	Jun	254	12	15
Wigeon			43	989	1,032	Jan, Feb	23	14	
Mallard	13	29	26	69	97	Aug, Sep	1	8	
Pintail	< 1	140	60	314	376	Nov, Dec	6	7	7
Teal	2	93	15	242	250	Nov	6	4	5
Little Egret	7	2	3	22	27	Jun	25	9	
Cormorant	11	11	2	60	66	Oct	11	4	
Oystercatcher	2,074	4,150	118	6,500	9,962	Sep, Oct	344 (121)	43	44
Lapwing	20		98	800	800	Dec, Jan	13	10	
Grey Plover	2			44	44	Feb	13	5	3
Ringed Plover	1	1	3	129	132	Sep	31	12	
Curlew	45	135	256	1,050	1,059	Sep	88	30	27
Bar-tailed Godwit		1	1	53	53	Oct	11	15	5
Black-tailed Godwit	23	162	500	1,053	1,513	Sep, Oct	388 (138)	24	87
Turnstone	66	9	1	8	68	Sep	17	33	
Knot	179	938	270	1,400	1,753	Apr, Sep	67	10	14
Sanderling	2			147	147	Feb	74	26	
Dunlin	442	388	339	1,750	2,409	Dec, Jan	71	14	9
Redshank	1,077	1,031	488	1,440	2,025	Sep, Oct	215	21	38
Black-headed Gull	351	977	530	550	1,839	Jul, Aug	8	19	
Common Gull		413	1,225	23	1,568	Sep	22	77	
Great Black-backed Gull	15	4	20	37	44	Sep, Oct	6	16	
Herring Gull	330	605	323	5,000	5,616	Aug, Sep	77	57	
Lesser Black-backed Gull	63	4	5	4	67	Sep	6	10	
Sandwich Tern	127	33	14	64	180	Sep, Feb	11	11	19
Little Tern				149	149	Aug	78	43	216
Common Tern				38	38	Aug	2	10	12

Bold species are features of the Dee Estuary SPA.

* The proportions are all expressed here as a percentage of the relevant threshold. Thus, the 4-year MoP of 9,962 Oystercatcher is 3.4 times the national threshold level of 2,900 which is expressed here as 364%. The 149 4-year MoP of Little Tern is 2.1 times the level within the Dee Estuary SPA citation of 69.

** Bracketed values in this column show the percentage of the Internationally Important Threshold Levels for species which have exceeded the threshold level.

² For the purpose of this report, an annual monitoring year is considered to include available monthly data from July to the following June (which is consistent with WeBS). It is standard practice for the reporting of coastal waterbird data to present the average of the annual peaks. Using mean of peak data is useful for characterising the relative importance of different sectors within a site, as it gives a good indication of how many individuals of a given species a sector typically supports (Austin and Ross-Smith, 2014).

³ The MoP count for the entire survey area is a summed value derived from the maximum number of birds occurring in each count sector on any of the 33 monthly surveys during the same hourly count.

Table 2. Low water 4-year MoP of key waterbirds in WeBS areas (September 2017 to April 2021)

Species	4-year MoP per WeBS Count Sector				Survey Area MoP		Thresholds*		
	MDS	FBS	FBN	PoA	4-year MoP	Peak Month(s)	% National Threshold**	% 5-Year WeBS Mean Peak	% Dee Estuary SPA Citation
Light-bellied Brent Geese	5	6	6	13	23	Jan	144	7	
Greylag Goose		201	175	91	220	Sep	16	42	
Shelduck	813	260	521	674	1,886	Oct	401	20	24
Mallard	13	9	5	21	31	Sep	< 1	2	
Pintail		145	91	41	215	Oct	3	4	4
Teal		89	43	104	196	Jan	5	3	4
Little Egret	12	2	2	6	18	Sep, May	16	6	
Cormorant	47	17	3	28	74	Dec	12	5	
Oystercatcher	1,476	4,645	1,103	6,575	10,545	Sep	364 (129)	45	47
Lapwing	< 1	1	193	683	683	Dec	11	8	
Grey Plover		< 1		28	28	Oct	8	3	2
Ringed Plover		1	3	14	15	Nov	4	1	
Curlew	174	165	175	125	480	Sep, Jan	40	14	12
Bar-tailed Godwit	1	1		1	1	Nov, Jan	< 1	< 1	< 1
Black-tailed Godwit	21	2,139	881	300	2,495	Nov	640 (104)	40	143
Turnstone	29		< 1	7	30	Nov, Jan	8	15	
Knot	149	3,200	875	108	3,326	Dec, Jan	128	19	27
Dunlin	117	1,975	1,138	638	2,695	Jan	79	16	10
Redshank	290	1,850	1,020	170	2,878	Sep, Oct	306 (120)	30	54
Black-headed Gull	329	308	328	95	903	Sep	4	9	
Common Gull		18	338	1	338	Oct, Jan	5	16	
Great Black-backed Gull	48	6	8	4	53	Sep, Oct	7	20	
Herring Gull	619	234	125	848	1,509	Sep	21	15	
Lesser Black-backed Gull	51	18	2	< 1	59	Sep	5	9	
Sandwich Tern	11			5	16	Sep	1	1	2

Bold species are features of the Dee Estuary SPA.

* The proportions are all expressed here as a percentage of the relevant threshold. Thus, the 4-year MoP of 10,545 Oystercatcher is 3.6 times the national threshold level of 2,900 which is expressed here as 364%. The 2,495 4-year MoP of Black-tailed Godwit is 1.4 times the level within the Dee Estuary SPA citation of 1,747.

** Bracketed values in this column show the percentage of the Internationally Important Threshold Levels for species which have exceeded the threshold level.

This table also compares the survey area peak against the thresholds and values outlined below, to provide objective criteria to help determine the value of the area in a national and regional context:

- **Nationally Important Threshold Level:** The threshold for an individual species (or subspecies) is set at 1 % of the British population⁴. i.e. if a site supports more than 1 % of the British population it is considered nationally important (for that species or subspecies);
- **The Dee Estuary Special Protection Area (SPA) Qualifying Numbers:** The count numbers identified in the Dee Estuary SPA citation⁵; and
- **Latest Dee Estuary WeBS Core Counts 5-year average:** The mean of the annual peak count (mean peak) from the latest Dee Estuary WeBS Core Counts for the period 2015/16 to 2019/20 (Frost *et al.*, 2021).

For those species exceeding National Threshold Levels, the table also highlights those species which have also exceeded **internationally important threshold levels**⁶.

⁴ The thresholds levels are available at BTO: <https://www.bto.org/volunteer-surveys/webs/data/species-threshold-levels> (accessed 10/4/21). Where 1 % of the national population is less than 50 birds, 50 is normally used as a minimum qualifying threshold for the designation of sites of national or international importance.

⁵ Natura 2000 – Standard Data Form <https://jncc.gov.uk/jncc-assets/SPA-N2K/UK9013011.pdf> (accessed 10/4/21).

In addition, the 4-year MoP peak counts for key species recorded in the Port roost sectors are shown in Table 3.

Table 3. Low water and high water 4-year MoP Peak counts of key waterbirds in Port areas (September 2017 to April 2021)

Survey	Species	4-year MoP Per Port Roost Count Sector							
		Breakwater (East)	Breakwater (West)	C	D	E	G	H	I
High Water	Shelduck		6	< 1	5	27	7	57	4
	Mallard				< 1	5	< 1		20
	Pintail								18
	Teal								58
	Cormorant	10	11	< 1	1		< 1		
	Oystercatcher	4	1,350		1,572	29	1,071	3,950	11
	Grey Plover								
	Curlew	1	5		18	1	6	51	1
	Black-tailed Godwit		2		23	< 1	1	30	1
	Turnstone	8	9		50		36		1
	Knot		242		61	0	126	913	1
	Dunlin		1		178		349	16	60
	Redshank		708		389	23	859	469	33
	Black-headed Gull	6		5	85	5	168	243	30
	Common Gull							50	
	Great Black-backed Gull	5	2		1				1
	Herring Gull	170	460	7	15	6	122		53
	Lesser Black-backed Gull	3	2	1	1		3		
Sandwich Tern		6	1	54		9			
Low Water	Shelduck	2			4		3		2
	Mallard								4
	Pintail								
	Teal								
	Cormorant	1			1		< 1		
	Oystercatcher	4	58	3	217		4		
	Grey Plover								
	Curlew	3		< 1	5		2		
	Black-tailed Godwit				1		< 1		
	Turnstone	9		1	11		5		
	Knot				62				
	Dunlin	1			114		1		
	Redshank	1	8	5	260		10		
	Black-headed Gull	1		1	19		12		
	Common Gull								
	Great Black-backed Gull	1		1	2		1		
	Herring Gull	28	2	6	6		5		1
	Lesser Black-backed Gull	1			2				
Sandwich Tern				5					

Bold species are features of the Dee Estuary SPA.

⁶ 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 waterbird, while criterion 5 states that any site regularly supporting 20,000 or more waterbirds also qualifies. Britain and Ireland's wildfowl belong, in most cases, to the northwest European population and the waders to the east Atlantic flyway population.

Distribution maps and graphs showing the monthly peak abundances for Oystercatcher, Redshank Black-tailed Godwit and Shelduck are also shown in Figure 2 to Figure 9 as follows:

- Figure 2: Oystercatcher (High Water);
- Figure 3: Oystercatcher (Low Water);
- Figure 4: Redshank (High Water);
- Figure 5: Redshank (Low Water);
- Figure 6: Black-tailed Godwit (High Water);
- Figure 7: Black-tailed Godwit (Low Water);
- Figure 8: Shelduck (High Water); and
- Figure 9: Shelduck (Low Water).

Distribution maps are provided for these SPA species as they were all regularly recorded in large numbers in the survey area and with counts that exceeded the National Threshold Levels by the greatest values. An overview of the results for the whole survey is provided in Section 2.1 with summary information for each sector in Sections 2.2 to 2.5.

2.1 Survey area overview

During these surveys, a wide range of coastal waders and waterfowl species were observed feeding on intertidal mudflat and sandbank habitats and roosting on the upper foreshore within the count areas. Oystercatcher, Redshank, Black-tailed Godwit were all recorded in both nationally and internationally important numbers and Knot in nationally important numbers. In addition to these waders, several species of wildfowl (Shelduck and Light-bellied Brent Geese) were also present in nationally important numbers (Table 1 and Table 2).

These species were also found in abundances which typically represented between 20 % and 40 % of the latest Dee Estuary WeBS Core Counts 5-year average suggesting that the habitats in the area support a significant proportion of the overall Dee Estuary populations.

Sections 2.1.1 to 2.1.3 provides further information on the abundance and distribution of waders (Section 2.1.1), wildfowl (Section 2.1.2) and other species such as gulls and terns (Section 2.1.3) in the survey area.

2.1.1 Waders

Oystercatcher and Redshank were two of the most abundant coastal waterbirds with 4-year MoP counts of 10,545 and 2,878 birds respectively during the low water surveys (Table 2). Large numbers of these species were also recorded roosting during high water surveys (in slightly lower numbers than during low water periods) (Table 1). Both Oystercatcher and Redshank were abundant during both passage and winter periods with the largest numbers of Redshank present during the Autumn passage months (particularly September and October). The abundance of these two species within the Dee Estuary has generally increased, or remained stable, over the last ten years with up to approximately 30,000 Oystercatcher and 10,000 Redshank recorded during recent BTO WeBS estuary-wide counts (Woodward *et al.*, 2019; Frost *et al.*, 2021).

These species were abundant at high water during the surveys roosting on the upper shore around the Point of Ayr (Figure 2 and Figure 4). Other roosting areas include the cockle shell deposits between Mostyn and Ffynngroyw (Count Sector 'H'); along the Port breakwater; on the shingle beach below Warwick Chemicals (Count Sector D) and on the eastern side of the Mostyn Dock (Count Sector G). These are all known to be established roosts that have been regularly used by large numbers of birds for many years (Port of Mostyn, 2013; CCW/NE, 2010).

Black-tailed Godwit, Dunlin and Knot were also present in large numbers, particularly during low water surveys (4-year MoP counts of 2,495, 2,695 and 3,326 birds respectively) (Table 2). Counts of Black-tailed Godwit were largest during Autumn passage months and early winter with Dunlin occurring in largest numbers throughout the winter (particularly December and January). Both of these species have generally increased in the Dee Estuary over the last ten years with approximately 6,000 Black-tailed Godwit and 10,000-20,000 Dunlin observed in recent BTO WeBS estuary-wide counts (Woodward *et al.*, 2019; Frost *et al.*, 2021). The peak numbers of Knot seen in the Dee Estuary on an annual basis can be highly variable with between approximately 8,000 and 30,000 birds recorded in recent years (Frost *et al.*, 2021). However, this species has generally shown a long-term decline in the Dee Estuary (Woodward *et al.*, 2019).

Other species of waders recorded in large numbers during both high water and low water surveys included Curlew and Lapwing (Table 1 and Table 3). These wading bird species typically roosted in the locations described above, with the largest aggregations occurring at the Point of Ayr.

In general, waders roosting on the Mostyn Bank and Point of Ayr typically followed the water's edge down the shore on the ebbing tide, often undertaking short flights to utilise foraging resources on Salisbury Middle, Salisbury Bank and West Hoyle Bank when they become exposed during low water.

2.1.2 Wildfowl (ducks and geese)

With respect to wildfowl, Shelduck were the most abundant species (4-year MoP count of 1,886 birds at low water). Shelduck were recorded feeding widely throughout the survey area. This species has generally showed a decline in the Dee Estuary over the last ten years with between approximately 8,000 and 11,000 recorded in recent BTO WeBS estuary-wide counts (Woodward *et al.*, 2019; Frost *et al.*, 2021). Pintail and Teal were also abundant in the survey area. These duck species occurred mainly in high water surveys foraging on both the foreshore and over shallow areas of water and were widely distributed through the survey area.

Light-bellied Brent Goose was also recorded (4-year MoP counts of 36 birds during high water surveys). Two distinct populations of the Light-bellied Brent Goose winter in the UK, the Svalbard population and the Canadian (Nearctic) population. The population recorded in the Dee Estuary is part of the Canadian population. The majority of this population visiting the UK are recorded in Northern Ireland especially on Strangford Lough (which alone hosts about 80% of the UK total). The number wintering in the Dee Estuary has increased from less than 20 in the 1990s to 200-400 during recent years (Frost *et al.*, 2021)⁷.

2.1.3 Other species

Terns were also regularly observed foraging and loafing in the area, particularly around the Point of Ayr. The mouth of the Dee Estuary is a known foraging and post-breeding resting area for terns, with up to 3,000 birds using the area. Large numbers of Herring gull (up to 10,000 birds) were recorded around the Point of Ayr with Herring Gull as well as other species such as Black-headed Gull and Common Gull abundant in the survey area.

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<http://www.deeestuary.co.uk/news1207.htm>

2.2 Mostyn Dock count area

The intertidal habitat to the east of the Mostyn Dock was used by a total of 36 coastal waterbird species. The most common species here were Oystercatcher and Redshank with the largest counts occurring during high water (4-year MoP counts of 2,074 birds and 1,077 birds, respectively). Oystercatcher in this area predominantly roost on the shingle beach below Warwick Chemicals (Sector D) (Image 1). Redshank which were recorded in nationally important numbers, predominantly roosted on the pebble beaches and boulder areas on the eastern side of the Mostyn Dock (Sector G).



Image 1. Large flock of Oystercatcher roosting on the Warwick Chemicals foreshore

The numbers of both species were lower than recorded previously in this area. For example, over 5,000 Oystercatchers were regularly roosting on the Warwick Chemicals foreshore during previous ornithology monitoring between 2009 and 2016 (Port of Mostyn, 2013). However, numbers within the Dee Estuary have generally increased or remained stable over the last ten years (Woodward *et al.*, 2019). Other wading birds recorded roosting and feeding in this area included Knot, Lapwing and Curlew. Waders roosting in this area often undertake short flights to the sandbanks on and around Salisbury Middle as they become exposed during low water for foraging (Figure 2).

The most numerous duck species during the monitoring period was Shelduck which was recorded in nationally important numbers (4-year MoP count of 813 birds recorded during the low water surveys). Sandwich Terns were also recorded within this count sector during summer and passage periods (4-year MoP counts of 127 birds).

Several gull species were also regularly counted, with a 4-year MoP count of 619 Herring Gull during low water, and 330 during high water surveys. Other gulls also recorded within this section were Black-headed Gull, Lesser Black-backed Gull and Great Black-backed Gull.

2.3 Ffynnongroyw Bay South count area

The Ffynnongroyw Bay South count sector covers the inner section of the Mostyn Bank to the west of the Mostyn Dock. In total, 33 coastal waterbird species were recorded using the sector including a range of wading bird species in large numbers. This included nationally important numbers of both Black-tailed Godwit and Knot during low water surveys (4-year MoP counts of approximately 2,000 birds). The largest numbers of Black-tailed Godwit occurred during Autumn and early winter (September to October) (Figure 7) with Knot recorded in the largest numbers in December.

Nationally important numbers of Redshank and Oystercatcher were recorded during both high water (4-year MoP counts of 1,031 and 4,150 birds respectively) and low water surveys (4-year MoP counts of 1,850 and 4,645 birds respectively). Oystercatcher was recorded in large numbers during winter and passage periods (Figure 2 and Figure 3) with Redshank typically present in the largest numbers during the autumn passage (September to October) (Figure 4 and Figure 5). Dunlin (4-year MoP count of 1,975 birds during low water surveys) as well as lower numbers of other waders including Turnstone, Lapwing and Ringed Plover were also recorded feeding and roosting in the area. With respect to duck species, Shelduck (4-year MoP count of 450 birds during high water surveys and 260 birds during low water surveys) as well as Pintail and Teal (4-year MoP peak counts of approximately 140 and 90 birds respectively during both high and low water surveys) were the main species recorded.

The main roost within this area of the Mostyn Bank is the upper foreshore between Mostyn and Ffynnongroyw (known as count sector 'H'). This roost consists of deposited cockle shell that is located below the sea wall and is used extensively by waders, particularly Oystercatcher, Knot and Redshank. Waterbirds (mainly Oystercatcher and Redshank) have also been recorded roosting in flocks along the rock ledge on the North West side (downstream) of the Port breakwater usually at mid-high water.

The other roost site in this area is the foreshore around the Ffynnongroyw Railway Bridge (count sector I). Very few waterbirds are typically observed using this roost as the area is regularly disturbed from people and dogs walking over the Ffynnongroyw Railway Footbridge on to the beach.

The main feeding area for wading birds such as Oystercatcher and Redshank were the mudflat habitat of the Mostyn Bank and Salisbury Bank near the Approach Channel in the northern section of this area (Figure 3 and Figure 5). Waders typically followed the ebbing tide down the Mostyn Bank from upper shore roosts as mudflat becomes exposed. Waders then followed the flooding tide back up the Mostyn Bank once lower shore habitat on the Salisbury Bank became inundated (Image 2).



Image 2. Oystercatcher feeding during the flooding tide on the Mostyn Bank

2.4 Ffynnongroyw Bay North count area

The Ffynnongroyw Bay North count sector covers the outer section of the Mostyn Bank. There were 39 species recorded in this sector over the survey period with largest numbers typically occurring during low water surveys. The wading species recorded in the largest numbers were Black-tailed Godwit and Redshank,, both of which occurred in nationally important numbers (4-year MoP count of 881 birds and 1,020 birds respectively) as well as Dunlin (4-year MoP of 1,138 birds) and Oystercatcher (4-year MoP count of 1,103 birds).

All of the peak counts were recorded during low tide counts when birds were observed foraging along the extensive mudflats in this area. Counts of waders in this section of the Mostyn Bank were generally lower than recorded in the Ffynnongroyw Bay South sector and the Point of Ayr, particularly during high water surveys.

Shelduck were the most common waterfowl that use this sector (Image 3, Figure 8 and Figure 9) and were recorded in nationally important numbers during both high water and low water surveys (4-year MoP count of 810 birds and 521 birds respectively). Other waterfowl recorded included Wigeon (peak count of 170 birds) as well as lower numbers of Mallard, Teal, Canada Geese and Brent Geese.



Image 3. Feeding and loafing Shelduck on the Mostyn Bank

2.5 Point of Ayr count area

The Point of Ayr count sector includes the foreshore within the RSPB's Point of Ayr Nature Reserve as well as Talacre Beach. In total, 54 species of waterbird were recorded with this count sector. The sector also supported the largest numbers of many species during the monitoring period when compared to the other sectors, particularly during high water surveys. This included nationally important numbers of Oystercatcher (4-year MoP counts during low water and high water surveys of 6,575 birds and 6,500 birds respectively). Within this area, Oystercatcher predominantly foraged on the West Hoyle Bank during low water periods and foraged and roosted on the extensive sandbanks, mudflat and saltmarsh habitat available at the Point of Ayr during high water (Figure 2 and Figure 3).

Nationally important numbers of Black-tailed Godwit (a 4-year MoP of 1,053 birds) and Redshank (a 4-year MoP of 1,440 birds) were also recorded during high water surveys. These species occurred in the largest numbers in this area over high water and during passage and early winter (particularly October) (Figure 4 and Figure 7). Dunlin (4-year MoP count of 1,750 birds), Curlew (4-year MoP count of 1,050 birds) and Sanderling (4-year MoP count of 147 birds) were all recorded in numbers approaching national importance thresholds). Other waders recorded in large numbers included Knot and Lapwing.

With respect to wildfowl, Shelduck and Light-bellied Brent Geese were recorded in nationally important numbers (4-year MoP count of 800 birds and 36 birds respectively) during high water surveys. Other waterfowl included Wigeon, (4-year MoP of 989 birds), Teal (4-year MoP of 242 birds) and Pintail (4-year MoP of 314 birds). In addition, Common Scoter was observed foraging further offshore (peak count of 200 birds). This diving sea duck has been recorded in large numbers recorded in the outer Dee Estuary in some recent years. For example, counts of up to 40,000 birds have been reported in the outer Dee Estuary in recent years based on WeBS Core Count data for the area.

Gulls were also recorded in large numbers, particularly Herring Gulls during high water surveys (4-year MoP count of 5,000 birds).

Terns were also recorded foraging and roosting in this area, passage Sandwich Terns, Little Terns and Common Terns (4-year MoP counts of 64, 149 and 38 birds respectively). The only Little Tern breeding colony in Wales is located within the Gronant dune system near the Point of Ayr.



Image 4. Roosting passage Dunlin at high water near Talacre Beach

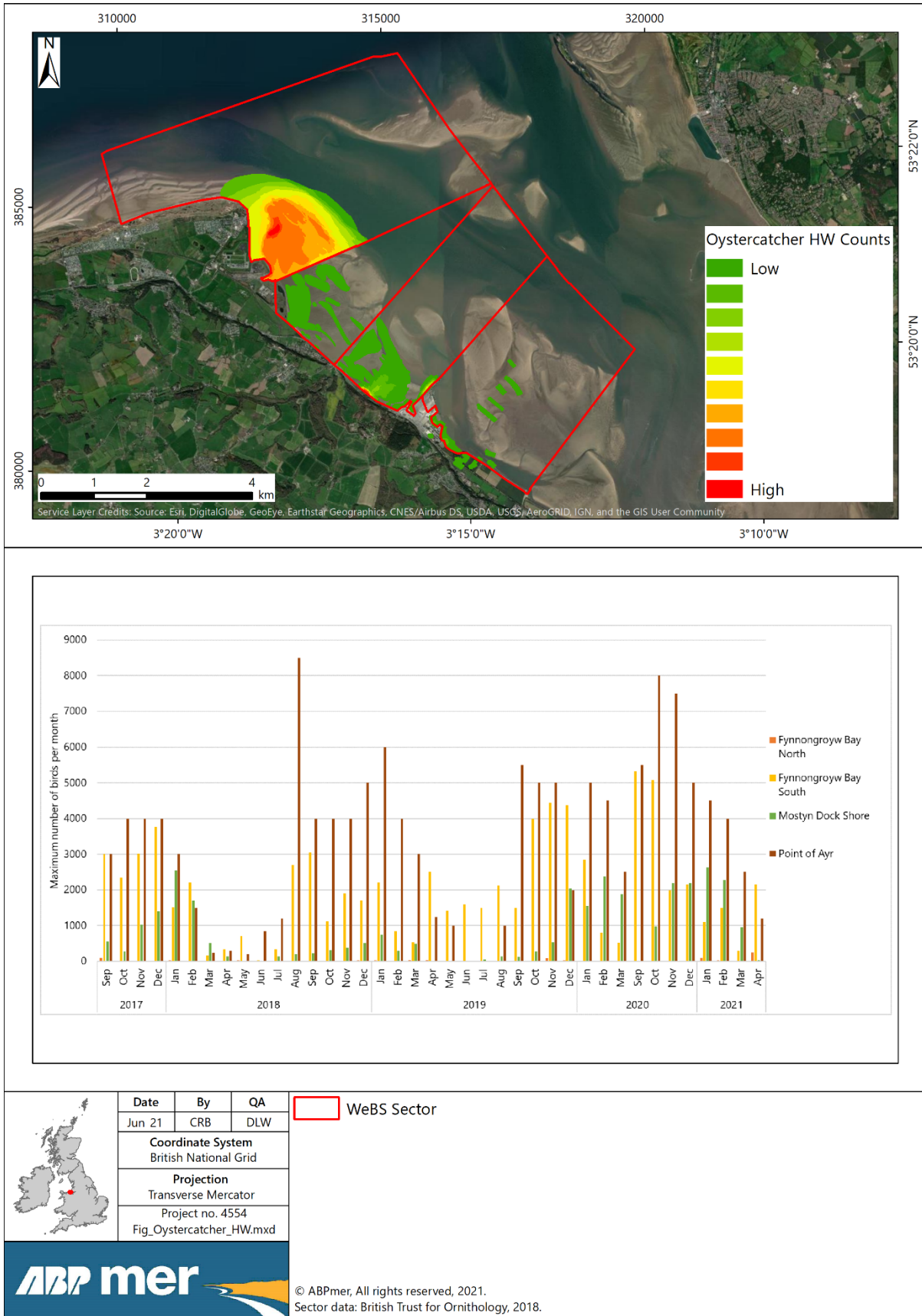


Figure 2. Oystercatcher distribution map and monthly peak high water abundances

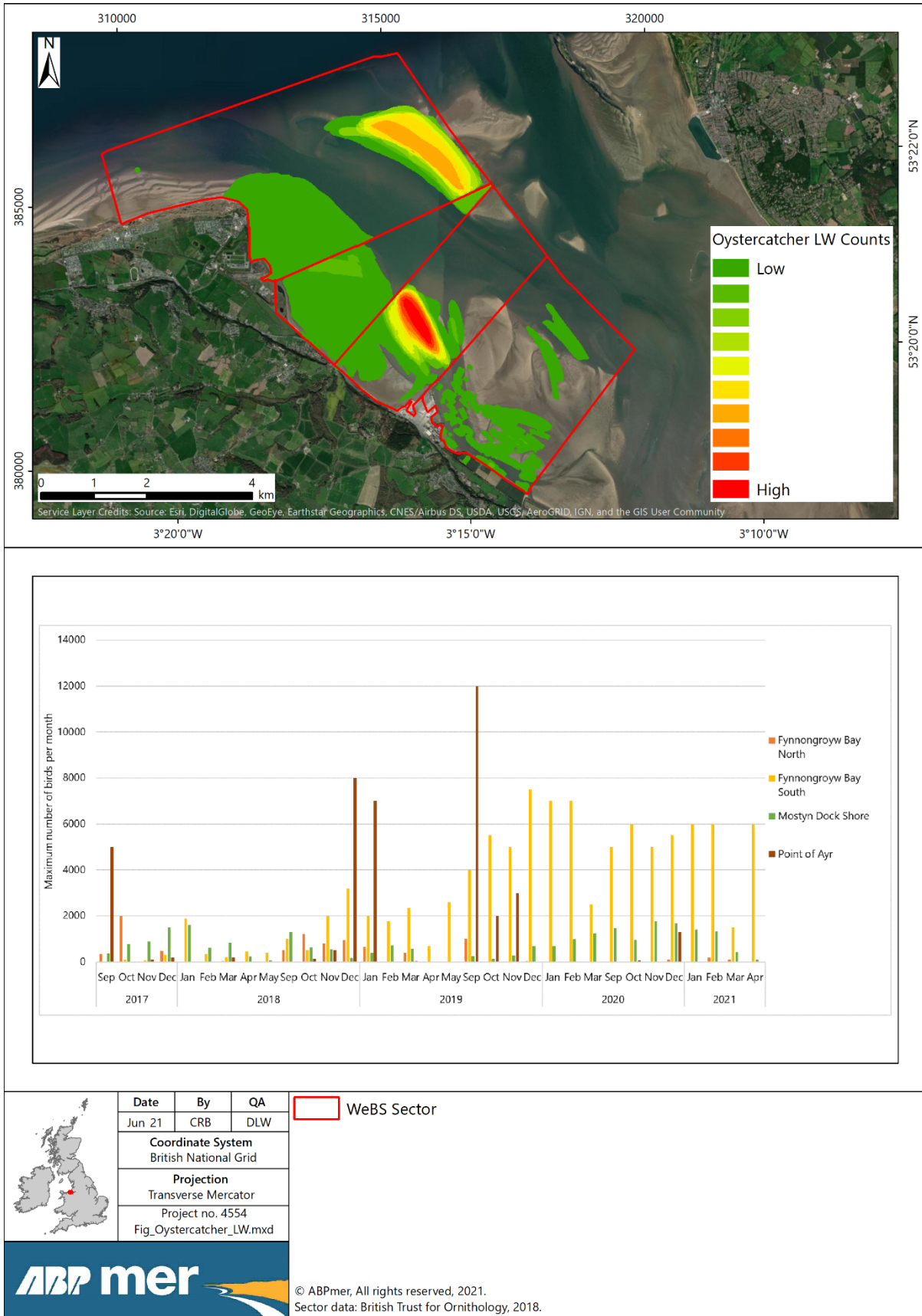


Figure 3. Oystercatcher distribution map and monthly peak low water abundances

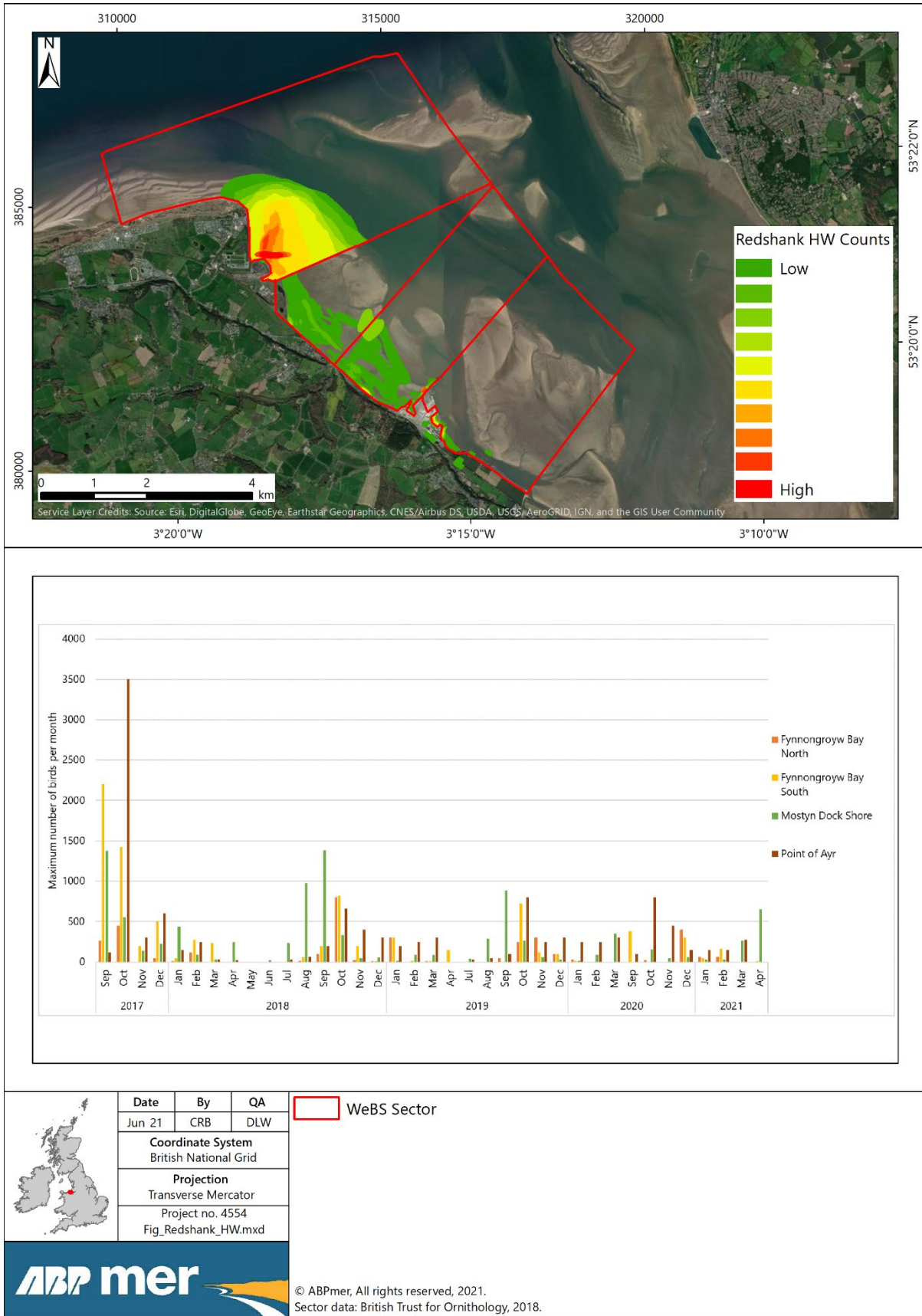


Figure 4. Redshank distribution map and monthly peak high water abundances

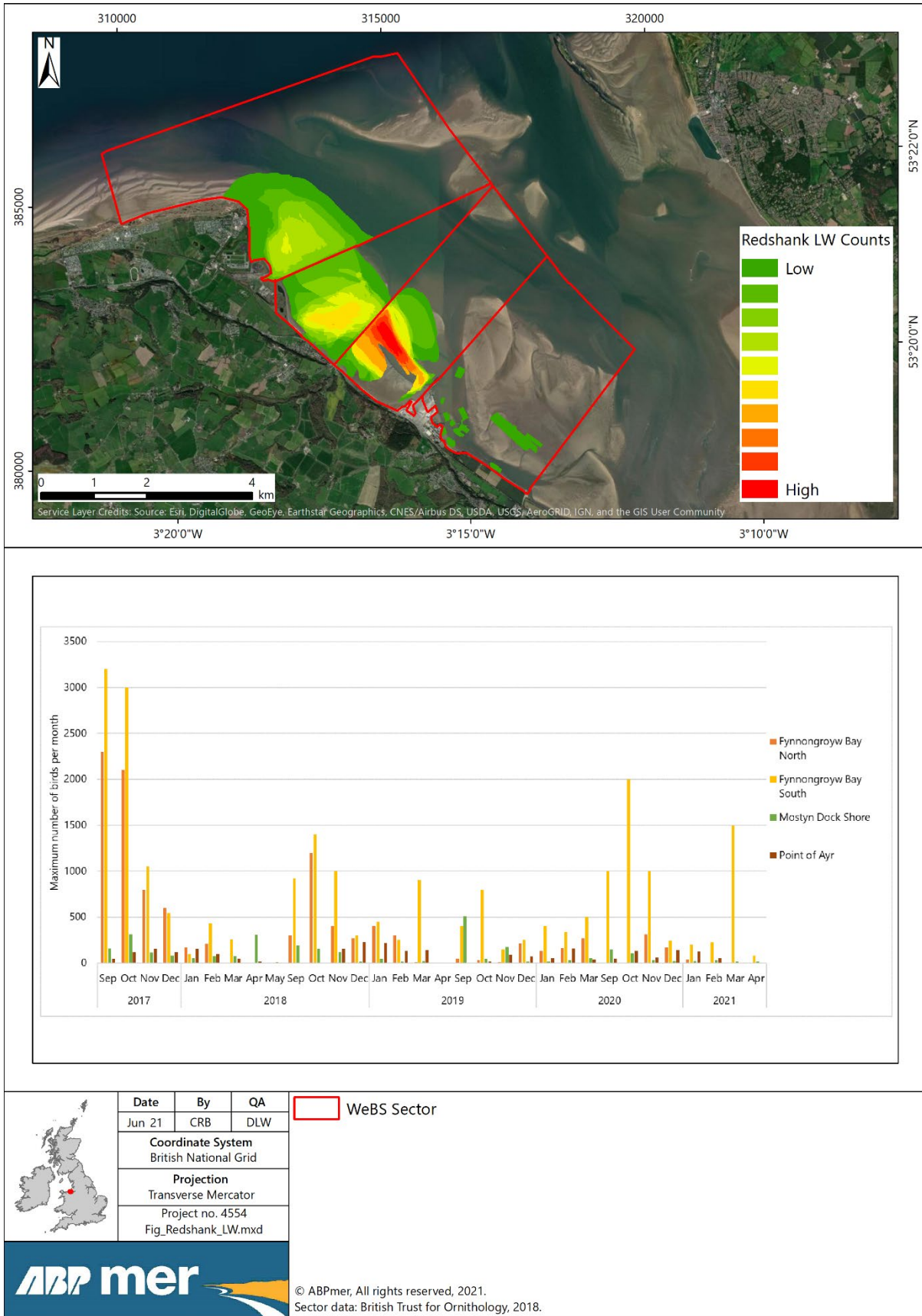


Figure 5. Redshank distribution map and monthly peak low water abundances

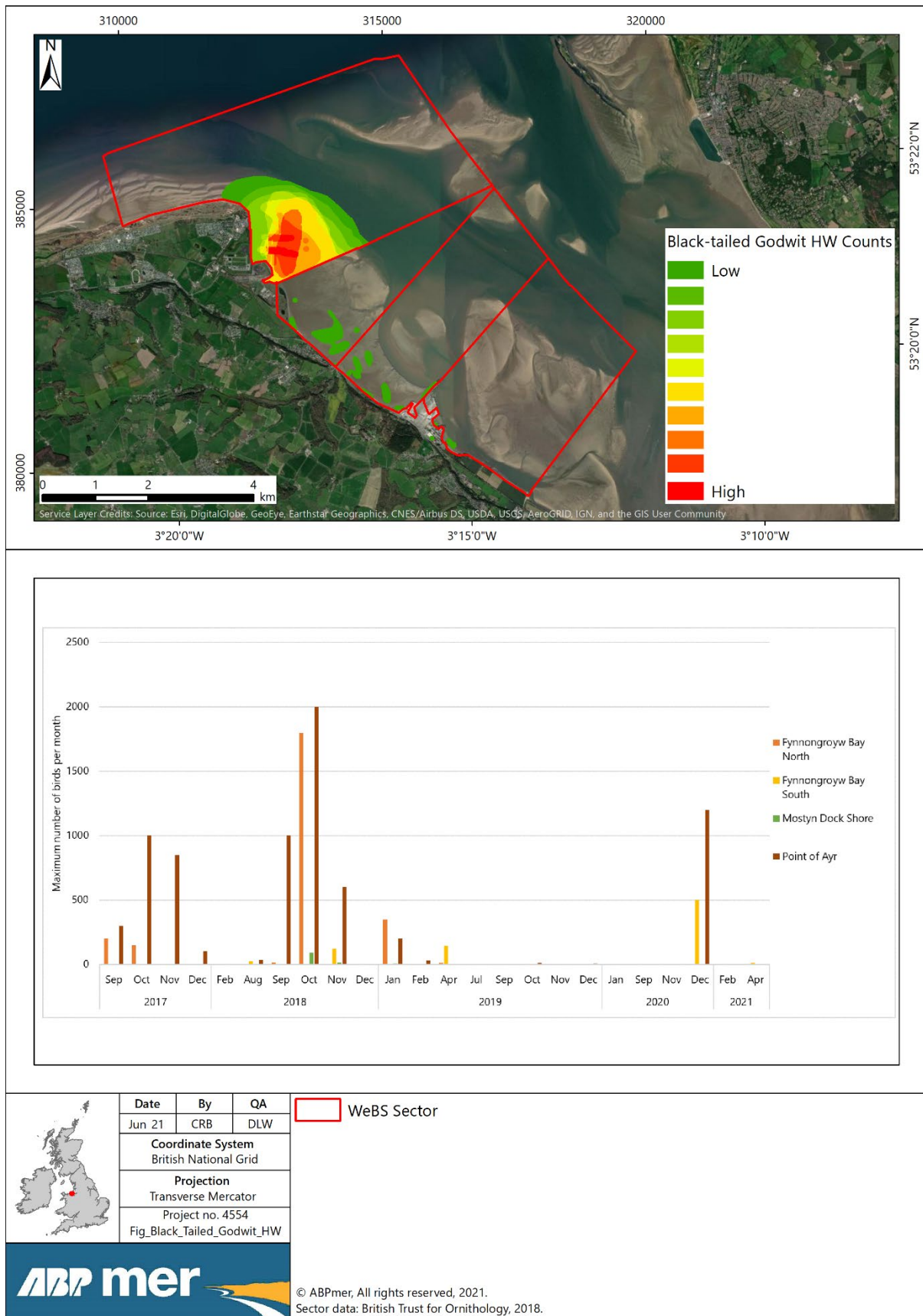


Figure 6. Black-tailed Godwit distribution map and monthly peak high water abundances

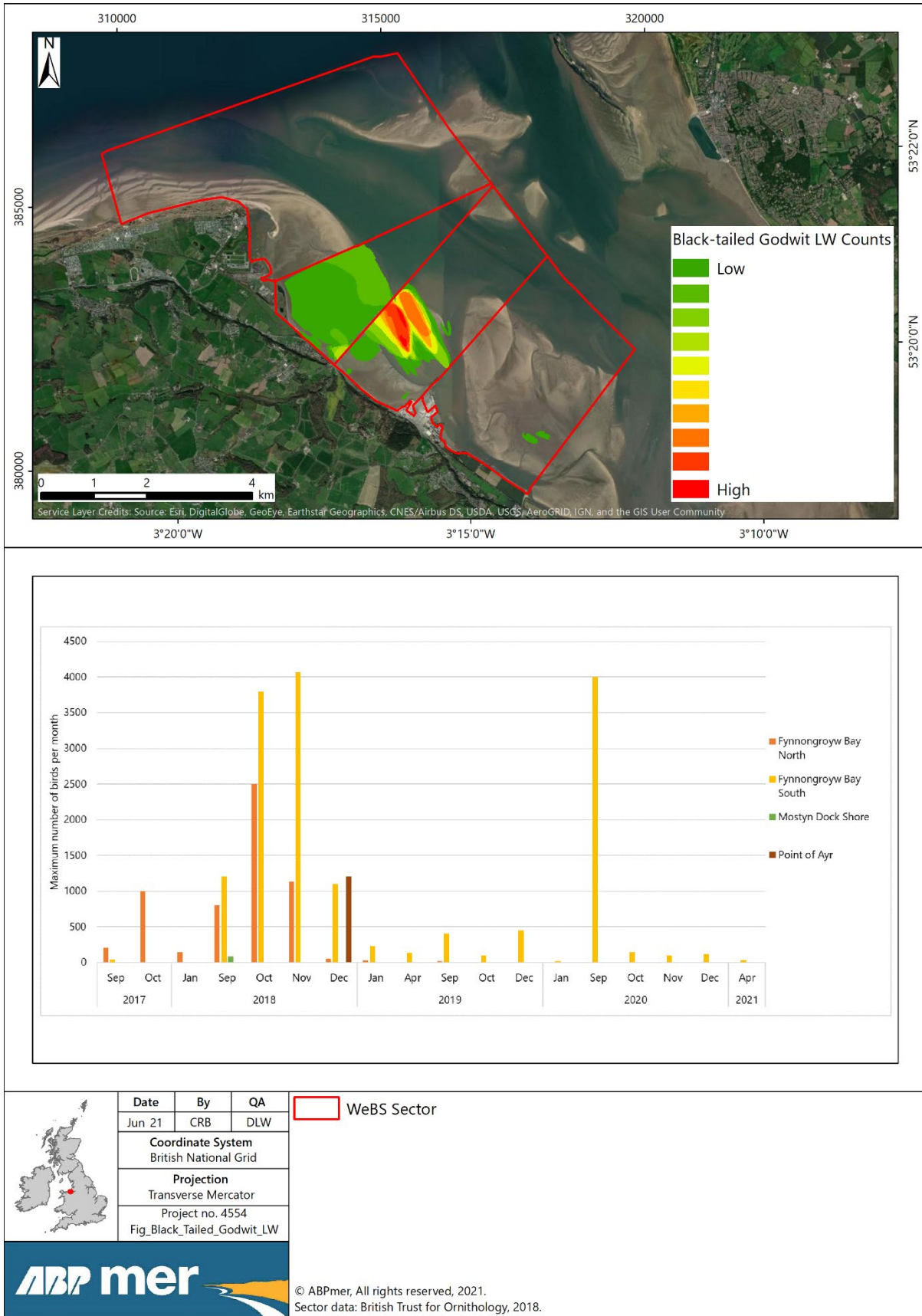


Figure 7. Black-tailed Godwit distribution map and monthly peak low water abundances

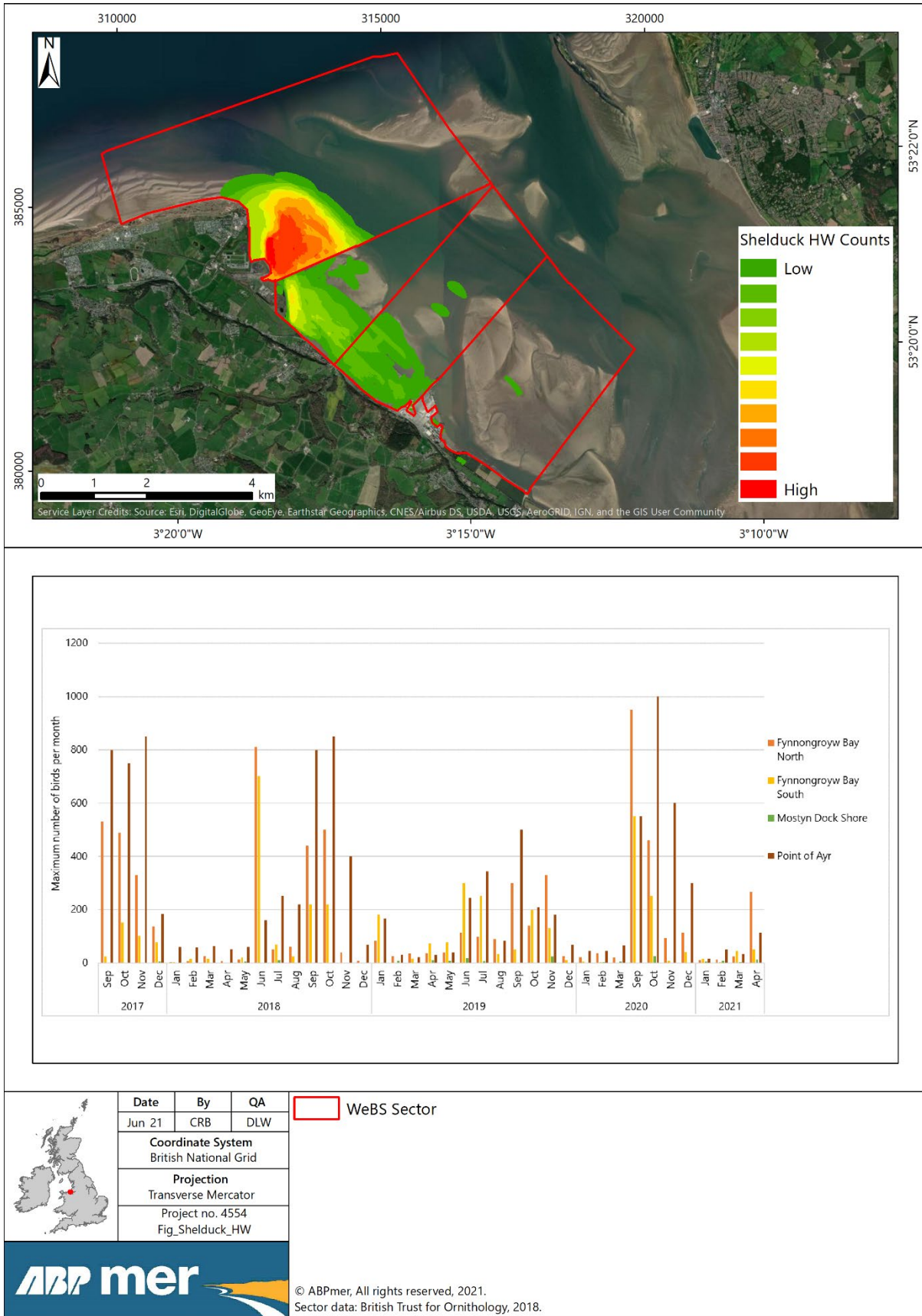


Figure 8. Shelduck distribution map and monthly peak high water abundances

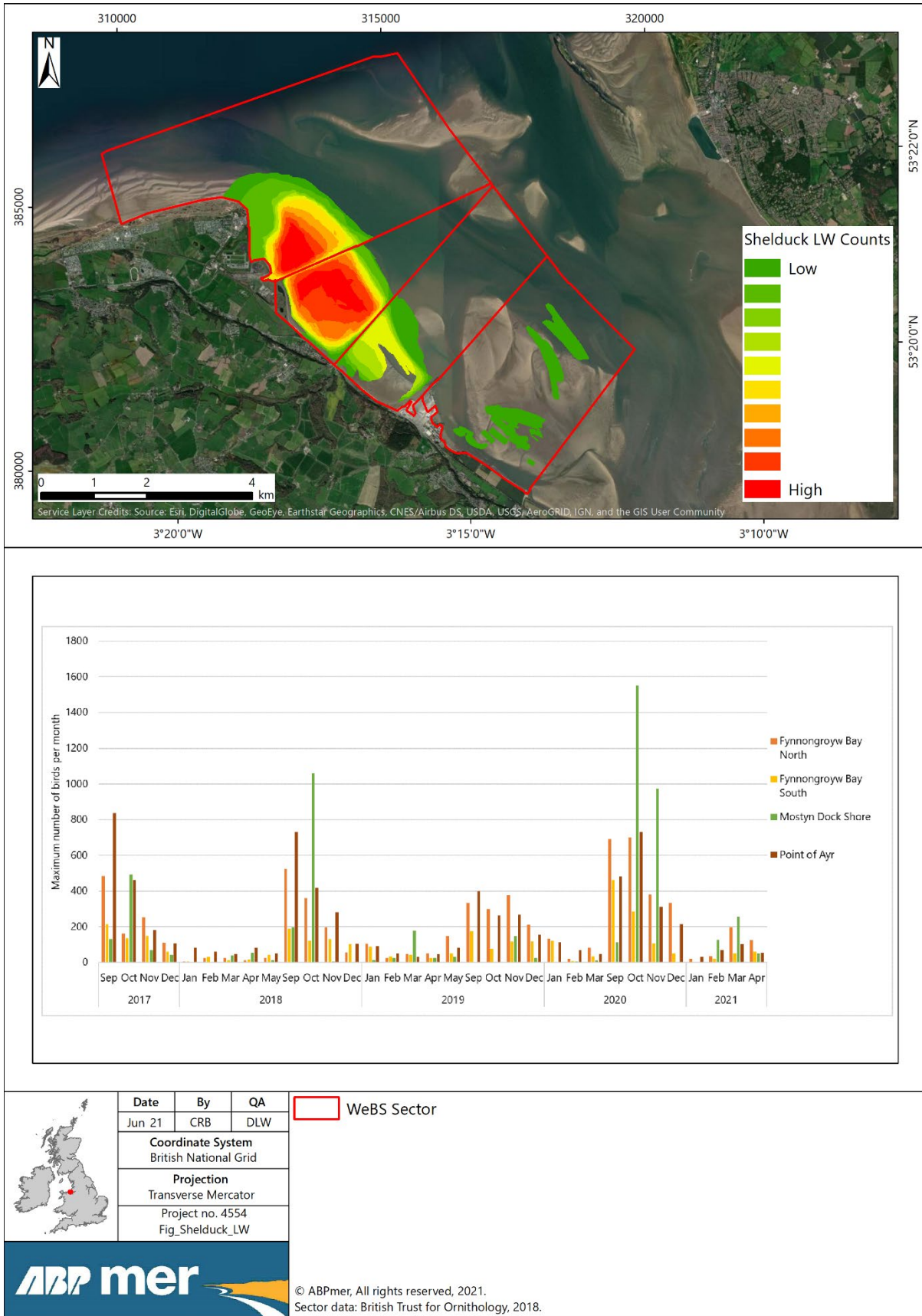


Figure 9. Shelduck distribution map and monthly peak low water abundances

3 Conclusions

These surveys have provided detailed baseline information on the abundance and distribution of coastal waterbirds populations within and around the Port of Mostyn. Waders and wildfowl populations of international and national importance were recorded during both the high water and low surveys with intertidal habitats in the area considered to be of high functional value for both feeding and roosting assemblages of waterbirds.

Oystercatcher, Redshank, Black-tailed Godwit were regularly recorded in internationally important numbers and Knot, Shelduck and Light-bellied Brent Geese recorded in nationally important numbers during the monitoring. The survey area also supported large numbers of other waders (such as Curlew, Dunlin and Lapwing) and ducks (Wigeon, Pintail and Teal) as well as gulls and terns.

The largest numbers of roosting birds were recorded at the Point of Ayr with other roosting sites including upper foreshore habitat on the Mostyn Bank and in the vicinity of the Port of Mostyn. Foraging areas included mudflat habitat on the Mostyn Bank with large aggregations also occurring in areas of the Salisbury Middle, Salisbury Bank and West Hoyle Bank sandbanks when they become exposed during low water. The data suggests that these habitats can support a significant proportion of the overall Dee Estuary populations.

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5 Abbreviations/Acronyms

ASSI	Areas of Special Scientific Interest
BTO	British Trust for Ornithology
CCW	Countryside Council for Wales
COVID-19	Coronavirus
FBN	Ffynnongroyw Bay North
FBS	Ffynnongroyw Bay South
HW	High Water
JNCC	Joint Nature Conservation Committee
LW	Low Water
MDS	Mostyn Dock Shore
MoP	Mean of Peak
NE	Natural England
PoA	Point of Ayr
RSPB	Royal Society for the Protection of Birds
SPA	Special Protection Areas
SSSI	Sites of Special Scientific Interest
UK	United Kingdom
WeBS	Wetland Bird Survey

Cardinal points/directions are used unless otherwise stated.

SI units are used unless otherwise stated.

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