

Contents

List of Tables.....	ii
Abbreviations and Acronyms.....	iii
11E.1 Introduction	1
11E.2 Population models.....	2
11E.3 Estimation of impacts for incorporation within the PVAs	5
11E.3.1 Estimation of mortality from collisions and displacement/barrier effects.....	5
11E.3.2 Estimating mortality according to age classes.....	5
11E.3.3 Calculation of the additional mortality for incorporation within the PVAs.....	10
11E.4 Predicted population-level impacts	15
11E.5 Estimated wind farm impacts and SPA population sizes	19
References.....	21
Annex 11E.1: Details of population models for kittiwake, guillemot, razorbill and puffin	
Annex 11E.2 Outputs from the Forth Islands gannet PVA	
Annex 11E.3 Stable age structure from the Forth Islands SPA herring gull population model	

List of Tables

Table 11E.1 The percentage of different age classes estimated for each species according to seasonal period and wind farm sites, and as used to apportion the estimated impacts from collisions and displacement/barrier effects	8
Table 11E.2 The estimated mortality from collisions and/or displacement/barrier effects incorporated into each of the PVAs for the assessment of population-level impacts	11
Table 11E.3 The range of values within each SPA obtained for the metrics used in the interpretation of the PVA outputs at 25 and 50 years for Development-alone and in-combination	17

Abbreviations and Acronyms

CEH	Centre for Ecology and Hydrology
CRM	Collision Risk Model
EIA	Environmental Impact Assessment
ICOL	Inch Cape Offshore Limited
JNCC	Joint Nature Conservation Committee
MS LOT	Marine Scotland Licencing Operations Team
NNR	National Nature Reserve
PVA	Population Viability Analysis
RSPB	The Royal Society for the Protection of Birds
SNH	Scottish Natural Heritage
SPA	Special Protection Area

11E Population Viability Analyses

11E.1 Introduction

- 1 Following the advice received in the Scoping Opinion from the Marine Scotland Licencing Operations Team (MS LOT), the offshore ornithology assessment for the Inch Cape Wind Farm and associated Offshore Transmission Works (the Development) focusses on the potential impacts of collisions, displacement and barrier effects on six species of seabird (i.e. gannet, kittiwake, herring gull, guillemot, razorbill and puffin). For the purposes of assessing the resulting potential population-level impacts, the Scoping Opinion advised that Population Viability Analyses (PVAs) were required. Specifically, these were considered to be required for Special Protection Area (SPA) breeding colonies where the assessed effects exceeded a change to the annual adult survival rate of 0.2 per cent. This was considered likely to arise in relation to kittiwake, guillemot and razorbill at both the Forth Islands and Fowlsheugh SPAs, and in relation to gannet and puffin at the Forth Islands SPA.
- 2 The Scoping Opinion also advised that PVAs should encompass both 25 and 50 year timescales and be produced for the following scenarios:
 - The predicted effects from the Development-alone throughout the year and on all age classes;
 - The predicted effects from the Development in-combination with the other three Forth and Tay wind farms (i.e. Neart na Gaoithe, Seagreen Alpha and Seagreen Bravo), throughout the year and on all age classes;
 - For gannet and kittiwake only, the predicted breeding season effects from the Development in-combination with the other three Forth and Tay wind farms plus the predicted non-breeding season effects for the offshore wind farms in the UK North Sea and (for gannet) Channel; and
 - For kittiwake (as the only species for which both collision and displacement/barrier effects were assessed), the above scenarios for predicted collision effects in isolation, as well as for the combined effects from collisions with displacement and barrier effects.
- 3 In relation to the outputs from the PVAs, the Scoping Opinion advised that the following three metrics should be applied to these outputs to aid interpretation:
 - The median of the ratio of the growth rate of the impacted to un-impacted populations, also referred to as the counterfactual of population growth rate;
 - The median of the ratio of the size of the impacted to un-impacted populations, also referred to as the counterfactual of population size; and
 - The centile of the un-impacted population that matches the 50th centile (i.e. median) for the impacted population.

Both the counterfactual of population growth rate and of population size have been shown to have low sensitivity to the mis-specification of input parameters and to the underlying assumptions of the population models from which the PVAs are derived (Cook and Robinson,

2015, Jitlal *et al.*, 2017). The centile metric has demonstrated moderate sensitivity in relation to such factors, overall, and considerably better performance than other probabilistic-based metrics (Jitlal *et al.*, 2017).

4 Therefore, to inform the assessment for the Development, PVAs were undertaken for the SPA populations identified above, as well as for the St Abb's Head to Fast Castle SPA kittiwake and guillemot populations and the Buchan Ness to Collieston Coast SPA guillemot population (on the basis that they also have connectivity to the Development Area and two kilometre buffer – see *Appendix 11B: Apportioning Effects to SPA Colonies During the Breeding and non-breeding Seasons*). Additionally, PVAs for regional populations were produced for those species for which more than one SPA population had connectivity to the Development Area and two kilometre buffer (i.e. kittiwake, guillemot and razorbill), with these being used specifically to inform the Environmental Impact Assessment (EIA) for these species (*Chapter 11: Offshore Ornithology*). PVAs were not undertaken on herring gull SPA populations because of the small impacts predicted on the populations of this species (*Chapter 11*), although a population model was developed for the Forth islands SPA population of this species.

11E.2 Population models

5 As advised in the Scoping Opinion, PVAs were based upon stochastic, density independent, population models which incorporated all age classes.

6 PVAs for all species other than gannet were based upon a Bayesian state-space modelling framework, which allows for ‘observation error’ and environmental stochasticity simultaneously within the same model. These models were adapted from existing SPA-specific population models (Freeman *et al.*, 2014, Jitlal *et al.*, 2017), updated according to recently available population and demographic data. The PVAs used a matched runs approach, such that stochasticity was applied to the population to give the same survival and productivity rates for the impacted and un-impacted population at each time step prior to applying the wind farm impacts. The Scoping Opinion confirmed that modelling based on the approach of Freeman *et al.* (2014) was considered to be appropriate.

7 The input data for the Bayesian state-space models comprised:

- Colony counts - derived from the Seabird Monitoring Programme database (JNCC, 2017) supplemented by unpublished Royal Society for the Protection of Birds (RSPB) and the Joint Nature Conservation Committee (JNCC) count data, but with the most recent counts as provided by Scottish Natural Heritage (SNH)¹;
- Breeding productivity data – derived from the long-term monitoring by the Centre for Ecology and Hydrology (CEH) on the Isle of May within the Forth Islands SPA (e.g. JNCC, 2017, Lahoz-Monfort *et al.*, 2013, Newell *et al.*, 2012) and applied to each SPA population of each species, except in the case of kittiwake for which SPA-specific productivity data were available for each of the three SPAs (JNCC, 2017); and

¹Email of 08 December 2017 from MS-LOT to Inch Cape Offshore Limited (ICOL), with attached table of SPA colony counts as provided by SNH.

- Adult survival data – derived from the long-term monitoring by CEH on the Isle of May (e.g. Frederiksen *et al.*, 2004, Lahoz-Monfort *et al.*, 2013) and applied to each SPA population of each species.
- 8 The extent to which the colony count data used within each of the Bayesian state-space population models were derived from censuses or sub-plot surveys (and whether these censuses or surveys were regular or sporadic) is detailed in Annex 11E.1, together with the estimates of adult survival rate and productivity used as inputs to each of the models. Further details of the modelling approach used is also provided in Annex 11E.1, with full details in Freeman *et al.* (2014) and Jitlal *et al.* (2017).
- 9 For kittiwake, guillemot and razorbill, regional PVAs were produced by summing the projections for the population models for each SPA population of these species. Also, for the St Abbs Head to Fast Castle SPA guillemot population, two population models were produced; first on the basis of the regular survey data from the St Abbs Head National Nature Reserve (NNR) and, secondly, with those count data supplemented by the two years of full census data for the SPA. The model based solely on the regular count data from the NNR (which holds over 90 per cent of the SPA population, as determined from the recent count data provided by SNH) is used for the current assessment because the projections from this model are associated with smaller 95 per cent credibility intervals, and (in terms of the PVA metrics) it tends to give more precautionary outputs (although differences are minor – see Annex 11E.1).
- 10 The PVA for the Forth Islands SPA gannet population was based upon a standard matrix-based population model (Caswell, 2000), which incorporated both environmental and demographic stochasticity, with the former derived by generating random demographic rates by sampling from the distribution determined by the standard deviations estimated about the mean values for each of these rates. This population model was adapted from a previous model of the same SPA population, which in turn had been derived from a model for the UK gannet population (WWT Consulting, 2012, MacArthur Green, 2014). The demographic rates upon which the model was based were as used in the previous models, but with the initial population size updated to include the most recent estimate of the Forth Islands SPA gannet population (Murray *et al.*, 2015).
- 11 In contrast to the PVAs for the other SPA populations, The Forth Islands SPA gannet PVA did not adopt a matched runs approach to comparing the projections for the impacted and unimpacted populations. Although, it has been proposed that a matched runs approach may produce more precautionary predictions (e.g. Jitlal *et al.*, 2017), the evidence for this is unclear and the use of a matched runs approach appears to be less widely advocated than has been indicated by some recent studies (e.g. compare WWT Consulting, 2012 and Green *et al.*, 2016 with Cook and Robinson, 2015 and Jitlal *et al.*, 2017). This gannet population model (or variations of it) is well established and it has been applied widely in assessing likely impacts from offshore wind farms (WWT Consulting, 2012, MacArthur Green, 2014). Furthermore, the Scoping Opinion² confirmed that the Forth Islands SPA gannet PVA was an appropriate model

² Letter of 08 September 2017 from MS-LOT to ICOL.

for use in the assessment (subject to the incorporation of all age classes within the PVA, which was undertaken).

- 12 The Forth Islands gannet PVA also differed from the PVAs derived from the Bayesian state-space models in terms of how the predicted Wind Farm impacts were considered. Thus, the additional mortality was incorporated into the gannet PVA at intervals of 25 individuals up to a maximum of 1,500, and in such a way that the additional mortality remained proportional to the population size as this changed through the course of the projection. This additional mortality was also apportioned by age class as outlined below (Table 11E.1). This gave predictions of population-level impacts for a range of additional mortalities that spanned the estimated mortality from the Wind Farm impacts, allowing the estimated mortality to be matched to the closest higher level of additional mortality considered by the PVA. By contrast, the PVAs derived from the Bayesian state-space models required the specific mortality resulting from the wind farm impacts to be incorporated within the PVA (having first expressed this mortality in terms of the percentage point change it represented to the different population age classes).
- 13 All PVAs were run in such a way that all adult birds in the population at the start of the year were assumed to breed, or at least to attempt to breed. Thus, the additional mortality from the Wind Farm impacts was essentially applied as a post-breeding harvest. In reality, some of this potential mortality would occur during the breeding period, so reducing breeding productivity as well. The extent to which this assumption will lead to an underestimation of the population-level impacts will be small (if even distinguishable) because the imposed mortality occurs immediately after breeding and only those birds which survive to the next breeding season have the opportunity to breed (so that birds lost as a result of the Wind Farm impacts do not contribute to breeding productivity in the subsequent years). Such a minor source of underestimation will also be more than compensated by some of the precautionary assumptions incorporated into the modelling (e.g. that sub-adult birds will experience the same mortality rates from displacement and barrier effects as adults despite not having to undertake regular foraging trips to and from the breeding colony, and the lack of compensatory movement of non-breeding gannets and kittiwakes into the breeding age class despite the mortality from the Wind Farm impacts being heavily skewed towards the adult age class in these species).
- 14 All PVAs were undertaken in relation to 25 and 50 year impact periods, as advised in the Scoping Opinion. The additional mortality within the PVAs derived from the Bayesian state-space models was not incorporated until after year three of the projection, giving 28 and 53 year projection periods overall. This was undertaken to provide a more realistic representation of the likely population status at the time when the potential Wind Farm impacts are expected to arise. This three year 'lag' was not incorporated into the Forth Islands SPA gannet PVA but, given the rapidly increasing trend predicted for this population (see Annex 11E.2), this will not cause the predicted population-level impacts to be underestimated or to be any less precautionary.

- 15 The stable age structures derived from each population model are presented in Annex 11E.1 (for kittiwake, guillemot, razorbill and puffin), Annex 11E.2 (for gannet) and Annex 11E.3 (for herring gull).

11E.3 Estimation of impacts for incorporation within the PVAs

11E.3.1 Estimation of mortality from collisions and displacement/barrier effects

- 16 In accordance with the advice of the Scoping Opinion, potential impacts from collisions were estimated for gannet and kittiwake and from displacement/barrier effects for kittiwake, guillemot, razorbill and puffin. The impacts from these different effects were calculated as described in *Appendix 11B*, *Appendix 11C: Estimation of the Development Alone and Cumulative Collision Risk* and *Appendix 11D: Estimation of the Development Alone and Cumulative Effects from Displacement and Barrier Effects*. The estimates of mortality from the wind farm impacts presented in these technical reports provide the basis for the Development-alone and cumulative or in-combination impacts that are considered by the PVAs.
- 17 Collision estimates for the Wind Farm and the other three Forth and Tay wind farms were calculated using the Strategic Ornithological Support Services offshore collision risk model (CRM) (Band, 2012). For both gannet and kittiwake, only the option 2 CRM estimates were used for the PVAs, with these being derived for the worst-case design (in terms of collision estimates) for the Development (i.e. the 40 Wind Turbine Generator design for both species - *Appendix 11C*). The PVAs for the different cumulative or in-combination scenarios used the collision estimates from the worst-case of the 2014 and 2017 designs for each of the other Forth and Tay wind farms, along with the 2017 design for the Development (*Appendix 11C*).
- 18 The collision estimates to gannet and kittiwake during the non-breeding passage periods were derived from the CRMs undertaken for the Development and the other Forth and Tay wind farms (described above) and from existing sources for the other UK North Sea and (for gannet) Channel wind farms (Royal HaskoningDHV *et al.*, 2015, MacArthur Green, 2017).
- 19 The mortality estimates from displacement/barrier effects applied within the PVAs were calculated using the SNCB matrix approach, as advised in the Scoping Opinion³. The seasonal periods for which displacement/barrier effects were estimated for each species were as advised in the Scoping Opinion, as were the rates of displacement and of mortality amongst displaced birds which were assumed for each species and seasonal period (*Appendix 11D*).

11E.3.2 Estimating mortality according to age classes

- 20 The PVAs considered impacts to the different population age classes, so that the mortalities estimated from collisions and displacement/barrier effects were apportioned between the adult and sub-adult age classes.

³ Letter of 03 November 2017 from MS-LOT to ICOL.

- 21 For gannet and kittiwake, the mortalities estimated to occur as a result of the Development and the other three Forth and Tay wind farms during the breeding period were apportioned on the basis of the plumage characteristics of birds recorded during the 'at-sea' surveys of the Development Area and four kilometre buffer (subsequently referred to as the Survey Area), and of the other Forth and Tay wind farm sites (giving site-specific estimates of age distribution). These age distributions are presented in Table 11E.1, whilst further details are presented in *Appendix 11A: Offshore Ornithology Baseline Survey Report* and *Appendix 11C*.
- 22 As for the breeding period, gannet collision estimates calculated for the passage periods were apportioned to age classes using the 'at-sea' survey data for the Development and the other Forth and Tay wind farms. The collisions from the other UK North Sea and Channel wind farms were apportioned to age classes according to the stable age structure of a population model for gannet (Table 11E.1, *Appendix 11B*). For kittiwake, the collision estimates calculated for the passage periods at all UK wind farms in the North Sea (including the Development and the other Forth and Tay sites) were apportioned to age classes according to the stable age structure of a population model for kittiwake (Table 11E.1). In this case the 'at-sea' survey data could not be applied to the collision estimates from the Forth and Tay wind farms because the method used to apportion the kittiwake passage period collisions to individual SPA populations relies upon relating the number of adults and sub-adults in each SPA population directly to the overall passage population estimated within the North Sea (*Appendix 11B*).
- 23 The population model stable age structure used to apportion kittiwake collisions to age classes during the passage periods estimated that 53 per cent of the population were adults (*Appendix 11B*). This compared to 57 to 72 per cent for the spring passage 'at-sea' survey data for the Forth and Tay wind farms, and 79 to 83 per cent for the autumn passage 'at-sea' survey data (see Tables 11C.7 and 11C.11 in *Appendix 11C*). This may appear to suggest that the stable age structure data will underestimate the impact to the adult age class (and hence to the population) at the Forth and Tay wind farms during the passage periods. However, kittiwakes adopt adult plumage by their third year but do not generally start to breed until their fourth year (Snow and Perrins, 1998), so that the use of 'at-sea' survey data is likely to overestimate impacts to the adult age class overall.
- 24 The data on gannet and kittiwake age distributions from the Survey Area, but not from the other Forth and Tay sites, distinguished immatures and juveniles amongst the sub-adult age class. The kittiwake population model used only two age classes (adults and sub-adults), but the gannet model distinguished juveniles from immatures. Therefore, the proportion of juveniles estimated within the sub-adult age class for gannets in the Survey Area for each seasonal period was extrapolated to the other Forth and Tay sites to provide separate estimates of the proportions of juveniles and immatures (noting that the percentage of sub-adults was invariably small, being two to three per cent at each wind farm site during the breeding period and one to 11 per cent during any of the passage periods at each site – Table 11E.1).
- 25 Age distributions for the three auk species could not be determined from the survey data (as after the first winter, age cannot be distinguished from plumage). Therefore, the estimated

mortality was apportioned to age classes according to the stable age structure derived from the population models developed for the current assessment (as advised in the Scoping Opinion). These models were specific to each SPA population, so that impacts were apportioned to each population according to the stable age structure from the appropriate model, with the range of values being presented in Table 11E.1 (and the SPA-specific age structures given in *Annex 11E.1*).

- 26 The Scoping Opinion also advised that sabbatical birds (i.e. adults that do not breed in a given year) should be assumed to occur at a rate of 10 per cent for gannet and kittiwake and seven per cent for each of the three auk species. To take account of this, the impacts to the adult age class were reduced according to these percentages, although for gannet and kittiwake this reduction was only applied to the breeding period collisions and not to the autumn and spring passage period collisions (due to the different method used to apportion passage period collisions to SPA populations – *Appendices 11B and 11C*).

Table 11E.1 The percentage of different age classes estimated for each species according to seasonal period and wind farm sites, and as used to apportion the estimated impacts from collisions and displacement/barrier effects

Species	Age class ¹	Seasonal period	Wind farm(s)				
			Inch Cape	Neart na Gaoithe	Seagreen Alpha	Seagreen Bravo	Other UK North Sea and Channel ²
Gannet	Adults	Breeding	97	97	97	98	N/A
		Autumn passage	94	94	89	97	55
		Spring passage	98	98	98	99	55
	Immatures	Breeding	2	2	2	2	N/A
		Autumn passage	2	2	4	1	26
		Spring passage	2	2	2	1	19
	Juveniles	Breeding	1	1	1	0	N/A
		Autumn passage	4	4	7	2	19
		Spring passage	0	0	0	0	0
Kittiwake	Adults	Breeding	93	93	93	95	N/A
		Autumn passage	53	53	53	53	53
		Spring passage	53	53	53	53	53
Guillemot ³	Adults	Breeding	43 - 45	43 - 45	43 - 45	43 - 45	N/A

Species	Age class ¹	Seasonal period	Wind farm(s)				
			Inch Cape	Neart na Gaoithe	Seagreen Alpha	Seagreen Bravo	Other UK North Sea and Channel ²
			Non-breeding	43 - 45	43 - 45	43 - 45	43 - 45
Razorbill ³	Adults	Breeding	48 - 49	48 - 49	48 - 49	48 - 49	N/A
		Non-breeding	48 - 49	48 - 49	48 - 49	48 - 49	N/A
Puffin ⁴		Breeding	38	38	38	38	N/A

¹Only the percentage of adults is shown for all species other than gannet because for these species age classes comprise adults and sub-adults only.
²Channel wind farms are included for gannet only.
³The range of adult percentages from the different SPA population models is shown.
⁴Only breeding period estimates given because no assessment for the non-breeding period is undertaken (as advised in the Scoping Opinion).

11E.3.3 Calculation of the additional mortality for incorporation within the PVAs

- 27 The gannet and kittiwake collisions estimated for each population age class during the breeding period are presented in Tables 11C.8 and 11C.12 in *Appendix 11C* for the Development-alone and for the Development cumulatively with the other Forth and Tay wind farms, respectively. Similarly, the mortality by age class which is predicted to occur from displacement/barrier effects during both the breeding and non-breeding periods is presented in Tables 11D.13 and 11D.15 in *Appendix 11D* for the Development-alone and the Development cumulatively with the other Forth and Tay wind farms, respectively.
- 28 Following the advice of the Scoping Opinion, the estimates of breeding period and, for guillemot and razorbill, non-breeding period mortality detailed above were apportioned to the individual SPA populations with connectivity to the Development Area and two kilometre buffer, using a variation of the approach outlined in existing SNH guidance (SNH, 2016). The resulting apportionment estimates are presented in Table 11B.3 of *Appendix 11B*. This gave the estimates of additional mortality for incorporation within the PVAs for each of the guillemot, razorbill and puffin SPA populations.
- 29 To calculate the estimates of additional mortality for incorporation within the PVAs for the gannet and kittiwake SPA populations, the apportioned breeding period mortality was combined with the estimated collisions attributable to each SPA population during each of the autumn and spring passage periods (as detailed in Table 11B.4 and *Section 11B.3.2*, and Table 11B.6 and *Section 11B.3.3* of *Appendix 11B* for gannet and kittiwake, respectively).
- 30 The resultant mortality estimates incorporated into each of the PVAs for prediction of population-level impacts are presented in Table 11E.2.

Table 11E.2 The estimated mortality from collisions and/or displacement/barrier effects incorporated into each of the PVAs for the assessment of population-level impacts

Species	SPA	Impact	Scenario	Additional mortality (individuals)			Population size (individuals) ¹		Percentage point change in mortality ²			
				Adults	Immatures ³	Juveniles ³	Adults	Sub-adults ⁴	Adults	Sub-adults		
Gannet	Forth Islands	Collisions	Development-alone	98	3	1	150,518	N/A	N/A	N/A		
			Development with other Forth and Tay wind farms	698	17	6		N/A	N/A	N/A		
			Development with other Forth and Tay wind farms plus passage collisions from other UK North Sea and Channel wind farms	775	60	25		N/A	N/A	N/A		
Kittiwake	Forth Islands	Collisions	Development-alone	7	1		9,326	7,328	0.077	0.009		
			Development with other Forth and Tay wind farms	31	3				0.333	0.042		
			Development with other Forth and Tay wind farms plus passage collisions from other UK North Sea wind farms	37	6				0.401	0.080		
		Collisions and displacement/ barrier effects	Development-alone	11	1				0.121	0.014		
			Development with other Forth and Tay wind farms	45	4				0.480	0.057		

Species	SPA	Impact	Scenario	Additional mortality (individuals)			Population size (individuals) ¹		Percentage point change in mortality ²			
				Adults	Immatures ³	Juveniles ³	Adults	Sub-adults ⁴	Adults	Sub-adults		
Fowlsheugh	Collisions	Development with other Forth and Tay wind farms plus passage collisions from other UK North Sea wind farms	Development-alone	51	7		19,310	17,124	0.548	0.095		
			Development with other Forth and Tay wind farms	10	1				0.052	0.006		
			Development with other Forth and Tay wind farms plus passage collisions from other UK North Sea wind farms	70	7				0.364	0.042		
	Collisions and displacement/barrier effects	Development with other Forth and Tay wind farms plus passage collisions from other UK North Sea wind farms	Development-alone	87	16				0.452	0.091		
			Development-alone	16	2				0.081	0.009		
			Development with other Forth and Tay wind farms	86	8				0.446	0.048		
			Development with other Forth and Tay wind farms plus passage collisions from other UK North Sea wind farms	103	17				0.534	0.098		
	Collisions	Development-alone	2	0		6,668	5,030	0.031	0.005			

Species	SPA	Impact	Scenario	Additional mortality (individuals)			Population size (individuals) ¹		Percentage point change in mortality ²	
				Adults	Immatures ³	Juveniles ³	Adults	Sub-adults ⁴	Adults	Sub-adults
St Abbs Head to Fast Castle			Development with other Forth and Tay wind farms	5	1				0.082	0.024
			Development with other Forth and Tay wind farms plus passage collisions from other UK North Sea wind farms	12	4				0.176	0.085
			Development-alone	3	0				0.047	0.007
			Development with other Forth and Tay wind farms	8	1				0.120	0.028
			Development with other Forth and Tay wind farms plus passage collisions from other UK North Sea wind farms	14	4				0.214	0.089
			Development-alone	10	14		38,573	49,093	0.027	0.029
Guillemot	Forth Islands	Displacement/barrier effects	Development with other Forth and Tay wind farms	42	58				0.109	0.118
	Fowlsheugh	Displacement/barrier effects	Development-alone	12	15				0.015	0.017
			Development with other Forth and Tay wind farms	64	83		74,379	90,908	0.086	0.092
			Development-alone	5	6		48,516	61,748	0.009	0.010

Species	SPA	Impact	Scenario	Additional mortality (individuals)			Population size (individuals) ¹		Percentage point change in mortality ²			
				Adults	Immatures ³	Juveniles ³	Adults	Sub-adults ⁴	Adults	Sub-adults		
St Abbs Head to Fast Castle	Buchan Ness to Collieston Coast	Displacement/ barrier effects	Development with other Forth and Tay wind farms	21	29		45,067	59,740	0.044	0.047		
			Development-alone	1	1				0.002	0.002		
Razorbill	Forth Islands	Displacement/ barrier effects	Development with other Forth and Tay wind farms	6	8		7,792	8,441	0.013	0.014		
			Development-alone	8	10				0.106	0.113		
	Fowlsheugh	Displacement/ barrier effects	Development with other Forth and Tay wind farms	18	21		9,950	10,356	0.235	0.251		
			Development-alone	8	9				0.083	0.089		
Puffin	Forth Islands	Displacement/ barrier effects	Development with other Forth and Tay wind farms	19	22		90,010	146,858	0.195	0.209		
			Development-alone	22	38				0.024	0.026		
			Development with other Forth and Tay wind farms	77	135				0.086	0.092		

¹As provided by SNH in email of 08 December 2017 from MS LOT to Inch Cape Offshore Limited (ICOL).

²Not calculated for gannet because the gannet PVA did not require this as an input.

³Immatures and juveniles were distinguished for gannet only. These age classes were combined as sub-adults for other species.

⁴The number of sub-adults within each population was calculated by applying the stable age structure from the population model to the estimated number of adults. This was not calculated for gannet because the percentage point change in mortality was not required as an input to the gannet PVA (although mortality to the sub-adult age classes was accounted for within the actual PVA calculations).

11E.4 Predicted population-level impacts

- 31 The key outputs from the PVAs in terms of the predicted population sizes with and without the wind farm impacts, and the three metrics used to interpret the level of impact to the population are presented for the SPA populations in Section 4 of the *Inch Cape Wind Farm and Offshore Transmission Works Habitats Regulation Appraisal* (ICOL, 2018). The same outputs are presented for the regional kittiwake, guillemot and razorbill PVAs within the *Chapter 11* of this EIA Report.
- 32 Further details of the outputs from the Bayesian state-space population models and the associated PVAs, including graphical outputs of the population projections with and without the wind farm impacts and tabular outputs of these projections (with median and other quantile values), are provided in *Annex 11E.1*. Outputs from the Forth Islands SPA gannet PVA in terms of the values of the three metrics in relation to the range of additional mortality considered by the PVA are provided in *Annex 11E.2*.
- 33 Given the above, the PVA outputs are not presented in detail here, with only a general summary of the three metrics used to aid the interpretation of the outputs provided below (Table 11E.3).
- 34 The metrics used to summarise the PVA outputs are:
- The counterfactual of population size – the median of the ratio of the end point size of the impacted to un-impacted (or baseline) population, expressed as a proportion;
 - The counterfactual of population growth rate – the median of the ratio of the annual growth rate of the impacted to un-impacted population, expressed as a proportion (with this metric being unaffected by the length of the projection period); and
 - The centile of the un-impacted population that matches the median (i.e. 50th centile) of the impacted population.
- 35 The first two metrics above take values of one or less, with a value of one indicating no difference between the impacted and un-impacted population (and hence no impact). The third metric is based upon the distribution of the end-point population sizes generated by the replications of the model runs, and the value should not exceed 50 because the median for the impacted population is not expected to exceed that of the un-impacted population (although where impacts are small this could occur due to sampling variation). For all of these metrics, smaller values should be indicative of greater differences between impacted and un-impacted populations and therefore greater impacts.
- 36 The metrics indicate small impacts from the Development-alone, with the values for the counterfactual of population size predicting at most a six per cent reduction in the end-point size of any SPA population, and the counterfactual of population growth rate showing little reduction from a value of one, even after a 50 year impact period (Table 11E.3). In-combination effects are greater, but the predicted reductions to the end-point population

sizes remain below 20 per cent in the vast majority of cases after a 50 year impact period, and are within 13 per cent in all cases after a 25 year impact period.

- 37 Overall, the impacts are greatest in relation to the Forth Islands and Fowlsheugh SPAs, which is unsurprising given that these SPAs are closest to the Development and have a greater number of SPA populations with connectivity to the Development Area and two kilometre buffer (*Figures 11.2 – 11.7, Chapter 11*).
- 38 The centile metric generally has values above 40, which suggests a moderate to high likelihood of the end-point size of the impacted population being similar to that of the un-impacted population (Table 11E.3). However, some markedly lower values of this metric are associated with the Forth Islands SPA (i.e. values of 2 – 12), with these lower values all deriving from the PVA for the gannet population (the centile metric being greater than 40 for all other SPA populations - Table 5 in *Annex 11E.1*).
- 39 Given that the other metrics derived from the Forth Islands SPA gannet PVA do not show markedly lower values to those derived from other PVAs, this difference in the values of the centile metric appears anomalous. It is beyond the scope of the current work to investigate this issue in detail but the low centile values produced by the gannet PVA appear to be associated with the different population modelling approach used for gannet. Thus, greater variation is associated with the predictions from the Bayesian state-space models than from the gannet matrix model⁴, which is likely to mean greater overlap in the distributions of the predicted end-point sizes of the impacted and un-impacted populations (and hence higher centile values). Therefore, caution is required in interpreting the centile values and in making comparisons between the estimates obtained using the different modelling approaches.

⁴ Using the 25 year un-impacted population estimates as an example, the 5th centile value for the gannet PVA is 12 per cent smaller than the median value, whilst the 95th centile value is 13 per cent larger. This compares to differences for the Bayesian state-space models of 34 – 75 per cent between the 5th centile and median values and of 47 – 422 per cent between the median and the 95th centile values.

Table 11E.3 The range of values within each SPA obtained for the metrics used in the interpretation of the PVA outputs at 25 and 50 years for Development-alone and in-combination

SPA	Scenario	Counterfactual of end population size		Counterfactual of population growth rate ¹	Centile of baseline population matching the median of the impacted population	
		25 years	50 years		25 years	50 years
Forth Islands	Development-alone	0.969 - 0.993	0.938 - 0.986	0.999 - 1.000	41 - 50	37 - 49
	Development with other Forth and Tay wind farms	0.896 - 0.975	0.807 - 0.952	0.996 - 0.999	12 - 48	5 - 48
	Development with other Forth and Tay wind farms plus passage collisions from other UK North Sea and Channel wind farms ²	0.878 - 0.903	0.776 - 0.809	0.995 - 0.996	9 - 44	2 - 43
Fowlsheugh	Development-alone	0.977 – 0.995	0.952 – 0.991	0.999 – 1.000	47 - 49	47 - 49
	Development with other Forth and Tay wind farms	0.902 – 0.974	0.819 – 0.948	0.996 – 0.999	44 - 45	42 - 44
	Development with other Forth and Tay wind farms plus passage collisions from other UK North Sea wind farms ²	0.879	0.779	0.995	42	41
St Abbs Head to Fast Castle	Development-alone	0.988 – 0.997	0.974 – 0.995	0.999 – 1.000	49	49
	Development with other Forth and Tay wind farms	0.969 – 0.986	0.938 – 0.974	0.999	47 - 48	47 - 48
	Development with other Forth and Tay wind farms plus passage collisions from other UK North Sea wind farms ²	0.944	0.888	0.998	47	47
	Development-alone	0.999	0.999	1.000	50	50

SPA	Scenario	Counterfactual of end population size		Counterfactual of population growth rate ¹	Centile of baseline population matching the median of the impacted population	
		25 years	50 years		25 years	50 years
Buchan Ness to Collieston Coast	Development with other Forth and Tay wind farms	0.997	0.992	1.000	50	49

¹The value of this metric does not vary according to the length of the projection period.
²This in-combination scenario is relevant to gannet and kittiwake only.

11E.5 Estimated wind farm impacts and SPA population sizes

- 40 The mortality estimates from collisions and/or displacement/barrier effects which have been used within the PVAs have been calculated following the methods advised in the Scoping Opinion, and in a precautionary way (e.g. via the use of the option 2 collision estimates for the Development, as opposed to the option 1 estimates, and the use of the mean peak counts for estimating displacement/barrier effects – *Appendices 11C and 11D*). For the Development, these impacts were calculated using baseline survey data collected between 2010 and 2012 and (in the case of the SPA colonies) have been related to population estimates mainly from the period 2014 (Forth Islands SPA gannets) to 2017 (e.g. Forth Islands SPA kittiwakes, guillemots and razorbills). If the colony population sizes have changed markedly since the period over which the survey data were collected, this might increase or reduce the numbers of birds of a given species and SPA using the Development Area and two kilometre buffer, and this may lead to some potential for impacts to be under or overestimated.
- 41 Of the SPA populations for which PVAs were undertaken, the most recent estimates for the St Abbs Head to Fast Castle SPA populations and the Forth Islands SPA puffin population are lower than those recorded at the time of the baseline surveys (so that any effect of the population change would be to cause an overestimation of impacts, all else being equal). The estimated numbers of Fowlsheugh SPA kittiwakes have remained approximately constant over this period, whilst for the Buchan Ness to Collieston Coast SPA guillemot population and the Forth Islands SPA gannet population there are no counts which are contemporaneous with the baseline survey data, with the previous counts being from 2007 and 2009, respectively. Thus, for the Forth Islands SPA gannet population the timing of the baseline surveys (which encompassed the 2011 and 2012 breeding periods) is as close to the most recent count (in 2014) as it is to the previous count.
- 42 The most recent counts for the remaining SPA populations are higher than those recorded at the time of the baseline surveys, with the earlier counts for these populations being between 71 per cent (for Fowlsheugh SPA razorbills) to 83 per cent (for Forth Islands SPA kittiwakes) of the counts used in the current assessment. Given the large number of factors that affect the distribution and abundance of seabirds in the marine environment, differences of this scale in the numbers estimated at individual breeding colonies are unlikely to have more than a minor effect on the numbers of birds from that colony occurring within the Survey Area. In terms of the actual calculations involved in predicting the impacts to the individual SPA populations, where the trends in numbers have varied between the different colonies of a particular species (as in the case of kittiwake), the potential for underestimating impacts due to an increase in numbers at a particular colony may be offset by the consequent increase in the apportioning of the impacts to that population. Thus, for kittiwake, re-calculation of the Development-alone impacts using the previously available SPA colony counts (and including re-estimation of the apportionment) has no effect on the values for the percentage point change in mortality for the Forth Islands and Fowlsheugh SPA populations, and a very small reduction (0.001) in that for the St Abb's Head to Fact Castle SPA population.

- 43 To further consider the potential for bias as a consequence of the (relatively small) differences between the timing of the baseline surveys and the SPA population estimates, the PVA metrics for the Forth Islands SPA gannet population were re-calculated on the basis of impacts that were 15 per cent greater than those used in the assessment and presented in *Chapter 11* and the *Inch Cape Wind Farm and Offshore Transmission Works Habitats Regulations Appraisal* (ICOL, 2018). This was on the basis of an assumed population of 65,370 breeding pairs (i.e. the mean of the 2009 and 2014 population estimates) at the time when baseline survey data were collected. A 15 per cent increase in the level of the impacts had no effect on the values of the PVA metrics for the Development-alone (because the increase was encompassed by the collision mortality value from which the metrics were derived for the assessment – the additional mortality in the gannet PVA having been incorporated at intervals of 25 individuals, with the collision estimates matched to the closest higher value). For the in-combination scenarios, there was virtually no detectable effect on the counterfactual of population growth rate, whilst the values of the counterfactual of population size for the worst-case in-combination decreased from 0.903 to 0.887 and from 0.809 to 0.785 for the 25 and 50 year projections, respectively. The values for the centile metric were reduced (in absolute terms) by one to three (giving values for the worst-case in-combination of six and one for the 25 and 50 year projections, respectively).

References

- Band, W. (2012). Using a Collision Risk Model to Assess Bird Collision Risks for Offshore Wind farms. SSOS-02. http://www.bto.org/sites/default/files/u28/downloads/Projects/Final_Report_SOSS02_Band1Model_Guidance.pdf [Accessed 15/05/2018]
- Caswell, H. (2000). Matrix Population Models, 2nd edition. Sinauer Associates Inc., Sunderland, MA, USA.
- Cook, A.S.C.P and Robinson, R.A. (2015). Testing sensitivity of metrics of seabird population response to offshore wind farm effects. JNCC Report no. 553. JNCC, Peterborough.
- Frederiksen, M., Wanless, S., Harris, M.P., Rothery, P. & Wilson, L.J. (2004). The role of the industrial fishery and climate change in the decline of North Sea black-legged kittiwakes *Rissa tridactyla*. Journal of Applied Ecology, 41:1129-1139.
- Freeman, S., Searle, K., Bogdanova, M., Wanless, S. & Daunt, F. (2014). Population Dynamics of Forth & Tay Breeding Seabirds: Review of Available Models and Modelling of Key Breeding Populations. CEH report to Marine Scotland Science, Edinburgh.
- Green, R.E., Langston, R.H.W., McCluskie, A., Sutherland, R. and Wilson, J.D. (2016). Lack of sound science in assessing wind farm impacts on seabirds. Journal of Applied Ecology, 53: 1635-1641.
- ICOL (2018). *Inch Cape Wind Farm and Offshore Transmission Works Habitats Regulation Appraisal*
- Jitlal, M., Burthe, S. Freeman, S. & Daunt, F. (2017). Testing and validating metrics of change produced by Population Viability Analysis (PVA) (Ref CR/2014/16). Draft report to Scottish Government.
- JNCC (2017). Seabird monitoring programme database. <http://jncc.defra.gov.uk/smp/> [Accessed 15/05/2018]
- Lahoz-Monfort, J.J., Morgan, B.J.T., Harris, M.P., Daunt, F., Wanless, S. and Freeman, S.N. (2013). Breeding together: modelling synchrony in productivity in a seabird community. Ecology, 94: 3-10.
- MacArthur Green (2014). Bass Rock gannet PVA. Report to Marine Scotland Science.
- MacArthur Green (2017). Estimates of ornithological headroom in offshore wind farm collision mortality. Report to The Crown Estate.
- Murray, S., Harris, M. and Wanless, S. (2015). The status of the gannet in Scotland in 2013 – 14. Scottish Birds, 35: 3 – 18.
- Newell, M., Harris, M., Wanless, S., Burthe, S., Bogdanova, M., Gunn, C., Daunt, F. (2012). The Isle of May Long-Term Study (IMLOTS) Seabird Annual Breeding Success 1982-2012. NERC-Environmental Information Data Centre. doi: 10.5285/d38b609b-7bc1-4204-86dd-022375208d4f

Royal HaskoningDHV, MacArthur Green and Apem Ltd. (2015) Information for the Habitats Regulations Assessment. Document reference – 5.4. East Anglia THREE Limited.

SNH (2016). Interim guidance on apportioning impacts from marine renewable developments to breeding seabird populations in Special Protection Areas. Available at: <https://www.nature.scot/sites/default/files/2017-07/A2176850%20-%20Interim%20Guidance%20on%20Apportioning%20Impacts%20from%20Marine%20Renewable%20Developments%20to%20breeding%20seabird%20populations%20in%20special%20Protection%20Areas%20-%202021%20Dec%202016.pdf> [Accessed 15/05/2018]

Snow, D. W. and Perrins, C. M. (1998). *The Birds of the Western Palearctic*, concise edition, Oxford University Press.

WWT Consulting (2012). Gannet Population Viability Analysis. Demographic data, population model and outputs. SOSS-04 report to The Crown Estate. Available at: http://www.bto.org/sites/default/files/u28/downloads/Projects/Final_Report_SOSS04_GannetPVA.pdf [Accessed 15/05/2018]

Annex 11E.1: Details of population models for kittiwake, guillemot, razorbill and puffin

Provision of Ornithology Modelling: (ii) Population Viability Analyses

Jitlal, M., Freeman, S. & Daunt, F.

Centre for Ecology & Hydrology, March 2018

1. Introduction

In relation to the ornithology Environmental Impact Assessment (EIA) and Habitats Regulations Appraisal (HRA) it is recognised that there are particular modelling requirements to support and underpin this key element of the assessment. In particular, there is a need for Population Viability Analyses (PVAs) to assess the population-level consequences of the predicted wind farm impacts on several of the seabird species. This report details the approach, methods and results for PVA modelling which follow those used in projects undertaken on Forth/Tay seabird populations for Marine Scotland (Freeman et al. 2014; Jitlal et al 2017). Any amendments to these approaches are highlighted in this report. Models were also updated with the most recent, readily available, colony count and demographic data, up to 2017 where available. PVAs were requested for the species and SPAs outlined in Table 1.

Table 1: Species and SPA populations for which PVA modelling was required.

Species	Forth Islands	Fowlsheugh	Buchan Ness to Collieston Coast	St Abbs Head to Fast Castle
Kittiwake	✓	✓		✓
Guillemot	✓	✓	✓	✓
Razorbill	✓	✓		
Puffin	✓			

2.1 Modelling methods

2.1.1 Input data

Four study species were selected: kittiwake *Rissa tridactyla*, guillemot *Uria aalge*, razorbill *Alca torda*, and puffin *Fratercula arctica*. We accumulated data sets on abundance, survival and productivity from four SPAs (Buchan Ness to Collieston Coast SPA; Fowsheugh SPA; Forth Islands SPA; St Abbs Head to Fast Castle SPA). Note that the analyses for guillemots at St Abbs Head to Fast Castle SPA are given for two batches of sub-sites: i) St Abbs Head NNR only; and ii) all four sub-sites, since the three other sub-sites only having population count data collected for two years (2000 and 2016).

New data were added up to 2017 where available (Jitlal et al. 2017 modelled data up to 2016). Data include colony counts, in full wherever possible but often such data are available only in a limited number of years, or else have been made only in smaller parts of the main colony (i.e. plots). Demography is estimated from ringing data (survival) or nest record data (productivity per nest/pair). Such data have been gathered by the Centre for Ecology and Hydrology (CEH) for several decades at the Isle of May in the Forth Islands SPA, but are often missing elsewhere in the region. Data availability for the species considered are given in Table 2.

Table 2: Data availability for each species at each SPA (see Jitlal et al. 2017 for sources).

Species	SPA	Counts	Survival (Adult birds)	Productivity
Kittiwake	Forth Islands	Regular census	Regular survey	Regular census
	St Abbs Head to Fast Castle	Regular census	No	Regular census
	Fowsheugh	Sporadic census Regular sub-plot survey	No	Regular census
Guillemot	Forth Islands	Regular census	Regular survey	Regular census
	St. Abbs Head to Fast Castle	Sporadic census Regular sub-plot survey	No	No
	Fowsheugh	Sporadic census Regular sub-plot survey	No	No

Species	SPA	Counts	Survival (Adult birds)	Productivity
	Buchan Ness to Collieston Coast	Sporadic census Sporadic sub-plot survey	No	No
Razorbill	Forth Islands	Regular census	Regular survey	Regular census
	Fowlsheugh	Sporadic census Sub-plot surveys from 2004	No	No
Puffin	Forth Islands	Sporadic census	Regular survey	Regular census

2.1.2 Population models

The models adopted for these data are as described in Freeman et al. (2014) and Jitlal et al. (2017) and we provide only a brief overview here. A state-space model for the annual counts was adopted, with the expected number of breeding pairs of a population in year t given by N_t , where, for a species such as kittiwake that begins breeding at age 3:

$$\begin{aligned} N_t &= Nr_t + Na_t \\ Nr_t &\sim \text{Poisson} \left(N_{t-3} \left(\frac{f_{t-3}}{2} \times \varphi_{j,t-3} \varphi_{j,t-2} \varphi_{j,t-1} \right) \right) \\ Na_t &\sim \text{Binomial} (N_{t-1}, \varphi_{a,t-1}) \end{aligned}$$

Where Nr_t and Na_t are respectively the numbers of new recruits, and survivors of the previous breeding population, in year t . The observed counts, y_t are given by:

$$y_t \sim \text{Normal}(N_t, \sigma^2)$$

Where N_t is defined as above and σ^2 is the observation error. Juvenile survival probabilities $\varphi_{j,t}$ are assumed to take a constant value φ_j , unknown but estimable from the data; those for adults $\varphi_{a,t}$ are assumed to have $\text{logit}(\varphi_{a,t})$ to be normally distributed with mean values and variance estimated from a set of ringing data at the Isle of May. Completing the model, the annual numbers of chicks per pair f_t are estimated with means and variance from nest record data gathered at the site in question, where available, or using the data from the Isle of May where site-specific productivity data are unavailable. Similarly the adult survival data are ‘borrowed’ from the Isle of May for all sites; Table 3).

Table 3: Data source for each species at each SPA.

Species	SPA	Counts	Adult survival	Productivity
Kittiwake	Forth Islands	Forth Islands	Isle of May	Isle of May
	St Abbs Head to Fast Castle	St Abbs Head to Fast Castle	Isle of May	St Abbs Head to Fast Castle
	Fowlsheugh	Fowlsheugh	Isle of May	Fowlsheugh
Guillemot	Forth Islands	Forth Islands	Isle of May	Isle of May
	St. Abbs Head to Fast Castle	St. Abbs Head to Fast Castle	Isle of May	Isle of May
	Fowlsheugh	Fowlsheugh	Isle of May	Isle of May
	Buchan Ness to Collieston Coast	Buchan Ness to Collieston Coast	Isle of May	Isle of May
Razorbill	Forth Islands	Forth Islands	Isle of May	Isle of May
	Fowlsheugh	Fowlsheugh	Isle of May	Isle of May
Puffin	Forth Islands	Forth Islands	Isle of May	Isle of May

Note that where there is a regular census, then the observed abundance data in the state space model are taken as the colony counts, but where these are sporadically surveyed, then the observations come from the predicted responses after regressing the colony counts on the plot counts, within a Poisson GLM framework (Freeman et al 2014).

Models were fitted using Bayesian techniques using the software JAGS (Plummer, 2013). As in Freeman et al (2014) and Jitlal et al. (2017), multiple projections for 53 future years (2018 to 2070) of wind-farm impact (starting in 2021) under various scenarios (given below) are made by repeatedly sampling from the demographic parameters' distributions above, effectively generating posterior distributions for the abundance in future years. However, note that there is only data until 2016 for guillemots at Buchan Ness to Collieston Coast, so the projection period is 2017-2041. Using the model above, we thus produce 'baseline' predictions, under the assumption that prevailing conditions apply in future years. Input parameters for the state-space models can be found in Appendix 1.

Note that the regional estimates provided in this report are based just on the SPAs included in this report and not other locations within the Forth-Tay region where the birds may be

found elsewhere. Also note that the estimated abundance for puffins after fifty years of the wind farm being installed (2070) is approximately 1 million, with 95% credible intervals being between 250,000 and 3.5 million. Given that the estimated count in 2017 is approximately 75,000, this would appear to be an unrealistic estimated projection (the area of the Isle of May is approximately 45 hectares, thus the upper interval implies nearly ten birds per metre squared), based as it is on only nine observed counts at the Isle of May, with no actual observed count above 60,000 since 2003. This is an example of when to be cautious in the interpretation of results when extrapolating beyond the time point for which data exist.

Dr Murray Grant (Royal Haskoning DHV) provided a series of values quantifying the impacts upon the four seabird species' adult survival and juvenile survival, with six scenarios for kittiwakes and two scenarios for each of the auks (see Table 11E.2). We then produced a series of alternative 'impacted' population trajectories assuming that adult survival and juvenile survival were both negatively affected by these 'perturbations', equating to the effect of an offshore wind farm. This enables a comparison of future predictions following perturbation with those under the 'status quo' assumptions, known as the baseline.

2.2 PVA metrics

The above modelling framework allowed us to examine the population changes under various levels of impact upon the demographic parameters, given that in the absence of such impact these take the values of the model. It is of course plausible that the average values of adult survival and productivity experienced by the populations may differ from those implied by the demographic data used, especially where these are 'borrowed' from adjacent sites for those without such data of their own.

From the six PVA metrics examined in Jitlal et al. (2017), we were asked to focus on these three:

1. Median of the ratio of impacted to unimpacted (=baseline) annual growth rate assessed across 25 and 50 years (PVA 1);
2. Median of the ratio of impacted to unimpacted population size after 25 and 50 years (PVA 2);

3. Centile for unimpacted population which matches the 50th centile for the impacted population after 25 and 50 years (PVA 3).

45

PVAs 1 and 2 are ratio metrics and PVA 3 is a probabilistic metric. All of these metrics are readily estimable from the repeated simulations above, with posterior distributions of the ratios arising from a “matched runs” approach, as recommended (WWF 2012; Green et al. 2016; Cook & Robinson 2017; Jitlal et al 2017). i.e. the parameters defining the expected annual baseline and impacted counts in each replicate are identical, except insofar as the expected impacted figures are adjusted to reflect the level of the impact.

3. Results

3.1 Kittiwake

The projections of population abundance 50 years into the future are given in Figures 1-4. The three PVA metrics are given, for both 50 years (2070) and 25 years (2045) of hypothesized wind farm use, in Tables 4-7.

3.2 Guillemot

The projections of population abundance 50 years into the future are given in Figures 5-9. The three PVA metrics are given, for both 50 years (2070) and 25 years (2045) of hypothesized wind farm use, in Tables 8-12.

3.3 Razorbill

The projections of population abundance 50 years into the future are given in Figures 10-12. The three PVA metrics are given, for both 50 years (2070) and 25 years (2045) of hypothesized wind farm use, in Tables 13-15.

3.4 Puffin

The projections of population abundance 50 years into the future are given in Figure 13. To provide a clearer depiction of the historical counts, projections of population abundance 25 years into the future are given in Figure 14. The three PVA metrics are given, for both 50 years (2070) and 25 years (2045) of hypothesized wind farm use, in Table 16.

For all species, annual growth rates and stable age structures can be found in Appendix 2.

Figure 1. Projected abundance for 2018-2070 for kittiwakes at Forth Islands SPA, by scenario. The observed counts are represented by filled circles. The line through the unfilled circles represents the median estimates of abundance, whereas the lower and upper dashed lines represent the bounds of the 95% credible intervals. The two vertical dashed lines indicate the projected abundance at 2017 and 2045 (25 years after the wind farm).

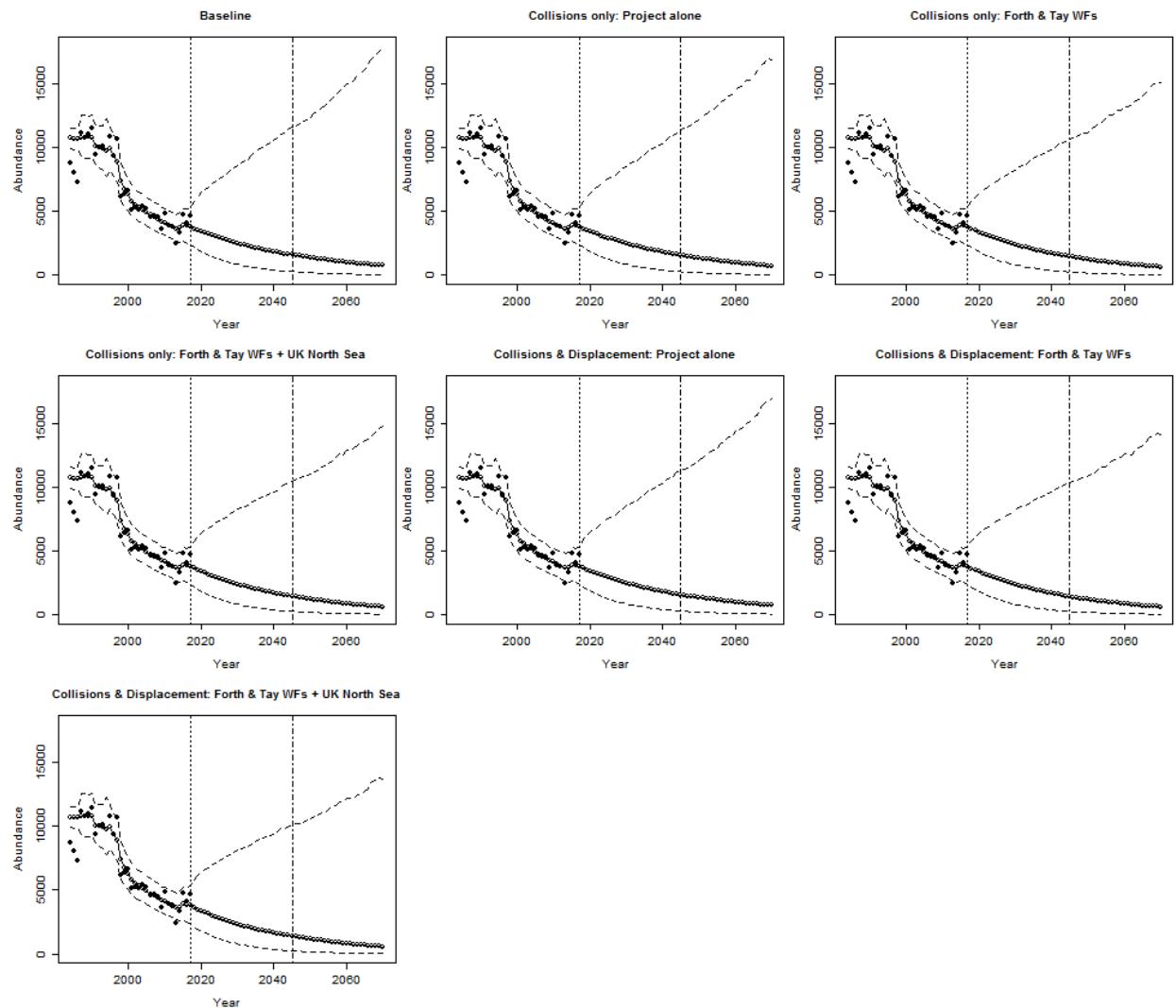


Figure 2. Projected abundance for 2018-2070 for kittiwakes at St Abbs Head to Fast Castle SPA, by scenario. The observed counts are represented by filled circles. The line through the unfilled circles represents the median estimates of abundance, whereas the lower and upper dashed lines represent the bounds of the 95% credible intervals. The two vertical dashed lines indicate the projected abundance at 2017 and 2045 (25 years after the wind farm).

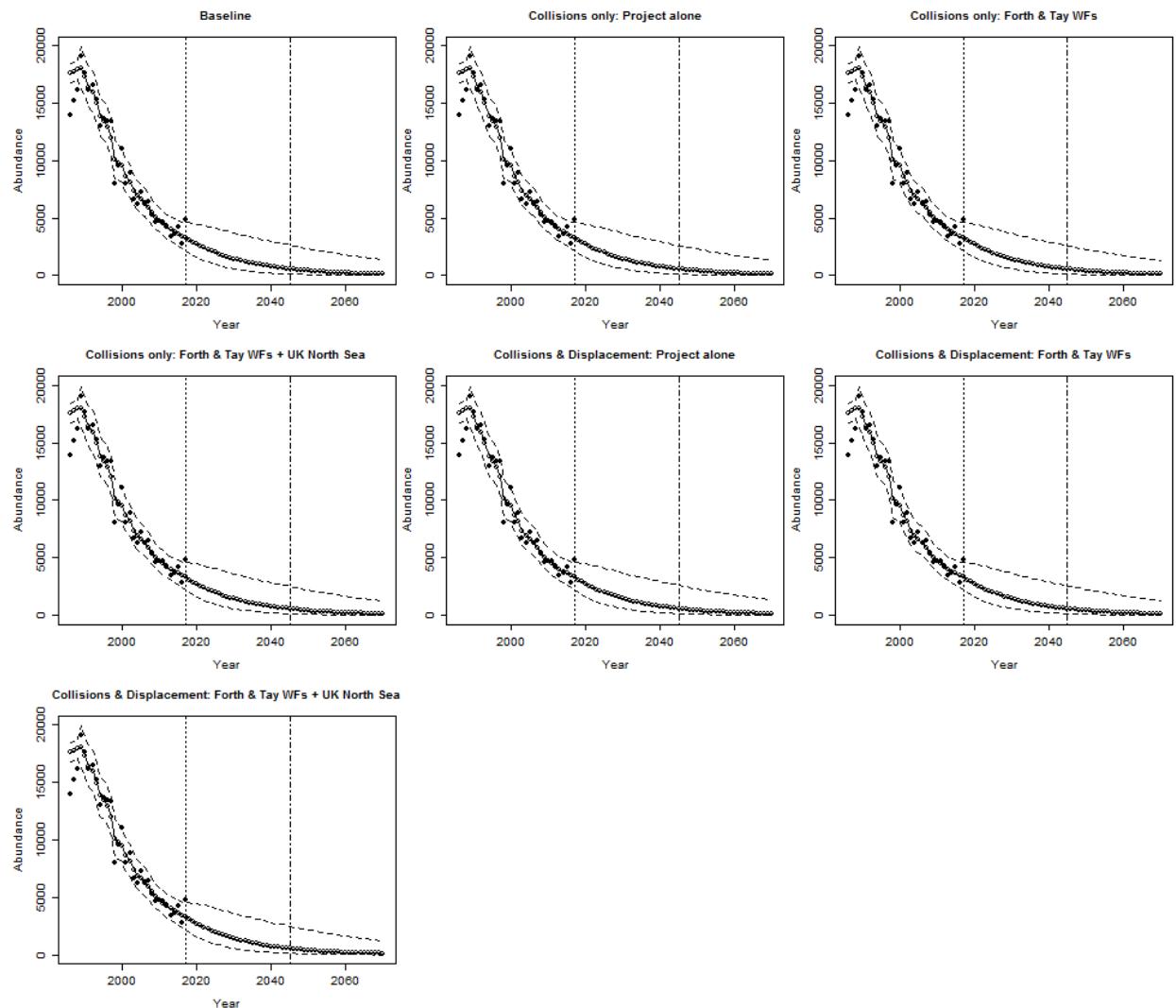


Figure 3. Projected abundance for 2018-2070 for kittiwakes at Fowlsheugh SPA, by scenario. The observed counts are represented by filled circles. The line through the unfilled circles represents the median estimates of abundance, whereas the lower and upper dashed lines represent the bounds of the 95% credible intervals. The two vertical dashed lines indicate the projected abundance at 2017 and 2045 (25 years after the wind farm).

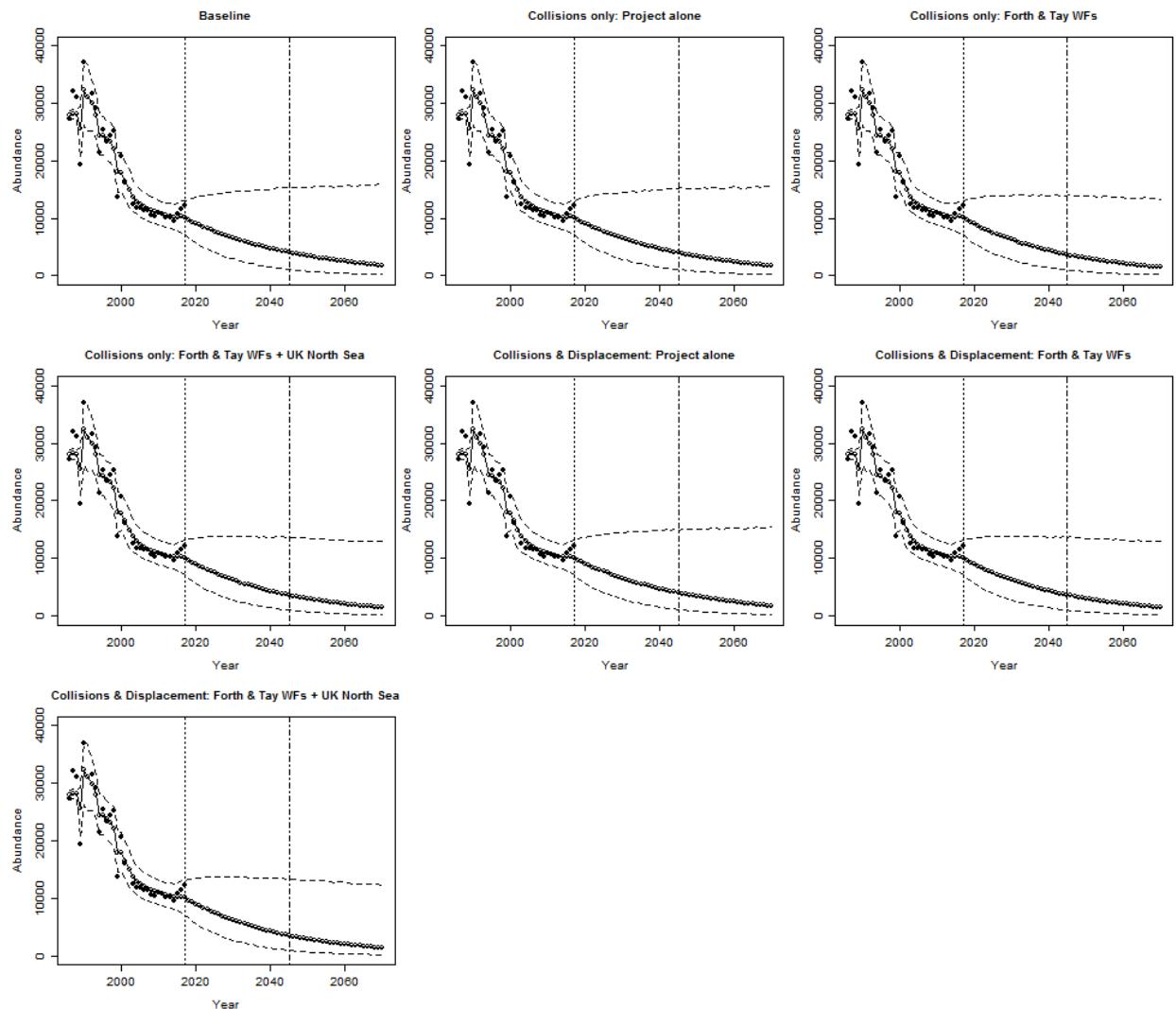


Figure 4. Projected abundance for 2018-2070 for kittiwakes across the region (summation of Forth, St Abbs Head to Fast Castle and Fowlsheugh SPAs), by scenario. The observed counts are represented by filled circles. The line through the unfilled circles represents the median estimates of abundance, whereas the lower and upper dashed lines represent the bounds of the 95% credible intervals. The two vertical dashed lines indicate the projected abundance at 2017 and 2045 (25 years after the wind farm).

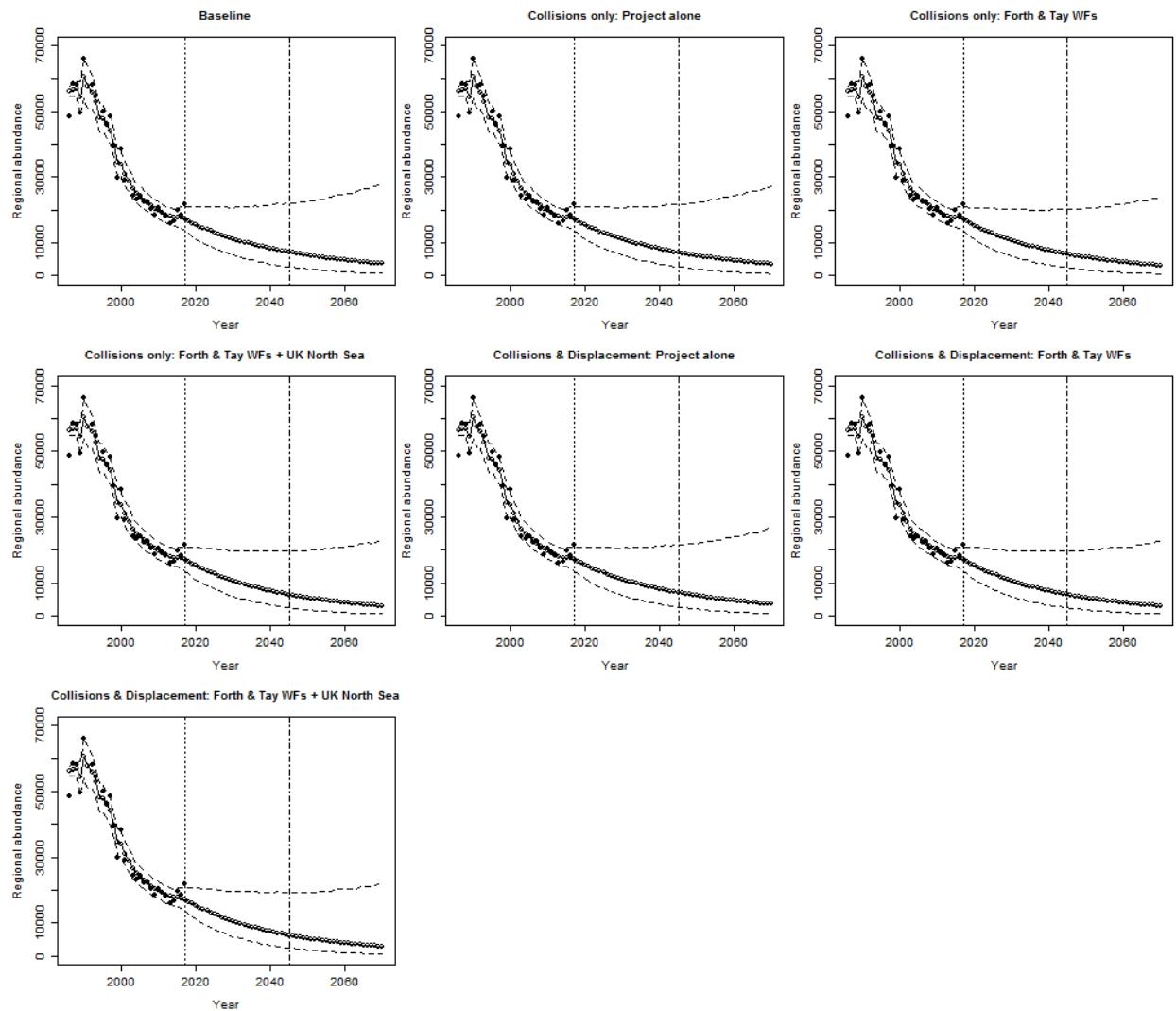


Table 4. Forth Islands kittiwakes PVA Metrics

Scenario	PVA 1: 50 years	PVA 1: 25 years	PVA 2: 50 years	PVA 2: 25 years	PVA 3: 50 years	PVA 3: 25 years
Collisions only: Development-alone	0.999	0.999	0.966	0.982	49.200	49.050
Collisions only: Forth & Tay WFs	0.997	0.997	0.861	0.926	45.973	46.753
Collisions only: Forth & Tay WFs + UK North Sea	0.996	0.996	0.828	0.909	44.980	45.773
Collisions & Displacement: Development-alone	0.999	0.999	0.950	0.973	48.753	48.853
Collisions & Displacement: Forth & Tay WFs	0.996	0.996	0.807	0.896	44.370	45.130
Collisions & Displacement: Forth & Tay WFs + UK North Sea	0.995	0.995	0.776	0.878	43.313	44.377

Table 5. St Abbs Head to Fast Castle kittiwakes PVA Metrics

Scenario	PVA 1: 50 years	PVA 1: 25 years	PVA 2: 50 years	PVA 2: 25 years	PVA 3: 50 years	PVA 3: 25 years
Collisions only: Development-alone	1.000	1.000	0.985	0.992	49.710	49.660
Collisions only: Forth & Tay WFs	0.999	0.999	0.951	0.978	48.880	48.820
Collisions only: Forth & Tay WFs + UK North Sea	0.998	0.998	0.904	0.953	47.330	47.497
Collisions & Displacement: Development-alone	1.000	0.999	0.974	0.988	49.710	49.243
Collisions & Displacement: Forth & Tay WFs	0.999	0.999	0.938	0.969	48.230	48.040
Collisions & Displacement: Forth & Tay WFs + UK North Sea	0.998	0.998	0.888	0.944	46.723	46.570

Table 6. Fowlsheugh kittiwakes PVA Metrics

Scenario	PVA 1: 50 years	PVA 1: 25 years	PVA 2: 50 years	PVA 2: 25 years	PVA 3: 50 years	PVA 3: 25 years
Collisions only: Development-alone	1.000	1.000	0.977	0.988	48.380	49.367
Collisions only: Forth & Tay WFs	0.997	0.997	0.847	0.919	43.803	44.963
Collisions only: Forth & Tay WFs + UK North Sea	0.996	0.996	0.808	0.896	42.210	43.560
Collisions & Displacement: Development-alone	0.999	0.999	0.964	0.981	48.877	48.930
Collisions & Displacement: Forth & Tay WFs	0.996	0.996	0.819	0.902	42.823	43.887
Collisions & Displacement: Forth & Tay WFs + UK North Sea	0.995	0.995	0.779	0.879	40.827	42.453

Table 7. Regional kittiwakes PVA Metrics (Forth Islands SPA + St Abbs Head to Fast Castle SPA + Fowlsheugh SPA)

Scenario	PVA 1: 50 years	PVA 1: 25 years	PVA 2: 50 years	PVA 2: 25 years	PVA 3: 50 years	PVA 3: 25 years
Collisions only: Development-alone	0.999	1.000	0.975	0.987	48.763	49.087
Collisions only: Forth & Tay WFs	0.997	0.997	0.861	0.928	43.413	44.007
Collisions only: Forth & Tay WFs + UK North Sea	0.996	0.996	0.824	0.907	41.597	42.277
Collisions & Displacement: Development-alone	0.999	0.999	0.961	0.980	48.213	48.307
Collisions & Displacement: Forth & Tay WFs	0.996	0.996	0.825	0.908	41.533	42.467
Collisions & Displacement: Forth & Tay WFs + UK North Sea	0.995	0.995	0.788	0.886	39.710	40.743

Figure 5. Projected abundance for 2018-2070 for guillemots at Forth Islands SPA, by scenario. The observed counts are represented by filled circles. The line through the unfilled circles represents the median estimates of abundance, whereas the lower and upper dashed lines represent the bounds of the 95% credible intervals. The two vertical dashed lines indicate the projected abundance at 2017 and 2045 (25 years after the wind farm).

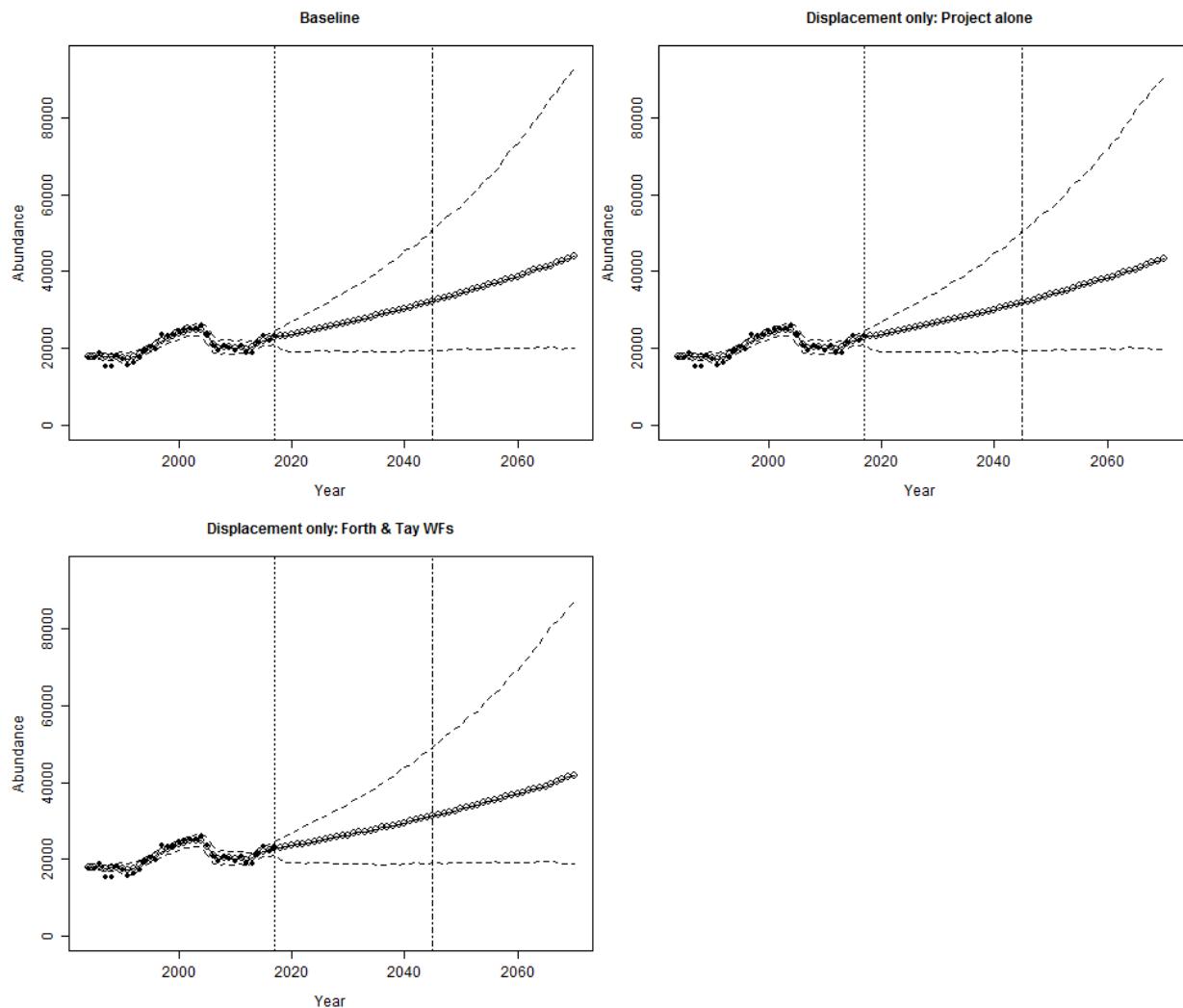


Figure 6a. Projected abundance for 2018-2070 for guillemots at St Abbs Head to Fast Castle SPA (Version A: St Abbs Head NNR sub-site only), by scenario. The observed counts are represented by filled circles. The line through the unfilled circles represents the median estimates of abundance, whereas the lower and upper dashed lines represent the bounds of the 95% credible intervals. The two vertical dashed lines indicate the projected abundance at 2017 and 2045 (25 years after the wind farm).

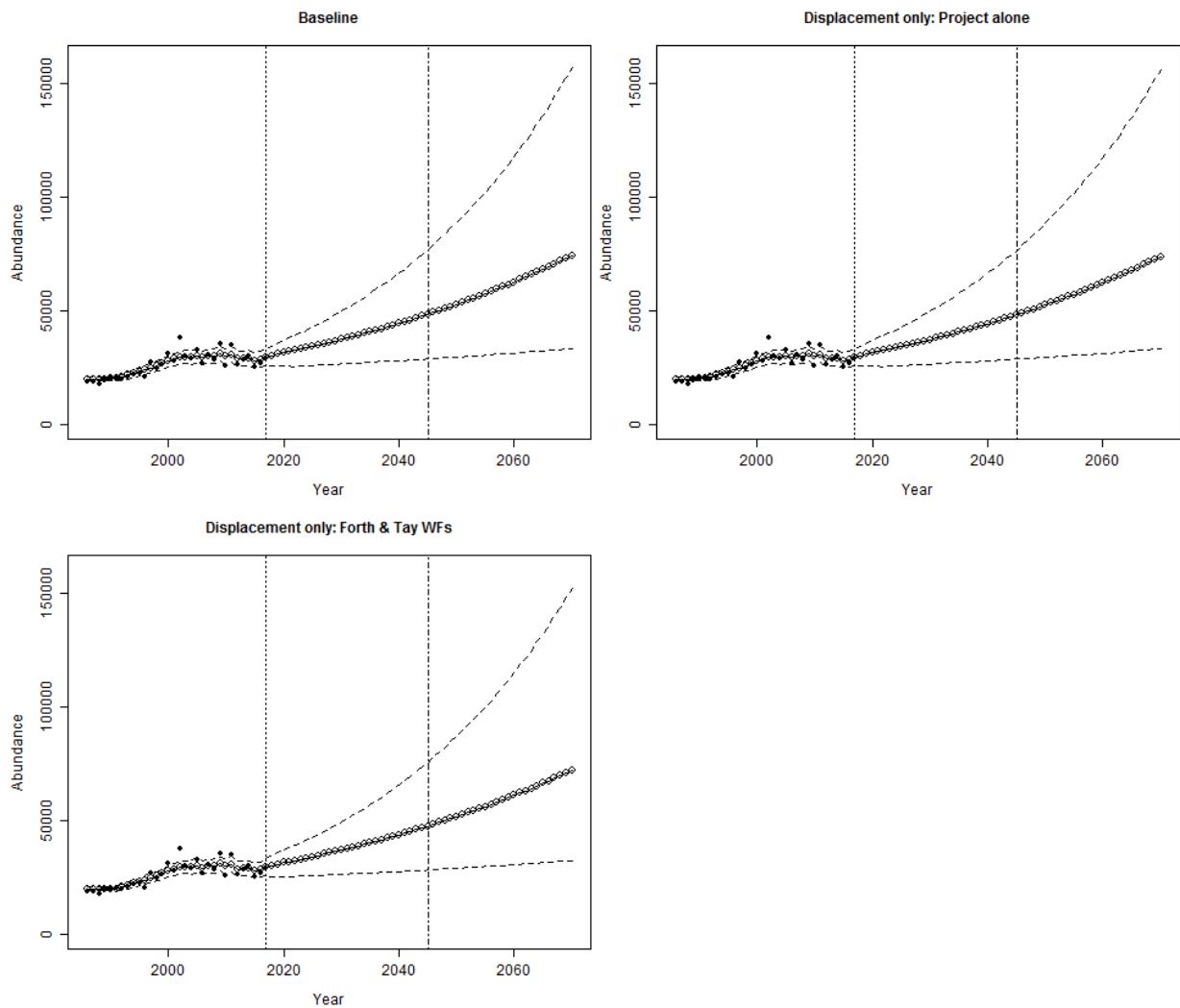


Figure 6b. Projected abundance for 2018-2070 for guillemots at St Abbs Head to Fast Castle SPA (Version B: total estimated count for whole SPA), by scenario. The observed counts are represented by filled circles. The line through the unfilled circles represents the median estimates of abundance, whereas the lower and upper dashed lines represent the bounds of the 95% credible intervals. The two vertical dashed lines indicate the projected abundance at 2017 and 2045 (25 years after the wind farm).

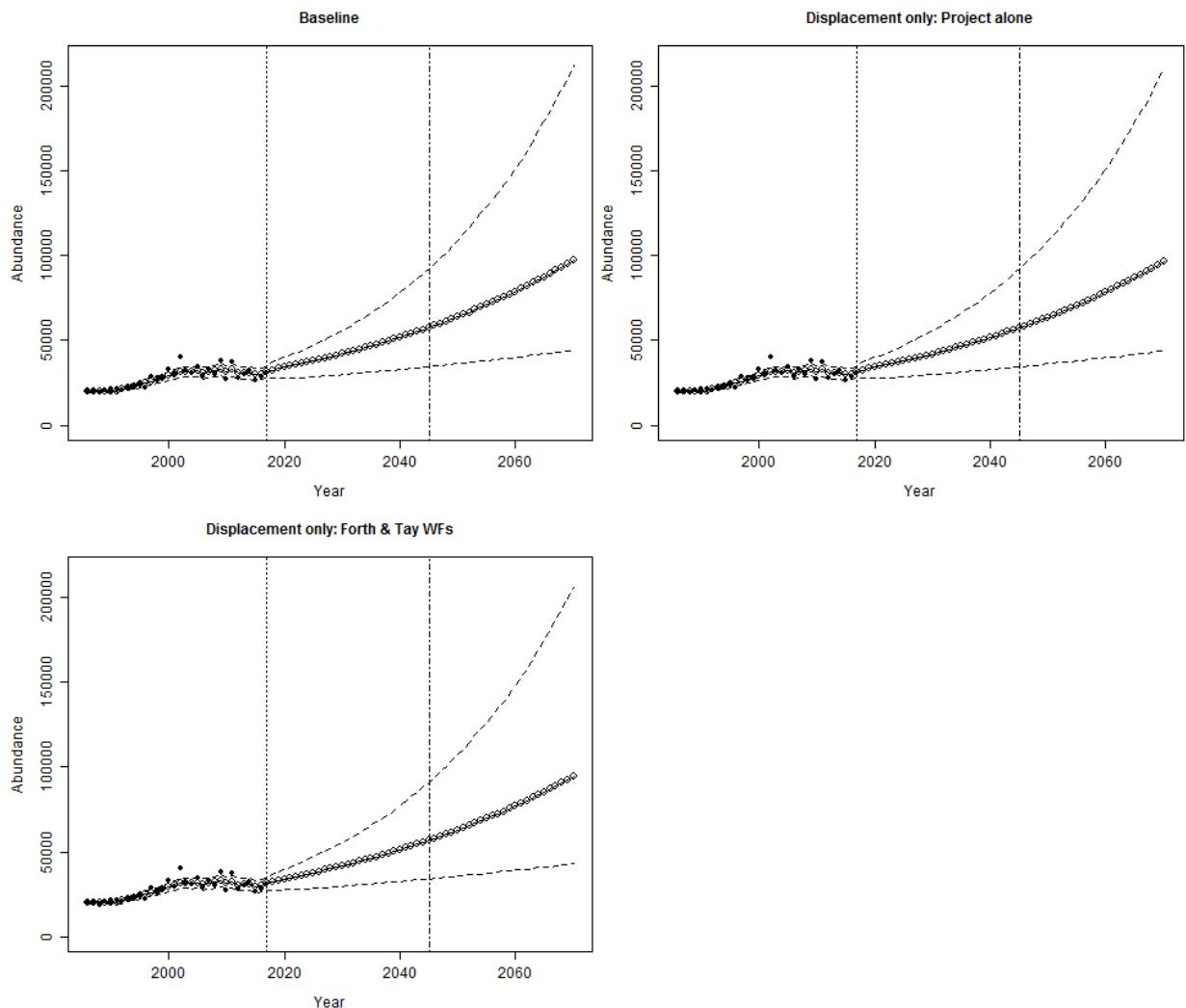


Figure 7. Projected abundance for 2018-2070 for guillemots at Fowlsheugh SPA, by scenario. The observed counts are represented by filled circles. The line through the unfilled circles represents the median estimates of abundance, whereas the lower and upper dashed lines represent the bounds of the 95% credible intervals. The two vertical dashed lines indicate the projected abundance at 2017 and 2045 (25 years after the wind farm).

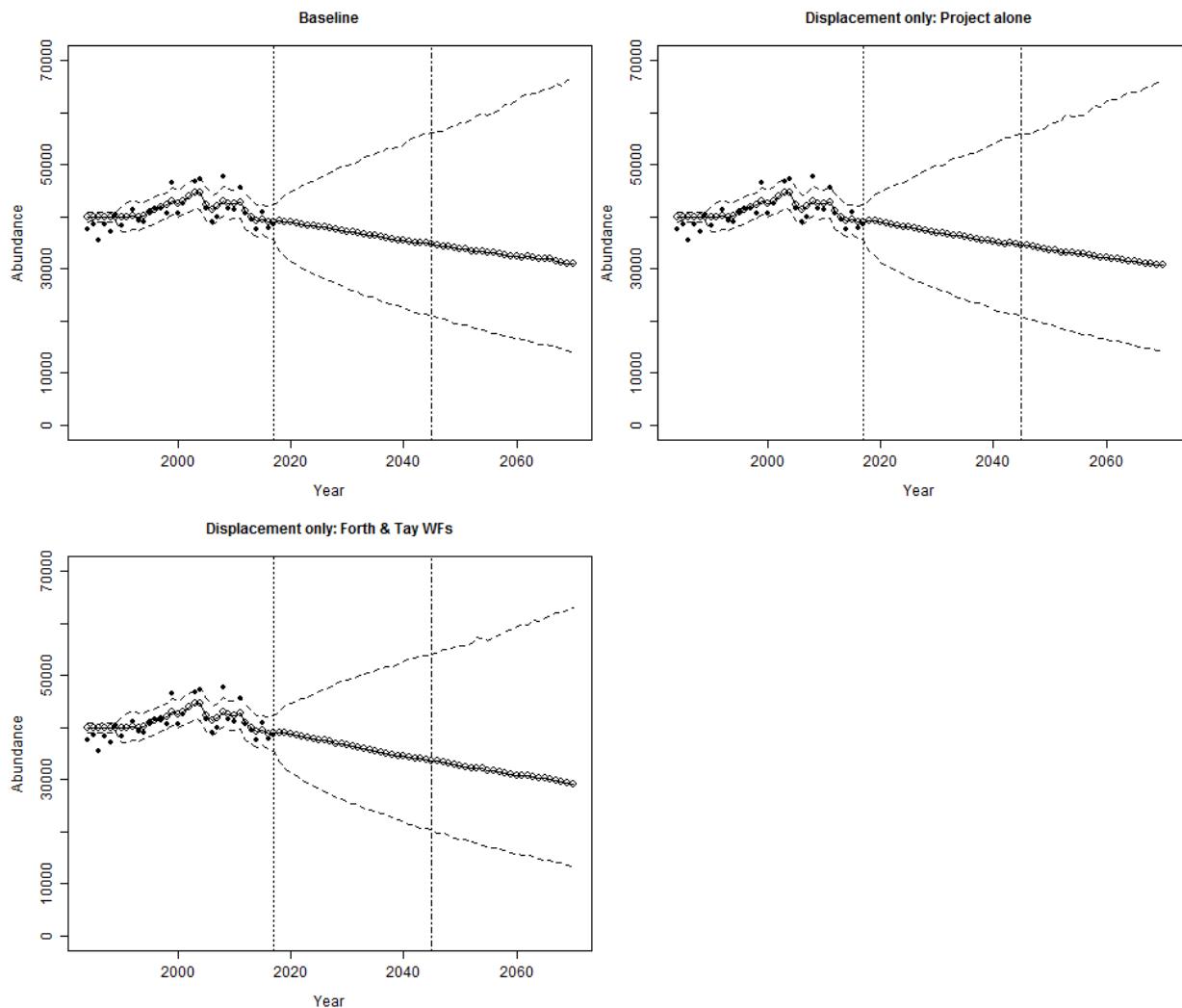


Figure 8. Projected abundance for 2017-2070 for guillemots at Buchan Ness to Collieston Coast SPA, by scenario (there were no counts in 2017). The observed counts are represented by filled circles. The line through the unfilled circles represents the median estimates of abundance, whereas the lower and upper dashed lines represent the bounds of the 95% credible intervals. The two vertical dashed lines indicate the projected abundance at 2016 and 2045 (25 years after the wind farm).

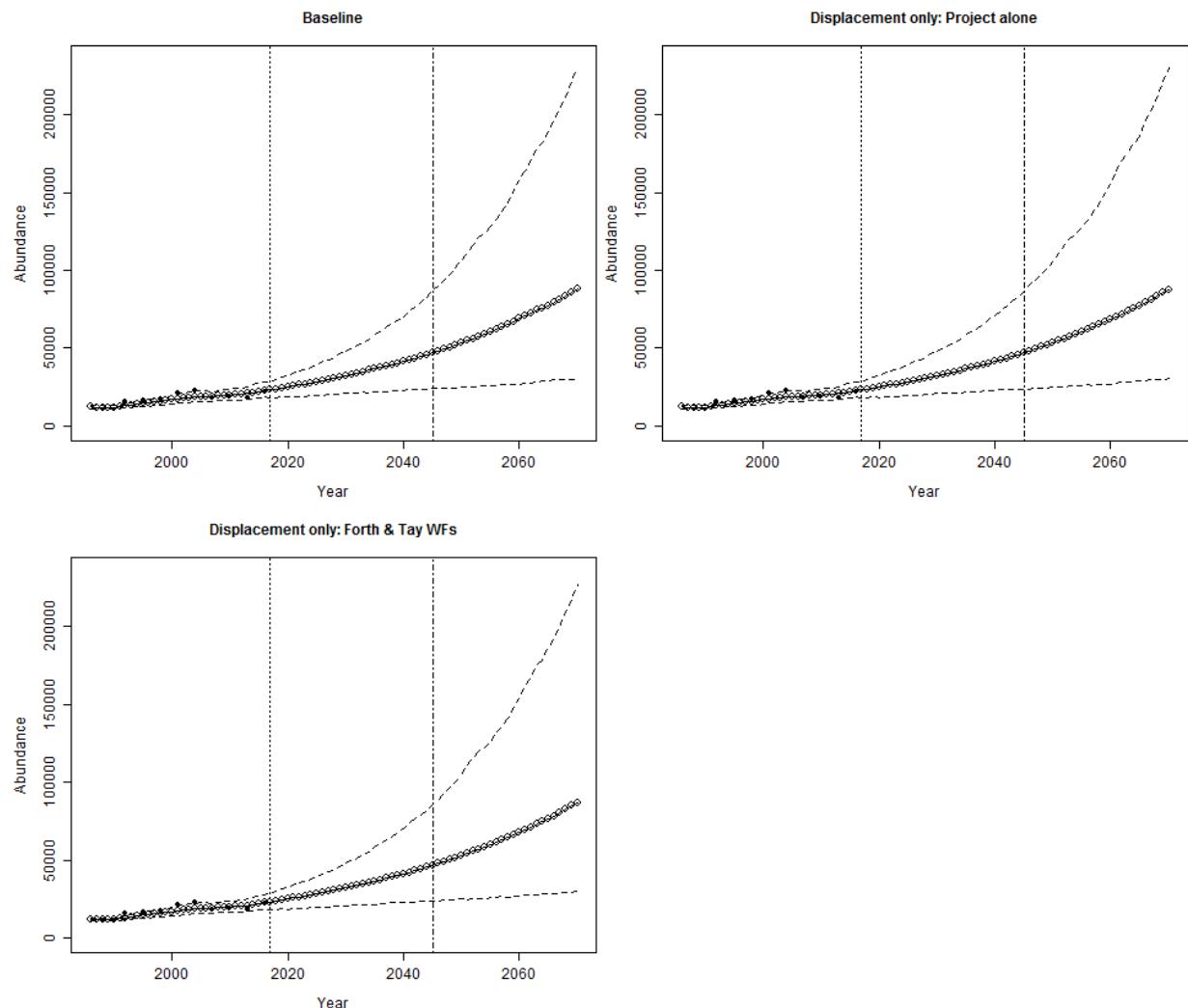


Figure 9a. Projected abundance for 2018-2070 for guillemots across the region (summation of Forth, St Abbs Head to Fast Castle (Version A – St Abbs Head NNR only) and Fowlsheugh SPAs), by scenario. The observed counts are represented by filled circles. The line through the unfilled circles represents the median estimates of abundance, whereas the lower and upper dashed lines represent the bounds of the 95% credible intervals. The two vertical dashed lines indicate the projected abundance at 2017 and 2045 (25 years after the wind farm).

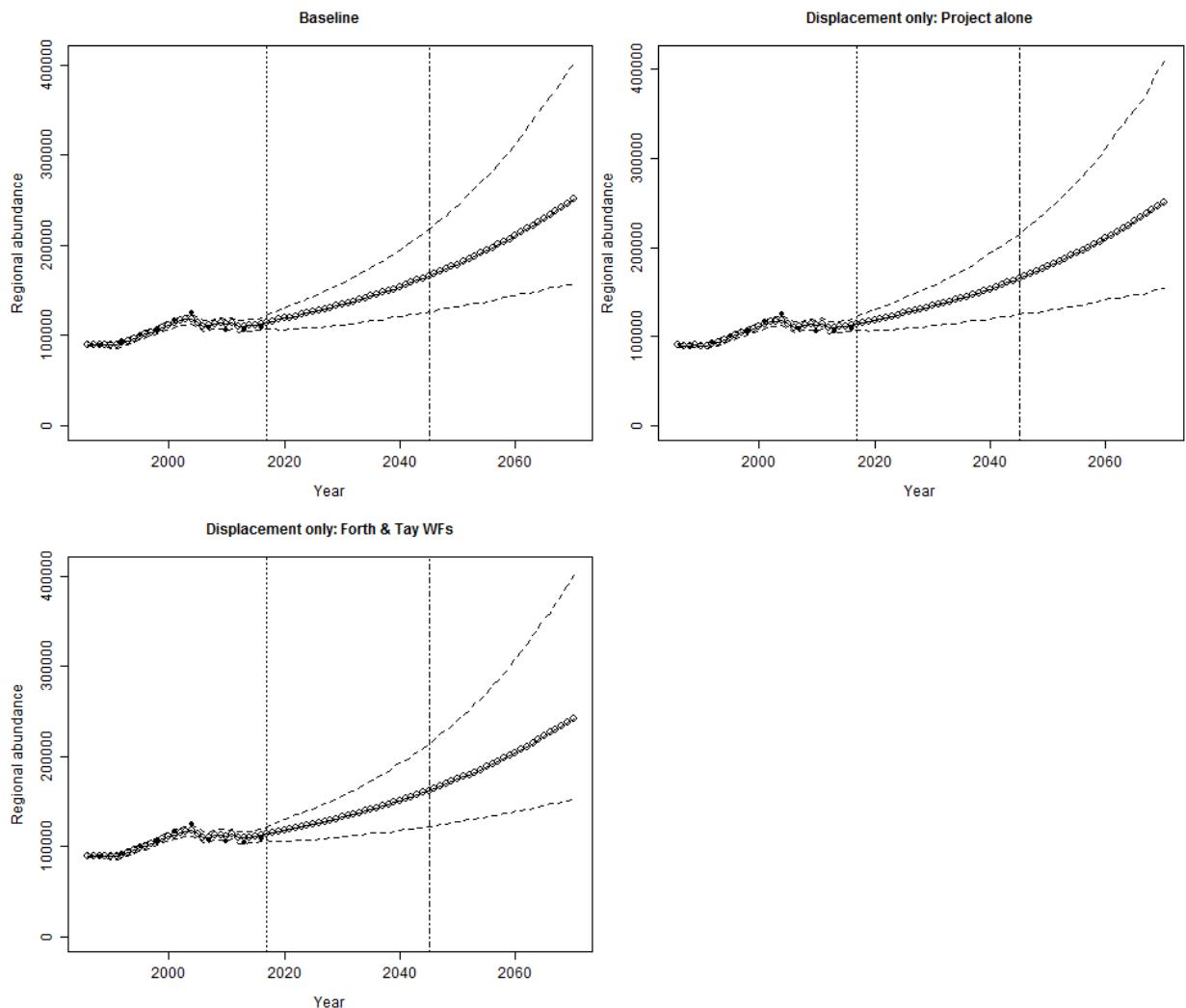


Figure 9b. Projected abundance for 2018-2070 for guillemots across the region (summation of Forth Islands, St Abbs Head to Fast Castle (Version B) and Fowlsheugh SPAs), by scenario. The observed counts are represented by filled circles. The line through the unfilled circles represents the median estimates of abundance, whereas the lower and upper dashed lines represent the bounds of the 95% credible intervals. The two vertical dashed lines indicate the projected abundance at 2017 and 2045 (25 years after the wind farm).

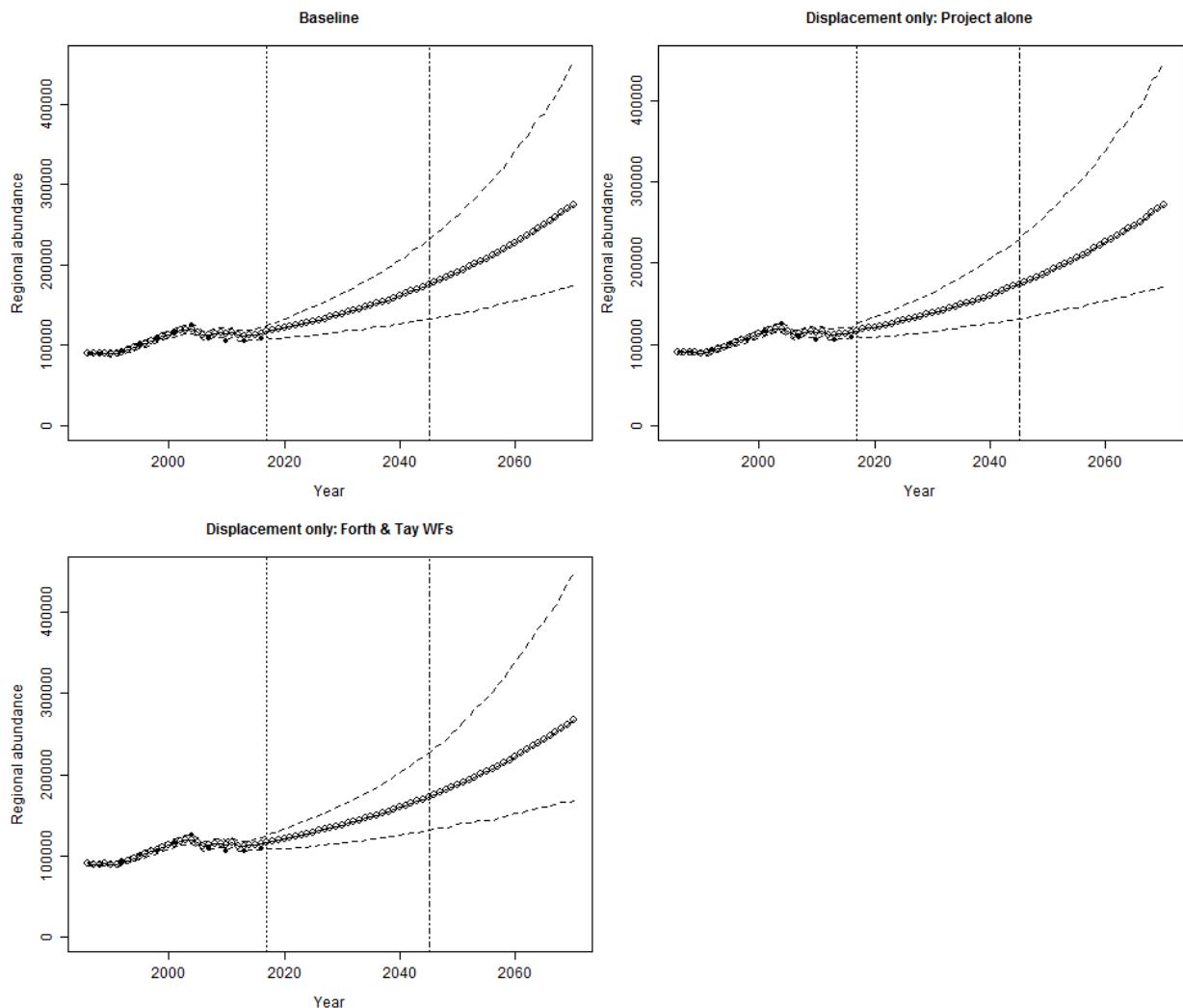


Table 8. Forth Islands guillemots PVA Metrics

Scenario	PVA 1: 50 years	PVA 1: 25 years	PVA 2: 50 years	PVA 2: 25 years	PVA 3: 50 years	PVA 3: 25 years
Displacement only: Development-alone	1.000	1.000	0.984	0.992	48.133	48.967
Displacement only: Forth & Tay WFs	0.999	0.999	0.936	0.968	43.067	44.100

Table 9a. St Abbs Head to Fast Castle (Version A: St Abbs Head NNR sub-site only) guillemots PVA Metrics

Scenario	PVA 1: 50 years	PVA 1: 25 years	PVA 2: 50 years	PVA 2: 25 years	PVA 3: 50 years	PVA 3: 25 years
Displacement only: Development-alone	1.000	1.000	0.995	0.997	49.367	49.433
Displacement only: Forth & Tay WFs	0.999	0.999	0.974	0.986	47.467	47.267

Table 9b. St Abbs Head to Fast Castle (Version B: total estimated count for whole SPA) guillemots PVA Metrics

Scenario	PVA 1: 50 years	PVA 1: 25 years	PVA 2: 50 years	PVA 2: 25 years	PVA 3: 50 years	PVA 3: 25 years
Displacement only: Development-alone	1.000	1.000	0.994	0.998	49.733	49.100
Displacement only: Forth & Tay WFs	0.999	0.999	0.974	0.987	47.633	47.900

Table 10. Fowlsheugh guillemots PVA Metrics

Scenario	PVA 1: 50 years	PVA 1: 25 years	PVA 2: 50 years	PVA 2: 25 years	PVA 3: 50 years	PVA 3: 25 years
Displacement only: Development-alone	1.000	1.000	0.991	0.995	48.500	49.400
Displacement only: Forth & Tay WFs	0.999	0.999	0.948	0.974	44.500	45.533

Table 11. Buchan Ness to Collieston Coast guillemots PVA Metrics

Scenario	PVA 1: 50 years	PVA 1: 25 years	PVA 2: 50 years	PVA 2: 25 years	PVA 3: 50 years	PVA 3: 25 years
Displacement only: Development-alone	1.000	1.000	0.999	0.999	50.500	49.700
Displacement only: Forth & Tay WFs	1.000	1.000	0.992	0.997	49.233	49.833

Table 12a. Regional guillemots PVA Metrics (Forth Islands SPA + St Abbs Head to Fast Castle (Version A) + Fowlsheugh + Buchan Ness to Collieston Coast)

Scenario	PVA 1: 50 years	PVA 1: 25 years	PVA 2: 50 years	PVA 2: 25 years	PVA 3: 50 years	PVA 3: 25 years
Displacement only: Development-alone	1.000	1.000	0.994	0.996	48.867	49.467
Displacement only: Forth & Tay WFs	0.999	0.999	0.970	0.982	44.767	45.267

Table 12b. Regional guillemots PVA Metrics (Forth Islands SPA + St Abbs Head to Fast Castle (Version B) + Fowlsheugh + Buchan Ness to Collieston Coast)

Scenario	PVA 1: 50 years	PVA 1: 25 years	PVA 2: 50 years	PVA 2: 25 years	PVA 3: 50 years	PVA 3: 25 years
Displacement only: Development-alone	1.000	1.000	0.994	0.996	49.200	49.433
Displacement only: Forth & Tay WFs	0.999	0.999	0.971	0.983	45.700	45.333

Figure 10. Projected abundance for 2018-2070 for razorbills at Forth Islands SPA, by scenario. The observed counts are represented by filled circles. The line through the unfilled circles represents the median estimates of abundance, whereas the lower and upper dashed lines represent the bounds of the 95% credible intervals. The two vertical dashed lines indicate the projected abundance at 2017 and 2045 (25 years after the wind farm).

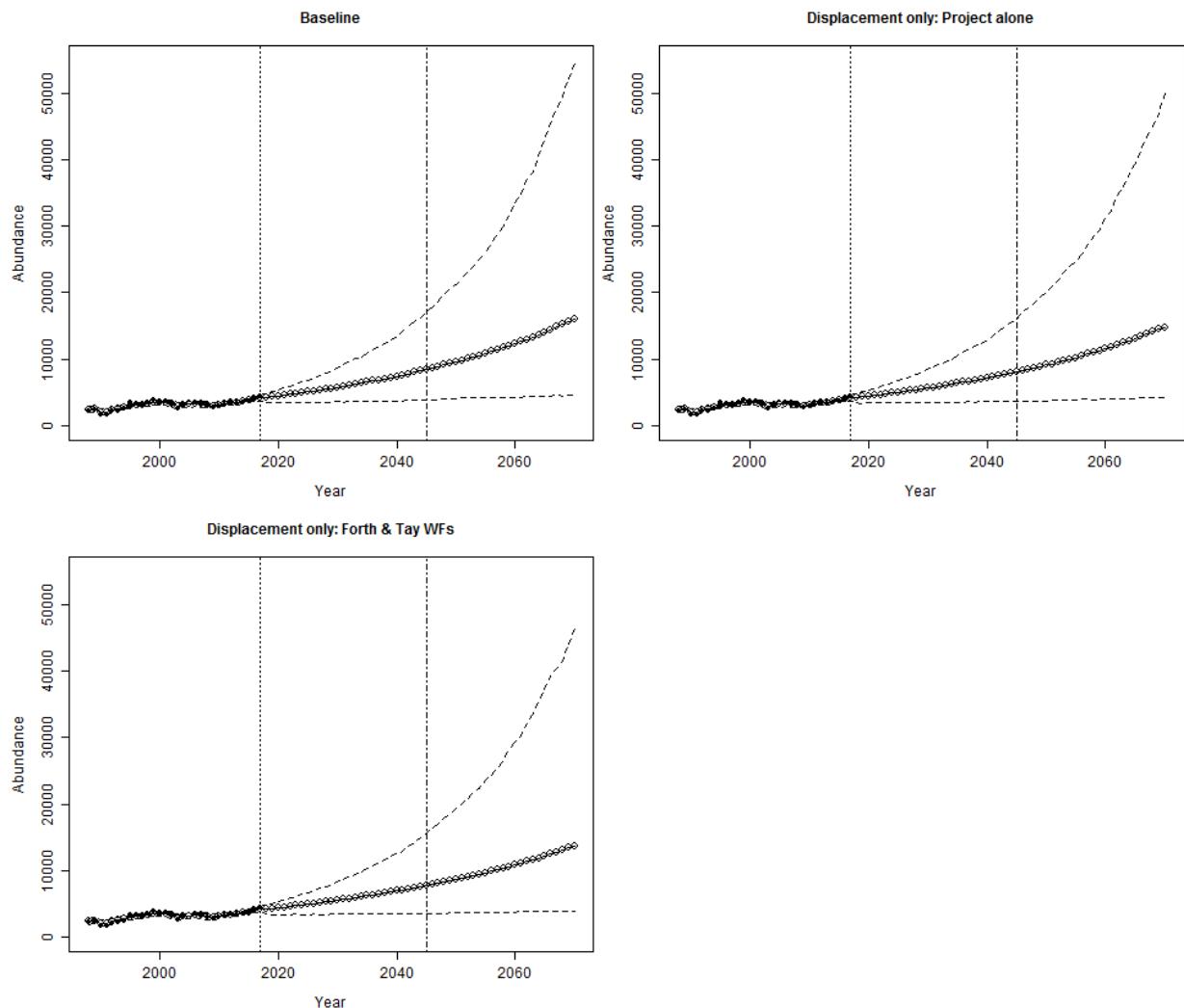


Figure 11. Projected abundance for 2018-2070 for razorbills at Fowlsheugh SPA, by scenario. The observed counts are represented by filled circles. The line through the unfilled circles represents the median estimates of abundance, whereas the lower and upper dashed lines represent the bounds of the 95% credible intervals. The two vertical dashed lines indicate the projected abundance at 2017 and 2045 (25 years after the wind farm).

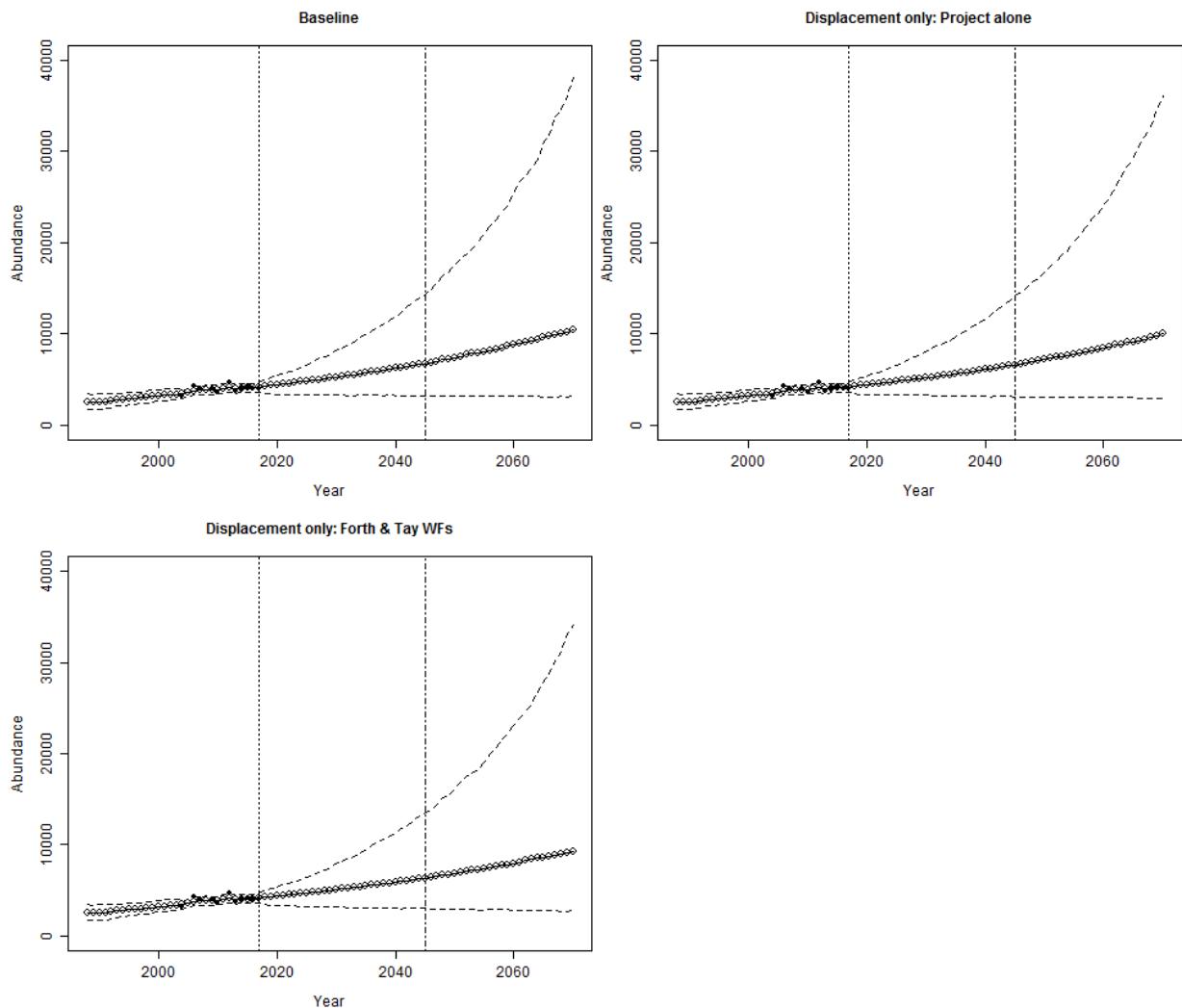


Figure 12. Projected abundance for 2018-2070 for razorbills across the region (summation of Forth and Fowlsheugh SPAs), by scenario. The observed counts are represented by filled circles. The line through the unfilled circles represents the median estimates of abundance, whereas the lower and upper dashed lines represent the bounds of the 95% credible intervals. The two vertical dashed lines indicate the projected abundance at 2017 and 2045 (25 years after the wind farm).

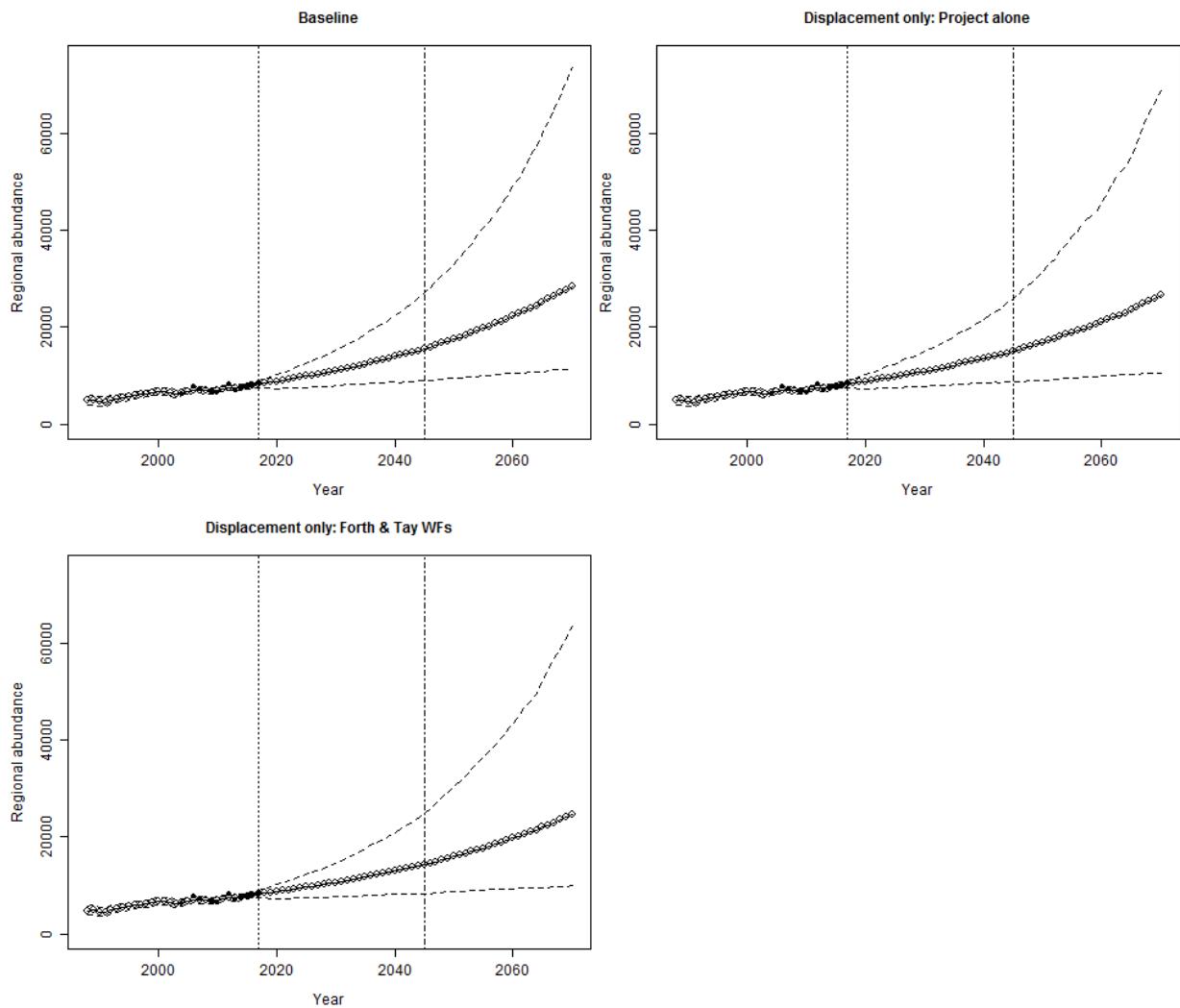


Table 13. Forth Islands razorbills PVA Metrics

Scenario	PVA 1: 50 years	PVA 1: 25 years	PVA 2: 50 years	PVA 2: 25 years	PVA 3: 50 years	PVA 3: 25 years
Displacement only: Development-alone	0.999	0.999	0.938	0.969	45.833	46.933
Displacement only: Forth & Tay WFs	0.997	0.997	0.868	0.933	41.700	42.833

Table 14. Fowlsheugh razorbills PVA Metrics

Scenario	PVA 1: 50 years	PVA 1: 25 years	PVA 2: 50 years	PVA 2: 25 years	PVA 3: 50 years	PVA 3: 25 years
Displacement only: Development-alone	0.999	0.999	0.952	0.977	47.467	47.200
Displacement only: Forth & Tay WFs	0.998	0.998	0.890	0.944	42.167	43.833

Table 15. Regional razorbills PVA Metrics (Forth + Fowlsheugh SPAs)

Scenario	PVA 1: 50 years	PVA 1: 25 years	PVA 2: 50 years	PVA 2: 25 years	PVA 3: 50 years	PVA 3: 25 years
Displacement only: Development-alone	0.999	0.999	0.945	0.972	44.867	46.200
Displacement only: Forth & Tay WFs	0.997	0.997	0.878	0.937	38.900	40.467

Figure 13. Projected abundance for 2018-2070 for puffins at Forth Islands SPA, by scenario. The observed counts are represented by filled circles. The line through the unfilled circles represents the median estimates of abundance, whereas the lower and upper dashed lines represent the bounds of the 95% credible intervals. The two vertical dashed lines indicate the projected abundance at 2017 and 2045 (25 years after the wind farm).

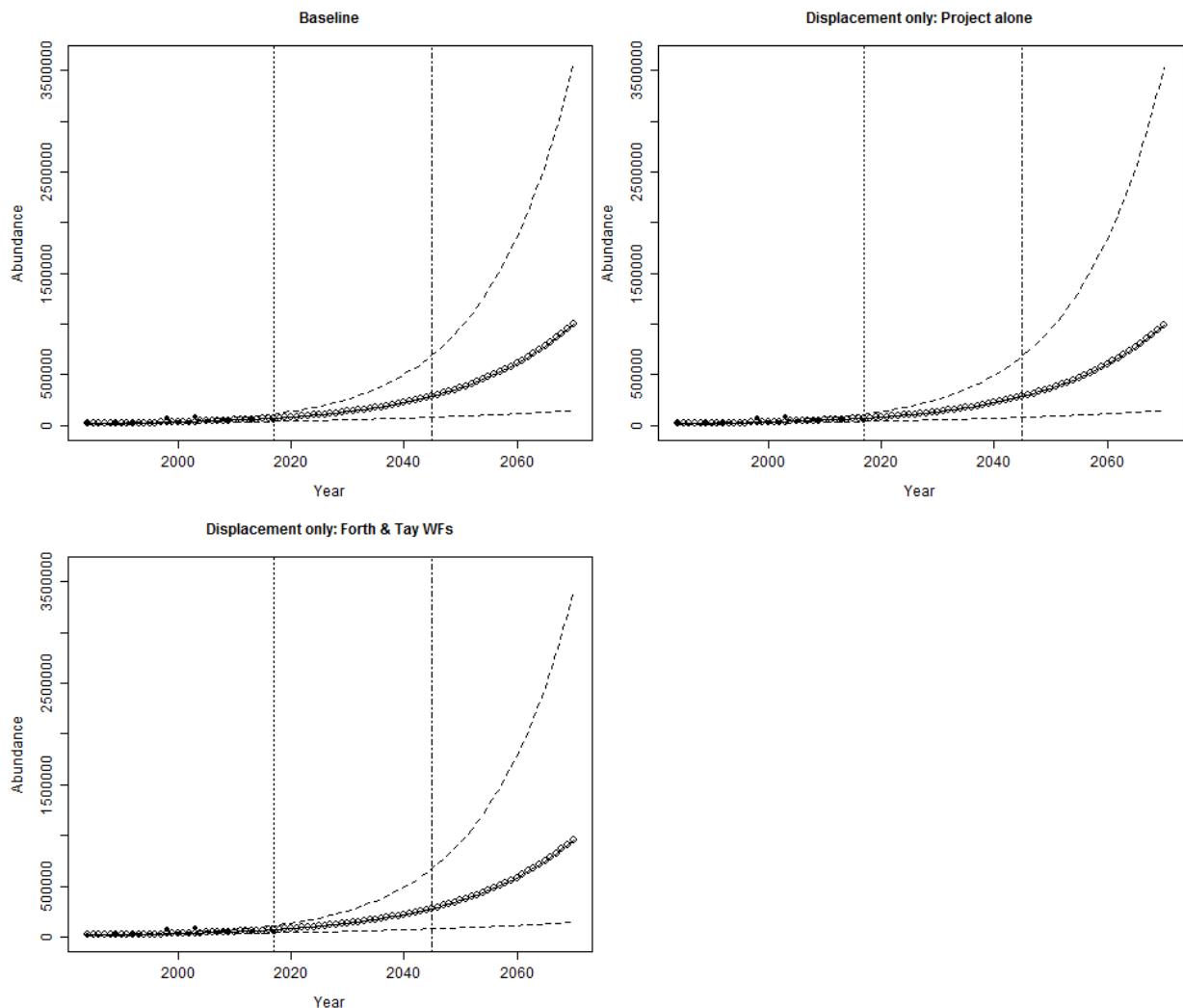


Figure 14. Projected abundance for 2018-2045 for puffins at Forth Islands SPA, by scenario. The observed counts are represented by filled circles. The line through the unfilled circles represents the median estimates of abundance, whereas the lower and upper dashed lines represent the bounds of the 95% credible intervals. The vertical dashed line indicates the projected abundance at 2017.

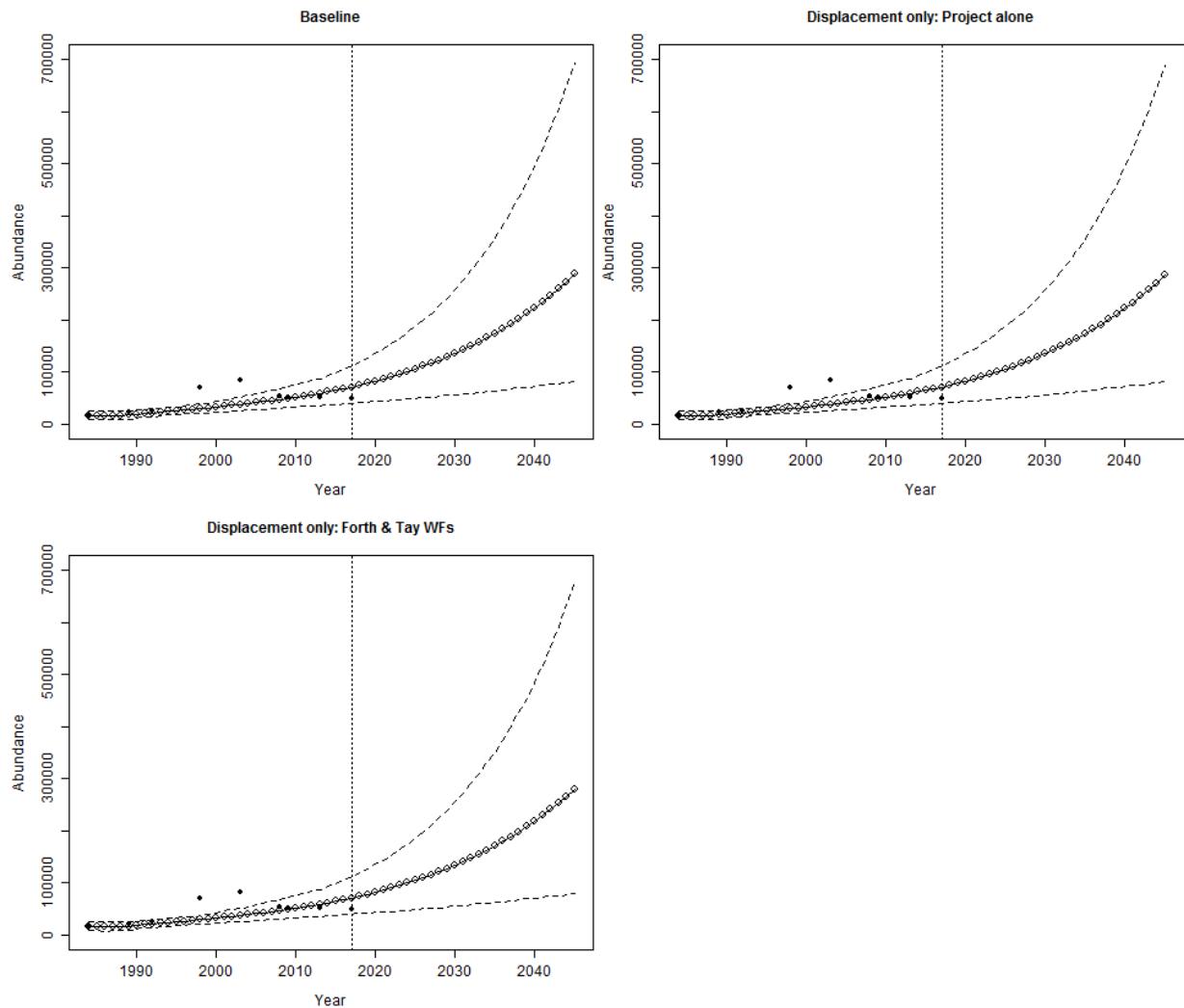


Table 16. Forth Islands puffins PVA Metrics

Scenario	PVA 1: 50 years	PVA 1: 25 years	PVA 2: 50 years	PVA 2: 25 years	PVA 3: 50 years	PVA 3: 25 years
Displacement only: Development-alone	1.000	1.000	0.986	0.993	49.367	49.573
Displacement only: Forth & Tay WFs	0.999	0.999	0.952	0.975	47.720	48.227

4. References

Cook, A.S.C.P. & Robinson, R.A. (2017) Towards a framework for quantifying the population-level consequences of anthropogenic pressures on the environment: The case of seabirds and windfarms. *Journal of Environmental Management*, 190: 113-121.

Freeman, S., Searle, K., Bogdanova, M., Wanless, S. & Daunt, F. (2014) Population dynamics of Forth & Tay breeding seabirds: review of available models and modelling of key breeding populations (MSQ – 0006). Report to Scottish Government

Green, R.E., Langston, R.H.W., McCluskie, A., Sutherland, R. & Wilson, J.D. (2016) Lack of sound science in assessing wind farm impacts on seabirds. *Journal of Applied Ecology* 53: 1635-41.

Jitlal, M., Burthe, S. Freeman, S. & Daunt, F. (2017) Testing and validating metrics of change produced by Population Viability Analysis (PVA) (Ref CR/2014/16). Draft report to Scottish Government

WWT Consulting (2012) Developing guidelines on the use of Population Viability Analysis for investigating bird impacts due to offshore wind farms. Wildfowl and Wetlands Trust, Gloucestershire. Strategic Ornithological Support Services (SOSS) Report SOSS-04 Gannet Population Viability Analysis.

Appendix 1. Input parameters to the Bayesian state space models

This appendix details the input values for the population models.

Input parameters for adult survival and productivity for the Bayesian models are on the logit or the log scale. The logit scale ensures that when values are untransformed they will be bound between (0,1). However, these can be somewhat difficult to understand, so we have back transformed these parameters, such that those that are on the log scale (productivity for kittiwakes), using the mean and variance on the log scale to estimate the mean and variance of the untransformed productivity, are log-normally distributed; these estimates were verified with simulations and the two approaches matched. We therefore ran simulations for the parameters on the log and logit scale and estimated the mean and variance for the remaining untransformed survival and productivity parameters (Table A1).

Table A1. Input parameters into the Bayesian state space models for kittiwakes, guillemots, razorbills and puffins at Forth Islands, St Abbs Head to Fast Castle, Buchan Ness to Collieston Coast and Fowlsheugh SPAs. Note that adult survival is on the logit scale and productivity is on the log scale for kittiwakes, and on the logit scale for guillemots, razorbills and puffins.

Species	SPA	Adult survival (transformed): mean (sd)	Productivity (transformed): mean (sd)	Adult survival (untransformed): mean (sd)	Productivity (untransformed): mean (sd)
Kittiwake	Forth Islands	1.895 (0.554)	-0.783 (0.893)	0.857 (0.068)	0.681 (0.753)
	St Abbs Head to Fast Castle	1.895 (0.554)	-0.593 (0.677)	0.857 (0.068)	0.695 (0.530)
	Fowlsheugh	1.895 (0.554)	-0.303 (0.489)	0.857 (0.068)	0.832 (0.432)
Guillemot	Forth Islands	2.692 (0.619)	1.037 (0.568)	0.926 (0.044)	0.725 (0.108)
	St Abbs Head to Fast Castle	2.692 (0.619)	1.037 (0.568)	0.926 (0.044)	0.725 (0.108)
	Fowlsheugh	2.692 (0.619)	1.037 (0.568)	0.926 (0.044)	0.725 (0.108)
	Buchan Ness to Collieston Coast	2.692 (0.619)	1.037 (0.568)	0.926 (0.044)	0.725 (0.108)
Razorbill	Forth Islands	2.482 (0.673)	0.548 (0.343)	0.909 (0.057)	0.630 (0.078)
	Fowlsheugh	2.482 (0.673)	0.548 (0.343)	0.909 (0.057)	0.630 (0.078)
Puffin	Forth Islands	2.440 (0.670)	0.882 (0.671)	0.906 (0.058)	0.691 (0.133)

Appendix 2: annual growth rates and stable age structures

We estimated the projected population growth rate over 25 years and 50 years (from 2021 when the wind farms are hypothetically installed) as follows:

$$\lambda_{25} = \left(\frac{\text{Estimated median total population in 2045}}{\text{Estimated median total population in 2021}} \right)^{1/25}$$

$$\lambda_{50} = \left(\frac{\text{Estimated median total population in 2070}}{\text{Estimated median total population in 2021}} \right)^{1/50}$$

As the projections for future years use the same demographic parameters, we expect the two growth rates to be very similar (Table A2). This table also includes the age-stabilised annual growth rate, λ_{stable} .

Table A2. Projected annual population growth rates over 25 years and 50 years, starting from 2021, for species/SPA populations.

Species/SPA population	λ_{25}	λ_{50}	λ_{stable}
Kittiwakes:			
Forth Islands	0.969	0.970	0.980
St Abbs Head to Fast Castle	0.939	0.939	0.947
Fowlsheugh	0.968	0.968	0.974
Guillemots:			
Forth Islands	1.012	1.012	1.012
St Abbs Head to Fast Castle			
St Abbs NNR only	1.018	1.018	1.017
Four sub-sites	1.022	1.022	1.020
Fowlsheugh	0.996	0.996	0.996
Buchan Ness to Collieston Coast	1.026	1.025	1.024
Razorbills:			
Forth Islands	1.025	1.026	1.024
Fowlsheugh	1.018	1.018	1.017
Puffins:			
Forth Islands	1.051	1.051	1.047

The age structure that the populations tend to can be determined by using the (mean) demographic values to parameterise a Leslie population transition matrix. The dominant eigenvalue (maximum of the real eigenvalues) of the Leslie matrix is the growth rate, whereas the proportions of the first eigenvector describe the age structure of the stable population. The population growth rate (λ_{stable}) and the relative structure of each population (Tables A3.1 – A3.4) are given for each species/SPA. Note that these age structures do not describe the age structure of any observed bird populations, but a hypothetical population.

Tables A3.1 – A3.4 indicate that the age population, per species, is similarly distributed between different SPAs. For all species there are approximately ten times as many older

adults as there are new recruits to the adult population (kittiwakes: 7-10 times; guillemots: 10-14; razorbills: approx.. 9; puffins: approx.. 7). There is a greater proportion of kittiwakes as adults compared to the auks (kittiwakes: approx.. 55%, guillemots: 43%; razorbills: 48%; puffins: 38%), but then the kittiwakes breed at an earlier age. Note that the implementation of the Leslie matrix in this case uses a constant juvenile survival across all non-breeding years, which is a strong assumption to make. The ratio of long-term breeders to new recruited adults is insensitive to changes in juvenile survival, but the immature age classes are sensitive to changes in juvenile survival and so we did not estimate full age breakdown to this level.

Table A3.1: Relative age structure for kittiwakes across three SPAs. Values given are proportional sizes for each age class (juveniles, new recruits to the breeding pool and established adults).

Age-class	Forth Islands	St Abbs Head to Fast Castle	Fowlsheugh
0-3	0.436	0.428	0.471
3-4	0.071	0.055	0.063
4+	0.494	0.517	0.466

Table A3.2: Relative age structure for guillemots across four SPAs. Values given are proportional sizes for each age class (juveniles, new recruits to the breeding pool and established adults). The two sets of proportions for St Abbs are for the St Abbs Head sub-site only and the total SPA (four sub-sites), respectively.

Age-class	Forth Islands	St Abbs Head to Fast Castle	Fowlsheugh	Buchan Ness to Collieston Coast
0-6	0.561	0.564	0.566	0.550
6-7	0.037	0.039	0.040	0.032
7+	0.401	0.397	0.394	0.418

Table A3.3: Relative age structure for razorbills across two SPAs. Values given are proportional sizes for each age class (juveniles, new recruits to the breeding pool and established adults).

Age-class	Forth Islands	Fowlsheugh
0-5	0.517	0.514
5-6	0.054	0.052
6+	0.428	0.435

Table A3.4: Relative age structure for puffins across the Forth Islands SPA. Values given are proportional sizes for each age class (juveniles, new recruits to the breeding pool and established adults).

Age-class	Forth Islands
0-7	0.619
7-8	0.051
8+	0.330

Appendix 3: Tables of population projections.

This Appendix contains tables for the projected abundances under different scenarios, for each species at each SPA location (plus a regional estimate, where more than one SPA is provided). The projections are for the 50 year period of wind farm activity (2021-2070), plus the three years after 2017 (when the observed data ended) before wind farm installation. There are five quantiles given for the estimated number of bird abundance (number of breeding females) – 5th, 33rd, 50th, 66th and 95th, represented in the tables by Q5, Q33, Q50, Q66 and Q95, respectively.

Note that the values in the below tables do not exactly match the projection plots, as the plots are of the median (Q50), lower credible interval (Q2.5) and upper credible interval (Q97.5) from the posterior distribution of the respective Bayesian state space model.

KITTIWAKES – FORTH ISLANDS SPA

Projections placed in the following order of scenarios:

- **Baseline**
- **Collisions only: Development-alone**
- **Collisions only: Forth & Tay WFs**
- **Collisions only: Forth & Tay WFs + UK North Sea**
- **Collisions & Displacement: Development-alone**
- **Collisions & Displacement: Forth & Tay WFs**
- **Collisions & Displacement: Forth & Tay WFs + UK North Sea**

year	Q5	Q33	Q50	Q66	Q95	site	ptype
2018	2395	3284	3646	3994	5315	Forth Islands	Baseline
2019	2220	3129	3521	3918	5547	Forth Islands	Baseline
2020	2056	2999	3417	3848	5711	Forth Islands	Baseline
2021	1906	2868	3302	3774	5857	Forth Islands	Baseline
2022	1773	2748	3202	3707	5997	Forth Islands	Baseline
2023	1657	2621	3096	3636	6146	Forth Islands	Baseline
2024	1536	2519	3010	3580	6268	Forth Islands	Baseline
2025	1441	2415	2918	3516	6409	Forth Islands	Baseline
2026	1342	2309	2833	3426	6514	Forth Islands	Baseline
2027	1254	2215	2742	3349	6586	Forth Islands	Baseline
2028	1170	2127	2668	3302	6694	Forth Islands	Baseline
2029	1092	2044	2583	3244	6788	Forth Islands	Baseline
2030	1024	1965	2502	3180	6877	Forth Islands	Baseline
2031	957	1883	2429	3109	7027	Forth Islands	Baseline
2032	888	1812	2362	3050	7042	Forth Islands	Baseline
2033	837	1735	2285	2995	7187	Forth Islands	Baseline
2034	788	1665	2220	2931	7262	Forth Islands	Baseline
2035	732	1598	2161	2868	7375	Forth Islands	Baseline
2036	690	1534	2095	2817	7485	Forth Islands	Baseline
2037	640	1473	2027	2776	7524	Forth Islands	Baseline
2038	602	1418	1981	2715	7618	Forth Islands	Baseline
2039	565	1366	1913	2661	7807	Forth Islands	Baseline
2040	528	1309	1854	2604	7850	Forth Islands	Baseline
2041	494	1259	1794	2550	7869	Forth Islands	Baseline
2042	462	1207	1737	2506	7949	Forth Islands	Baseline
2043	434	1163	1686	2457	7929	Forth Islands	Baseline
2044	411	1118	1643	2407	8018	Forth Islands	Baseline
2045	381	1072	1593	2354	8106	Forth Islands	Baseline
2046	357	1021	1547	2313	8284	Forth Islands	Baseline
2047	333	979	1502	2253	8386	Forth Islands	Baseline
2048	312	942	1456	2212	8487	Forth Islands	Baseline
2049	293	902	1414	2161	8705	Forth Islands	Baseline

2050	275	871	1366	2124	8717	Forth Islands	Baseline
2051	255	836	1324	2084	8823	Forth Islands	Baseline
2052	240	803	1287	2025	8887	Forth Islands	Baseline
2053	225	768	1246	1981	8968	Forth Islands	Baseline
2054	209	741	1212	1949	9154	Forth Islands	Baseline
2055	197	714	1176	1917	9209	Forth Islands	Baseline
2056	184	685	1138	1884	9262	Forth Islands	Baseline
2057	173	661	1107	1839	9366	Forth Islands	Baseline
2058	161	637	1073	1798	9503	Forth Islands	Baseline
2059	151	610	1042	1760	9616	Forth Islands	Baseline
2060	140	589	1010	1729	9688	Forth Islands	Baseline
2061	133	564	975	1698	9720	Forth Islands	Baseline
2062	124	541	952	1655	9831	Forth Islands	Baseline
2063	116	519	921	1631	9943	Forth Islands	Baseline
2064	108	500	893	1592	9984	Forth Islands	Baseline
2065	102	478	870	1556	10193	Forth Islands	Baseline
2066	95	460	836	1537	10281	Forth Islands	Baseline
2067	89	439	812	1498	10425	Forth Islands	Baseline
2068	82	420	790	1480	10596	Forth Islands	Baseline
2069	77	404	762	1439	10714	Forth Islands	Baseline
2070	73	387	740	1420	10627	Forth Islands	Baseline
year	Q5	Q33	Q50	Q66	Q95	Forth Islands	ptype
2018	2397	3285	3643	3994	5314	Forth Islands	Collisions only: Development-alone
2019	2220	3133	3522	3920	5545	Forth Islands	Collisions only: Development-alone
2020	2050	3000	3415	3840	5712	Forth Islands	Collisions only: Development-alone
2021	1906	2865	3302	3766	5863	Forth Islands	Collisions only: Development-alone
2022	1772	2750	3198	3704	5995	Forth Islands	Collisions only: Development-alone
2023	1652	2617	3089	3631	6119	Forth Islands	Collisions only: Development-alone
2024	1533	2506	3004	3571	6253	Forth Islands	Collisions only: Development-alone
2025	1429	2404	2909	3501	6364	Forth Islands	Collisions only: Development-alone
2026	1337	2301	2820	3408	6444	Forth Islands	Collisions only: Development-alone
2027	1248	2209	2731	3339	6576	Forth Islands	Collisions only: Development-alone
2028	1161	2119	2649	3286	6655	Forth Islands	Collisions only: Development-alone
2029	1083	2030	2575	3226	6772	Forth Islands	Collisions only: Development-alone
2030	1020	1950	2488	3156	6820	Forth Islands	Collisions only: Development-alone
2031	944	1867	2410	3087	6973	Forth Islands	Collisions only: Development-alone
2032	888	1790	2344	3028	7000	Forth Islands	Collisions only: Development-alone
2033	826	1716	2270	2968	7136	Forth Islands	Collisions only: Development-alone
2034	780	1649	2204	2903	7194	Forth Islands	Collisions only: Development-alone
2035	725	1583	2137	2850	7359	Forth Islands	Collisions only: Development-alone
2036	681	1518	2071	2795	7418	Forth Islands	Collisions only: Development-alone
2037	631	1457	2010	2738	7484	Forth Islands	Collisions only: Development-alone
2038	591	1398	1948	2683	7533	Forth Islands	Collisions only: Development-alone
2039	553	1353	1885	2624	7667	Forth Islands	Collisions only: Development-alone
2040	516	1294	1827	2567	7756	Forth Islands	Collisions only: Development-alone
2041	488	1243	1766	2507	7846	Forth Islands	Collisions only: Development-alone

2042	453	1194	1711	2459	7847	Forth Islands	Collisions only: Development-alone
2043	425	1145	1664	2420	7865	Forth Islands	Collisions only: Development-alone
2044	400	1100	1613	2366	7925	Forth Islands	Collisions only: Development-alone
2045	375	1051	1558	2314	8038	Forth Islands	Collisions only: Development-alone
2046	353	1002	1516	2260	8185	Forth Islands	Collisions only: Development-alone
2047	333	962	1473	2219	8304	Forth Islands	Collisions only: Development-alone
2048	308	924	1426	2176	8366	Forth Islands	Collisions only: Development-alone
2049	288	886	1385	2117	8490	Forth Islands	Collisions only: Development-alone
2050	269	853	1336	2074	8534	Forth Islands	Collisions only: Development-alone
2051	252	821	1300	2032	8657	Forth Islands	Collisions only: Development-alone
2052	235	785	1258	1977	8745	Forth Islands	Collisions only: Development-alone
2053	219	750	1220	1934	8881	Forth Islands	Collisions only: Development-alone
2054	206	724	1181	1900	9005	Forth Islands	Collisions only: Development-alone
2055	192	695	1148	1863	9036	Forth Islands	Collisions only: Development-alone
2056	180	670	1108	1821	9036	Forth Islands	Collisions only: Development-alone
2057	169	645	1076	1780	9167	Forth Islands	Collisions only: Development-alone
2058	158	619	1043	1742	9329	Forth Islands	Collisions only: Development-alone
2059	148	596	1012	1712	9325	Forth Islands	Collisions only: Development-alone
2060	138	572	977	1682	9392	Forth Islands	Collisions only: Development-alone
2061	129	547	949	1649	9382	Forth Islands	Collisions only: Development-alone
2062	120	524	923	1610	9482	Forth Islands	Collisions only: Development-alone
2063	113	503	891	1575	9755	Forth Islands	Collisions only: Development-alone
2064	105	481	865	1542	9707	Forth Islands	Collisions only: Development-alone
2065	99	460	840	1510	9832	Forth Islands	Collisions only: Development-alone
2066	93	444	810	1479	9823	Forth Islands	Collisions only: Development-alone
2067	87	425	786	1455	10072	Forth Islands	Collisions only: Development-alone
2068	81	405	763	1426	10264	Forth Islands	Collisions only: Development-alone
2069	76	387	740	1390	10300	Forth Islands	Collisions only: Development-alone
2070	70	374	719	1362	10293	Forth Islands	Collisions only: Development-alone
year	Q5	Q33	Q50	Q66	Q95	Forth Islands	ptype
2018	2393	3284	3648	3998	5321	Forth Islands	Collisions only: Forth & Tay WFs
2019	2224	3126	3525	3918	5540	Forth Islands	Collisions only: Forth & Tay WFs
2020	2052	2992	3403	3829	5694	Forth Islands	Collisions only: Forth & Tay WFs
2021	1896	2848	3286	3749	5823	Forth Islands	Collisions only: Forth & Tay WFs
2022	1753	2723	3174	3670	5941	Forth Islands	Collisions only: Forth & Tay WFs
2023	1634	2588	3061	3599	6077	Forth Islands	Collisions only: Forth & Tay WFs
2024	1517	2474	2964	3533	6207	Forth Islands	Collisions only: Forth & Tay WFs
2025	1404	2364	2867	3451	6288	Forth Islands	Collisions only: Forth & Tay WFs
2026	1311	2265	2774	3353	6358	Forth Islands	Collisions only: Forth & Tay WFs
2027	1219	2166	2674	3273	6458	Forth Islands	Collisions only: Forth & Tay WFs
2028	1135	2069	2597	3223	6532	Forth Islands	Collisions only: Forth & Tay WFs
2029	1056	1983	2514	3148	6607	Forth Islands	Collisions only: Forth & Tay WFs
2030	984	1903	2419	3080	6693	Forth Islands	Collisions only: Forth & Tay WFs
2031	916	1817	2340	3003	6806	Forth Islands	Collisions only: Forth & Tay WFs
2032	853	1743	2271	2935	6825	Forth Islands	Collisions only: Forth & Tay WFs
2033	802	1665	2199	2876	6911	Forth Islands	Collisions only: Forth & Tay WFs

2034	752	1592	2127	2800	6981	Forth Islands	Collisions only: Forth & Tay WFs
2035	698	1526	2056	2743	7073	Forth Islands	Collisions only: Forth & Tay WFs
2036	649	1458	1994	2685	7132	Forth Islands	Collisions only: Forth & Tay WFs
2037	608	1398	1924	2628	7167	Forth Islands	Collisions only: Forth & Tay WFs
2038	568	1340	1865	2571	7214	Forth Islands	Collisions only: Forth & Tay WFs
2039	526	1288	1808	2500	7356	Forth Islands	Collisions only: Forth & Tay WFs
2040	491	1232	1741	2444	7363	Forth Islands	Collisions only: Forth & Tay WFs
2041	460	1176	1682	2386	7397	Forth Islands	Collisions only: Forth & Tay WFs
2042	426	1129	1623	2340	7434	Forth Islands	Collisions only: Forth & Tay WFs
2043	399	1082	1564	2288	7379	Forth Islands	Collisions only: Forth & Tay WFs
2044	376	1035	1526	2232	7472	Forth Islands	Collisions only: Forth & Tay WFs
2045	349	988	1472	2179	7616	Forth Islands	Collisions only: Forth & Tay WFs
2046	326	946	1423	2129	7715	Forth Islands	Collisions only: Forth & Tay WFs
2047	306	902	1379	2076	7793	Forth Islands	Collisions only: Forth & Tay WFs
2048	285	862	1332	2036	7832	Forth Islands	Collisions only: Forth & Tay WFs
2049	265	823	1288	1984	7968	Forth Islands	Collisions only: Forth & Tay WFs
2050	249	789	1244	1938	8067	Forth Islands	Collisions only: Forth & Tay WFs
2051	232	754	1206	1895	8106	Forth Islands	Collisions only: Forth & Tay WFs
2052	216	724	1163	1840	8140	Forth Islands	Collisions only: Forth & Tay WFs
2053	202	696	1126	1802	8220	Forth Islands	Collisions only: Forth & Tay WFs
2054	187	665	1091	1763	8344	Forth Islands	Collisions only: Forth & Tay WFs
2055	177	637	1053	1722	8318	Forth Islands	Collisions only: Forth & Tay WFs
2056	165	611	1017	1687	8343	Forth Islands	Collisions only: Forth & Tay WFs
2057	153	587	983	1642	8442	Forth Islands	Collisions only: Forth & Tay WFs
2058	142	564	953	1602	8558	Forth Islands	Collisions only: Forth & Tay WFs
2059	134	543	920	1560	8627	Forth Islands	Collisions only: Forth & Tay WFs
2060	123	520	893	1532	8654	Forth Islands	Collisions only: Forth & Tay WFs
2061	115	495	860	1498	8650	Forth Islands	Collisions only: Forth & Tay WFs
2062	107	473	835	1458	8703	Forth Islands	Collisions only: Forth & Tay WFs
2063	100	452	806	1425	8734	Forth Islands	Collisions only: Forth & Tay WFs
2064	94	432	782	1398	8835	Forth Islands	Collisions only: Forth & Tay WFs
2065	86	415	755	1359	8940	Forth Islands	Collisions only: Forth & Tay WFs
2066	81	399	731	1329	8976	Forth Islands	Collisions only: Forth & Tay WFs
2067	75	381	707	1304	9088	Forth Islands	Collisions only: Forth & Tay WFs
2068	70	365	685	1272	9105	Forth Islands	Collisions only: Forth & Tay WFs
2069	64	346	659	1240	9202	Forth Islands	Collisions only: Forth & Tay WFs
2070	61	332	637	1214	9227	Forth Islands	Collisions only: Forth & Tay WFs
year	Q5	Q33	Q50	Q66	Q95	Forth Islands	ptype
2018	2400	3285	3646	3996	5313	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2019	2220	3126	3520	3915	5539	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2020	2049	2986	3399	3824	5682	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2021	1897	2846	3274	3741	5821	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2022	1749	2715	3161	3662	5952	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2023	1620	2577	3048	3582	6059	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2024	1504	2467	2948	3512	6173	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2025	1405	2357	2851	3434	6258	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea

2026	1309	2253	2758	3337	6331	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2027	1212	2149	2660	3262	6418	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2028	1127	2057	2572	3201	6478	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2029	1045	1967	2488	3129	6549	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2030	978	1885	2400	3063	6626	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2031	908	1797	2318	2985	6755	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2032	843	1723	2244	2912	6742	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2033	788	1646	2169	2847	6833	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2034	740	1573	2099	2773	6891	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2035	685	1506	2030	2716	7014	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2036	640	1440	1961	2649	7064	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2037	596	1374	1896	2597	7073	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2038	556	1317	1846	2541	7130	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2039	514	1265	1785	2475	7245	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2040	482	1205	1718	2405	7287	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2041	450	1153	1654	2346	7311	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2042	420	1107	1599	2298	7300	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2043	393	1056	1539	2247	7269	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2044	368	1011	1491	2193	7356	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2045	342	966	1437	2143	7445	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2046	317	919	1394	2092	7554	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2047	295	882	1344	2042	7662	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2048	278	841	1298	1990	7680	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2049	257	808	1260	1942	7744	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2050	241	775	1215	1896	7872	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2051	225	739	1178	1844	7893	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2052	209	709	1135	1796	7938	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2053	192	681	1099	1749	7989	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2054	180	651	1060	1719	8119	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2055	169	625	1027	1677	8176	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2056	157	597	993	1637	8165	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2057	148	571	953	1597	8240	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2058	139	547	925	1561	8322	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2059	128	524	891	1527	8348	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2060	119	504	864	1495	8388	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2061	111	479	838	1451	8440	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2062	102	458	808	1419	8445	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2063	96	439	778	1385	8510	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2064	90	419	754	1350	8550	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2065	83	400	732	1319	8680	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2066	77	382	704	1287	8707	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2067	72	366	677	1259	8741	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2068	67	349	655	1230	8817	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2069	62	333	628	1193	8875	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
2070	58	318	612	1169	8904	Forth Islands	Collisions only: Forth & Tay WFs + UK North Sea
year	Q5	Q33	Q50	Q66	Q95	Forth Islands	ptype

2018	2396	3287	3644	3999	5311	Forth Islands	Collisions & Displacement: Development-alone
2019	2214	3131	3521	3922	5538	Forth Islands	Collisions & Displacement: Development-alone
2020	2057	2997	3409	3844	5694	Forth Islands	Collisions & Displacement: Development-alone
2021	1904	2862	3300	3769	5852	Forth Islands	Collisions & Displacement: Development-alone
2022	1765	2744	3194	3694	5992	Forth Islands	Collisions & Displacement: Development-alone
2023	1649	2615	3087	3627	6115	Forth Islands	Collisions & Displacement: Development-alone
2024	1528	2506	2995	3565	6238	Forth Islands	Collisions & Displacement: Development-alone
2025	1424	2399	2906	3491	6350	Forth Islands	Collisions & Displacement: Development-alone
2026	1339	2298	2813	3402	6433	Forth Islands	Collisions & Displacement: Development-alone
2027	1248	2203	2725	3330	6559	Forth Islands	Collisions & Displacement: Development-alone
2028	1160	2112	2637	3276	6607	Forth Islands	Collisions & Displacement: Development-alone
2029	1077	2027	2555	3214	6732	Forth Islands	Collisions & Displacement: Development-alone
2030	1007	1949	2471	3146	6809	Forth Islands	Collisions & Displacement: Development-alone
2031	939	1864	2394	3082	6942	Forth Islands	Collisions & Displacement: Development-alone
2032	875	1785	2324	3012	6977	Forth Islands	Collisions & Displacement: Development-alone
2033	824	1713	2253	2953	7080	Forth Islands	Collisions & Displacement: Development-alone
2034	776	1641	2187	2891	7129	Forth Islands	Collisions & Displacement: Development-alone
2035	721	1576	2117	2823	7293	Forth Islands	Collisions & Displacement: Development-alone
2036	672	1513	2057	2770	7357	Forth Islands	Collisions & Displacement: Development-alone
2037	627	1447	1997	2723	7393	Forth Islands	Collisions & Displacement: Development-alone
2038	589	1390	1939	2661	7493	Forth Islands	Collisions & Displacement: Development-alone
2039	545	1345	1872	2611	7641	Forth Islands	Collisions & Displacement: Development-alone
2040	511	1284	1817	2545	7685	Forth Islands	Collisions & Displacement: Development-alone
2041	478	1229	1758	2498	7693	Forth Islands	Collisions & Displacement: Development-alone
2042	446	1184	1705	2440	7742	Forth Islands	Collisions & Displacement: Development-alone
2043	420	1137	1645	2391	7721	Forth Islands	Collisions & Displacement: Development-alone
2044	393	1090	1601	2342	7801	Forth Islands	Collisions & Displacement: Development-alone
2045	369	1041	1551	2290	7958	Forth Islands	Collisions & Displacement: Development-alone
2046	345	997	1502	2238	8116	Forth Islands	Collisions & Displacement: Development-alone
2047	324	954	1459	2194	8182	Forth Islands	Collisions & Displacement: Development-alone
2048	302	917	1412	2149	8245	Forth Islands	Collisions & Displacement: Development-alone
2049	281	877	1364	2097	8445	Forth Islands	Collisions & Displacement: Development-alone
2050	263	845	1320	2056	8441	Forth Islands	Collisions & Displacement: Development-alone
2051	248	810	1279	2001	8599	Forth Islands	Collisions & Displacement: Development-alone
2052	231	779	1243	1951	8605	Forth Islands	Collisions & Displacement: Development-alone
2053	216	747	1205	1906	8711	Forth Islands	Collisions & Displacement: Development-alone
2054	201	718	1166	1878	8889	Forth Islands	Collisions & Displacement: Development-alone
2055	190	688	1132	1841	8947	Forth Islands	Collisions & Displacement: Development-alone
2056	177	661	1094	1802	8900	Forth Islands	Collisions & Displacement: Development-alone
2057	165	637	1059	1765	9079	Forth Islands	Collisions & Displacement: Development-alone
2058	154	609	1026	1723	9212	Forth Islands	Collisions & Displacement: Development-alone
2059	144	587	998	1684	9220	Forth Islands	Collisions & Displacement: Development-alone
2060	135	562	963	1660	9305	Forth Islands	Collisions & Displacement: Development-alone
2061	126	538	933	1621	9367	Forth Islands	Collisions & Displacement: Development-alone
2062	118	514	911	1580	9386	Forth Islands	Collisions & Displacement: Development-alone
2063	109	492	879	1545	9563	Forth Islands	Collisions & Displacement: Development-alone

2064	101	473	855	1512	9573	Forth Islands	Collisions & Displacement: Development-alone
2065	96	454	827	1479	9767	Forth Islands	Collisions & Displacement: Development-alone
2066	90	437	802	1458	9814	Forth Islands	Collisions & Displacement: Development-alone
2067	84	419	771	1423	9901	Forth Islands	Collisions & Displacement: Development-alone
2068	79	399	748	1398	9973	Forth Islands	Collisions & Displacement: Development-alone
2069	73	383	727	1365	10063	Forth Islands	Collisions & Displacement: Development-alone
2070	68	367	706	1340	10097	Forth Islands	Collisions & Displacement: Development-alone
year	Q5	Q33	Q50	Q66	Q95	Forth Islands	ptype
2018	2402	3283	3648	3997	5312	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2019	2216	3129	3519	3919	5533	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2020	2048	2985	3398	3823	5687	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2021	1891	2840	3271	3740	5801	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2022	1747	2710	3158	3657	5936	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2023	1618	2573	3046	3581	6050	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2024	1494	2456	2948	3506	6143	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2025	1392	2350	2843	3417	6240	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2026	1307	2239	2747	3320	6322	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2027	1209	2138	2653	3242	6402	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2028	1121	2045	2564	3181	6454	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2029	1041	1960	2480	3107	6520	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2030	975	1873	2387	3031	6596	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2031	899	1784	2301	2964	6693	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2032	836	1707	2229	2891	6707	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2033	786	1629	2153	2826	6794	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2034	736	1556	2080	2754	6811	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2035	680	1490	2009	2689	6939	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2036	630	1423	1936	2623	6986	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2037	589	1362	1877	2572	7017	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2038	548	1303	1824	2516	7090	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2039	511	1249	1752	2449	7157	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2040	474	1194	1692	2376	7212	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2041	441	1145	1629	2326	7261	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2042	409	1097	1572	2272	7253	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2043	384	1049	1518	2219	7228	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2044	361	1001	1471	2164	7264	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2045	334	955	1417	2109	7350	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2046	312	910	1369	2054	7474	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2047	293	865	1322	2008	7541	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2048	272	827	1280	1965	7589	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2049	254	790	1238	1907	7707	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2050	236	758	1191	1861	7734	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2051	219	724	1151	1813	7800	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2052	205	694	1115	1767	7825	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2053	191	664	1075	1720	7872	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2054	178	638	1038	1686	7973	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2055	166	611	1004	1644	7990	Forth Islands	Collisions & Displacement: Forth & Tay WFs

2056	154	584	967	1602	7938	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2057	144	558	936	1560	8030	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2058	134	533	906	1524	8107	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2059	124	511	873	1483	8186	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2060	116	488	847	1454	8207	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2061	108	467	813	1424	8238	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2062	100	445	789	1387	8287	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2063	92	427	760	1343	8397	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2064	86	408	734	1316	8407	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2065	81	389	712	1281	8453	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2066	75	372	689	1258	8394	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2067	69	355	667	1222	8608	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2068	64	339	642	1191	8666	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2069	59	323	619	1160	8758	Forth Islands	Collisions & Displacement: Forth & Tay WFs
2070	55	309	600	1136	8723	Forth Islands	Collisions & Displacement: Forth & Tay WFs
year	Q5	Q33	Q50	Q66	Q95	Forth Islands	ptype
2018	2399	3285	3646	3996	5321	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2019	2215	3128	3520	3917	5537	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2020	2040	2982	3395	3821	5682	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2021	1893	2835	3267	3735	5801	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2022	1747	2703	3153	3649	5922	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2023	1622	2564	3036	3567	6020	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2024	1495	2448	2934	3490	6126	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2025	1394	2335	2832	3405	6223	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2026	1300	2232	2734	3307	6270	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2027	1204	2127	2637	3218	6349	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2028	1117	2030	2546	3158	6422	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2029	1036	1945	2453	3082	6516	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2030	967	1856	2365	3014	6548	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2031	893	1766	2283	2938	6651	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2032	832	1689	2208	2859	6639	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2033	779	1615	2128	2794	6728	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2034	730	1541	2057	2714	6766	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2035	678	1476	1985	2652	6885	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2036	629	1404	1919	2586	6922	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2037	582	1343	1854	2539	6933	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2038	545	1284	1795	2473	6984	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2039	504	1230	1728	2415	7075	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2040	464	1174	1668	2344	7082	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2041	433	1118	1604	2288	7077	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2042	403	1071	1550	2236	7073	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2043	376	1027	1490	2181	7083	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2044	351	981	1441	2126	7073	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2045	330	933	1393	2075	7178	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2046	304	889	1343	2020	7310	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2047	284	847	1297	1967	7330	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea

2048	264	807	1255	1921	7410	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2049	246	770	1216	1875	7510	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2050	229	740	1169	1821	7539	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2051	213	704	1125	1774	7602	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2052	201	674	1087	1718	7567	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2053	186	648	1054	1673	7673	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2054	172	621	1015	1641	7777	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2055	161	594	982	1605	7754	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2056	150	567	945	1562	7812	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2057	138	543	913	1511	7871	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2058	128	519	882	1479	7928	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2059	120	498	850	1439	7903	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2060	111	477	821	1409	7955	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2061	104	453	790	1379	7970	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2062	97	432	761	1338	8026	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2063	89	412	738	1303	8141	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2064	83	393	710	1264	8093	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2065	77	376	685	1235	8263	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2066	71	359	660	1209	8227	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2067	67	342	638	1177	8346	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2068	63	327	613	1146	8387	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2069	57	313	596	1118	8416	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2070	52	299	575	1096	8330	Forth Islands	Collisions & Displacement: Forth & Tay WFs + UK North Sea

KITTIWAKES – ST ABBS HEAD TO FAST CASTLE SPA

Projections placed in the following order of scenarios:

- **Baseline**
- **Collisions only: Development-alone**
- **Collisions only: Forth & Tay WFs**
- **Collisions only: Forth & Tay WFs + UK North Sea**
- **Collisions & Displacement: Development-alone**
- **Collisions & Displacement: Forth & Tay WFs**
- **Collisions & Displacement: Forth & Tay WFs + UK North Sea**

year	Q5	Q33	Q50	Q66	Q95	site	ptype
2018	2124	2807	3085	3370	4307	St Abbs Head to Fast Castle	Baseline
2019	1910	2604	2892	3188	4228	St Abbs Head to Fast Castle	Baseline
2020	1726	2424	2721	3025	4127	St Abbs Head to Fast Castle	Baseline
2021	1575	2255	2553	2866	4032	St Abbs Head to Fast Castle	Baseline
2022	1431	2102	2401	2722	3961	St Abbs Head to Fast Castle	Baseline
2023	1299	1958	2256	2578	3851	St Abbs Head to Fast Castle	Baseline
2024	1181	1820	2119	2444	3759	St Abbs Head to Fast Castle	Baseline
2025	1074	1695	1990	2320	3636	St Abbs Head to Fast Castle	Baseline
2026	982	1576	1869	2195	3552	St Abbs Head to Fast Castle	Baseline
2027	894	1469	1758	2080	3448	St Abbs Head to Fast Castle	Baseline
2028	815	1371	1650	1969	3351	St Abbs Head to Fast Castle	Baseline
2029	747	1275	1549	1863	3289	St Abbs Head to Fast Castle	Baseline
2030	679	1188	1459	1765	3193	St Abbs Head to Fast Castle	Baseline
2031	619	1110	1373	1671	3100	St Abbs Head to Fast Castle	Baseline
2032	567	1033	1287	1581	3008	St Abbs Head to Fast Castle	Baseline
2033	516	961	1203	1496	2930	St Abbs Head to Fast Castle	Baseline
2034	472	894	1133	1419	2852	St Abbs Head to Fast Castle	Baseline
2035	429	838	1064	1342	2763	St Abbs Head to Fast Castle	Baseline
2036	392	779	998	1271	2692	St Abbs Head to Fast Castle	Baseline
2037	357	725	939	1205	2609	St Abbs Head to Fast Castle	Baseline
2038	327	675	881	1140	2523	St Abbs Head to Fast Castle	Baseline
2039	299	629	828	1080	2455	St Abbs Head to Fast Castle	Baseline
2040	271	585	776	1021	2388	St Abbs Head to Fast Castle	Baseline
2041	246	545	730	974	2304	St Abbs Head to Fast Castle	Baseline
2042	225	508	687	927	2251	St Abbs Head to Fast Castle	Baseline
2043	206	474	647	876	2162	St Abbs Head to Fast Castle	Baseline
2044	187	442	608	827	2105	St Abbs Head to Fast Castle	Baseline
2045	170	411	572	784	2030	St Abbs Head to Fast Castle	Baseline
2046	156	384	538	740	1970	St Abbs Head to Fast Castle	Baseline
2047	141	358	503	700	1920	St Abbs Head to Fast Castle	Baseline
2048	129	335	474	662	1852	St Abbs Head to Fast Castle	Baseline
2049	117	313	444	627	1788	St Abbs Head to Fast Castle	Baseline

2050	106	291	418	592	1717	St Abbs Head to Fast Castle	Baseline
2051	97	271	391	561	1667	St Abbs Head to Fast Castle	Baseline
2052	88	252	368	530	1625	St Abbs Head to Fast Castle	Baseline
2053	80	234	346	503	1579	St Abbs Head to Fast Castle	Baseline
2054	72	218	326	475	1526	St Abbs Head to Fast Castle	Baseline
2055	65	203	305	450	1479	St Abbs Head to Fast Castle	Baseline
2056	60	189	287	426	1430	St Abbs Head to Fast Castle	Baseline
2057	54	176	270	404	1384	St Abbs Head to Fast Castle	Baseline
2058	48	164	254	382	1337	St Abbs Head to Fast Castle	Baseline
2059	44	152	238	363	1306	St Abbs Head to Fast Castle	Baseline
2060	40	142	222	343	1278	St Abbs Head to Fast Castle	Baseline
2061	36	132	210	325	1219	St Abbs Head to Fast Castle	Baseline
2062	33	124	197	308	1194	St Abbs Head to Fast Castle	Baseline
2063	29	115	185	292	1151	St Abbs Head to Fast Castle	Baseline
2064	26	107	174	275	1122	St Abbs Head to Fast Castle	Baseline
2065	23	100	163	261	1089	St Abbs Head to Fast Castle	Baseline
2066	21	92	152	247	1058	St Abbs Head to Fast Castle	Baseline
2067	19	86	143	233	1033	St Abbs Head to Fast Castle	Baseline
2068	16	80	134	221	1000	St Abbs Head to Fast Castle	Baseline
2069	15	75	126	209	975	St Abbs Head to Fast Castle	Baseline
2070	13	70	119	197	949	St Abbs Head to Fast Castle	Baseline
year	Q5	Q33	Q50	Q66	Q95	St Abbs Head to Fast Castle	ptype
2018	2118	2807	3085	3366	4308	St Abbs Head to Fast Castle	Collisions only: Development-alone
2019	1909	2605	2893	3188	4218	St Abbs Head to Fast Castle	Collisions only: Development-alone
2020	1724	2423	2722	3022	4122	St Abbs Head to Fast Castle	Collisions only: Development-alone
2021	1571	2253	2555	2863	4035	St Abbs Head to Fast Castle	Collisions only: Development-alone
2022	1432	2099	2400	2719	3951	St Abbs Head to Fast Castle	Collisions only: Development-alone
2023	1296	1954	2255	2575	3844	St Abbs Head to Fast Castle	Collisions only: Development-alone
2024	1175	1816	2117	2440	3746	St Abbs Head to Fast Castle	Collisions only: Development-alone
2025	1073	1694	1986	2316	3638	St Abbs Head to Fast Castle	Collisions only: Development-alone
2026	982	1574	1868	2194	3548	St Abbs Head to Fast Castle	Collisions only: Development-alone
2027	896	1467	1755	2075	3434	St Abbs Head to Fast Castle	Collisions only: Development-alone
2028	813	1371	1647	1963	3343	St Abbs Head to Fast Castle	Collisions only: Development-alone
2029	739	1272	1547	1858	3260	St Abbs Head to Fast Castle	Collisions only: Development-alone
2030	674	1184	1456	1759	3182	St Abbs Head to Fast Castle	Collisions only: Development-alone
2031	619	1105	1367	1667	3079	St Abbs Head to Fast Castle	Collisions only: Development-alone
2032	566	1030	1283	1576	2990	St Abbs Head to Fast Castle	Collisions only: Development-alone
2033	512	959	1203	1489	2921	St Abbs Head to Fast Castle	Collisions only: Development-alone
2034	469	894	1128	1414	2824	St Abbs Head to Fast Castle	Collisions only: Development-alone
2035	427	832	1060	1336	2746	St Abbs Head to Fast Castle	Collisions only: Development-alone
2036	387	775	995	1270	2672	St Abbs Head to Fast Castle	Collisions only: Development-alone
2037	355	720	937	1202	2590	St Abbs Head to Fast Castle	Collisions only: Development-alone
2038	324	671	876	1136	2517	St Abbs Head to Fast Castle	Collisions only: Development-alone
2039	296	625	826	1073	2437	St Abbs Head to Fast Castle	Collisions only: Development-alone
2040	269	579	775	1017	2363	St Abbs Head to Fast Castle	Collisions only: Development-alone
2041	246	542	729	967	2272	St Abbs Head to Fast Castle	Collisions only: Development-alone

2042	225	505	686	918	2216	St Abbs Head to Fast Castle	Collisions only: Development-alone
2043	204	470	644	870	2142	St Abbs Head to Fast Castle	Collisions only: Development-alone
2044	185	439	604	822	2078	St Abbs Head to Fast Castle	Collisions only: Development-alone
2045	169	409	568	777	2014	St Abbs Head to Fast Castle	Collisions only: Development-alone
2046	155	380	532	737	1948	St Abbs Head to Fast Castle	Collisions only: Development-alone
2047	140	354	498	694	1884	St Abbs Head to Fast Castle	Collisions only: Development-alone
2048	126	331	468	659	1837	St Abbs Head to Fast Castle	Collisions only: Development-alone
2049	115	308	441	623	1762	St Abbs Head to Fast Castle	Collisions only: Development-alone
2050	105	288	413	589	1710	St Abbs Head to Fast Castle	Collisions only: Development-alone
2051	95	269	388	557	1651	St Abbs Head to Fast Castle	Collisions only: Development-alone
2052	87	249	364	526	1608	St Abbs Head to Fast Castle	Collisions only: Development-alone
2053	79	232	342	499	1556	St Abbs Head to Fast Castle	Collisions only: Development-alone
2054	71	216	320	472	1508	St Abbs Head to Fast Castle	Collisions only: Development-alone
2055	65	201	302	447	1465	St Abbs Head to Fast Castle	Collisions only: Development-alone
2056	59	187	284	423	1422	St Abbs Head to Fast Castle	Collisions only: Development-alone
2057	53	175	267	401	1376	St Abbs Head to Fast Castle	Collisions only: Development-alone
2058	47	162	250	380	1337	St Abbs Head to Fast Castle	Collisions only: Development-alone
2059	43	150	236	360	1297	St Abbs Head to Fast Castle	Collisions only: Development-alone
2060	39	140	222	340	1266	St Abbs Head to Fast Castle	Collisions only: Development-alone
2061	35	130	208	323	1219	St Abbs Head to Fast Castle	Collisions only: Development-alone
2062	32	121	195	305	1182	St Abbs Head to Fast Castle	Collisions only: Development-alone
2063	29	113	183	288	1147	St Abbs Head to Fast Castle	Collisions only: Development-alone
2064	26	105	172	274	1114	St Abbs Head to Fast Castle	Collisions only: Development-alone
2065	23	98	161	260	1079	St Abbs Head to Fast Castle	Collisions only: Development-alone
2066	21	91	151	244	1054	St Abbs Head to Fast Castle	Collisions only: Development-alone
2067	18	84	142	232	1026	St Abbs Head to Fast Castle	Collisions only: Development-alone
2068	16	78	134	219	997	St Abbs Head to Fast Castle	Collisions only: Development-alone
2069	14	73	125	207	965	St Abbs Head to Fast Castle	Collisions only: Development-alone
2070	13	68	117	197	939	St Abbs Head to Fast Castle	Collisions only: Development-alone
year	Q5	Q33	Q50	Q66	Q95	St Abbs Head to Fast Castle	ptype
2018	2118	2805	3088	3368	4304	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2019	1912	2604	2896	3189	4221	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2020	1723	2423	2720	3023	4119	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2021	1571	2253	2552	2862	4023	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2022	1432	2100	2397	2717	3950	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2023	1298	1948	2249	2569	3836	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2024	1180	1811	2111	2435	3734	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2025	1065	1687	1984	2309	3620	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2026	977	1568	1862	2179	3520	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2027	889	1458	1747	2065	3415	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2028	812	1356	1641	1954	3319	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2029	738	1263	1538	1848	3239	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2030	674	1176	1447	1754	3153	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2031	613	1100	1359	1659	3078	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2032	560	1024	1273	1568	2969	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2033	507	953	1192	1478	2894	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs

2034	464	887	1120	1401	2823	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2035	422	827	1048	1324	2728	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2036	385	770	984	1254	2646	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2037	350	714	926	1189	2568	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2038	320	664	867	1123	2499	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2039	292	618	815	1062	2414	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2040	264	576	764	1007	2334	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2041	242	536	719	954	2256	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2042	223	499	676	907	2191	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2043	202	464	633	857	2116	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2044	183	434	594	809	2048	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2045	165	403	559	764	1980	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2046	151	376	523	722	1924	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2047	136	349	492	682	1864	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2048	125	325	461	646	1805	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2049	112	303	433	613	1743	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2050	103	282	406	580	1688	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2051	93	262	382	547	1626	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2052	85	244	359	516	1584	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2053	77	227	337	488	1538	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2054	70	212	316	462	1475	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2055	63	197	297	436	1437	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2056	57	184	278	413	1389	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2057	52	172	261	391	1358	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2058	47	159	245	370	1313	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2059	43	149	230	350	1266	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2060	39	138	217	331	1232	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2061	34	129	203	314	1182	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2062	31	119	190	297	1155	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2063	28	111	180	280	1110	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2064	25	103	168	265	1082	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2065	22	96	157	251	1048	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2066	20	89	147	236	1026	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2067	18	82	138	223	989	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2068	16	77	129	211	957	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2069	14	71	121	200	932	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
2070	12	67	114	190	902	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs
year	Q5	Q33	Q50	Q66	Q95	St Abbs Head to Fast Castle	ptype
2018	2119	2805	3086	3365	4306	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2019	1910	2603	2895	3189	4217	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2020	1723	2419	2715	3020	4118	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2021	1563	2246	2548	2859	4019	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2022	1420	2088	2390	2708	3926	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2023	1285	1941	2240	2561	3847	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2024	1171	1804	2101	2422	3726	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2025	1061	1676	1970	2296	3603	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea

2026	971	1554	1847	2174	3500	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2027	882	1447	1731	2052	3400	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2028	799	1347	1624	1938	3296	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2029	728	1249	1522	1833	3224	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2030	660	1163	1425	1733	3129	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2031	604	1086	1341	1635	3032	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2032	552	1008	1255	1545	2935	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2033	501	939	1174	1459	2870	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2034	456	871	1101	1377	2782	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2035	418	810	1033	1301	2693	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2036	376	752	969	1231	2604	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2037	340	701	909	1167	2519	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2038	313	650	851	1097	2434	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2039	285	605	799	1037	2365	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2040	260	563	749	984	2299	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2041	236	522	703	932	2211	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2042	216	487	661	885	2140	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2043	195	452	620	836	2076	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2044	177	421	582	790	2011	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2045	161	392	546	743	1938	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2046	146	365	511	705	1872	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2047	133	339	479	664	1828	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2048	120	316	450	630	1762	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2049	109	293	421	593	1690	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2050	99	274	393	559	1629	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2051	90	254	369	526	1581	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2052	83	237	346	496	1529	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2053	73	219	325	472	1484	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2054	66	205	304	446	1437	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2055	61	191	285	421	1393	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2056	55	177	268	399	1347	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2057	49	164	251	378	1291	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2058	44	152	234	357	1253	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2059	40	141	220	338	1205	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2060	36	132	207	318	1176	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2061	32	123	194	301	1145	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2062	29	113	183	284	1108	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2063	26	105	171	268	1073	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2064	23	98	160	254	1030	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2065	21	91	150	241	1000	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2066	18	85	140	227	981	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2067	16	79	132	214	946	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2068	14	73	123	202	917	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2069	13	68	116	192	889	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
2070	11	63	109	181	858	St Abbs Head to Fast Castle	Collisions only: Forth & Tay WFs + UK North Sea
year	Q5	Q33	Q50	Q66	Q95	St Abbs Head to Fast Castle	ptype

2018	2122	2803	3084	3366	4306	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2019	1910	2602	2893	3191	4227	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2020	1723	2422	2723	3026	4133	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2021	1573	2255	2554	2865	4039	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2022	1436	2096	2403	2718	3946	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2023	1296	1952	2256	2569	3841	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2024	1179	1814	2116	2435	3744	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2025	1069	1693	1984	2318	3634	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2026	983	1573	1864	2192	3519	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2027	889	1465	1750	2077	3423	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2028	813	1364	1647	1962	3324	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2029	740	1269	1547	1857	3253	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2030	676	1182	1452	1761	3160	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2031	616	1104	1364	1664	3073	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2032	560	1029	1281	1577	2978	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2033	510	958	1197	1488	2906	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2034	467	893	1126	1409	2833	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2035	424	829	1058	1334	2743	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2036	385	773	995	1261	2668	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2037	351	720	936	1195	2583	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2038	322	668	874	1131	2503	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2039	295	622	822	1071	2424	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2040	268	579	772	1014	2345	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2041	245	539	726	963	2278	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2042	223	502	682	916	2208	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2043	203	469	640	866	2133	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2044	184	437	601	818	2078	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2045	168	407	564	772	2002	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2046	153	380	530	730	1940	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2047	140	352	498	691	1892	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2048	126	329	465	655	1821	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2049	115	308	437	618	1770	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2050	104	286	410	585	1704	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2051	95	266	385	555	1655	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2052	86	249	362	523	1600	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2053	78	232	340	495	1561	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2054	70	215	319	469	1504	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2055	64	200	300	443	1461	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2056	59	186	282	420	1415	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2057	52	173	266	399	1364	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2058	47	161	248	376	1331	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2059	43	150	234	357	1290	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2060	39	140	219	339	1252	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2061	35	130	206	319	1209	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2062	32	121	193	303	1170	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2063	29	113	182	286	1135	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone

2064	25	105	171	271	1102	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2065	23	98	160	257	1071	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2066	21	91	150	243	1038	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2067	18	84	142	230	1013	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2068	16	78	133	218	975	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2069	14	73	125	206	949	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
2070	12	68	117	195	917	St Abbs Head to Fast Castle	Collisions & Displacement: Development-alone
year	Q5	Q33	Q50	Q66	Q95	St Abbs Head to Fast Castle	ptype
2018	2121	2806	3086	3366	4305	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2019	1907	2601	2893	3191	4226	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2020	1725	2419	2716	3021	4122	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2021	1572	2252	2551	2860	4021	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2022	1428	2094	2394	2714	3932	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2023	1295	1945	2245	2566	3841	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2024	1173	1810	2109	2428	3727	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2025	1069	1684	1976	2304	3618	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2026	977	1563	1853	2183	3521	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2027	889	1452	1739	2062	3411	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2028	809	1354	1633	1952	3313	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2029	735	1259	1530	1842	3233	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2030	672	1170	1441	1746	3137	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2031	610	1091	1353	1650	3059	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2032	557	1014	1267	1556	2963	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2033	507	945	1186	1470	2882	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2034	462	878	1115	1394	2794	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2035	420	819	1041	1316	2717	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2036	382	761	979	1245	2634	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2037	347	708	918	1178	2545	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2038	318	657	862	1115	2474	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2039	290	612	807	1053	2396	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2040	264	570	758	998	2313	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2041	239	530	713	946	2241	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2042	219	495	669	897	2170	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2043	200	460	627	849	2096	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2044	181	428	590	803	2032	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2045	164	398	552	759	1962	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2046	150	370	519	716	1905	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2047	136	345	487	678	1847	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2048	124	322	457	641	1787	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2049	112	299	429	605	1730	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2050	101	278	402	572	1662	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2051	93	259	377	541	1611	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2052	84	242	354	510	1568	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2053	76	224	332	482	1526	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2054	68	208	312	457	1465	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2055	62	193	293	432	1419	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs

2056	56	180	274	408	1372	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2057	51	167	257	385	1328	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2058	45	156	241	362	1276	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2059	41	145	226	344	1248	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2060	37	134	212	327	1214	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2061	33	125	200	308	1170	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2062	30	116	187	293	1137	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2063	27	108	176	277	1094	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2064	24	100	165	262	1056	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2065	22	94	155	247	1028	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2066	19	87	145	234	1000	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2067	17	81	136	222	979	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2068	15	76	128	210	942	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2069	13	70	120	198	914	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
2070	12	65	112	187	884	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs
year	Q5	Q33	Q50	Q66	Q95	St Abbs Head to Fast Castle	ptype
2018	2119	2805	3087	3368	4312	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2019	1912	2606	2894	3188	4214	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2020	1723	2421	2714	3018	4117	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2021	1569	2245	2544	2855	4011	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2022	1426	2087	2388	2707	3932	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2023	1286	1943	2236	2558	3828	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2024	1168	1803	2096	2420	3718	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2025	1062	1675	1964	2290	3589	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2026	966	1554	1841	2166	3487	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2027	880	1447	1725	2046	3379	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2028	799	1342	1618	1932	3283	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2029	726	1248	1517	1826	3199	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2030	662	1159	1425	1724	3108	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2031	599	1081	1334	1629	3001	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2032	547	1003	1249	1537	2912	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2033	499	933	1170	1448	2833	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2034	456	870	1097	1372	2752	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2035	412	807	1027	1294	2663	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2036	373	751	963	1224	2589	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2037	340	697	903	1158	2507	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2038	311	646	845	1092	2433	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2039	283	600	792	1031	2348	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2040	255	557	744	976	2279	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2041	233	518	697	923	2189	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2042	212	482	654	874	2131	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2043	194	449	614	826	2060	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2044	175	416	576	780	1991	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2045	159	388	537	736	1931	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2046	144	360	503	696	1874	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2047	130	336	473	656	1812	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea

2048	120	313	443	623	1748	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2049	108	291	416	586	1680	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2050	99	271	391	552	1624	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2051	89	251	365	521	1560	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2052	80	234	343	493	1513	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2053	73	217	321	467	1470	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2054	65	202	300	440	1415	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2055	59	187	281	416	1369	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2056	54	174	264	395	1323	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2057	48	161	249	372	1287	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2058	44	150	233	352	1240	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2059	39	140	218	331	1199	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2060	35	130	204	313	1171	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2061	32	120	191	297	1121	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2062	29	112	179	279	1090	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2063	26	104	168	264	1048	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2064	23	96	157	251	1011	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2065	20	90	147	236	982	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2066	18	83	138	222	958	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2067	16	77	129	210	927	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2068	14	71	121	199	898	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2069	12	66	114	188	876	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2070	11	62	107	179	846	St Abbs Head to Fast Castle	Collisions & Displacement: Forth & Tay WFs + UK North Sea

KITTIWAKES – FOWLSHEUGH SPA

Projections placed in the following order of scenarios:

- **Baseline**
- **Collisions only: Development-alone**
- **Collisions only: Forth & Tay WFs**
- **Collisions only: Forth & Tay WFs + UK North Sea**
- **Collisions & Displacement: Development-alone**
- **Collisions & Displacement: Forth & Tay WFs**
- **Collisions & Displacement: Forth & Tay WFs + UK North Sea**

year	Q5	Q33	Q50	Q66	Q95	site	ptype
2018	7001	8940	9687	10392	12715	Fowlsheugh	Baseline
2019	6527	8556	9354	10150	12817	Fowlsheugh	Baseline
2020	6108	8219	9068	9933	12868	Fowlsheugh	Baseline
2021	5731	7884	8796	9705	12887	Fowlsheugh	Baseline
2022	5374	7571	8497	9468	12889	Fowlsheugh	Baseline
2023	5028	7260	8223	9224	12906	Fowlsheugh	Baseline
2024	4723	6969	7967	9014	12978	Fowlsheugh	Baseline
2025	4437	6703	7706	8786	12920	Fowlsheugh	Baseline
2026	4168	6429	7476	8598	12935	Fowlsheugh	Baseline
2027	3924	6178	7242	8362	12878	Fowlsheugh	Baseline
2028	3693	5931	7015	8169	12865	Fowlsheugh	Baseline
2029	3488	5686	6777	7977	12878	Fowlsheugh	Baseline
2030	3265	5477	6570	7772	12891	Fowlsheugh	Baseline
2031	3086	5248	6358	7585	12794	Fowlsheugh	Baseline
2032	2901	5027	6155	7387	12756	Fowlsheugh	Baseline
2033	2739	4835	5962	7204	12759	Fowlsheugh	Baseline
2034	2576	4643	5762	7022	12690	Fowlsheugh	Baseline
2035	2438	4459	5596	6844	12650	Fowlsheugh	Baseline
2036	2294	4289	5389	6673	12614	Fowlsheugh	Baseline
2037	2162	4136	5230	6508	12534	Fowlsheugh	Baseline
2038	2037	3960	5066	6339	12508	Fowlsheugh	Baseline
2039	1919	3799	4905	6181	12453	Fowlsheugh	Baseline
2040	1802	3658	4746	6045	12373	Fowlsheugh	Baseline
2041	1707	3502	4601	5878	12448	Fowlsheugh	Baseline
2042	1603	3369	4436	5730	12376	Fowlsheugh	Baseline
2043	1519	3239	4299	5591	12281	Fowlsheugh	Baseline
2044	1423	3115	4166	5449	12328	Fowlsheugh	Baseline
2045	1343	2997	4024	5323	12185	Fowlsheugh	Baseline
2046	1275	2885	3897	5186	12183	Fowlsheugh	Baseline
2047	1206	2770	3788	5028	12119	Fowlsheugh	Baseline
2048	1131	2658	3661	4919	12007	Fowlsheugh	Baseline
2049	1067	2551	3548	4778	11953	Fowlsheugh	Baseline

2050	1010	2448	3436	4684	11903	Fowsheugh	Baseline
2051	951	2352	3324	4578	11854	Fowsheugh	Baseline
2052	896	2263	3218	4452	11716	Fowsheugh	Baseline
2053	852	2179	3111	4335	11841	Fowsheugh	Baseline
2054	804	2093	3012	4226	11710	Fowsheugh	Baseline
2055	763	2010	2916	4127	11687	Fowsheugh	Baseline
2056	717	1935	2814	4030	11624	Fowsheugh	Baseline
2057	676	1857	2731	3920	11628	Fowsheugh	Baseline
2058	636	1786	2647	3815	11510	Fowsheugh	Baseline
2059	600	1716	2556	3726	11413	Fowsheugh	Baseline
2060	564	1642	2484	3632	11351	Fowsheugh	Baseline
2061	532	1581	2397	3528	11310	Fowsheugh	Baseline
2062	500	1517	2326	3442	11228	Fowsheugh	Baseline
2063	472	1460	2258	3364	11154	Fowsheugh	Baseline
2064	445	1403	2185	3273	11133	Fowsheugh	Baseline
2065	422	1347	2112	3197	11107	Fowsheugh	Baseline
2066	397	1299	2041	3116	11067	Fowsheugh	Baseline
2067	374	1249	1978	3035	11056	Fowsheugh	Baseline
2068	354	1202	1913	2963	10993	Fowsheugh	Baseline
2069	334	1155	1854	2896	10952	Fowsheugh	Baseline
2070	316	1104	1794	2816	10884	Fowsheugh Fowsheugh	Baseline
year	Q5	Q33	Q50	Q66	Q95	Fowsheugh	ptype
2018	7005	8941	9684	10397	12717	Fowsheugh	Collisions only: Development-alone
2019	6535	8553	9345	10147	12829	Fowsheugh	Collisions only: Development-alone
2020	6103	8213	9063	9927	12854	Fowsheugh	Collisions only: Development-alone
2021	5724	7878	8783	9705	12851	Fowsheugh	Collisions only: Development-alone
2022	5356	7553	8492	9453	12869	Fowsheugh	Collisions only: Development-alone
2023	5024	7251	8205	9217	12897	Fowsheugh	Collisions only: Development-alone
2024	4714	6957	7949	9006	12926	Fowsheugh	Collisions only: Development-alone
2025	4431	6674	7688	8777	12879	Fowsheugh	Collisions only: Development-alone
2026	4159	6414	7452	8571	12882	Fowsheugh	Collisions only: Development-alone
2027	3906	6157	7213	8340	12853	Fowsheugh	Collisions only: Development-alone
2028	3674	5909	6989	8149	12804	Fowsheugh	Collisions only: Development-alone
2029	3467	5668	6741	7958	12822	Fowsheugh	Collisions only: Development-alone
2030	3249	5458	6525	7745	12814	Fowsheugh	Collisions only: Development-alone
2031	3069	5221	6323	7551	12722	Fowsheugh	Collisions only: Development-alone
2032	2886	5001	6126	7356	12723	Fowsheugh	Collisions only: Development-alone
2033	2724	4814	5931	7171	12689	Fowsheugh	Collisions only: Development-alone
2034	2554	4623	5728	6989	12622	Fowsheugh	Collisions only: Development-alone
2035	2415	4431	5554	6799	12543	Fowsheugh	Collisions only: Development-alone
2036	2276	4258	5361	6628	12498	Fowsheugh	Collisions only: Development-alone
2037	2135	4097	5195	6456	12453	Fowsheugh	Collisions only: Development-alone
2038	2010	3928	5032	6284	12418	Fowsheugh	Collisions only: Development-alone
2039	1887	3765	4859	6120	12322	Fowsheugh	Collisions only: Development-alone
2040	1783	3612	4702	5974	12322	Fowsheugh	Collisions only: Development-alone
2041	1687	3471	4534	5814	12327	Fowsheugh	Collisions only: Development-alone

							Fowsheugh	
2042	1586	3344	4384	5691	12232		Fowsheugh	Collisions only: Development-alone
2043	1492	3198	4244	5539	12195		Fowsheugh	Collisions only: Development-alone
2044	1408	3080	4114	5390	12219		Fowsheugh	Collisions only: Development-alone
2045	1331	2958	3983	5254	12138		Fowsheugh	Collisions only: Development-alone
2046	1257	2851	3850	5128	12093		Fowsheugh	Collisions only: Development-alone
2047	1192	2741	3733	4990	12016		Fowsheugh	Collisions only: Development-alone
2048	1116	2628	3610	4848	11866		Fowsheugh	Collisions only: Development-alone
2049	1052	2517	3490	4721	11816		Fowsheugh	Collisions only: Development-alone
2050	996	2415	3386	4607	11761		Fowsheugh	Collisions only: Development-alone
2051	934	2325	3279	4506	11655		Fowsheugh	Collisions only: Development-alone
2052	886	2231	3164	4394	11598		Fowsheugh	Collisions only: Development-alone
2053	838	2145	3066	4289	11636		Fowsheugh	Collisions only: Development-alone
2054	786	2063	2970	4177	11591		Fowsheugh	Collisions only: Development-alone
2055	744	1983	2868	4071	11532		Fowsheugh	Collisions only: Development-alone
2056	700	1905	2770	3967	11472		Fowsheugh	Collisions only: Development-alone
2057	658	1834	2681	3852	11405		Fowsheugh	Collisions only: Development-alone
2058	624	1758	2598	3742	11354		Fowsheugh	Collisions only: Development-alone
2059	587	1688	2512	3652	11292		Fowsheugh	Collisions only: Development-alone
2060	550	1616	2438	3562	11121		Fowsheugh	Collisions only: Development-alone
2061	518	1550	2358	3469	11126		Fowsheugh	Collisions only: Development-alone
2062	492	1492	2285	3392	11109		Fowsheugh	Collisions only: Development-alone
2063	462	1435	2221	3289	11047		Fowsheugh	Collisions only: Development-alone
2064	433	1377	2146	3212	10996		Fowsheugh	Collisions only: Development-alone
2065	411	1322	2073	3134	10893		Fowsheugh	Collisions only: Development-alone
2066	388	1269	2000	3063	10901		Fowsheugh	Collisions only: Development-alone
2067	364	1224	1935	2971	10931		Fowsheugh	Collisions only: Development-alone
2068	345	1177	1864	2897	10815		Fowsheugh	Collisions only: Development-alone
2069	325	1124	1817	2831	10827		Fowsheugh	Collisions only: Development-alone
2070	307	1079	1760	2757	10701		Fowsheugh	Collisions only: Development-alone
year	Q5	Q33	Q50	Q66	Q95		Fowsheugh	ptype
2018	6996	8945	9677	10388	12711		Fowsheugh	Collisions only: Forth & Tay WFs
2019	6535	8557	9345	10147	12820		Fowsheugh	Collisions only: Forth & Tay WFs
2020	6081	8189	9026	9903	12822		Fowsheugh	Collisions only: Forth & Tay WFs
2021	5694	7821	8727	9642	12775		Fowsheugh	Collisions only: Forth & Tay WFs
2022	5311	7488	8410	9379	12771		Fowsheugh	Collisions only: Forth & Tay WFs
2023	4956	7166	8122	9108	12751		Fowsheugh	Collisions only: Forth & Tay WFs
2024	4635	6859	7830	8871	12744		Fowsheugh	Collisions only: Forth & Tay WFs
2025	4335	6562	7556	8623	12697		Fowsheugh	Collisions only: Forth & Tay WFs
2026	4059	6274	7308	8413	12628		Fowsheugh	Collisions only: Forth & Tay WFs
2027	3812	6020	7054	8154	12578		Fowsheugh	Collisions only: Forth & Tay WFs
2028	3573	5761	6817	7933	12507		Fowsheugh	Collisions only: Forth & Tay WFs
2029	3362	5508	6552	7734	12487		Fowsheugh	Collisions only: Forth & Tay WFs
2030	3133	5282	6330	7512	12456		Fowsheugh	Collisions only: Forth & Tay WFs
2031	2952	5041	6116	7302	12369		Fowsheugh	Collisions only: Forth & Tay WFs
2032	2768	4820	5901	7091	12271		Fowsheugh	Collisions only: Forth & Tay WFs
2033	2602	4625	5693	6884	12213		Fowsheugh	Collisions only: Forth & Tay WFs

2034	2447	4423	5498	6688	12110	Fowsheugh	Collisions only: Forth & Tay WFs
2035	2298	4229	5317	6504	12049	Fowsheugh	Collisions only: Forth & Tay WFs
2036	2170	4050	5117	6326	11946	Fowsheugh	Collisions only: Forth & Tay WFs
2037	2032	3885	4934	6139	11866	Fowsheugh	Collisions only: Forth & Tay WFs
2038	1905	3720	4763	5969	11819	Fowsheugh	Collisions only: Forth & Tay WFs
2039	1784	3562	4602	5803	11737	Fowsheugh	Collisions only: Forth & Tay WFs
2040	1682	3407	4440	5645	11629	Fowsheugh	Collisions only: Forth & Tay WFs
2041	1572	3260	4276	5471	11625	Fowsheugh	Collisions only: Forth & Tay WFs
2042	1475	3130	4115	5327	11529	Fowsheugh	Collisions only: Forth & Tay WFs
2043	1393	2993	3972	5156	11440	Fowsheugh	Collisions only: Forth & Tay WFs
2044	1302	2871	3841	5022	11406	Fowsheugh	Collisions only: Forth & Tay WFs
2045	1223	2756	3704	4881	11274	Fowsheugh	Collisions only: Forth & Tay WFs
2046	1155	2639	3571	4746	11214	Fowsheugh	Collisions only: Forth & Tay WFs
2047	1093	2527	3454	4618	11137	Fowsheugh	Collisions only: Forth & Tay WFs
2048	1020	2416	3327	4463	10984	Fowsheugh	Collisions only: Forth & Tay WFs
2049	959	2313	3216	4340	10904	Fowsheugh	Collisions only: Forth & Tay WFs
2050	903	2208	3106	4227	10795	Fowsheugh	Collisions only: Forth & Tay WFs
2051	843	2114	2994	4116	10745	Fowsheugh	Collisions only: Forth & Tay WFs
2052	801	2033	2885	4005	10617	Fowsheugh	Collisions only: Forth & Tay WFs
2053	752	1944	2781	3890	10665	Fowsheugh	Collisions only: Forth & Tay WFs
2054	706	1863	2686	3785	10527	Fowsheugh	Collisions only: Forth & Tay WFs
2055	668	1787	2592	3672	10531	Fowsheugh	Collisions only: Forth & Tay WFs
2056	636	1712	2504	3568	10415	Fowsheugh	Collisions only: Forth & Tay WFs
2057	591	1642	2410	3470	10320	Fowsheugh	Collisions only: Forth & Tay WFs
2058	556	1575	2334	3360	10262	Fowsheugh	Collisions only: Forth & Tay WFs
2059	521	1503	2242	3265	10142	Fowsheugh	Collisions only: Forth & Tay WFs
2060	489	1434	2171	3174	10021	Fowsheugh	Collisions only: Forth & Tay WFs
2061	459	1377	2094	3078	9960	Fowsheugh	Collisions only: Forth & Tay WFs
2062	433	1320	2023	2997	9907	Fowsheugh	Collisions only: Forth & Tay WFs
2063	404	1268	1962	2906	9821	Fowsheugh	Collisions only: Forth & Tay WFs
2064	379	1208	1887	2828	9776	Fowsheugh	Collisions only: Forth & Tay WFs
2065	358	1157	1820	2759	9644	Fowsheugh	Collisions only: Forth & Tay WFs
2066	334	1112	1751	2684	9613	Fowsheugh	Collisions only: Forth & Tay WFs
2067	314	1065	1687	2598	9606	Fowsheugh	Collisions only: Forth & Tay WFs
2068	296	1017	1634	2529	9465	Fowsheugh	Collisions only: Forth & Tay WFs
2069	276	971	1581	2466	9440	Fowsheugh	Collisions only: Forth & Tay WFs
2070	261	930	1519	2396	9318	Fowsheugh	Collisions only: Forth & Tay WFs
year	Q5	Q33	Q50	Q66	Q95	Fowsheugh	ptype
2018	7003	8941	9685	10396	12701	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2019	6525	8561	9350	10152	12829	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2020	6065	8177	9022	9883	12806	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2021	5672	7813	8710	9627	12774	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2022	5272	7472	8386	9346	12745	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2023	4938	7136	8081	9073	12704	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2024	4616	6823	7794	8819	12703	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2025	4317	6520	7514	8574	12601	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea

2026	4028	6233	7266	8351	12528	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2027	3773	5965	7008	8092	12479	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2028	3533	5701	6762	7877	12372	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2029	3323	5455	6489	7653	12392	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2030	3101	5229	6269	7427	12338	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2031	2927	4985	6058	7213	12220	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2032	2743	4754	5833	6998	12091	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2033	2575	4556	5618	6799	12012	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2034	2402	4357	5412	6594	11927	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2035	2256	4169	5233	6400	11824	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2036	2123	3983	5020	6218	11794	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2037	1990	3808	4845	6029	11627	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2038	1864	3643	4671	5853	11542	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2039	1750	3488	4506	5689	11512	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2040	1639	3336	4336	5525	11393	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2041	1536	3196	4178	5364	11345	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2042	1447	3062	4025	5207	11282	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2043	1363	2928	3871	5043	11184	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2044	1273	2796	3744	4908	11159	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2045	1194	2686	3611	4760	10982	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2046	1124	2563	3479	4632	10917	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2047	1064	2457	3355	4487	10821	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2048	994	2344	3234	4346	10685	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2049	932	2241	3123	4228	10620	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2050	878	2145	3008	4107	10552	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2051	825	2055	2906	4000	10437	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2052	778	1964	2803	3878	10366	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2053	730	1882	2693	3766	10281	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2054	683	1802	2604	3665	10239	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2055	647	1721	2511	3548	10190	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2056	604	1650	2413	3451	10055	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2057	567	1585	2325	3329	9984	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2058	530	1515	2246	3240	9909	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2059	495	1447	2162	3150	9748	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2060	468	1379	2080	3054	9600	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2061	439	1320	2002	2970	9566	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2062	413	1259	1932	2882	9437	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2063	389	1204	1882	2794	9375	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2064	362	1154	1803	2715	9381	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2065	341	1109	1739	2636	9327	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2066	318	1061	1677	2563	9202	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2067	301	1016	1613	2491	9169	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2068	281	975	1556	2411	9037	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2069	264	931	1504	2351	9003	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
2070	249	891	1448	2280	8869	Fowsheugh	Collisions only: Forth & Tay WFs + UK North Sea
year	Q5	Q33	Q50	Q66	Q95	Fowsheugh	ptype

2018	7002	8944	9684	10396	12702	Fowsheugh	Collisions & Displacement: Development-alone
2019	6549	8556	9355	10155	12817	Fowsheugh	Collisions & Displacement: Development-alone
2020	6096	8217	9061	9931	12859	Fowsheugh	Collisions & Displacement: Development-alone
2021	5715	7878	8780	9697	12878	Fowsheugh	Collisions & Displacement: Development-alone
2022	5348	7550	8486	9457	12853	Fowsheugh	Collisions & Displacement: Development-alone
2023	5003	7248	8202	9209	12882	Fowsheugh	Collisions & Displacement: Development-alone
2024	4710	6937	7935	8993	12943	Fowsheugh	Collisions & Displacement: Development-alone
2025	4421	6671	7664	8761	12872	Fowsheugh	Collisions & Displacement: Development-alone
2026	4146	6387	7437	8565	12857	Fowsheugh	Collisions & Displacement: Development-alone
2027	3895	6140	7202	8338	12844	Fowsheugh	Collisions & Displacement: Development-alone
2028	3656	5895	6974	8126	12801	Fowsheugh	Collisions & Displacement: Development-alone
2029	3457	5658	6723	7933	12762	Fowsheugh	Collisions & Displacement: Development-alone
2030	3245	5438	6515	7725	12771	Fowsheugh	Collisions & Displacement: Development-alone
2031	3068	5197	6310	7530	12722	Fowsheugh	Collisions & Displacement: Development-alone
2032	2870	4982	6103	7338	12657	Fowsheugh	Collisions & Displacement: Development-alone
2033	2709	4785	5893	7151	12603	Fowsheugh	Collisions & Displacement: Development-alone
2034	2552	4598	5699	6953	12482	Fowsheugh	Collisions & Displacement: Development-alone
2035	2410	4405	5532	6773	12500	Fowsheugh	Collisions & Displacement: Development-alone
2036	2273	4230	5327	6601	12456	Fowsheugh	Collisions & Displacement: Development-alone
2037	2144	4073	5165	6426	12384	Fowsheugh	Collisions & Displacement: Development-alone
2038	2017	3913	4998	6252	12387	Fowsheugh	Collisions & Displacement: Development-alone
2039	1887	3749	4831	6100	12335	Fowsheugh	Collisions & Displacement: Development-alone
2040	1777	3598	4674	5966	12199	Fowsheugh	Collisions & Displacement: Development-alone
2041	1671	3459	4524	5781	12276	Fowsheugh	Collisions & Displacement: Development-alone
2042	1578	3320	4369	5652	12164	Fowsheugh	Collisions & Displacement: Development-alone
2043	1488	3181	4220	5485	12101	Fowsheugh	Collisions & Displacement: Development-alone
2044	1402	3055	4084	5348	12145	Fowsheugh	Collisions & Displacement: Development-alone
2045	1319	2949	3954	5206	12052	Fowsheugh	Collisions & Displacement: Development-alone
2046	1247	2823	3812	5071	11984	Fowsheugh	Collisions & Displacement: Development-alone
2047	1173	2716	3709	4933	11892	Fowsheugh	Collisions & Displacement: Development-alone
2048	1101	2608	3587	4801	11722	Fowsheugh	Collisions & Displacement: Development-alone
2049	1037	2495	3472	4676	11658	Fowsheugh	Collisions & Displacement: Development-alone
2050	980	2400	3350	4564	11658	Fowsheugh	Collisions & Displacement: Development-alone
2051	926	2306	3242	4457	11592	Fowsheugh	Collisions & Displacement: Development-alone
2052	879	2209	3138	4351	11513	Fowsheugh	Collisions & Displacement: Development-alone
2053	825	2116	3038	4240	11551	Fowsheugh	Collisions & Displacement: Development-alone
2054	777	2034	2940	4121	11456	Fowsheugh	Collisions & Displacement: Development-alone
2055	735	1957	2847	4031	11411	Fowsheugh	Collisions & Displacement: Development-alone
2056	696	1883	2750	3935	11315	Fowsheugh	Collisions & Displacement: Development-alone
2057	651	1811	2661	3825	11258	Fowsheugh	Collisions & Displacement: Development-alone
2058	618	1739	2578	3712	11187	Fowsheugh	Collisions & Displacement: Development-alone
2059	580	1667	2488	3622	11079	Fowsheugh	Collisions & Displacement: Development-alone
2060	544	1593	2409	3515	10996	Fowsheugh	Collisions & Displacement: Development-alone
2061	514	1529	2329	3431	10967	Fowsheugh	Collisions & Displacement: Development-alone
2062	488	1472	2258	3348	10974	Fowsheugh	Collisions & Displacement: Development-alone
2063	458	1419	2187	3254	10892	Fowsheugh	Collisions & Displacement: Development-alone

2064	429	1361	2118	3180	10847	Fowsheugh	Collisions & Displacement: Development-alone
2065	405	1307	2046	3108	10794	Fowsheugh	Collisions & Displacement: Development-alone
2066	383	1250	1972	3013	10681	Fowsheugh	Collisions & Displacement: Development-alone
2067	361	1206	1914	2930	10709	Fowsheugh	Collisions & Displacement: Development-alone
2068	342	1155	1854	2864	10594	Fowsheugh	Collisions & Displacement: Development-alone
2069	321	1107	1800	2793	10580	Fowsheugh	Collisions & Displacement: Development-alone
2070	304	1065	1738	2727	10468	Fowsheugh	Collisions & Displacement: Development-alone
year	Q5	Q33	Q50	Q66	Q95	Fowsheugh	ptype
2018	6993	8941	9683	10389	12711	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2019	6535	8560	9351	10145	12799	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2020	6080	8182	9020	9881	12824	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2021	5673	7819	8711	9623	12773	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2022	5288	7467	8393	9355	12738	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2023	4933	7139	8086	9089	12707	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2024	4616	6825	7799	8848	12712	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2025	4314	6530	7515	8597	12643	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2026	4034	6252	7262	8364	12560	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2027	3785	5985	7010	8106	12508	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2028	3534	5713	6770	7891	12409	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2029	3336	5466	6499	7687	12415	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2030	3114	5247	6268	7448	12350	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2031	2919	5002	6074	7238	12242	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2032	2746	4783	5846	7026	12111	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2033	2585	4579	5644	6818	12067	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2034	2414	4374	5426	6615	11971	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2035	2273	4181	5251	6423	11908	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2036	2141	4004	5045	6244	11814	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2037	2002	3842	4872	6059	11692	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2038	1876	3665	4694	5880	11622	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2039	1765	3516	4520	5716	11514	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2040	1651	3351	4365	5560	11404	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2041	1553	3213	4210	5393	11416	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2042	1455	3074	4051	5233	11309	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2043	1366	2938	3900	5081	11225	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2044	1280	2815	3760	4939	11183	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2045	1205	2701	3633	4803	11075	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2046	1138	2582	3502	4650	11028	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2047	1070	2472	3384	4515	10854	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2048	999	2359	3265	4372	10678	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2049	944	2258	3144	4242	10603	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2050	888	2160	3037	4136	10532	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2051	835	2070	2936	4028	10420	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2052	780	1981	2833	3910	10405	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2053	731	1890	2729	3794	10358	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2054	688	1811	2631	3689	10240	Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2055	647	1739	2547	3591	10194	Fowsheugh	Collisions & Displacement: Forth & Tay WFs

							Fowsheugh	
2056	610	1665	2447	3479	10095		Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2057	571	1595	2355	3375	10042		Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2058	535	1529	2274	3273	9902		Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2059	500	1462	2193	3172	9846		Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2060	471	1394	2114	3088	9713		Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2061	444	1336	2030	2998	9623		Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2062	416	1277	1960	2925	9598		Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2063	390	1224	1895	2833	9531		Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2064	368	1171	1830	2745	9480		Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2065	349	1122	1765	2672	9407		Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2066	326	1070	1697	2588	9293		Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2067	304	1028	1632	2517	9253		Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2068	285	988	1577	2445	9092		Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2069	267	943	1524	2387	9070		Fowsheugh	Collisions & Displacement: Forth & Tay WFs
2070	249	901	1472	2315	9006		Fowsheugh	Collisions & Displacement: Forth & Tay WFs
year	Q5	Q33	Q50	Q66	Q95		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2018	6986	8938	9680	10389	12717		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2019	6533	8565	9352	10148	12823		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2020	6061	8172	9014	9879	12813		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2021	5665	7803	8699	9603	12754		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2022	5275	7452	8367	9331	12697		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2023	4920	7113	8056	9042	12663		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2024	4600	6791	7762	8798	12653		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2025	4288	6489	7476	8525	12567		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2026	4016	6198	7211	8314	12501		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2027	3759	5926	6955	8048	12454		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2028	3521	5659	6703	7808	12321		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2029	3305	5417	6442	7594	12281		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2030	3078	5179	6212	7369	12208		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2031	2892	4943	5999	7152	12128		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2032	2714	4712	5769	6938	12013		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2033	2543	4516	5561	6725	11940		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2034	2370	4308	5360	6525	11804		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2035	2236	4112	5162	6324	11716		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2036	2100	3937	4960	6141	11666		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2037	1966	3768	4781	5951	11506		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2038	1846	3599	4613	5764	11439		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2039	1724	3439	4427	5607	11330		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2040	1618	3283	4276	5450	11214		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2041	1516	3143	4120	5274	11210		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2042	1422	3010	3952	5114	11084		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2043	1335	2866	3806	4957	11006		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2044	1239	2746	3674	4815	10961		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2045	1167	2632	3538	4662	10804		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2046	1097	2514	3399	4534	10721		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2047	1034	2406	3284	4387	10582		Fowsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea

2048	970	2298	3165	4249	10471	Fowlsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2049	908	2197	3048	4112	10386	Fowlsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2050	854	2100	2936	4006	10325	Fowlsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2051	804	2001	2828	3901	10180	Fowlsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2052	752	1917	2732	3779	10098	Fowlsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2053	705	1833	2628	3668	10099	Fowlsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2054	665	1760	2529	3557	9974	Fowlsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2055	625	1678	2444	3462	9907	Fowlsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2056	588	1606	2345	3360	9786	Fowlsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2057	549	1537	2260	3244	9700	Fowlsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2058	515	1469	2178	3148	9609	Fowlsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2059	487	1398	2095	3057	9498	Fowlsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2060	452	1341	2021	2970	9302	Fowlsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2061	425	1282	1946	2876	9294	Fowlsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2062	395	1225	1873	2792	9239	Fowlsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2063	372	1172	1808	2702	9119	Fowlsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2064	350	1119	1746	2635	9088	Fowlsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2065	329	1066	1680	2552	8985	Fowlsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2066	307	1023	1611	2472	8897	Fowlsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2067	288	982	1553	2396	8864	Fowlsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2068	270	937	1498	2319	8745	Fowlsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2069	253	895	1448	2268	8738	Fowlsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2070	236	857	1392	2192	8613	Fowlsheugh	Collisions & Displacement: Forth & Tay WFs + UK North Sea

KITTIWAKES – REGIONAL – FORTH ISLANDS SPA + ST ABBS HEADTO FAST CASTLE SPA + FOWLSHEUGH SPA

Projections placed in the following order of scenarios:

- **Baseline**
- **Collisions only: Development-alone**
- **Collisions only: Forth & Tay WFs**
- **Collisions only: Forth & Tay WFs + UK North Sea**
- **Collisions & Displacement: Development-alone**
- **Collisions & Displacement: Forth & Tay WFs**
- **Collisions & Displacement: Forth & Tay WFs + UK North Sea**

year	Q5	Q33	Q50	Q66	Q95	scen
2018	13332	15653	16529	17384	20185	Baseline
2019	12553	14994	15963	16916	20078	Baseline
2020	11818	14416	15457	16481	19958	Baseline
2021	11177	13841	14952	16050	19840	Baseline
2022	10558	13298	14452	15624	19701	Baseline
2023	9977	12784	13996	15220	19564	Baseline
2024	9473	12315	13540	14853	19474	Baseline
2025	8955	11839	13109	14436	19352	Baseline
2026	8486	11391	12682	14068	19158	Baseline
2027	8036	10955	12284	13700	19053	Baseline
2028	7614	10557	11904	13356	18904	Baseline
2029	7224	10179	11532	13028	18855	Baseline
2030	6833	9799	11199	12699	18800	Baseline
2031	6497	9443	10847	12396	18697	Baseline
2032	6164	9105	10512	12106	18591	Baseline
2033	5864	8771	10184	11810	18459	Baseline
2034	5540	8447	9879	11510	18363	Baseline
2035	5277	8152	9578	11252	18322	Baseline
2036	5001	7874	9316	10963	18313	Baseline
2037	4746	7585	9052	10708	18215	Baseline
2038	4495	7333	8776	10450	18190	Baseline
2039	4294	7062	8529	10198	18231	Baseline
2040	4064	6806	8293	9992	18177	Baseline
2041	3864	6571	8052	9756	18114	Baseline
2042	3685	6338	7816	9512	18205	Baseline
2043	3498	6124	7600	9327	18237	Baseline
2044	3334	5914	7382	9102	18072	Baseline
2045	3183	5715	7164	8934	17997	Baseline
2046	3010	5506	6986	8719	18050	Baseline
2047	2871	5323	6774	8547	17959	Baseline
2048	2723	5146	6578	8362	18070	Baseline

2049	2597	4963	6390	8168	18008	Baseline
2050	2478	4796	6229	7992	18103	Baseline
2051	2354	4638	6065	7852	18184	Baseline
2052	2234	4479	5883	7684	18127	Baseline
2053	2126	4343	5712	7512	18317	Baseline
2054	2025	4200	5580	7382	18357	Baseline
2055	1936	4058	5437	7254	18251	Baseline
2056	1839	3926	5289	7098	18257	Baseline
2057	1756	3802	5138	6948	18398	Baseline
2058	1658	3669	5024	6817	18384	Baseline
2059	1577	3549	4876	6695	18421	Baseline
2060	1502	3431	4763	6542	18531	Baseline
2061	1435	3321	4642	6418	18532	Baseline
2062	1365	3201	4529	6297	18426	Baseline
2063	1303	3113	4404	6166	18613	Baseline
2064	1234	3017	4290	6053	18708	Baseline
2065	1174	2923	4179	5924	18849	Baseline
2066	1120	2824	4077	5820	18960	Baseline
2067	1068	2739	3992	5712	18917	Baseline
2068	1009	2656	3883	5620	19057	Baseline
2069	960	2568	3791	5514	19162	Baseline
2070	915	2485	3703	5411	19112	Baseline
year	Q5	Q33	Q50	Q66	Q95	scen
2018	13348	15645	16530	17381	20182	Collisions only: Development-alone
2019	12554	15000	15964	16912	20085	Collisions only: Development-alone
2020	11818	14403	15452	16478	19934	Collisions only: Development-alone
2021	11167	13835	14928	16034	19813	Collisions only: Development-alone
2022	10551	13282	14433	15613	19651	Collisions only: Development-alone
2023	9969	12760	13966	15194	19542	Collisions only: Development-alone
2024	9479	12282	13515	14803	19416	Collisions only: Development-alone
2025	8947	11811	13082	14397	19315	Collisions only: Development-alone
2026	8472	11370	12656	14022	19123	Collisions only: Development-alone
2027	7993	10925	12244	13655	18980	Collisions only: Development-alone
2028	7577	10521	11865	13306	18874	Collisions only: Development-alone
2029	7186	10144	11486	12969	18776	Collisions only: Development-alone
2030	6808	9757	11140	12641	18650	Collisions only: Development-alone
2031	6462	9402	10794	12320	18592	Collisions only: Development-alone
2032	6136	9058	10462	12009	18474	Collisions only: Development-alone
2033	5826	8715	10147	11706	18371	Collisions only: Development-alone
2034	5510	8388	9826	11407	18247	Collisions only: Development-alone
2035	5242	8099	9510	11153	18185	Collisions only: Development-alone
2036	4973	7811	9249	10849	18153	Collisions only: Development-alone
2037	4707	7529	8968	10609	18056	Collisions only: Development-alone
2038	4464	7269	8692	10350	18025	Collisions only: Development-alone
2039	4236	6996	8448	10109	18052	Collisions only: Development-alone
2040	4027	6752	8200	9880	17998	Collisions only: Development-alone

2041	3838	6513	7958	9646	17918	Collisions only: Development-alone
2042	3653	6281	7725	9416	17952	Collisions only: Development-alone
2043	3458	6050	7515	9206	18038	Collisions only: Development-alone
2044	3286	5846	7288	8998	17892	Collisions only: Development-alone
2045	3129	5641	7078	8809	17816	Collisions only: Development-alone
2046	2965	5440	6887	8595	17882	Collisions only: Development-alone
2047	2820	5264	6690	8412	17749	Collisions only: Development-alone
2048	2672	5075	6484	8220	17859	Collisions only: Development-alone
2049	2542	4893	6297	8035	17828	Collisions only: Development-alone
2050	2419	4722	6130	7868	17854	Collisions only: Development-alone
2051	2291	4565	5960	7712	17870	Collisions only: Development-alone
2052	2185	4412	5782	7552	17942	Collisions only: Development-alone
2053	2085	4273	5628	7391	18029	Collisions only: Development-alone
2054	1987	4127	5482	7246	17938	Collisions only: Development-alone
2055	1889	3987	5338	7119	17960	Collisions only: Development-alone
2056	1790	3859	5201	6985	17905	Collisions only: Development-alone
2057	1709	3737	5053	6802	18021	Collisions only: Development-alone
2058	1632	3611	4912	6667	18054	Collisions only: Development-alone
2059	1551	3491	4787	6538	18040	Collisions only: Development-alone
2060	1471	3375	4662	6409	18058	Collisions only: Development-alone
2061	1407	3262	4536	6267	18141	Collisions only: Development-alone
2062	1334	3153	4444	6144	17996	Collisions only: Development-alone
2063	1272	3058	4312	6031	18125	Collisions only: Development-alone
2064	1212	2961	4193	5931	18318	Collisions only: Development-alone
2065	1154	2860	4089	5796	18325	Collisions only: Development-alone
2066	1102	2766	3975	5685	18368	Collisions only: Development-alone
2067	1047	2679	3889	5575	18607	Collisions only: Development-alone
2068	986	2590	3776	5482	18576	Collisions only: Development-alone
2069	943	2504	3698	5376	18581	Collisions only: Development-alone
2070	905	2430	3599	5264	18724	Collisions only: Development-alone
year	Q5	Q33	Q50	Q66	Q95	scen
2018	13340	15646	16535	17387	20189	Collisions only: Forth & Tay WFs
2019	12547	14998	15968	16910	20082	Collisions only: Forth & Tay WFs
2020	11770	14364	15408	16441	19908	Collisions only: Forth & Tay WFs
2021	11110	13765	14859	15952	19699	Collisions only: Forth & Tay WFs
2022	10459	13177	14329	15495	19538	Collisions only: Forth & Tay WFs
2023	9843	12642	13844	15046	19376	Collisions only: Forth & Tay WFs
2024	9358	12138	13351	14620	19238	Collisions only: Forth & Tay WFs
2025	8817	11638	12900	14205	19066	Collisions only: Forth & Tay WFs
2026	8337	11185	12436	13791	18834	Collisions only: Forth & Tay WFs
2027	7847	10722	12017	13410	18656	Collisions only: Forth & Tay WFs
2028	7401	10294	11624	13030	18456	Collisions only: Forth & Tay WFs
2029	7001	9894	11218	12673	18353	Collisions only: Forth & Tay WFs
2030	6622	9502	10840	12306	18209	Collisions only: Forth & Tay WFs
2031	6291	9135	10497	11985	18035	Collisions only: Forth & Tay WFs
2032	5954	8785	10149	11661	17893	Collisions only: Forth & Tay WFs

2033	5632	8442	9796	11324	17745	Collisions only: Forth & Tay WFs
2034	5310	8091	9478	11018	17630	Collisions only: Forth & Tay WFs
2035	5044	7798	9158	10736	17497	Collisions only: Forth & Tay WFs
2036	4765	7500	8882	10431	17459	Collisions only: Forth & Tay WFs
2037	4522	7213	8588	10158	17328	Collisions only: Forth & Tay WFs
2038	4286	6939	8321	9872	17233	Collisions only: Forth & Tay WFs
2039	4048	6664	8054	9641	17240	Collisions only: Forth & Tay WFs
2040	3841	6431	7796	9403	17117	Collisions only: Forth & Tay WFs
2041	3647	6174	7549	9150	16983	Collisions only: Forth & Tay WFs
2042	3448	5935	7316	8910	16986	Collisions only: Forth & Tay WFs
2043	3268	5715	7084	8691	17010	Collisions only: Forth & Tay WFs
2044	3100	5503	6862	8462	16793	Collisions only: Forth & Tay WFs
2045	2938	5306	6635	8270	16738	Collisions only: Forth & Tay WFs
2046	2794	5087	6448	8075	16747	Collisions only: Forth & Tay WFs
2047	2639	4916	6250	7875	16657	Collisions only: Forth & Tay WFs
2048	2502	4735	6048	7670	16709	Collisions only: Forth & Tay WFs
2049	2373	4550	5874	7483	16590	Collisions only: Forth & Tay WFs
2050	2247	4380	5690	7307	16606	Collisions only: Forth & Tay WFs
2051	2127	4226	5512	7143	16591	Collisions only: Forth & Tay WFs
2052	2022	4090	5337	6971	16568	Collisions only: Forth & Tay WFs
2053	1923	3937	5182	6796	16571	Collisions only: Forth & Tay WFs
2054	1821	3797	5027	6650	16606	Collisions only: Forth & Tay WFs
2055	1743	3656	4888	6520	16465	Collisions only: Forth & Tay WFs
2056	1640	3532	4738	6357	16510	Collisions only: Forth & Tay WFs
2057	1562	3405	4592	6207	16478	Collisions only: Forth & Tay WFs
2058	1483	3286	4464	6069	16524	Collisions only: Forth & Tay WFs
2059	1412	3164	4339	5944	16452	Collisions only: Forth & Tay WFs
2060	1340	3053	4211	5802	16384	Collisions only: Forth & Tay WFs
2061	1274	2944	4105	5661	16368	Collisions only: Forth & Tay WFs
2062	1212	2839	3980	5546	16312	Collisions only: Forth & Tay WFs
2063	1143	2742	3862	5429	16337	Collisions only: Forth & Tay WFs
2064	1085	2651	3748	5326	16459	Collisions only: Forth & Tay WFs
2065	1026	2553	3650	5188	16479	Collisions only: Forth & Tay WFs
2066	975	2462	3550	5089	16491	Collisions only: Forth & Tay WFs
2067	934	2379	3440	4972	16496	Collisions only: Forth & Tay WFs
2068	876	2299	3342	4863	16536	Collisions only: Forth & Tay WFs
2069	829	2224	3264	4758	16564	Collisions only: Forth & Tay WFs
2070	791	2140	3180	4647	16572	Collisions only: Forth & Tay WFs
year	Q5	Q33	Q50	Q66	Q95	scen
2018	13333	15648	16526	17382	20185	Collisions only: Forth & Tay WFs + UK North Sea
2019	12540	15003	15958	16915	20087	Collisions only: Forth & Tay WFs + UK North Sea
2020	11777	14351	15399	16425	19899	Collisions only: Forth & Tay WFs + UK North Sea
2021	11075	13734	14829	15932	19707	Collisions only: Forth & Tay WFs + UK North Sea
2022	10428	13152	14281	15449	19489	Collisions only: Forth & Tay WFs + UK North Sea
2023	9820	12600	13779	14992	19300	Collisions only: Forth & Tay WFs + UK North Sea
2024	9302	12079	13296	14566	19131	Collisions only: Forth & Tay WFs + UK North Sea

2025	8745	11568	12825	14121	18943	Collisions only: Forth & Tay WFs + UK North Sea
2026	8256	11092	12369	13706	18709	Collisions only: Forth & Tay WFs + UK North Sea
2027	7761	10633	11928	13303	18522	Collisions only: Forth & Tay WFs + UK North Sea
2028	7341	10208	11518	12910	18331	Collisions only: Forth & Tay WFs + UK North Sea
2029	6943	9796	11116	12533	18194	Collisions only: Forth & Tay WFs + UK North Sea
2030	6548	9411	10738	12189	18013	Collisions only: Forth & Tay WFs + UK North Sea
2031	6202	9019	10374	11841	17873	Collisions only: Forth & Tay WFs + UK North Sea
2032	5857	8671	10031	11510	17761	Collisions only: Forth & Tay WFs + UK North Sea
2033	5555	8317	9684	11169	17585	Collisions only: Forth & Tay WFs + UK North Sea
2034	5241	7976	9336	10870	17460	Collisions only: Forth & Tay WFs + UK North Sea
2035	4977	7680	9016	10575	17281	Collisions only: Forth & Tay WFs + UK North Sea
2036	4690	7388	8734	10267	17243	Collisions only: Forth & Tay WFs + UK North Sea
2037	4443	7092	8434	9999	17133	Collisions only: Forth & Tay WFs + UK North Sea
2038	4198	6814	8182	9732	17013	Collisions only: Forth & Tay WFs + UK North Sea
2039	3985	6550	7901	9465	16950	Collisions only: Forth & Tay WFs + UK North Sea
2040	3764	6303	7660	9226	16813	Collisions only: Forth & Tay WFs + UK North Sea
2041	3566	6065	7403	8972	16677	Collisions only: Forth & Tay WFs + UK North Sea
2042	3380	5825	7166	8735	16651	Collisions only: Forth & Tay WFs + UK North Sea
2043	3208	5595	6934	8514	16735	Collisions only: Forth & Tay WFs + UK North Sea
2044	3043	5389	6715	8278	16502	Collisions only: Forth & Tay WFs + UK North Sea
2045	2879	5187	6486	8063	16371	Collisions only: Forth & Tay WFs + UK North Sea
2046	2718	4976	6304	7860	16436	Collisions only: Forth & Tay WFs + UK North Sea
2047	2586	4795	6095	7667	16294	Collisions only: Forth & Tay WFs + UK North Sea
2048	2440	4617	5897	7474	16267	Collisions only: Forth & Tay WFs + UK North Sea
2049	2318	4438	5710	7276	16222	Collisions only: Forth & Tay WFs + UK North Sea
2050	2201	4268	5531	7103	16191	Collisions only: Forth & Tay WFs + UK North Sea
2051	2074	4109	5355	6951	16147	Collisions only: Forth & Tay WFs + UK North Sea
2052	1970	3966	5184	6775	16091	Collisions only: Forth & Tay WFs + UK North Sea
2053	1863	3815	5027	6609	16140	Collisions only: Forth & Tay WFs + UK North Sea
2054	1761	3677	4878	6457	16059	Collisions only: Forth & Tay WFs + UK North Sea
2055	1682	3537	4736	6325	15988	Collisions only: Forth & Tay WFs + UK North Sea
2056	1583	3423	4591	6172	15887	Collisions only: Forth & Tay WFs + UK North Sea
2057	1505	3297	4453	6004	15976	Collisions only: Forth & Tay WFs + UK North Sea
2058	1428	3167	4314	5868	15935	Collisions only: Forth & Tay WFs + UK North Sea
2059	1351	3050	4202	5748	15899	Collisions only: Forth & Tay WFs + UK North Sea
2060	1288	2942	4070	5617	15904	Collisions only: Forth & Tay WFs + UK North Sea
2061	1220	2840	3958	5469	15811	Collisions only: Forth & Tay WFs + UK North Sea
2062	1156	2732	3845	5337	15726	Collisions only: Forth & Tay WFs + UK North Sea
2063	1103	2639	3726	5225	15807	Collisions only: Forth & Tay WFs + UK North Sea
2064	1046	2550	3614	5118	15851	Collisions only: Forth & Tay WFs + UK North Sea
2065	990	2448	3512	4983	15871	Collisions only: Forth & Tay WFs + UK North Sea
2066	936	2356	3405	4868	15911	Collisions only: Forth & Tay WFs + UK North Sea
2067	886	2277	3316	4776	16021	Collisions only: Forth & Tay WFs + UK North Sea
2068	835	2201	3220	4667	15889	Collisions only: Forth & Tay WFs + UK North Sea
2069	792	2119	3121	4568	16071	Collisions only: Forth & Tay WFs + UK North Sea
2070	750	2045	3043	4451	15967	Collisions only: Forth & Tay WFs + UK North Sea

year	Q5	Q33	Q50	Q66	Q95	scen
2018	13339	15649	16523	17383	20188	Collisions & Displacement: Development-alone
2019	12556	15007	15962	16917	20087	Collisions & Displacement: Development-alone
2020	11823	14396	15456	16484	19943	Collisions & Displacement: Development-alone
2021	11166	13827	14933	16029	19828	Collisions & Displacement: Development-alone
2022	10540	13277	14429	15591	19648	Collisions & Displacement: Development-alone
2023	9948	12751	13954	15178	19543	Collisions & Displacement: Development-alone
2024	9469	12264	13498	14777	19440	Collisions & Displacement: Development-alone
2025	8927	11793	13055	14366	19316	Collisions & Displacement: Development-alone
2026	8453	11337	12619	13997	19109	Collisions & Displacement: Development-alone
2027	7974	10896	12223	13630	18968	Collisions & Displacement: Development-alone
2028	7559	10482	11846	13271	18798	Collisions & Displacement: Development-alone
2029	7151	10089	11472	12936	18739	Collisions & Displacement: Development-alone
2030	6794	9727	11112	12587	18607	Collisions & Displacement: Development-alone
2031	6455	9366	10766	12275	18528	Collisions & Displacement: Development-alone
2032	6114	9017	10425	11970	18428	Collisions & Displacement: Development-alone
2033	5813	8676	10105	11669	18311	Collisions & Displacement: Development-alone
2034	5490	8346	9779	11373	18168	Collisions & Displacement: Development-alone
2035	5224	8049	9472	11086	18135	Collisions & Displacement: Development-alone
2036	4932	7764	9196	10792	18128	Collisions & Displacement: Development-alone
2037	4682	7481	8925	10546	17986	Collisions & Displacement: Development-alone
2038	4443	7208	8658	10286	17977	Collisions & Displacement: Development-alone
2039	4233	6942	8385	10034	17970	Collisions & Displacement: Development-alone
2040	4005	6707	8152	9818	17898	Collisions & Displacement: Development-alone
2041	3809	6470	7897	9573	17810	Collisions & Displacement: Development-alone
2042	3621	6236	7672	9357	17879	Collisions & Displacement: Development-alone
2043	3441	6005	7447	9163	17899	Collisions & Displacement: Development-alone
2044	3270	5798	7242	8934	17699	Collisions & Displacement: Development-alone
2045	3112	5602	7010	8728	17666	Collisions & Displacement: Development-alone
2046	2956	5382	6834	8533	17707	Collisions & Displacement: Development-alone
2047	2809	5208	6635	8349	17611	Collisions & Displacement: Development-alone
2048	2664	5017	6438	8159	17673	Collisions & Displacement: Development-alone
2049	2534	4856	6245	7963	17667	Collisions & Displacement: Development-alone
2050	2417	4691	6078	7802	17681	Collisions & Displacement: Development-alone
2051	2289	4529	5919	7646	17712	Collisions & Displacement: Development-alone
2052	2174	4376	5724	7485	17655	Collisions & Displacement: Development-alone
2053	2068	4227	5576	7316	17838	Collisions & Displacement: Development-alone
2054	1966	4096	5421	7162	17862	Collisions & Displacement: Development-alone
2055	1873	3944	5286	7041	17720	Collisions & Displacement: Development-alone
2056	1776	3811	5139	6886	17759	Collisions & Displacement: Development-alone
2057	1689	3698	4994	6720	17821	Collisions & Displacement: Development-alone
2058	1608	3572	4868	6596	17882	Collisions & Displacement: Development-alone
2059	1530	3445	4735	6476	17885	Collisions & Displacement: Development-alone
2060	1458	3328	4602	6345	17774	Collisions & Displacement: Development-alone
2061	1389	3221	4485	6199	17798	Collisions & Displacement: Development-alone
2062	1326	3112	4374	6071	17801	Collisions & Displacement: Development-alone

2063	1256	3008	4247	5955	17906	Collisions & Displacement: Development-alone
2064	1195	2911	4142	5855	18084	Collisions & Displacement: Development-alone
2065	1144	2812	4036	5713	18157	Collisions & Displacement: Development-alone
2066	1086	2722	3928	5607	18212	Collisions & Displacement: Development-alone
2067	1033	2647	3832	5516	18217	Collisions & Displacement: Development-alone
2068	976	2559	3732	5393	18378	Collisions & Displacement: Development-alone
2069	932	2475	3642	5294	18456	Collisions & Displacement: Development-alone
2070	888	2392	3553	5198	18380	Collisions & Displacement: Development-alone
year	Q5	Q33	Q50	Q66	Q95	scen
2018	13331	15642	16525	17381	20185	Collisions & Displacement: Forth & Tay WFs
2019	12542	15005	15966	16923	20075	Collisions & Displacement: Forth & Tay WFs
2020	11769	14352	15396	16413	19877	Collisions & Displacement: Forth & Tay WFs
2021	11084	13734	14834	15919	19657	Collisions & Displacement: Forth & Tay WFs
2022	10437	13152	14290	15459	19468	Collisions & Displacement: Forth & Tay WFs
2023	9839	12603	13777	14995	19306	Collisions & Displacement: Forth & Tay WFs
2024	9296	12083	13294	14567	19149	Collisions & Displacement: Forth & Tay WFs
2025	8752	11568	12826	14142	18968	Collisions & Displacement: Forth & Tay WFs
2026	8265	11102	12368	13720	18740	Collisions & Displacement: Forth & Tay WFs
2027	7790	10645	11923	13310	18518	Collisions & Displacement: Forth & Tay WFs
2028	7345	10215	11528	12926	18357	Collisions & Displacement: Forth & Tay WFs
2029	6949	9814	11129	12572	18225	Collisions & Displacement: Forth & Tay WFs
2030	6577	9422	10752	12194	18044	Collisions & Displacement: Forth & Tay WFs
2031	6232	9036	10394	11854	17878	Collisions & Displacement: Forth & Tay WFs
2032	5892	8696	10029	11532	17756	Collisions & Displacement: Forth & Tay WFs
2033	5570	8329	9681	11197	17551	Collisions & Displacement: Forth & Tay WFs
2034	5264	7999	9355	10875	17469	Collisions & Displacement: Forth & Tay WFs
2035	4993	7693	9033	10591	17299	Collisions & Displacement: Forth & Tay WFs
2036	4695	7384	8755	10293	17219	Collisions & Displacement: Forth & Tay WFs
2037	4436	7104	8454	10022	17096	Collisions & Displacement: Forth & Tay WFs
2038	4197	6836	8170	9746	16983	Collisions & Displacement: Forth & Tay WFs
2039	3974	6572	7912	9486	16975	Collisions & Displacement: Forth & Tay WFs
2040	3769	6309	7670	9255	16831	Collisions & Displacement: Forth & Tay WFs
2041	3562	6074	7416	8986	16678	Collisions & Displacement: Forth & Tay WFs
2042	3376	5831	7177	8752	16665	Collisions & Displacement: Forth & Tay WFs
2043	3196	5605	6949	8539	16671	Collisions & Displacement: Forth & Tay WFs
2044	3043	5390	6716	8312	16446	Collisions & Displacement: Forth & Tay WFs
2045	2879	5189	6504	8087	16313	Collisions & Displacement: Forth & Tay WFs
2046	2726	4967	6314	7874	16375	Collisions & Displacement: Forth & Tay WFs
2047	2585	4803	6113	7702	16264	Collisions & Displacement: Forth & Tay WFs
2048	2441	4616	5914	7475	16236	Collisions & Displacement: Forth & Tay WFs
2049	2312	4446	5728	7291	16153	Collisions & Displacement: Forth & Tay WFs
2050	2199	4276	5539	7115	16232	Collisions & Displacement: Forth & Tay WFs
2051	2069	4130	5361	6950	16114	Collisions & Displacement: Forth & Tay WFs
2052	1964	3987	5196	6786	16116	Collisions & Displacement: Forth & Tay WFs
2053	1863	3827	5032	6622	16152	Collisions & Displacement: Forth & Tay WFs
2054	1768	3686	4884	6463	16100	Collisions & Displacement: Forth & Tay WFs

2055	1676	3558	4748	6325	16050	Collisions & Displacement: Forth & Tay WFs
2056	1590	3417	4610	6181	15923	Collisions & Displacement: Forth & Tay WFs
2057	1511	3303	4474	6021	15882	Collisions & Displacement: Forth & Tay WFs
2058	1431	3184	4338	5857	15931	Collisions & Displacement: Forth & Tay WFs
2059	1352	3061	4208	5734	15928	Collisions & Displacement: Forth & Tay WFs
2060	1286	2960	4084	5608	15855	Collisions & Displacement: Forth & Tay WFs
2061	1224	2845	3962	5460	15708	Collisions & Displacement: Forth & Tay WFs
2062	1156	2739	3846	5344	15639	Collisions & Displacement: Forth & Tay WFs
2063	1100	2643	3735	5221	15729	Collisions & Displacement: Forth & Tay WFs
2064	1045	2552	3624	5103	15840	Collisions & Displacement: Forth & Tay WFs
2065	992	2457	3518	4982	15769	Collisions & Displacement: Forth & Tay WFs
2066	940	2365	3419	4875	15810	Collisions & Displacement: Forth & Tay WFs
2067	892	2283	3325	4778	15816	Collisions & Displacement: Forth & Tay WFs
2068	839	2201	3225	4670	15838	Collisions & Displacement: Forth & Tay WFs
2069	793	2128	3138	4561	15787	Collisions & Displacement: Forth & Tay WFs
2070	757	2049	3040	4449	15772	Collisions & Displacement: Forth & Tay WFs
year	Q5	Q33	Q50	Q66	Q95	scen
2018	13341	15642	16527	17379	20180	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2019	12550	14994	15958	16915	20078	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2020	11766	14340	15369	16410	19872	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2021	11079	13722	14799	15891	19631	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2022	10414	13100	14250	15405	19428	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2023	9805	12551	13733	14942	19232	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2024	9269	12026	13239	14502	19065	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2025	8715	11501	12753	14057	18888	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2026	8227	11037	12298	13619	18623	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2027	7733	10578	11851	13220	18374	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2028	7288	10140	11429	12821	18174	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2029	6891	9724	11024	12444	18053	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2030	6501	9321	10643	12086	17871	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2031	6154	8949	10283	11740	17689	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2032	5811	8586	9914	11390	17536	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2033	5483	8221	9550	11055	17334	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2034	5167	7889	9228	10743	17190	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2035	4896	7581	8909	10441	17081	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2036	4631	7277	8621	10131	16998	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2037	4352	6988	8326	9853	16785	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2038	4116	6716	8048	9565	16729	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2039	3903	6439	7771	9296	16649	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2040	3690	6182	7518	9058	16501	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2041	3496	5946	7277	8799	16327	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2042	3308	5717	7031	8569	16316	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2043	3126	5477	6794	8335	16358	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2044	2968	5271	6572	8110	16086	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2045	2802	5066	6346	7892	16005	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2046	2648	4860	6155	7680	16035	Collisions & Displacement: Forth & Tay WFs + UK North Sea

2047	2504	4686	5954	7503	15844	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2048	2368	4506	5744	7297	15861	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2049	2247	4324	5574	7105	15765	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2050	2129	4150	5392	6921	15711	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2051	2011	3996	5220	6747	15707	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2052	1909	3848	5049	6588	15682	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2053	1806	3706	4878	6405	15649	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2054	1713	3569	4736	6259	15654	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2055	1626	3431	4598	6122	15492	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2056	1532	3306	4454	5965	15475	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2057	1451	3178	4312	5816	15420	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2058	1373	3064	4170	5670	15436	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2059	1304	2953	4061	5537	15325	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2060	1233	2842	3937	5406	15359	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2061	1173	2728	3820	5263	15218	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2062	1110	2634	3695	5149	15053	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2063	1055	2540	3587	5024	15182	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2064	997	2445	3471	4919	15270	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2065	947	2350	3373	4777	15186	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2066	902	2264	3276	4673	15194	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2067	852	2185	3176	4568	15196	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2068	801	2109	3079	4471	15262	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2069	758	2038	2990	4358	15200	Collisions & Displacement: Forth & Tay WFs + UK North Sea
2070	716	1961	2913	4259	15146	Collisions & Displacement: Forth & Tay WFs + UK North Sea

GUILLEMOTS – FORTH ISLANDS SPA

Projections placed in the following order of scenarios:

- **Baseline**
- **Development-alone**
- **Forth & Tay WFs**

	year	Q5	Q33	Q50	Q66	Q95	site	ptype
1	2018	20594	22523	23082	23638	25050	Forth Islands	Baseline
2	2019	20330	22531	23326	23958	25720	Forth Islands	Baseline
3	2020	19949	22770	23622	24367	26447	Forth Islands	Baseline
4	2021	20013	22941	23866	24731	27208	Forth Islands	Baseline
5	2022	19965	23165	24245	25171	27846	Forth Islands	Baseline
6	2023	19950	23503	24566	25563	28492	Forth Islands	Baseline
7	2024	20140	23506	24803	25905	29199	Forth Islands	Baseline
8	2025	20189	23756	25082	26322	29937	Forth Islands	Baseline
9	2026	20172	23929	25359	26707	30673	Forth Islands	Baseline
10	2027	20325	24200	25654	27109	31325	Forth Islands	Baseline
11	2028	20157	24465	25908	27438	31998	Forth Islands	Baseline
12	2029	20163	24658	26236	27787	32716	Forth Islands	Baseline
13	2030	20249	24860	26618	28171	33366	Forth Islands	Baseline
14	2031	20316	25132	26936	28545	34159	Forth Islands	Baseline
15	2032	20416	25404	27236	29023	34911	Forth Islands	Baseline
16	2033	20448	25664	27579	29480	35432	Forth Islands	Baseline
17	2034	20486	25822	27984	29979	36520	Forth Islands	Baseline
18	2035	20646	26131	28254	30424	37254	Forth Islands	Baseline
19	2036	20857	26290	28656	30845	38215	Forth Islands	Baseline
20	2037	20683	26562	28948	31316	39128	Forth Islands	Baseline
21	2038	20831	26844	29343	31820	40301	Forth Islands	Baseline
22	2039	20970	27038	29617	32375	40820	Forth Islands	Baseline
23	2040	20973	27259	29991	32808	41636	Forth Islands	Baseline
24	2041	21263	27547	30278	33228	42620	Forth Islands	Baseline
25	2042	21190	27798	30678	33602	43538	Forth Islands	Baseline
26	2043	21252	28269	31064	34083	44450	Forth Islands	Baseline
27	2044	21082	28484	31528	34747	45411	Forth Islands	Baseline
28	2045	21032	28759	31883	35246	46523	Forth Islands	Baseline
29	2046	21248	29137	32354	35796	47786	Forth Islands	Baseline
30	2047	21433	29541	32658	36366	48996	Forth Islands	Baseline
31	2048	21607	29676	33248	37010	49978	Forth Islands	Baseline
32	2049	21539	30077	33578	37393	51290	Forth Islands	Baseline
33	2050	21538	30413	34078	37997	52282	Forth Islands	Baseline
34	2051	21824	30637	34579	38576	52897	Forth Islands	Baseline
35	2052	21727	30758	34875	39065	54137	Forth Islands	Baseline
36	2053	21846	31100	35180	39603	55410	Forth Islands	Baseline

37	2054	21847	31527	35854	40192	56784	Forth Islands	Baseline
38	2055	21954	31862	36207	40954	58333	Forth Islands	Baseline
39	2056	21958	32136	36665	41664	59498	Forth Islands	Baseline
40	2057	22022	32372	36954	41985	60689	Forth Islands	Baseline
41	2058	22100	32797	37489	42762	61463	Forth Islands	Baseline
42	2059	22140	32862	37873	43340	63007	Forth Islands	Baseline
43	2060	22230	33243	38387	44013	65080	Forth Islands	Baseline
44	2061	22094	33424	38770	44465	65773	Forth Islands	Baseline
45	2062	22300	33808	39432	44782	67301	Forth Islands	Baseline
46	2063	22364	34149	39778	45792	69085	Forth Islands	Baseline
47	2064	22486	34534	40202	46481	70605	Forth Islands	Baseline
48	2065	22350	34738	40620	46922	72890	Forth Islands	Baseline
49	2066	22475	35293	41138	47884	74250	Forth Islands	Baseline
50	2067	22559	35696	41573	48628	76152	Forth Islands	Baseline
51	2068	22637	35926	42223	49255	77610	Forth Islands	Baseline
52	2069	22615	36387	42718	49647	79576	Forth Islands	Baseline
53	2070	22659	36916	43102	50474	81227	Forth Islands Forth Islands	Baseline
	year	Q5	Q33	Q50	Q66	Q95		ptype
1	2018	20596	22505	23088	23610	25019	Forth Islands	Displacement only: Development-alone
2	2019	20301	22562	23336	23983	25689	Forth Islands	Displacement only: Development-alone
3	2020	19977	22759	23597	24380	26384	Forth Islands	Displacement only: Development-alone
4	2021	20033	22942	23896	24727	27125	Forth Islands	Displacement only: Development-alone
5	2022	19950	23153	24232	25115	27764	Forth Islands	Displacement only: Development-alone
6	2023	19973	23448	24558	25535	28458	Forth Islands	Displacement only: Development-alone
7	2024	20146	23462	24813	25858	29072	Forth Islands	Displacement only: Development-alone
8	2025	20110	23687	25070	26323	29806	Forth Islands	Displacement only: Development-alone
9	2026	20179	23865	25334	26602	30624	Forth Islands	Displacement only: Development-alone
10	2027	20309	24160	25610	27021	31293	Forth Islands	Displacement only: Development-alone
11	2028	20092	24340	25880	27402	31940	Forth Islands	Displacement only: Development-alone
12	2029	20125	24515	26178	27718	32694	Forth Islands	Displacement only: Development-alone
13	2030	20294	24720	26524	28086	33278	Forth Islands	Displacement only: Development-alone
14	2031	20283	24917	26870	28437	34060	Forth Islands	Displacement only: Development-alone
15	2032	20399	25243	27140	28917	34690	Forth Islands	Displacement only: Development-alone
16	2033	20346	25457	27444	29310	35324	Forth Islands	Displacement only: Development-alone
17	2034	20387	25641	27864	29849	36423	Forth Islands	Displacement only: Development-alone
18	2035	20493	25928	28150	30232	37190	Forth Islands	Displacement only: Development-alone
19	2036	20641	26094	28472	30677	38113	Forth Islands	Displacement only: Development-alone
20	2037	20505	26351	28775	31093	39166	Forth Islands	Displacement only: Development-alone
21	2038	20603	26638	29200	31591	39900	Forth Islands	Displacement only: Development-alone
22	2039	20765	26833	29484	32129	40669	Forth Islands	Displacement only: Development-alone
23	2040	20800	27072	29784	32546	41679	Forth Islands	Displacement only: Development-alone
24	2041	20988	27358	30175	33084	42510	Forth Islands	Displacement only: Development-alone
25	2042	21024	27738	30471	33444	43162	Forth Islands	Displacement only: Development-alone
26	2043	21148	27999	30782	33892	44188	Forth Islands	Displacement only: Development-alone
27	2044	20964	28330	31274	34516	45352	Forth Islands	Displacement only: Development-alone
28	2045	20918	28635	31662	34909	46326	Forth Islands	Displacement only: Development-alone

29	2046	20956	28938	32174	35542	47196	Forth Islands
30	2047	21189	29310	32440	35924	48745	Forth Islands
31	2048	21304	29425	32964	36687	49315	Forth Islands
32	2049	21053	29813	33476	37125	50870	Forth Islands
33	2050	21210	30152	33817	37710	51813	Forth Islands
34	2051	21348	30440	34170	38252	52198	Forth Islands
35	2052	21253	30644	34542	38688	53306	Forth Islands
36	2053	21500	30944	34822	39372	54707	Forth Islands
37	2054	21675	31297	35350	39961	55827	Forth Islands
38	2055	21637	31567	35836	40610	57388	Forth Islands
39	2056	21621	31896	36176	41164	58403	Forth Islands
40	2057	21588	32165	36561	41580	60006	Forth Islands
41	2058	21742	32486	37076	42241	61037	Forth Islands
42	2059	21742	32656	37526	42811	62629	Forth Islands
43	2060	21811	32949	38072	43482	64447	Forth Islands
44	2061	21793	32998	38356	43986	65721	Forth Islands
45	2062	21983	33508	38854	44339	66835	Forth Islands
46	2063	21925	33718	39244	45024	68493	Forth Islands
47	2064	22129	34043	39809	45860	70096	Forth Islands
48	2065	21920	34335	40130	46558	71904	Forth Islands
49	2066	22126	34820	40660	47445	72903	Forth Islands
50	2067	22331	35190	41180	47875	74764	Forth Islands
51	2068	22145	35518	41730	48523	76575	Forth Islands
52	2069	22145	35828	42140	48928	77645	Forth Islands
53	2070	22330	36294	42396	49743	79400	Forth Islands
year	Q5	Q33	Q50	Q66	Q95	ptype	
1	2018	20609	22517	23078	23632	25022	Forth Islands
2	2019	20290	22546	23298	23976	25675	Forth Islands
3	2020	20029	22748	23568	24343	26401	Forth Islands
4	2021	19997	22846	23844	24712	27073	Forth Islands
5	2022	19895	23054	24146	25060	27746	Forth Islands
6	2023	19876	23344	24488	25472	28367	Forth Islands
7	2024	19978	23369	24591	25743	28952	Forth Islands
8	2025	20035	23618	24904	26088	29679	Forth Islands
9	2026	20056	23726	25122	26441	30432	Forth Islands
10	2027	20149	23929	25398	26831	31086	Forth Islands
11	2028	19860	24116	25640	27133	31629	Forth Islands
12	2029	19918	24252	25900	27464	32330	Forth Islands
13	2030	20054	24500	26225	27757	32925	Forth Islands
14	2031	20064	24741	26526	28150	33626	Forth Islands
15	2032	20056	24967	26770	28509	34377	Forth Islands
16	2033	20094	25134	27092	28949	34938	Forth Islands
17	2034	19994	25308	27500	29398	35686	Forth Islands
18	2035	20281	25575	27706	29814	36640	Forth Islands
19	2036	20304	25748	27998	30236	37405	Forth Islands
20	2037	20252	25939	28290	30642	38365	Forth Islands

21	2038	20108	26167	28608	31041	39367	Forth Islands	Displacement only: Forth & Tay WFs
22	2039	20282	26404	28903	31550	39678	Forth Islands	Displacement only: Forth & Tay WFs
23	2040	20477	26584	29180	31984	40746	Forth Islands	Displacement only: Forth & Tay WFs
24	2041	20561	26805	29512	32369	41519	Forth Islands	Displacement only: Forth & Tay WFs
25	2042	20427	27076	29824	32817	42361	Forth Islands	Displacement only: Forth & Tay WFs
26	2043	20483	27418	30103	33075	43393	Forth Islands	Displacement only: Forth & Tay WFs
27	2044	20471	27678	30585	33714	44098	Forth Islands	Displacement only: Forth & Tay WFs
28	2045	20372	27796	30880	34036	44998	Forth Islands	Displacement only: Forth & Tay WFs
29	2046	20368	28234	31352	34560	46239	Forth Islands	Displacement only: Forth & Tay WFs
30	2047	20590	28434	31630	35202	47182	Forth Islands	Displacement only: Forth & Tay WFs
31	2048	20744	28575	32142	35699	48310	Forth Islands	Displacement only: Forth & Tay WFs
32	2049	20536	28982	32436	36090	49302	Forth Islands	Displacement only: Forth & Tay WFs
33	2050	20533	29198	32830	36513	49909	Forth Islands	Displacement only: Forth & Tay WFs
34	2051	20712	29413	33156	36975	50694	Forth Islands	Displacement only: Forth & Tay WFs
35	2052	20531	29525	33553	37440	51311	Forth Islands	Displacement only: Forth & Tay WFs
36	2053	20718	29839	33672	38035	52661	Forth Islands	Displacement only: Forth & Tay WFs
37	2054	20767	30149	34298	38549	53580	Forth Islands	Displacement only: Forth & Tay WFs
38	2055	20613	30489	34686	39068	55246	Forth Islands	Displacement only: Forth & Tay WFs
39	2056	20746	30732	35046	39623	56275	Forth Islands	Displacement only: Forth & Tay WFs
40	2057	20882	31002	35306	39977	57657	Forth Islands	Displacement only: Forth & Tay WFs
41	2058	20953	31093	35768	40707	58687	Forth Islands	Displacement only: Forth & Tay WFs
42	2059	20898	31391	36083	41120	59872	Forth Islands	Displacement only: Forth & Tay WFs
43	2060	20939	31583	36619	41741	61436	Forth Islands	Displacement only: Forth & Tay WFs
44	2061	20954	31652	36831	42102	62539	Forth Islands	Displacement only: Forth & Tay WFs
45	2062	21116	32045	37296	42630	63265	Forth Islands	Displacement only: Forth & Tay WFs
46	2063	21069	32213	37639	43275	64819	Forth Islands	Displacement only: Forth & Tay WFs
47	2064	21015	32606	38178	43849	66718	Forth Islands	Displacement only: Forth & Tay WFs
48	2065	20804	32918	38389	44412	68822	Forth Islands	Displacement only: Forth & Tay WFs
49	2066	21057	33320	38946	45123	69612	Forth Islands	Displacement only: Forth & Tay WFs
50	2067	20970	33563	39272	45712	70938	Forth Islands	Displacement only: Forth & Tay WFs
51	2068	21150	33906	39592	46350	72828	Forth Islands	Displacement only: Forth & Tay WFs
52	2069	21148	34240	39993	46549	74100	Forth Islands	Displacement only: Forth & Tay WFs
53	2070	21120	34579	40403	47215	75226	Forth Islands	Displacement only: Forth & Tay WFs

GUILLEMOTS – ST ABBS HEAD TO FAST CASTLE SPA– Version A: St Abbs Head NNR sub-site only

Projections placed in the following order of scenarios:

- Baseline
- Development-alone
- Forth & Tay WFs

	year	Q5	Q33	Q50	Q66	Q95	site	ptype
1	2018	26427	29203	30074	30957	33558	St Abbs Head to Fast Castle	Baseline
2	2019	26454	29634	30700	31701	34796	St Abbs Head to Fast Castle	Baseline
3	2020	26261	30024	31207	32317	35864	St Abbs Head to Fast Castle	Baseline
4	2021	26449	30285	31656	32907	36970	St Abbs Head to Fast Castle	Baseline
5	2022	26474	30637	32126	33435	37851	St Abbs Head to Fast Castle	Baseline
6	2023	26612	30947	32466	34076	38958	St Abbs Head to Fast Castle	Baseline
7	2024	26614	31461	33087	34630	40173	St Abbs Head to Fast Castle	Baseline
8	2025	26682	31816	33636	35302	41156	St Abbs Head to Fast Castle	Baseline
9	2026	26881	32146	34298	36009	42342	St Abbs Head to Fast Castle	Baseline
10	2027	27180	32543	34749	36773	43390	St Abbs Head to Fast Castle	Baseline
11	2028	27029	32922	35236	37430	44571	St Abbs Head to Fast Castle	Baseline
12	2029	27264	33440	35731	38125	45746	St Abbs Head to Fast Castle	Baseline
13	2030	27296	33823	36282	38821	47142	St Abbs Head to Fast Castle	Baseline
14	2031	27431	34175	36932	39563	48737	St Abbs Head to Fast Castle	Baseline
15	2032	27407	34530	37390	40158	49987	St Abbs Head to Fast Castle	Baseline
16	2033	27705	35058	37986	41018	51425	St Abbs Head to Fast Castle	Baseline
17	2034	27680	35396	38555	41855	52681	St Abbs Head to Fast Castle	Baseline
18	2035	27816	35865	39170	42613	53895	St Abbs Head to Fast Castle	Baseline
19	2036	28032	36381	39699	43413	55313	St Abbs Head to Fast Castle	Baseline
20	2037	28312	36906	40330	43975	56931	St Abbs Head to Fast Castle	Baseline
21	2038	28370	37249	41011	44876	58433	St Abbs Head to Fast Castle	Baseline
22	2039	28575	37835	41714	45644	59913	St Abbs Head to Fast Castle	Baseline
23	2040	28778	38287	42446	46517	61239	St Abbs Head to Fast Castle	Baseline
24	2041	28735	38587	43006	47278	63407	St Abbs Head to Fast Castle	Baseline
25	2042	29172	39291	43605	48003	65123	St Abbs Head to Fast Castle	Baseline
26	2043	29314	39743	44388	48864	66932	St Abbs Head to Fast Castle	Baseline
27	2044	29360	40124	44964	49682	68896	St Abbs Head to Fast Castle	Baseline
28	2045	29538	40784	45693	50800	70152	St Abbs Head to Fast Castle	Baseline
29	2046	29727	41300	46291	51781	72378	St Abbs Head to Fast Castle	Baseline
30	2047	30100	41734	47124	52550	74454	St Abbs Head to Fast Castle	Baseline
31	2048	30378	41973	47843	53435	76294	St Abbs Head to Fast Castle	Baseline
32	2049	30309	42498	48484	54285	78471	St Abbs Head to Fast Castle	Baseline
33	2050	30569	42936	49098	55233	80869	St Abbs Head to Fast Castle	Baseline
34	2051	30582	43619	49963	56253	83144	St Abbs Head to Fast Castle	Baseline
35	2052	30784	44247	50800	57274	84975	St Abbs Head to Fast Castle	Baseline
36	2053	30830	44733	51666	58387	86848	St Abbs Head to Fast Castle	Baseline

37	2054	31004	45311	52404	59394	90073	St Abbs Head to Fast Castle	Baseline
38	2055	31073	46022	53336	60891	91591	St Abbs Head to Fast Castle	Baseline
39	2056	31107	46581	54000	61936	94512	St Abbs Head to Fast Castle	Baseline
40	2057	31346	47145	54394	62657	96982	St Abbs Head to Fast Castle	Baseline
41	2058	31512	47790	55419	63732	100638	St Abbs Head to Fast Castle	Baseline
42	2059	31707	48371	56106	64872	103447	St Abbs Head to Fast Castle	Baseline
43	2060	31975	48955	57293	65958	105694	St Abbs Head to Fast Castle	Baseline
44	2061	32413	49581	58016	67586	108414	St Abbs Head to Fast Castle	Baseline
45	2062	32530	50366	58801	68632	110928	St Abbs Head to Fast Castle	Baseline
46	2063	32913	50885	59630	69740	113880	St Abbs Head to Fast Castle	Baseline
47	2064	32929	51775	60828	70857	117270	St Abbs Head to Fast Castle	Baseline
48	2065	33171	52491	61698	72120	119658	St Abbs Head to Fast Castle	Baseline
49	2066	33245	53211	62742	73641	123043	St Abbs Head to Fast Castle	Baseline
50	2067	33602	53788	63506	75090	125748	St Abbs Head to Fast Castle	Baseline
51	2068	33448	54279	64474	76365	130235	St Abbs Head to Fast Castle	Baseline
52	2069	33464	54864	65356	78145	134592	St Abbs Head to Fast Castle	Baseline
53	2070	33745	55739	66408	79809	137249	St Abbs Head to Fast Castle	Baseline
	year	Q5	Q33	Q50	Q66	Q95	St Abbs Head to Fast Castle	ptype
1	2018	26445	29186	30090	30984	33560	St Abbs Head to Fast Castle	Displacement alone
2	2019	26430	29618	30722	31717	34781	St Abbs Head to Fast Castle	Displacement alone
3	2020	26262	30034	31212	32280	35860	St Abbs Head to Fast Castle	Displacement alone
4	2021	26433	30302	31630	32922	36883	St Abbs Head to Fast Castle	Displacement alone
5	2022	26481	30618	32060	33404	37890	St Abbs Head to Fast Castle	Displacement alone
6	2023	26667	30938	32462	34027	39021	St Abbs Head to Fast Castle	Displacement alone
7	2024	26663	31430	33064	34609	40132	St Abbs Head to Fast Castle	Displacement alone
8	2025	26771	31844	33618	35283	41047	St Abbs Head to Fast Castle	Displacement alone
9	2026	26825	32169	34214	35995	42259	St Abbs Head to Fast Castle	Displacement alone
10	2027	27136	32499	34732	36691	43314	St Abbs Head to Fast Castle	Displacement alone
11	2028	26988	32926	35262	37422	44543	St Abbs Head to Fast Castle	Displacement alone
12	2029	27269	33445	35780	38087	45767	St Abbs Head to Fast Castle	Displacement alone
13	2030	27233	33747	36283	38888	46681	St Abbs Head to Fast Castle	Displacement alone
14	2031	27394	34165	36892	39582	48417	St Abbs Head to Fast Castle	Displacement alone
15	2032	27400	34392	37380	40125	49697	St Abbs Head to Fast Castle	Displacement alone
16	2033	27517	34995	37978	41028	51131	St Abbs Head to Fast Castle	Displacement alone
17	2034	27682	35372	38498	41793	52569	St Abbs Head to Fast Castle	Displacement alone
18	2035	27856	35767	39108	42539	53732	St Abbs Head to Fast Castle	Displacement alone
19	2036	27950	36229	39702	43197	55083	St Abbs Head to Fast Castle	Displacement alone
20	2037	28116	36786	40290	44183	56729	St Abbs Head to Fast Castle	Displacement alone
21	2038	28467	37262	40885	44800	58054	St Abbs Head to Fast Castle	Displacement alone
22	2039	28710	37694	41644	45691	59582	St Abbs Head to Fast Castle	Displacement alone
23	2040	28870	38033	42369	46416	61285	St Abbs Head to Fast Castle	Displacement alone
24	2041	28722	38391	42916	47089	62924	St Abbs Head to Fast Castle	Displacement alone
25	2042	28983	39086	43572	47877	64766	St Abbs Head to Fast Castle	Displacement alone

26	2043	29311	39664	44423	48725	66728	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
27	2044	29201	40152	44792	49478	68861	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
28	2045	29552	40731	45554	50553	70155	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
29	2046	29869	41316	46053	51506	72304	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
30	2047	30177	41697	46808	52513	73633	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
31	2048	30323	41958	47600	53424	75807	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
32	2049	30502	42337	48322	54239	77652	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
33	2050	30565	42951	48848	55031	80507	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
34	2051	30872	43384	49839	55969	82010	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
35	2052	30992	43963	50673	57087	84262	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
36	2053	31117	44653	51348	57994	85965	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
37	2054	30966	45065	52158	59059	88818	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
38	2055	31074	45866	53088	60317	91470	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
39	2056	31137	46370	53807	61676	93816	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
40	2057	31329	47033	54150	62563	96639	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
41	2058	31497	47615	55342	63453	99376	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
42	2059	31743	48231	55935	64397	102740	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
43	2060	32061	48725	56930	65595	104708	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
44	2061	32311	49303	57544	67253	106863	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
45	2062	32314	50122	58460	68463	110927	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
46	2063	32936	50786	59364	69596	112406	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
47	2064	32772	51474	60405	70694	115555	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
48	2065	33193	52065	61244	71917	119664	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
49	2066	33399	52697	62142	73156	121985	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
50	2067	33530	53470	63066	74531	125417	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
51	2068	33252	53781	64168	76083	129114	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
52	2069	33263	54564	65109	77816	132742	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
53	2070	33727	55334	65994	79281	136283	St Abbs Head to Fast Castle	Displacement alone	only:	Development-
	year	Q5	Q33	Q50	Q66	Q95	St Abbs Head to Fast Castle	ptype		
1	2018	26433	29194	30068	31000	33569	St Abbs Head to Fast Castle	Displacement only:	Forth & Tay WFs	
2	2019	26436	29617	30718	31707	34774	St Abbs Head to Fast Castle	Displacement only:	Forth & Tay WFs	
3	2020	26286	30012	31200	32291	35890	St Abbs Head to Fast Castle	Displacement only:	Forth & Tay WFs	
4	2021	26316	30262	31617	32850	36814	St Abbs Head to Fast Castle	Displacement only:	Forth & Tay WFs	
5	2022	26446	30543	32002	33420	37866	St Abbs Head to Fast Castle	Displacement only:	Forth & Tay WFs	
6	2023	26613	30920	32385	33994	38962	St Abbs Head to Fast Castle	Displacement only:	Forth & Tay WFs	
7	2024	26560	31404	32993	34538	40119	St Abbs Head to Fast Castle	Displacement only:	Forth & Tay WFs	
8	2025	26730	31714	33564	35207	41068	St Abbs Head to Fast Castle	Displacement only:	Forth & Tay WFs	
9	2026	26789	31983	34101	35994	42048	St Abbs Head to Fast Castle	Displacement only:	Forth & Tay WFs	
10	2027	27047	32449	34597	36626	43159	St Abbs Head to Fast Castle	Displacement only:	Forth & Tay WFs	
11	2028	26940	32753	35082	37237	44392	St Abbs Head to Fast Castle	Displacement only:	Forth & Tay WFs	
12	2029	27091	33263	35582	37958	45471	St Abbs Head to Fast Castle	Displacement only:	Forth & Tay WFs	
13	2030	26913	33591	36158	38627	46539	St Abbs Head to Fast Castle	Displacement only:	Forth & Tay WFs	

14	2031	27144	34046	36638	39355	48177	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
15	2032	27190	34180	37176	39916	49459	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
16	2033	27439	34679	37752	40673	51144	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
17	2034	27644	35122	38254	41471	52279	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
18	2035	27650	35496	38836	42279	53607	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
19	2036	27776	36002	39412	43031	55017	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
20	2037	28008	36464	40030	43769	56413	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
21	2038	28134	36975	40514	44396	57726	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
22	2039	28360	37282	41242	45162	59033	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
23	2040	28553	37777	41843	46058	60832	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
24	2041	28640	38137	42474	46494	62465	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
25	2042	28671	38727	43126	47371	64464	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
26	2043	28965	39160	43868	48250	65744	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
27	2044	28910	39581	44398	49031	67932	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
28	2045	29126	40179	44968	50137	69296	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
29	2046	29522	40696	45675	50955	71477	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
30	2047	29602	41032	46315	51825	73557	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
31	2048	29952	41374	47048	52534	75502	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
32	2049	30092	41908	47692	53552	77238	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
33	2050	30157	42334	48094	54322	80126	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
34	2051	30387	42781	48922	55288	81752	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
35	2052	30539	43349	49814	56310	83261	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
36	2053	30461	43870	50590	57275	85379	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
37	2054	30707	44346	51264	58317	87902	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
38	2055	30558	45052	52463	59565	90543	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
39	2056	31036	45593	52961	60654	92843	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
40	2057	31018	46242	53473	61565	95007	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
41	2058	31220	46810	54194	62590	98104	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
42	2059	31331	47384	54888	63474	101138	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
43	2060	31607	47954	55908	64387	102826	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
44	2061	31761	48565	56431	65860	105593	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
45	2062	32044	49177	57299	67013	108923	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
46	2063	32408	49961	58108	68238	111263	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
47	2064	32455	50479	59289	69550	115369	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
48	2065	32454	51052	59938	70448	117664	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
49	2066	32964	51720	60840	71751	120133	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
50	2067	32741	52472	61646	73234	123707	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
51	2068	32917	52615	63056	74349	126365	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
52	2069	32878	53306	63474	76180	131260	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
53	2070	32977	53988	64684	77333	133206	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs

GUILLEMOTS – ST ABBS HEAD TO FAST CASTLE SPA – Version B: total estimated count for whole SPA

Projections placed in the following order of scenarios:

- **Baseline**
- **Development-alone**
- **Forth & Tay WFs**

1	2018	28285	31248	32392	33332	36248	St Abbs Head to Fast Castle	Baseline
2	2019	28561	32215	33485	34631	38130	St Abbs Head to Fast Castle	Baseline
3	2020	29014	32962	34475	35749	39872	St Abbs Head to Fast Castle	Baseline
4	2021	29082	33458	35175	36652	41273	St Abbs Head to Fast Castle	Baseline
5	2022	29323	33988	35798	37589	42682	St Abbs Head to Fast Castle	Baseline
6	2023	29693	34658	36578	38451	44392	St Abbs Head to Fast Castle	Baseline
7	2024	29902	35539	37490	39566	46130	St Abbs Head to Fast Castle	Baseline
8	2025	30194	36161	38490	40756	47793	St Abbs Head to Fast Castle	Baseline
9	2026	30795	37045	39539	41914	49738	St Abbs Head to Fast Castle	Baseline
10	2027	31014	37795	40456	43164	52078	St Abbs Head to Fast Castle	Baseline
11	2028	31450	38641	41544	44415	54109	St Abbs Head to Fast Castle	Baseline
12	2029	31755	39568	42581	45721	56246	St Abbs Head to Fast Castle	Baseline
13	2030	32244	40358	43417	46882	59166	St Abbs Head to Fast Castle	Baseline
14	2031	32422	41237	44476	48163	60840	St Abbs Head to Fast Castle	Baseline
15	2032	32907	42102	45800	49521	63697	St Abbs Head to Fast Castle	Baseline
16	2033	33334	42962	47130	50911	66124	St Abbs Head to Fast Castle	Baseline
17	2034	33806	43834	48128	52313	68615	St Abbs Head to Fast Castle	Baseline
18	2035	34433	44693	49398	53907	71318	St Abbs Head to Fast Castle	Baseline
19	2036	34769	45573	50376	55414	74105	St Abbs Head to Fast Castle	Baseline
20	2037	35196	46443	51416	56807	77617	St Abbs Head to Fast Castle	Baseline
21	2038	35576	47255	52716	58449	80253	St Abbs Head to Fast Castle	Baseline
22	2039	35852	48372	53974	60051	83802	St Abbs Head to Fast Castle	Baseline
23	2040	36212	49351	55508	61684	87138	St Abbs Head to Fast Castle	Baseline
24	2041	36924	50455	57034	63537	90671	St Abbs Head to Fast Castle	Baseline
25	2042	37322	51600	58484	65336	93968	St Abbs Head to Fast Castle	Baseline
26	2043	37832	52528	59676	67420	97999	St Abbs Head to Fast Castle	Baseline
27	2044	38393	53743	61312	68539	102198	St Abbs Head to Fast Castle	Baseline
28	2045	38694	55047	62361	70604	106100	St Abbs Head to Fast Castle	Baseline
29	2046	39202	56245	63918	72905	110008	St Abbs Head to Fast Castle	Baseline
30	2047	39603	57093	65201	74594	115318	St Abbs Head to Fast Castle	Baseline
31	2048	40067	58401	67183	76829	119964	St Abbs Head to Fast Castle	Baseline
32	2049	41044	59672	68720	78464	125212	St Abbs Head to Fast Castle	Baseline
33	2050	41355	60482	70480	80633	129023	St Abbs Head to Fast Castle	Baseline
34	2051	41822	61941	72000	82813	134209	St Abbs Head to Fast Castle	Baseline
35	2052	42586	63403	73947	84906	139979	St Abbs Head to Fast Castle	Baseline
36	2053	42858	64567	75710	87565	146151	St Abbs Head to Fast Castle	Baseline
37	2054	43413	65736	77596	89421	151662	St Abbs Head to Fast Castle	Baseline

38	2055	43888	67101	79934	92702	159603	St Abbs Head to Fast Castle	Baseline
39	2056	44370	68650	81397	94608	166768	St Abbs Head to Fast Castle	Baseline
40	2057	45531	69932	83224	97265	171213	St Abbs Head to Fast Castle	Baseline
41	2058	45291	71625	85298	99969	176454	St Abbs Head to Fast Castle	Baseline
42	2059	46050	73067	87256	102835	185549	St Abbs Head to Fast Castle	Baseline
43	2060	46749	74282	89173	106032	194602	St Abbs Head to Fast Castle	Baseline
44	2061	47060	75974	91274	109460	201271	St Abbs Head to Fast Castle	Baseline
45	2062	48408	77287	93391	112327	210172	St Abbs Head to Fast Castle	Baseline
46	2063	49386	78955	95627	114532	218606	St Abbs Head to Fast Castle	Baseline
47	2064	49756	80365	98022	118414	226735	St Abbs Head to Fast Castle	Baseline
48	2065	50318	82332	100514	121786	237050	St Abbs Head to Fast Castle	Baseline
49	2066	51068	83896	102694	124880	245291	St Abbs Head to Fast Castle	Baseline
50	2067	51140	86028	105508	128423	254939	St Abbs Head to Fast Castle	Baseline
51	2068	52329	88132	107810	132539	262421	St Abbs Head to Fast Castle	Baseline
52	2069	52652	89509	111024	136350	272898	St Abbs Head to Fast Castle	Baseline
53	2070	53409	90736	113720	139871	288140	St Abbs Head to Fast Castle	Baseline
	year	Q5	Q33	Q50	Q66	Q95	St Abbs Head to Fast Castle	ptype
1	2018	28254	31255	32380	33354	36201	St Abbs Head to Fast Castle	Displacement only: Development-alone
2	2019	28533	32219	33461	34604	38075	St Abbs Head to Fast Castle	Displacement only: Development-alone
3	2020	29011	32966	34464	35698	39821	St Abbs Head to Fast Castle	Displacement only: Development-alone
4	2021	29152	33461	35124	36693	41234	St Abbs Head to Fast Castle	Displacement only: Development-alone
5	2022	29166	34015	35810	37556	42699	St Abbs Head to Fast Castle	Displacement only: Development-alone
6	2023	29730	34635	36567	38403	44306	St Abbs Head to Fast Castle	Displacement only: Development-alone
7	2024	29890	35432	37458	39574	45921	St Abbs Head to Fast Castle	Displacement only: Development-alone
8	2025	30224	36152	38393	40676	47833	St Abbs Head to Fast Castle	Displacement only: Development-alone
9	2026	30793	37050	39464	41988	49784	St Abbs Head to Fast Castle	Displacement only: Development-alone
10	2027	30956	37842	40443	43151	51930	St Abbs Head to Fast Castle	Displacement only: Development-alone
11	2028	31539	38637	41428	44431	53955	St Abbs Head to Fast Castle	Displacement only: Development-alone
12	2029	31765	39580	42442	45685	56037	St Abbs Head to Fast Castle	Displacement only: Development-alone
13	2030	32170	40232	43401	46858	58713	St Abbs Head to Fast Castle	Displacement only: Development-alone
14	2031	32512	41145	44482	47946	60623	St Abbs Head to Fast Castle	Displacement only: Development-alone
15	2032	32977	42094	45791	49433	63330	St Abbs Head to Fast Castle	Displacement only: Development-alone
16	2033	33516	42941	46958	50939	65867	St Abbs Head to Fast Castle	Displacement only: Development-alone
17	2034	33808	43718	48011	52318	68380	St Abbs Head to Fast Castle	Displacement only: Development-alone
18	2035	34207	44576	49195	53739	70936	St Abbs Head to Fast Castle	Displacement only: Development-alone
19	2036	34495	45551	50230	55338	73684	St Abbs Head to Fast Castle	Displacement only: Development-alone
20	2037	35034	46386	51398	56812	76949	St Abbs Head to Fast Castle	Displacement only: Development-alone
21	2038	35312	47271	52542	58376	80346	St Abbs Head to Fast Castle	Displacement only: Development-alone
22	2039	35708	48212	53882	59819	83480	St Abbs Head to Fast Castle	Displacement only: Development-alone
23	2040	36105	49292	55380	61592	87112	St Abbs Head to Fast Castle	Displacement only: Development-alone
24	2041	36781	50497	56820	63538	90349	St Abbs Head to Fast Castle	Displacement only: Development-alone
25	2042	37142	51584	58166	65280	93639	St Abbs Head to Fast Castle	Displacement only: Development-alone
26	2043	37767	52482	59508	67247	97913	St Abbs Head to Fast Castle	Displacement only: Development-alone
27	2044	38346	53767	60955	68797	101622	St Abbs Head to Fast Castle	Displacement only: Development-alone
28	2045	38754	55063	62120	70368	105462	St Abbs Head to Fast Castle	Displacement only: Development-alone
29	2046	39414	55865	63606	72580	109142	St Abbs Head to Fast Castle	Displacement only: Development-alone

30	2047	39497	56892	64973	74358	114217	St Abbs Head to Fast Castle	Displacement only: Development-alone
31	2048	39939	58245	66730	76444	119683	St Abbs Head to Fast Castle	Displacement only: Development-alone
32	2049	40759	59488	68542	78316	124164	St Abbs Head to Fast Castle	Displacement only: Development-alone
33	2050	41076	60244	70288	80185	128018	St Abbs Head to Fast Castle	Displacement only: Development-alone
34	2051	41921	61434	71693	82591	133059	St Abbs Head to Fast Castle	Displacement only: Development-alone
35	2052	42640	63060	73586	84768	138425	St Abbs Head to Fast Castle	Displacement only: Development-alone
36	2053	43087	64504	75732	87389	144310	St Abbs Head to Fast Castle	Displacement only: Development-alone
37	2054	43566	65383	77386	89274	149622	St Abbs Head to Fast Castle	Displacement only: Development-alone
38	2055	43891	67079	79217	91926	158041	St Abbs Head to Fast Castle	Displacement only: Development-alone
39	2056	44641	68388	81010	94636	164254	St Abbs Head to Fast Castle	Displacement only: Development-alone
40	2057	44892	69607	82972	96604	170352	St Abbs Head to Fast Castle	Displacement only: Development-alone
41	2058	45477	71020	84828	99423	177557	St Abbs Head to Fast Castle	Displacement only: Development-alone
42	2059	46133	72717	87279	102364	183680	St Abbs Head to Fast Castle	Displacement only: Development-alone
43	2060	46370	73960	89138	105644	191972	St Abbs Head to Fast Castle	Displacement only: Development-alone
44	2061	47280	75715	90956	108731	199334	St Abbs Head to Fast Castle	Displacement only: Development-alone
45	2062	48221	76970	93300	111713	207386	St Abbs Head to Fast Castle	Displacement only: Development-alone
46	2063	49181	78937	95486	114519	216670	St Abbs Head to Fast Castle	Displacement only: Development-alone
47	2064	49613	80527	97371	117335	224167	St Abbs Head to Fast Castle	Displacement only: Development-alone
48	2065	50161	82011	99910	120908	233991	St Abbs Head to Fast Castle	Displacement only: Development-alone
49	2066	50867	83332	102072	124282	243209	St Abbs Head to Fast Castle	Displacement only: Development-alone
50	2067	51087	85431	105248	128720	251811	St Abbs Head to Fast Castle	Displacement only: Development-alone
51	2068	52242	87463	107360	130997	262219	St Abbs Head to Fast Castle	Displacement only: Development-alone
52	2069	52610	89225	110228	134867	274733	St Abbs Head to Fast Castle	Displacement only: Development-alone
53	2070	53500	90964	113106	139134	288052	St Abbs Head to Fast Castle	Displacement only: Development-alone
	year	Q5	Q33	Q50	Q66	Q95	St Abbs Head to Fast Castle	ptype
1	2018	28260	31263	32383	33315	36205	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
2	2019	28587	32202	33469	34637	38079	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
3	2020	28956	32909	34446	35737	39728	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
4	2021	29070	33479	35146	36668	41190	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
5	2022	29234	34011	35770	37539	42675	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
6	2023	29672	34629	36534	38350	44116	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
7	2024	29894	35434	37408	39447	45881	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
8	2025	30110	36071	38362	40650	47812	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
9	2026	30707	36966	39363	41917	49730	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
10	2027	30900	37773	40316	42925	51733	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
11	2028	31279	38453	41316	44219	53824	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
12	2029	31716	39348	42313	45486	55861	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
13	2030	32125	40077	43279	46479	58590	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
14	2031	32270	40888	44276	47878	60419	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
15	2032	32748	41823	45556	49280	62905	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
16	2033	33263	42702	46638	50675	65663	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
17	2034	33457	43290	47720	51936	67759	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
18	2035	33999	44245	48719	53484	70472	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
19	2036	34366	45141	49896	54866	72822	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
20	2037	34787	45983	50856	56344	76812	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
21	2038	35159	46776	52051	57826	79308	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs

22	2039	35519	47674	53390	59445	82605	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
23	2040	36032	48748	54846	61092	85875	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
24	2041	36588	49859	56152	62774	89414	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
25	2042	36935	51036	57709	64628	92541	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
26	2043	37553	52086	58794	66391	96824	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
27	2044	37744	53092	60268	68045	100971	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
28	2045	38181	54403	61582	69723	104456	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
29	2046	38730	55285	63008	71716	109136	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
30	2047	38933	56310	64384	73516	112960	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
31	2048	39490	57676	65958	75431	118000	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
32	2049	40161	58733	67752	77472	122852	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
33	2050	40649	59568	69418	79424	127644	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
34	2051	41217	60642	70666	81489	131478	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
35	2052	42095	62141	72567	83833	137719	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
36	2053	42340	63678	74494	86063	143345	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
37	2054	42730	64533	76242	88314	148964	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
38	2055	43130	65943	78062	90796	156059	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
39	2056	43842	67383	79921	92991	163209	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
40	2057	44151	68524	81604	95382	167705	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
41	2058	44518	70394	83254	98204	174005	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
42	2059	45512	71298	85388	101115	181117	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
43	2060	45733	72518	87140	103841	189448	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
44	2061	46391	73785	89133	107206	197478	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
45	2062	47266	75248	91066	109841	205173	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
46	2063	48219	76887	93502	112642	213269	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
47	2064	48856	78463	95614	116074	221429	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
48	2065	49566	80161	97734	119306	230205	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
49	2066	50094	81725	100488	122706	238174	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
50	2067	50005	83510	103150	126067	249757	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
51	2068	50989	85353	105308	129283	255868	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
52	2069	51450	87135	107926	132720	269154	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs
53	2070	52383	88321	110344	136284	280560	St Abbs Head to Fast Castle	Displacement only: Forth & Tay WFs

GUILLEMOTS – FOWLSHEUGH SPA

Projections placed in the following order of scenarios:

- Baseline
- Development-alone
- Forth & Tay WFs

	year	Q5	Q33	Q50	Q66	Q95	site	ptype
1	2018	34814	38136	39141	40122	42585	Fowlsheugh	Baseline
2	2019	33756	37767	39114	40264	43354	Fowlsheugh	Baseline
3	2020	32819	37351	38854	40177	43975	Fowlsheugh	Baseline
4	2021	32182	37056	38658	40177	44460	Fowlsheugh	Baseline
5	2022	31563	36704	38410	40063	44569	Fowlsheugh	Baseline
6	2023	31182	36329	38262	39947	44739	Fowlsheugh	Baseline
7	2024	30711	36036	38060	39886	45340	Fowlsheugh	Baseline
8	2025	30257	35912	37906	39828	45388	Fowlsheugh	Baseline
9	2026	29783	35684	37682	39767	45753	Fowlsheugh	Baseline
10	2027	29092	35321	37678	39655	45989	Fowlsheugh	Baseline
11	2028	28623	35016	37432	39705	46249	Fowlsheugh	Baseline
12	2029	28175	34827	37298	39575	46623	Fowlsheugh	Baseline
13	2030	27637	34613	37225	39592	47072	Fowlsheugh	Baseline
14	2031	27351	34419	36945	39491	47293	Fowlsheugh	Baseline
15	2032	27034	34132	36922	39404	47615	Fowlsheugh	Baseline
16	2033	26709	33779	36669	39327	48004	Fowlsheugh	Baseline
17	2034	26138	33635	36492	39210	48085	Fowlsheugh	Baseline
18	2035	25761	33495	36424	39223	48564	Fowlsheugh	Baseline
19	2036	25393	33285	36184	39068	48925	Fowlsheugh	Baseline
20	2037	24852	33071	35981	39034	49072	Fowlsheugh	Baseline
21	2038	24603	32785	35847	38782	49310	Fowlsheugh	Baseline
22	2039	24260	32433	35774	38681	49056	Fowlsheugh	Baseline
23	2040	23984	32195	35599	38699	49263	Fowlsheugh	Baseline
24	2041	23687	31942	35414	38633	49630	Fowlsheugh	Baseline
25	2042	23490	31663	35122	38483	49639	Fowlsheugh	Baseline
26	2043	22867	31500	35104	38471	50486	Fowlsheugh	Baseline
27	2044	22606	31226	34937	38299	51047	Fowlsheugh	Baseline
28	2045	22518	30970	34662	38240	51197	Fowlsheugh	Baseline
29	2046	21945	30893	34539	38256	51367	Fowlsheugh	Baseline
30	2047	21732	30673	34344	38145	52001	Fowlsheugh	Baseline
31	2048	21442	30342	34008	38045	52165	Fowlsheugh	Baseline
32	2049	21344	30197	33865	38002	52124	Fowlsheugh	Baseline
33	2050	21083	29895	33786	37786	51943	Fowlsheugh	Baseline
34	2051	20910	29597	33660	37856	52746	Fowlsheugh	Baseline
35	2052	20531	29348	33432	37566	52849	Fowlsheugh	Baseline
36	2053	20348	29303	33176	37459	52714	Fowlsheugh	Baseline

37	2054	19986	28965	33124	37601	53038	Fowsheugh	Baseline	
38	2055	19752	28865	32832	37381	53565	Fowsheugh	Baseline	
39	2056	19494	28616	32894	37361	54340	Fowsheugh	Baseline	
40	2057	19171	28498	32810	37170	54480	Fowsheugh	Baseline	
41	2058	19011	28388	32530	37248	54571	Fowsheugh	Baseline	
42	2059	18772	28070	32348	37329	55215	Fowsheugh	Baseline	
43	2060	18500	27836	32271	37077	55444	Fowsheugh	Baseline	
44	2061	18213	27584	32133	37022	55774	Fowsheugh	Baseline	
45	2062	18047	27517	31934	36883	55790	Fowsheugh	Baseline	
46	2063	17782	27213	31789	36906	55898	Fowsheugh	Baseline	
47	2064	17478	27316	31782	36999	56601	Fowsheugh	Baseline	
48	2065	17302	27079	31628	36998	56718	Fowsheugh	Baseline	
49	2066	17080	26902	31472	36890	57494	Fowsheugh	Baseline	
50	2067	16961	26645	31396	36704	57864	Fowsheugh	Baseline	
51	2068	16581	26317	31360	36561	58084	Fowsheugh	Baseline	
52	2069	16373	26231	31076	36336	57616	Fowsheugh	Baseline	
53	2070	16186	26033	31022	36517	57812	Fowsheugh	Baseline	
	year	Q5	Q33	Q50	Q66	Q95	Fowsheugh	ptype	
1	2018	34835	38112	39142	40098	42677	Fowsheugh	Displacement only: Development-alone	
2	2019	33800	37764	39100	40225	43322	Fowsheugh	Displacement only: Development-alone	
3	2020	32741	37366	38844	40153	43811	Fowsheugh	Displacement only: Development-alone	
4	2021	32125	37031	38680	40156	44336	Fowsheugh	Displacement only: Development-alone	
5	2022	31556	36659	38370	39968	44495	Fowsheugh	Displacement only: Development-alone	
6	2023	31034	36293	38228	39817	44820	Fowsheugh	Displacement only: Development-alone	
7	2024	30694	35962	38017	39800	45324	Fowsheugh	Displacement only: Development-alone	
8	2025	30151	35831	37882	39730	45213	Fowsheugh	Displacement only: Development-alone	
9	2026	29727	35558	37649	39722	45677	Fowsheugh	Displacement only: Development-alone	
10	2027	29039	35326	37548	39611	45808	Fowsheugh	Displacement only: Development-alone	
11	2028	28611	34984	37386	39634	45961	Fowsheugh	Displacement only: Development-alone	
12	2029	27924	34724	37286	39478	46412	Fowsheugh	Displacement only: Development-alone	
13	2030	27624	34538	37154	39488	47009	Fowsheugh	Displacement only: Development-alone	
14	2031	27330	34275	36875	39410	47146	Fowsheugh	Displacement only: Development-alone	
15	2032	27057	34015	36738	39331	47386	Fowsheugh	Displacement only: Development-alone	
16	2033	26662	33774	36578	39236	47815	Fowsheugh	Displacement only: Development-alone	
17	2034	26072	33528	36424	39111	47581	Fowsheugh	Displacement only: Development-alone	
18	2035	25700	33377	36364	39096	48166	Fowsheugh	Displacement only: Development-alone	
19	2036	25374	33073	36032	38923	48519	Fowsheugh	Displacement only: Development-alone	
20	2037	24824	32942	35913	38966	48779	Fowsheugh	Displacement only: Development-alone	
21	2038	24675	32734	35648	38663	49015	Fowsheugh	Displacement only: Development-alone	
22	2039	24136	32418	35556	38578	49001	Fowsheugh	Displacement only: Development-alone	
23	2040	23668	32147	35398	38582	48929	Fowsheugh	Displacement only: Development-alone	
24	2041	23525	31773	35258	38543	49404	Fowsheugh	Displacement only: Development-alone	
25	2042	23308	31499	34996	38282	49541	Fowsheugh	Displacement only: Development-alone	
26	2043	22978	31415	34936	38314	50108	Fowsheugh	Displacement only: Development-alone	
27	2044	22580	31089	34783	38162	50710	Fowsheugh	Displacement only: Development-alone	
28	2045	22392	30817	34476	38070	50715	Fowsheugh	Displacement only: Development-alone	

29	2046	22013	30664	34239	38018	51165	Fowsheugh	Displacement only: Development-alone	
30	2047	21546	30381	34068	38034	51364	Fowsheugh	Displacement only: Development-alone	
31	2048	21361	30134	33798	37941	51581	Fowsheugh	Displacement only: Development-alone	
32	2049	21182	30047	33757	37666	51657	Fowsheugh	Displacement only: Development-alone	
33	2050	21009	29762	33478	37476	51638	Fowsheugh	Displacement only: Development-alone	
34	2051	20746	29364	33402	37490	52042	Fowsheugh	Displacement only: Development-alone	
35	2052	20338	29174	33195	37294	52263	Fowsheugh	Displacement only: Development-alone	
36	2053	19993	29135	32991	37168	52465	Fowsheugh	Displacement only: Development-alone	
37	2054	19847	28936	32748	37182	52696	Fowsheugh	Displacement only: Development-alone	
38	2055	19506	28754	32652	37091	53232	Fowsheugh	Displacement only: Development-alone	
39	2056	19478	28474	32565	36963	53562	Fowsheugh	Displacement only: Development-alone	
40	2057	19076	28389	32487	36912	53616	Fowsheugh	Displacement only: Development-alone	
41	2058	19003	28139	32177	36932	54308	Fowsheugh	Displacement only: Development-alone	
42	2059	18587	27872	32047	36831	54700	Fowsheugh	Displacement only: Development-alone	
43	2060	18363	27662	32024	36827	55092	Fowsheugh	Displacement only: Development-alone	
44	2061	17949	27466	31658	36630	55209	Fowsheugh	Displacement only: Development-alone	
45	2062	17752	27427	31768	36565	55419	Fowsheugh	Displacement only: Development-alone	
46	2063	17614	27140	31580	36441	55515	Fowsheugh	Displacement only: Development-alone	
47	2064	17348	27081	31478	36424	56196	Fowsheugh	Displacement only: Development-alone	
48	2065	17140	26894	31414	36567	56440	Fowsheugh	Displacement only: Development-alone	
49	2066	16802	26506	31190	36450	56861	Fowsheugh	Displacement only: Development-alone	
50	2067	16497	26369	31040	36296	57135	Fowsheugh	Displacement only: Development-alone	
51	2068	16306	26186	31025	36289	56731	Fowsheugh	Displacement only: Development-alone	
52	2069	16234	25997	30810	35900	56915	Fowsheugh	Displacement only: Development-alone	
53	2070	15988	25798	30590	35969	57184	Fowsheugh	Displacement only: Development-alone	
year	Q5	Q33	Q50	Q66	Q95	Fowsheugh	ptype		
1	2018	34812	38149	39140	40109	42638	Fowsheugh	Displacement only: Forth & Tay WFs	
2	2019	33804	37745	39108	40221	43352	Fowsheugh	Displacement only: Forth & Tay WFs	
3	2020	32719	37340	38816	40100	43761	Fowsheugh	Displacement only: Forth & Tay WFs	
4	2021	32123	37013	38613	40126	44299	Fowsheugh	Displacement only: Forth & Tay WFs	
5	2022	31400	36582	38322	39908	44388	Fowsheugh	Displacement only: Forth & Tay WFs	
6	2023	30914	36187	38113	39757	44675	Fowsheugh	Displacement only: Forth & Tay WFs	
7	2024	30616	35848	37874	39729	45078	Fowsheugh	Displacement only: Forth & Tay WFs	
8	2025	30008	35747	37686	39599	45079	Fowsheugh	Displacement only: Forth & Tay WFs	
9	2026	29513	35375	37470	39417	45407	Fowsheugh	Displacement only: Forth & Tay WFs	
10	2027	28858	35048	37344	39375	45582	Fowsheugh	Displacement only: Forth & Tay WFs	
11	2028	28426	34746	37106	39387	45709	Fowsheugh	Displacement only: Forth & Tay WFs	
12	2029	27749	34502	36894	39188	46142	Fowsheugh	Displacement only: Forth & Tay WFs	
13	2030	27366	34298	36748	39164	46626	Fowsheugh	Displacement only: Forth & Tay WFs	
14	2031	27102	34077	36525	38994	46586	Fowsheugh	Displacement only: Forth & Tay WFs	
15	2032	26573	33743	36470	38915	46816	Fowsheugh	Displacement only: Forth & Tay WFs	
16	2033	26338	33334	36155	38774	47145	Fowsheugh	Displacement only: Forth & Tay WFs	
17	2034	25848	33171	35995	38656	47203	Fowsheugh	Displacement only: Forth & Tay WFs	
18	2035	25482	32998	35940	38623	47703	Fowsheugh	Displacement only: Forth & Tay WFs	
19	2036	24960	32618	35572	38492	47771	Fowsheugh	Displacement only: Forth & Tay WFs	
20	2037	24363	32511	35408	38387	48217	Fowsheugh	Displacement only: Forth & Tay WFs	

21	2038	24067	32132	35130	38233	48033	Fowsheugh	Displacement only: Forth & Tay WFs
22	2039	23648	31802	35010	38032	47942	Fowsheugh	Displacement only: Forth & Tay WFs
23	2040	23307	31521	34760	37943	48232	Fowsheugh	Displacement only: Forth & Tay WFs
24	2041	23291	31224	34588	37865	48569	Fowsheugh	Displacement only: Forth & Tay WFs
25	2042	22866	30874	34415	37697	48742	Fowsheugh	Displacement only: Forth & Tay WFs
26	2043	22536	30726	34265	37534	49358	Fowsheugh	Displacement only: Forth & Tay WFs
27	2044	22184	30367	34047	37287	49495	Fowsheugh	Displacement only: Forth & Tay WFs
28	2045	21793	30162	33756	37288	49614	Fowsheugh	Displacement only: Forth & Tay WFs
29	2046	21546	29928	33590	37181	49711	Fowsheugh	Displacement only: Forth & Tay WFs
30	2047	21149	29741	33356	37166	50351	Fowsheugh	Displacement only: Forth & Tay WFs
31	2048	20894	29319	32892	36935	50537	Fowsheugh	Displacement only: Forth & Tay WFs
32	2049	20755	29311	32838	36819	50487	Fowsheugh	Displacement only: Forth & Tay WFs
33	2050	20339	29000	32700	36577	50210	Fowsheugh	Displacement only: Forth & Tay WFs
34	2051	20173	28676	32581	36535	50975	Fowsheugh	Displacement only: Forth & Tay WFs
35	2052	19866	28600	32296	36362	51072	Fowsheugh	Displacement only: Forth & Tay WFs
36	2053	19601	28361	31997	36332	50908	Fowsheugh	Displacement only: Forth & Tay WFs
37	2054	19211	28045	31883	36086	51460	Fowsheugh	Displacement only: Forth & Tay WFs
38	2055	19030	27761	31674	35938	51393	Fowsheugh	Displacement only: Forth & Tay WFs
39	2056	18893	27503	31438	36030	51799	Fowsheugh	Displacement only: Forth & Tay WFs
40	2057	18436	27380	31449	35876	51918	Fowsheugh	Displacement only: Forth & Tay WFs
41	2058	18300	27110	31236	35702	52264	Fowsheugh	Displacement only: Forth & Tay WFs
42	2059	18031	26794	31020	35657	52633	Fowsheugh	Displacement only: Forth & Tay WFs
43	2060	17815	26704	30970	35776	53132	Fowsheugh	Displacement only: Forth & Tay WFs
44	2061	17423	26491	30608	35565	53355	Fowsheugh	Displacement only: Forth & Tay WFs
45	2062	17107	26365	30529	35408	53631	Fowsheugh	Displacement only: Forth & Tay WFs
46	2063	16814	26120	30364	35113	53559	Fowsheugh	Displacement only: Forth & Tay WFs
47	2064	16694	26116	30272	35158	53991	Fowsheugh	Displacement only: Forth & Tay WFs
48	2065	16406	25790	30166	35337	54268	Fowsheugh	Displacement only: Forth & Tay WFs
49	2066	16173	25639	29943	34889	54621	Fowsheugh	Displacement only: Forth & Tay WFs
50	2067	16036	25395	29856	34838	55155	Fowsheugh	Displacement only: Forth & Tay WFs
51	2068	15554	25181	29700	34776	55277	Fowsheugh	Displacement only: Forth & Tay WFs
52	2069	15495	24964	29592	34654	55084	Fowsheugh	Displacement only: Forth & Tay WFs
53	2070	15281	24785	29318	34388	54819	Fowsheugh	Displacement only: Forth & Tay WFs

GUILLEMOTS – BUCHAN NESS TO COLLIESTON COAST SPA

Projections placed in the following order of scenarios:

- Baseline
- Development-alone
- Forth & Tay WFs

1	2017	19034	22108	23094	24218	27743	Buchan Ness to Collieston Coast	Baseline
2	2018	19205	22568	23784	24888	28811	Buchan Ness to Collieston Coast	Baseline
3	2019	19483	23087	24402	25676	30085	Buchan Ness to Collieston Coast	Baseline
4	2020	19628	23607	25046	26377	31209	Buchan Ness to Collieston Coast	Baseline
5	2021	19730	24152	25682	27144	32353	Buchan Ness to Collieston Coast	Baseline
6	2022	20242	24699	26354	27944	33541	Buchan Ness to Collieston Coast	Baseline
7	2023	20532	25311	26989	28732	34666	Buchan Ness to Collieston Coast	Baseline
8	2024	20541	25861	27765	29556	36088	Buchan Ness to Collieston Coast	Baseline
9	2025	20682	26489	28454	30481	37220	Buchan Ness to Collieston Coast	Baseline
10	2026	20859	27041	29190	31317	38692	Buchan Ness to Collieston Coast	Baseline
11	2027	21278	27577	29946	32367	40081	Buchan Ness to Collieston Coast	Baseline
12	2028	21403	28238	30754	33339	41759	Buchan Ness to Collieston Coast	Baseline
13	2029	21583	28907	31606	34311	43288	Buchan Ness to Collieston Coast	Baseline
14	2030	21897	29598	32331	35228	45323	Buchan Ness to Collieston Coast	Baseline
15	2031	22401	30147	33262	36110	46539	Buchan Ness to Collieston Coast	Baseline
16	2032	22451	30848	34174	37294	48255	Buchan Ness to Collieston Coast	Baseline
17	2033	22924	31488	35159	38576	50132	Buchan Ness to Collieston Coast	Baseline
18	2034	23167	32364	36066	39587	51959	Buchan Ness to Collieston Coast	Baseline
19	2035	23511	33073	36950	40646	54029	Buchan Ness to Collieston Coast	Baseline
20	2036	23829	33652	37910	41998	55968	Buchan Ness to Collieston Coast	Baseline
21	2037	24190	34399	38854	43275	58149	Buchan Ness to Collieston Coast	Baseline
22	2038	24453	35079	39852	44350	60665	Buchan Ness to Collieston Coast	Baseline
23	2039	24772	36006	40971	45732	62707	Buchan Ness to Collieston Coast	Baseline
24	2040	25011	36854	41894	47020	65318	Buchan Ness to Collieston Coast	Baseline
25	2041	25297	37741	42980	48209	67285	Buchan Ness to Collieston Coast	Baseline
26	2042	25616	38596	44144	49535	70156	Buchan Ness to Collieston Coast	Baseline
27	2043	25640	39370	45142	51102	72626	Buchan Ness to Collieston Coast	Baseline
28	2044	26209	40388	46386	52485	75100	Buchan Ness to Collieston Coast	Baseline
29	2045	26438	41264	47766	54078	78483	Buchan Ness to Collieston Coast	Baseline
30	2046	26950	42126	48656	55809	80902	Buchan Ness to Collieston Coast	Baseline
31	2047	27368	43149	49982	57115	83988	Buchan Ness to Collieston Coast	Baseline
32	2048	27769	44008	50920	58685	87355	Buchan Ness to Collieston Coast	Baseline
33	2049	27894	44950	52004	60133	91228	Buchan Ness to Collieston Coast	Baseline
34	2050	28346	45812	53680	61950	94953	Buchan Ness to Collieston Coast	Baseline
35	2051	28908	46847	55008	63934	99215	Buchan Ness to Collieston Coast	Baseline
36	2052	29092	47940	56408	65536	102404	Buchan Ness to Collieston Coast	Baseline
37	2053	29640	48827	57817	67558	106024	Buchan Ness to Collieston Coast	Baseline
38	2054	30124	50025	59668	69445	108870	Buchan Ness to Collieston Coast	Baseline
39	2055	30495	50998	61074	71524	113341	Buchan Ness to Collieston Coast	Baseline

40	2056	30798	52363	62472	74123	117160	Buchan Ness to Collieston Coast	Baseline
41	2057	31397	53655	64108	75431	121105	Buchan Ness to Collieston Coast	Baseline
42	2058	31569	54903	65820	77813	126269	Buchan Ness to Collieston Coast	Baseline
43	2059	31886	56189	67516	80221	130624	Buchan Ness to Collieston Coast	Baseline
44	2060	32749	57186	69344	82476	136018	Buchan Ness to Collieston Coast	Baseline
45	2061	33117	58258	70678	84518	140813	Buchan Ness to Collieston Coast	Baseline
46	2062	33449	59805	72706	87191	147226	Buchan Ness to Collieston Coast	Baseline
47	2063	33478	61011	74306	89556	152305	Buchan Ness to Collieston Coast	Baseline
48	2064	34018	62646	76150	92470	158114	Buchan Ness to Collieston Coast	Baseline
49	2065	34350	64039	78416	95360	163658	Buchan Ness to Collieston Coast	Baseline
50	2066	34937	65345	80610	97933	166707	Buchan Ness to Collieston Coast	Baseline
51	2067	35679	66964	82874	100023	174907	Buchan Ness to Collieston Coast	Baseline
52	2068	35924	68219	84316	103425	181860	Buchan Ness to Collieston Coast	Baseline
53	2069	36342	69467	86316	106449	187239	Buchan Ness to Collieston Coast	Baseline
54	2070	36785	71379	88524	109335	193730	Buchan Ness to Collieston Coast	Baseline
	year	Q5	Q33	Q50	Q66	Q95	Buchan Ness to Collieston Coast	ptype
1	2017	19028	22086	23136	24193	27772	Buchan Ness to Collieston Coast	Displacement only: Development-alone
2	2018	19276	22576	23786	24915	28794	Buchan Ness to Collieston Coast	Displacement only: Development-alone
3	2019	19413	23108	24410	25675	30087	Buchan Ness to Collieston Coast	Displacement only: Development-alone
4	2020	19556	23627	24981	26395	31259	Buchan Ness to Collieston Coast	Displacement only: Development-alone
5	2021	19782	24132	25701	27175	32305	Buchan Ness to Collieston Coast	Displacement only: Development-alone
6	2022	20225	24666	26351	27969	33550	Buchan Ness to Collieston Coast	Displacement only: Development-alone
7	2023	20466	25278	27022	28707	34744	Buchan Ness to Collieston Coast	Displacement only: Development-alone
8	2024	20597	25906	27760	29583	36019	Buchan Ness to Collieston Coast	Displacement only: Development-alone
9	2025	20655	26499	28518	30379	37412	Buchan Ness to Collieston Coast	Displacement only: Development-alone
10	2026	20836	27055	29205	31308	38641	Buchan Ness to Collieston Coast	Displacement only: Development-alone
11	2027	21001	27570	29884	32441	40219	Buchan Ness to Collieston Coast	Displacement only: Development-alone
12	2028	21274	28156	30786	33305	41592	Buchan Ness to Collieston Coast	Displacement only: Development-alone
13	2029	21623	28863	31570	34250	43334	Buchan Ness to Collieston Coast	Displacement only: Development-alone
14	2030	21840	29541	32426	35209	45047	Buchan Ness to Collieston Coast	Displacement only: Development-alone
15	2031	22295	30016	33264	36276	46696	Buchan Ness to Collieston Coast	Displacement only: Development-alone
16	2032	22564	30849	34144	37393	48397	Buchan Ness to Collieston Coast	Displacement only: Development-alone
17	2033	23012	31585	35109	38512	50098	Buchan Ness to Collieston Coast	Displacement only: Development-alone
18	2034	23276	32292	35974	39483	51928	Buchan Ness to Collieston Coast	Displacement only: Development-alone
19	2035	23406	33019	36944	40666	53886	Buchan Ness to Collieston Coast	Displacement only: Development-alone
20	2036	23891	33712	37862	41916	55869	Buchan Ness to Collieston Coast	Displacement only: Development-alone
21	2037	23993	34463	38840	43354	58361	Buchan Ness to Collieston Coast	Displacement only: Development-alone
22	2038	24440	35138	39900	44362	60739	Buchan Ness to Collieston Coast	Displacement only: Development-alone
23	2039	24839	35964	40908	45691	62782	Buchan Ness to Collieston Coast	Displacement only: Development-alone
24	2040	25042	36726	41976	46895	65411	Buchan Ness to Collieston Coast	Displacement only: Development-alone
25	2041	25170	37660	42886	48089	66810	Buchan Ness to Collieston Coast	Displacement only: Development-alone
26	2042	25547	38496	44028	49469	69987	Buchan Ness to Collieston Coast	Displacement only: Development-alone
27	2043	25636	39325	45098	50906	72253	Buchan Ness to Collieston Coast	Displacement only: Development-alone
28	2044	25989	40232	46294	52501	75351	Buchan Ness to Collieston Coast	Displacement only: Development-alone
29	2045	26390	41215	47608	54181	78482	Buchan Ness to Collieston Coast	Displacement only: Development-alone
30	2046	26691	42073	48571	55759	80641	Buchan Ness to Collieston Coast	Displacement only: Development-alone

31	2047	27215	43183	50012	57181	83924	Buchan Ness to Collieston Coast	Displacement only: Development-alone
32	2048	27469	43854	51022	58687	86934	Buchan Ness to Collieston Coast	Displacement only: Development-alone
33	2049	28161	44999	52194	59924	90050	Buchan Ness to Collieston Coast	Displacement only: Development-alone
34	2050	28244	45816	53805	61803	93985	Buchan Ness to Collieston Coast	Displacement only: Development-alone
35	2051	28813	46762	55112	63884	98320	Buchan Ness to Collieston Coast	Displacement only: Development-alone
36	2052	29108	47974	56474	65678	101779	Buchan Ness to Collieston Coast	Displacement only: Development-alone
37	2053	29452	48929	57810	67365	104534	Buchan Ness to Collieston Coast	Displacement only: Development-alone
38	2054	30055	50108	59508	69414	108198	Buchan Ness to Collieston Coast	Displacement only: Development-alone
39	2055	30339	51099	61188	71492	112877	Buchan Ness to Collieston Coast	Displacement only: Development-alone
40	2056	30735	52373	62491	73725	116521	Buchan Ness to Collieston Coast	Displacement only: Development-alone
41	2057	31094	53754	64168	75724	121369	Buchan Ness to Collieston Coast	Displacement only: Development-alone
42	2058	31621	54944	65761	77760	125349	Buchan Ness to Collieston Coast	Displacement only: Development-alone
43	2059	31980	56401	67604	79931	130666	Buchan Ness to Collieston Coast	Displacement only: Development-alone
44	2060	32557	57280	69046	82295	135301	Buchan Ness to Collieston Coast	Displacement only: Development-alone
45	2061	33505	58423	70784	84522	140065	Buchan Ness to Collieston Coast	Displacement only: Development-alone
46	2062	33686	59611	72628	87353	146868	Buchan Ness to Collieston Coast	Displacement only: Development-alone
47	2063	33543	61040	73994	89928	150585	Buchan Ness to Collieston Coast	Displacement only: Development-alone
48	2064	34196	62329	76023	92622	157737	Buchan Ness to Collieston Coast	Displacement only: Development-alone
49	2065	34202	63930	78390	94678	161637	Buchan Ness to Collieston Coast	Displacement only: Development-alone
50	2066	34932	65205	80720	97680	167548	Buchan Ness to Collieston Coast	Displacement only: Development-alone
51	2067	35233	66689	82750	99808	172436	Buchan Ness to Collieston Coast	Displacement only: Development-alone
52	2068	35949	68150	84350	103313	180702	Buchan Ness to Collieston Coast	Displacement only: Development-alone
53	2069	36518	69732	86296	105858	187207	Buchan Ness to Collieston Coast	Displacement only: Development-alone
54	2070	36928	71550	89047	109335	193701	Buchan Ness to Collieston Coast	Displacement only: Development-alone
	year	Q5	Q33	Q50	Q66	Q95	Buchan Ness to Collieston Coast	ptype
1	2017	19043	22087	23089	24190	27763	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
2	2018	19347	22568	23782	24925	28848	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
3	2019	19466	23094	24405	25638	30007	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
4	2020	19657	23623	24951	26409	31217	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
5	2021	19844	24095	25681	27155	32240	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
6	2022	20323	24642	26345	27945	33577	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
7	2023	20561	25246	27006	28712	34635	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
8	2024	20570	25839	27767	29573	36068	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
9	2025	20717	26495	28488	30373	37456	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
10	2026	20858	26960	29124	31247	38597	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
11	2027	21140	27611	29924	32250	39963	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
12	2028	21416	28167	30726	33299	41460	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
13	2029	21539	28880	31570	34272	43537	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
14	2030	21816	29493	32310	35204	45007	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
15	2031	22389	30094	33182	36143	46696	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
16	2032	22487	30861	34109	37256	48394	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
17	2033	22849	31579	34982	38482	50042	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
18	2034	23121	32368	35774	39375	51762	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
19	2035	23481	33007	36864	40440	53939	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
20	2036	23702	33653	37836	41933	56103	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
21	2037	24049	34294	38818	43184	57789	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs

22	2038	24302	34987	39900	44214	60732	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
23	2039	24497	35934	40769	45465	62496	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
24	2040	24931	36703	41832	46821	65219	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
25	2041	25066	37523	42766	47994	67332	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
26	2042	25396	38468	43921	49333	69630	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
27	2043	25519	39249	45028	50778	72006	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
28	2044	25852	40194	46254	52104	75358	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
29	2045	26262	41129	47630	53978	78131	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
30	2046	26677	41891	48438	55494	80546	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
31	2047	27343	43018	49778	56929	83711	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
32	2048	27568	43736	50834	58401	87165	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
33	2049	27779	44645	51917	59990	90128	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
34	2050	28205	45689	53601	61659	94142	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
35	2051	28616	46539	54954	63534	98176	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
36	2052	28784	47596	56466	65389	102124	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
37	2053	29189	48818	57736	66969	105163	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
38	2054	29917	49828	59545	68893	109228	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
39	2055	30073	50825	60700	71022	113592	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
40	2056	30567	52205	62144	73502	116493	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
41	2057	31065	53341	63868	75426	121006	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
42	2058	31081	54450	65257	77490	126253	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
43	2059	32071	55914	67054	79613	130551	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
44	2060	32461	56955	68624	81778	135348	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
45	2061	32869	58096	70128	83902	139378	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
46	2062	33117	59232	71943	86338	146253	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
47	2063	33333	60506	73724	88739	152165	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
48	2064	34040	62232	75464	92153	157110	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
49	2065	34072	63662	77705	94308	162160	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
50	2066	34464	64622	79710	96905	166856	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
51	2067	35017	66292	82164	99224	174921	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
52	2068	35550	67486	83898	102206	179346	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
53	2069	36285	69175	85914	105553	186645	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs
54	2070	36620	70917	87904	108482	192146	Buchan Ness to Collieston Coast	Displacement only: Forth & Tay WFs

**GUILLEMOTS – REGIONAL – FORTH ISLANDS SPA + ST ABBS HEAD TO FAST CASTLE SPA (VERSION A)
+ FOWLSHEUGH SPA + BUCHAN NESS TO COLLIESTON COAST**

Projections placed in the following order of scenarios:

- **Baseline**
- **Development-alone**
- **Forth & Tay WFs**

	year	Q5_1	Q33_1	Q50_1	Q66_1	Q95_1	scen
1	2018	108098	114037	116020	117750	123589	Baseline
2	2019	108594	114914	117420	119558	126090	Baseline
3	2020	108507	115975	118662	121130	128052	Baseline
4	2021	109248	116787	119715	122561	130489	Baseline
5	2022	109375	118047	120915	123881	132976	Baseline
6	2023	110311	119282	122412	125375	134954	Baseline
7	2024	111122	120318	123804	127211	137377	Baseline
8	2025	111582	121515	125422	128752	139951	Baseline
9	2026	112129	122756	126856	130535	142458	Baseline
10	2027	113027	124113	128522	132485	144724	Baseline
11	2028	113381	125209	129798	134472	147241	Baseline
12	2029	113960	126680	131416	136103	149865	Baseline
13	2030	114670	128252	133100	137982	152535	Baseline
14	2031	115396	129612	134926	140098	155446	Baseline
15	2032	115861	130920	136332	142039	159340	Baseline
16	2033	116835	132476	138380	143872	162183	Baseline
17	2034	117852	133935	140043	146259	164466	Baseline
18	2035	119110	135591	142063	148523	167429	Baseline
19	2036	119748	137110	144094	150839	171043	Baseline
20	2037	120646	138574	146092	153078	175100	Baseline
21	2038	121392	140350	147858	155141	179293	Baseline
22	2039	122302	141691	150046	157476	182343	Baseline
23	2040	122935	143881	152107	160035	186690	Baseline
24	2041	123992	145805	154116	162852	188646	Baseline
25	2042	124608	147736	156174	165302	192340	Baseline
26	2043	125836	149338	158728	167657	195407	Baseline
27	2044	127134	151030	160800	170114	200067	Baseline
28	2045	129163	153276	163188	172930	205527	Baseline
29	2046	129799	155072	165808	175592	210077	Baseline
30	2047	131586	157223	167988	178642	214523	Baseline
31	2048	132405	159281	170626	181301	218742	Baseline
32	2049	133498	161128	172954	184997	223849	Baseline
33	2050	134895	163343	175786	187366	228624	Baseline
34	2051	136443	165786	178885	191081	233678	Baseline
35	2052	137511	167972	181679	194458	238340	Baseline

36	2053	139102	170770	184196	197487	243554	Baseline
37	2054	139846	173224	187366	201827	249051	Baseline
38	2055	141544	175596	190412	205080	256455	Baseline
39	2056	143275	178055	193328	208906	264000	Baseline
40	2057	144879	180567	196096	212854	269761	Baseline
41	2058	146086	183329	199362	216056	277004	Baseline
42	2059	147549	185144	202938	220949	283791	Baseline
43	2060	148723	187746	206307	224790	288655	Baseline
44	2061	149412	190651	209677	228297	295973	Baseline
45	2062	151020	193140	212992	232741	303624	Baseline
46	2063	152193	196924	216696	237114	311827	Baseline
47	2064	154553	199977	220628	241569	319603	Baseline
48	2065	155951	202546	224253	246261	328258	Baseline
49	2066	158159	205497	227344	251346	333967	Baseline
50	2067	159364	208821	231434	256654	344502	Baseline
51	2068	160213	212126	234904	261186	353725	Baseline
52	2069	162117	214786	239044	265936	363380	Baseline
53	2070	163421	218203	243650	271266	369710	Baseline
	year	Q5_2	Q33_2	Q50_2	Q66_2	Q95_2	scen
1	2018	108083	114016	116027	117865	123577	Displacement only: Development-alone
2	2019	108583	114939	117302	119562	125990	Displacement only: Development-alone
3	2020	108332	115956	118708	121025	128033	Displacement only: Development-alone
4	2021	109226	116784	119702	122575	130454	Displacement only: Development-alone
5	2022	109206	117921	120838	123830	132754	Displacement only: Development-alone
6	2023	110220	119117	122338	125275	134717	Displacement only: Development-alone
7	2024	110985	120160	123628	127163	137040	Displacement only: Development-alone
8	2025	111493	121459	125275	128737	139718	Displacement only: Development-alone
9	2026	112100	122643	126696	130480	142409	Displacement only: Development-alone
10	2027	112700	123910	128286	132370	144369	Displacement only: Development-alone
11	2028	113046	125104	129778	134224	146933	Displacement only: Development-alone
12	2029	113362	126700	131196	135997	149629	Displacement only: Development-alone
13	2030	114774	128073	133031	137793	152435	Displacement only: Development-alone
14	2031	115098	129378	134764	139791	155060	Displacement only: Development-alone
15	2032	115823	130913	136072	141705	158587	Displacement only: Development-alone
16	2033	116918	132172	138191	143615	161651	Displacement only: Development-alone
17	2034	117730	133748	139680	145962	164508	Displacement only: Development-alone
18	2035	118879	135405	141904	148000	167392	Displacement only: Development-alone
19	2036	119030	136850	143764	150311	170674	Displacement only: Development-alone
20	2037	119971	138510	145597	152549	174223	Displacement only: Development-alone
21	2038	120864	140042	147292	154826	177929	Displacement only: Development-alone
22	2039	121987	141329	149646	157024	181849	Displacement only: Development-alone
23	2040	122450	143419	151662	159522	186123	Displacement only: Development-alone
24	2041	123592	145481	153482	162332	188575	Displacement only: Development-alone
25	2042	124612	147329	155584	164635	191763	Displacement only: Development-alone
26	2043	125452	148956	158338	166951	195485	Displacement only: Development-alone
27	2044	127156	150612	160215	169636	199243	Displacement only: Development-alone

28	2045	128107	152730	162812	172472	204674	Displacement only: Development-alone
29	2046	129126	154669	164744	175384	209392	Displacement only: Development-alone
30	2047	131110	156798	167448	178278	213461	Displacement only: Development-alone
31	2048	132270	158715	169672	181042	217804	Displacement only: Development-alone
32	2049	132922	160678	172363	184182	222786	Displacement only: Development-alone
33	2050	134314	162876	174874	186802	227516	Displacement only: Development-alone
34	2051	135974	165054	178044	190113	233254	Displacement only: Development-alone
35	2052	136879	167553	180605	193464	238087	Displacement only: Development-alone
36	2053	138242	169691	183168	196916	243649	Displacement only: Development-alone
37	2054	139803	172307	186674	201272	248508	Displacement only: Development-alone
38	2055	141078	175003	189623	204269	255478	Displacement only: Development-alone
39	2056	143009	177378	192648	207858	262246	Displacement only: Development-alone
40	2057	144389	179394	195282	211757	267842	Displacement only: Development-alone
41	2058	145672	182247	198294	215543	274103	Displacement only: Development-alone
42	2059	147184	184346	201978	219421	281670	Displacement only: Development-alone
43	2060	148229	187428	205414	223452	287067	Displacement only: Development-alone
44	2061	149049	189717	208496	227168	294544	Displacement only: Development-alone
45	2062	149995	192461	211996	231701	301470	Displacement only: Development-alone
46	2063	151247	195960	214886	236048	308643	Displacement only: Development-alone
47	2064	153857	198982	219078	240059	318589	Displacement only: Development-alone
48	2065	154724	201597	223084	244996	326520	Displacement only: Development-alone
49	2066	157189	204778	226104	249798	332593	Displacement only: Development-alone
50	2067	158182	207877	229468	254914	341761	Displacement only: Development-alone
51	2068	159745	211186	233680	259745	350185	Displacement only: Development-alone
52	2069	161790	213953	237442	264619	360244	Displacement only: Development-alone
53	2070	162765	217172	241900	270266	365092	Displacement only: Development-alone
	year	Q5_3	Q33_3	Q50_3	Q66_3	Q95_3	scen
1	2018	108154	114036	116036	117793	123569	Displacement only: Forth & Tay WFs
2	2019	108599	114944	117362	119537	126102	Displacement only: Forth & Tay WFs
3	2020	108319	115801	118592	120957	127941	Displacement only: Forth & Tay WFs
4	2021	109052	116692	119546	122388	130238	Displacement only: Forth & Tay WFs
5	2022	109076	117696	120620	123631	132557	Displacement only: Forth & Tay WFs
6	2023	109816	118831	122118	125029	134416	Displacement only: Forth & Tay WFs
7	2024	110596	119791	123334	126718	136796	Displacement only: Forth & Tay WFs
8	2025	111202	121030	124892	128405	139409	Displacement only: Forth & Tay WFs
9	2026	111390	122097	126120	129930	141710	Displacement only: Forth & Tay WFs
10	2027	112086	123319	127586	131798	143717	Displacement only: Forth & Tay WFs
11	2028	112547	124425	128992	133457	146298	Displacement only: Forth & Tay WFs
12	2029	112967	125934	130491	135190	148615	Displacement only: Forth & Tay WFs
13	2030	113886	127391	132088	137058	151458	Displacement only: Forth & Tay WFs
14	2031	114144	128632	133776	138830	154309	Displacement only: Forth & Tay WFs
15	2032	114614	129855	135230	140628	157667	Displacement only: Forth & Tay WFs
16	2033	115443	131050	137068	142526	160762	Displacement only: Forth & Tay WFs
17	2034	116714	132466	138442	144606	163369	Displacement only: Forth & Tay WFs
18	2035	117483	134135	140654	146835	166141	Displacement only: Forth & Tay WFs
19	2036	118230	135547	142448	149051	169463	Displacement only: Forth & Tay WFs

20	2037	119161	137072	144184	151258	173241	Displacement only: Forth & Tay WFs
21	2038	119634	138473	145916	153287	176638	Displacement only: Forth & Tay WFs
22	2039	120416	139980	148001	155561	179502	Displacement only: Forth & Tay WFs
23	2040	120294	141694	150006	157843	184049	Displacement only: Forth & Tay WFs
24	2041	121793	143590	151679	160466	185797	Displacement only: Forth & Tay WFs
25	2042	122881	145593	153708	162612	188720	Displacement only: Forth & Tay WFs
26	2043	123682	147025	156244	164903	192844	Displacement only: Forth & Tay WFs
27	2044	125081	148451	158120	167322	197204	Displacement only: Forth & Tay WFs
28	2045	126389	150368	160616	170116	201913	Displacement only: Forth & Tay WFs
29	2046	127220	152208	162885	172480	206311	Displacement only: Forth & Tay WFs
30	2047	128774	154398	165210	175480	211026	Displacement only: Forth & Tay WFs
31	2048	129728	155877	166901	178042	215430	Displacement only: Forth & Tay WFs
32	2049	130684	157936	169576	181225	220412	Displacement only: Forth & Tay WFs
33	2050	131789	159951	172120	184078	224479	Displacement only: Forth & Tay WFs
34	2051	133272	161770	174724	187348	229815	Displacement only: Forth & Tay WFs
35	2052	134579	164372	177522	190397	234435	Displacement only: Forth & Tay WFs
36	2053	135426	166838	179872	193282	238868	Displacement only: Forth & Tay WFs
37	2054	137190	169160	182913	197384	245217	Displacement only: Forth & Tay WFs
38	2055	138257	171477	185896	200196	251997	Displacement only: Forth & Tay WFs
39	2056	139740	173788	188220	203925	258282	Displacement only: Forth & Tay WFs
40	2057	141066	176121	191598	207240	264502	Displacement only: Forth & Tay WFs
41	2058	142166	178449	194692	210632	270599	Displacement only: Forth & Tay WFs
42	2059	143959	180456	197751	214903	277211	Displacement only: Forth & Tay WFs
43	2060	145039	183079	201196	219351	282047	Displacement only: Forth & Tay WFs
44	2061	145623	185552	203860	223026	289093	Displacement only: Forth & Tay WFs
45	2062	147390	188263	207330	227265	297215	Displacement only: Forth & Tay WFs
46	2063	148799	191225	210506	230822	305692	Displacement only: Forth & Tay WFs
47	2064	150736	194242	213840	235592	313520	Displacement only: Forth & Tay WFs
48	2065	150749	197075	217022	239037	320564	Displacement only: Forth & Tay WFs
49	2066	153591	199575	220378	244612	326306	Displacement only: Forth & Tay WFs
50	2067	155393	203152	223835	249820	335249	Displacement only: Forth & Tay WFs
51	2068	155757	206089	227358	254082	345877	Displacement only: Forth & Tay WFs
52	2069	157048	208873	231010	258291	353358	Displacement only: Forth & Tay WFs
53	2070	158182	211125	235988	264207	360656	Displacement only: Forth & Tay WFs

**GUILLEMOTS – REGIONAL – FORTH ISLANDS SPA + ST ABBS HEAD TO FAST CASTLE SPA (VERSION B)
+ FOWLSHEUGH SPA + BUCHAN NESS TO COLLIESTON COAST**

Projections placed in the following order of scenarios:

- **Baseline**
- **Development-alone**
- **Forth & Tay WFs**

	year	Q5_1	Q33_1	Q50_1	Q66_1	Q95_1	scen
1	2018	110081	116165	118200	120128	125915	Baseline
2	2019	111241	117523	120032	122272	129046	Baseline
3	2020	111521	119018	121659	124352	132055	Baseline
4	2021	112372	120340	123060	125923	134644	Baseline
5	2022	112828	121560	124644	127780	137332	Baseline
6	2023	114093	123165	126354	129765	140113	Baseline
7	2024	114446	124730	128396	131904	142867	Baseline
8	2025	115360	126175	130222	134021	145847	Baseline
9	2026	116389	127912	132348	136265	149155	Baseline
10	2027	118265	129651	134217	138700	152757	Baseline
11	2028	118701	131416	136242	141077	155956	Baseline
12	2029	119903	133155	138180	143481	159589	Baseline
13	2030	121176	135153	140425	145749	162921	Baseline
14	2031	122108	136753	142820	148043	166786	Baseline
15	2032	123443	139162	145036	150916	171148	Baseline
16	2033	124575	141066	147633	153853	175409	Baseline
17	2034	126003	143138	149856	156399	179240	Baseline
18	2035	127008	145272	152504	159622	183373	Baseline
19	2036	128245	147448	154866	162409	188106	Baseline
20	2037	129530	149294	157106	165496	192880	Baseline
21	2038	129934	151528	159507	168581	197473	Baseline
22	2039	132141	154028	162784	171969	202077	Baseline
23	2040	132996	156448	165760	175365	207092	Baseline
24	2041	134763	158892	168472	178130	211743	Baseline
25	2042	136116	161381	171806	181375	217361	Baseline
26	2043	137551	163983	174621	184870	223310	Baseline
27	2044	139179	166800	177572	188863	230274	Baseline
28	2045	140810	169969	180710	192935	236518	Baseline
29	2046	142627	172021	183810	196386	242804	Baseline
30	2047	143712	175176	186995	200339	249029	Baseline
31	2048	145527	178055	190376	203930	255799	Baseline
32	2049	148292	180439	193567	208258	263044	Baseline
33	2050	149992	183388	197526	212511	270173	Baseline
34	2051	151575	186320	201197	217737	276955	Baseline
35	2052	153624	189111	205734	222227	286158	Baseline

36	2053	156297	192704	209419	227157	296099	Baseline
37	2054	157896	196314	213445	232363	304498	Baseline
38	2055	160280	199873	217360	237918	314821	Baseline
39	2056	161721	202743	221472	242424	325106	Baseline
40	2057	163672	206352	225936	247703	332697	Baseline
41	2058	165249	209720	231104	252622	342027	Baseline
42	2059	168078	213560	234994	258428	353300	Baseline
43	2060	169993	216917	240020	264050	363526	Baseline
44	2061	171960	220798	244902	269290	375367	Baseline
45	2062	173990	226131	249344	275419	387203	Baseline
46	2063	176900	230474	254508	282919	400378	Baseline
47	2064	179687	235060	259256	289069	412999	Baseline
48	2065	181904	239375	264276	296454	425564	Baseline
49	2066	183340	243812	270730	302387	439968	Baseline
50	2067	186094	248381	277378	310823	451637	Baseline
51	2068	188593	252199	282970	317727	467281	Baseline
52	2069	190029	256356	289058	324872	482953	Baseline
53	2070	192418	261021	296172	332156	496629	Baseline
	year	Q5_2	Q33_2	Q50_2	Q66_2	Q95_2	scen
1	2018	110070	116217	118180	120103	125952	Displacement only: Development-alone
2	2019	111128	117582	119954	122246	129048	Displacement only: Development-alone
3	2020	111389	119094	121657	124286	131845	Displacement only: Development-alone
4	2021	112153	120265	123044	125971	134679	Displacement only: Development-alone
5	2022	112685	121512	124519	127555	137387	Displacement only: Development-alone
6	2023	113937	122898	126262	129645	139923	Displacement only: Development-alone
7	2024	114285	124505	128242	131760	142574	Displacement only: Development-alone
8	2025	115222	126231	130157	134059	145601	Displacement only: Development-alone
9	2026	116661	127796	132076	136274	149081	Displacement only: Development-alone
10	2027	117882	129512	134250	138496	152511	Displacement only: Development-alone
11	2028	118576	131273	136022	140831	155407	Displacement only: Development-alone
12	2029	119671	132961	137828	143089	159212	Displacement only: Development-alone
13	2030	121093	135000	140316	145553	162762	Displacement only: Development-alone
14	2031	121928	136538	142618	147709	166622	Displacement only: Development-alone
15	2032	123140	138659	144824	150618	170789	Displacement only: Development-alone
16	2033	124320	140759	147316	153646	174845	Displacement only: Development-alone
17	2034	125881	142686	149479	155929	179352	Displacement only: Development-alone
18	2035	126914	144883	152192	159247	183124	Displacement only: Development-alone
19	2036	127830	147103	154494	162047	187737	Displacement only: Development-alone
20	2037	129317	149314	156857	164975	191888	Displacement only: Development-alone
21	2038	129728	151110	159477	168034	196883	Displacement only: Development-alone
22	2039	131517	153615	162522	171478	201949	Displacement only: Development-alone
23	2040	132768	155865	165296	174525	206523	Displacement only: Development-alone
24	2041	134722	158760	168010	177448	211695	Displacement only: Development-alone
25	2042	136083	161134	171283	181084	216795	Displacement only: Development-alone
26	2043	137208	163700	173874	184372	223061	Displacement only: Development-alone
27	2044	138923	166204	177188	188608	229324	Displacement only: Development-alone

28	2045	140548	169257	180298	192332	234862	Displacement only: Development-alone
29	2046	142187	171875	183626	195585	242737	Displacement only: Development-alone
30	2047	142960	174753	186544	199608	248355	Displacement only: Development-alone
31	2048	145374	177479	189577	203350	254923	Displacement only: Development-alone
32	2049	147088	180064	192766	207337	261594	Displacement only: Development-alone
33	2050	149464	182805	196433	212159	269997	Displacement only: Development-alone
34	2051	150753	185447	200765	216584	277553	Displacement only: Development-alone
35	2052	152650	188044	205066	221028	285839	Displacement only: Development-alone
36	2053	154999	191801	208202	226536	293172	Displacement only: Development-alone
37	2054	156582	195541	212872	231555	303403	Displacement only: Development-alone
38	2055	158808	198879	216922	236449	311511	Displacement only: Development-alone
39	2056	160526	202040	220984	241283	323062	Displacement only: Development-alone
40	2057	162706	205697	224760	246314	331825	Displacement only: Development-alone
41	2058	164438	209111	230336	251651	338990	Displacement only: Development-alone
42	2059	167008	212993	233923	257226	351973	Displacement only: Development-alone
43	2060	168426	216191	238651	263262	360282	Displacement only: Development-alone
44	2061	170823	220138	243926	268280	371199	Displacement only: Development-alone
45	2062	172919	224757	248220	274527	384122	Displacement only: Development-alone
46	2063	175605	229462	253410	281489	397091	Displacement only: Development-alone
47	2064	177635	233957	258088	287929	411090	Displacement only: Development-alone
48	2065	180171	238003	263214	294759	424324	Displacement only: Development-alone
49	2066	182121	241989	269534	299183	436686	Displacement only: Development-alone
50	2067	184716	246257	275702	308790	450042	Displacement only: Development-alone
51	2068	186515	250770	281760	316008	465536	Displacement only: Development-alone
52	2069	189026	255261	287251	322524	480553	Displacement only: Development-alone
53	2070	191478	259724	294222	329735	495536	Displacement only: Development-alone
	year	Q5_3	Q33_3	Q50_3	Q66_3	Q95_3	scen
1	2018	110086	116165	118218	120123	125935	Displacement only: Forth & Tay WFs
2	2019	111287	117552	119988	122280	129059	Displacement only: Forth & Tay WFs
3	2020	111517	119029	121557	124127	131828	Displacement only: Forth & Tay WFs
4	2021	112254	120136	122896	125778	134462	Displacement only: Forth & Tay WFs
5	2022	112531	121290	124394	127521	137050	Displacement only: Forth & Tay WFs
6	2023	113470	122654	126060	129356	139754	Displacement only: Forth & Tay WFs
7	2024	113783	124180	127950	131431	142306	Displacement only: Forth & Tay WFs
8	2025	114842	125692	129736	133496	145137	Displacement only: Forth & Tay WFs
9	2026	116133	127343	131612	135619	148230	Displacement only: Forth & Tay WFs
10	2027	117211	128997	133561	137851	151805	Displacement only: Forth & Tay WFs
11	2028	117716	130575	135388	140064	155016	Displacement only: Forth & Tay WFs
12	2029	118984	132226	137136	142387	158130	Displacement only: Forth & Tay WFs
13	2030	119990	134001	139514	144805	161591	Displacement only: Forth & Tay WFs
14	2031	121222	135580	141686	146902	165389	Displacement only: Forth & Tay WFs
15	2032	122130	137769	143795	149626	169397	Displacement only: Forth & Tay WFs
16	2033	123330	139716	146153	152389	173426	Displacement only: Forth & Tay WFs
17	2034	124209	141209	148312	154826	177707	Displacement only: Forth & Tay WFs
18	2035	125774	143597	150852	157844	181051	Displacement only: Forth & Tay WFs
19	2036	126725	145464	153172	160494	186288	Displacement only: Forth & Tay WFs

20	2037	127944	147705	155442	163267	190270	Displacement only: Forth & Tay WFs
21	2038	128462	149661	157871	166529	194833	Displacement only: Forth & Tay WFs
22	2039	129874	151952	160736	169639	199449	Displacement only: Forth & Tay WFs
23	2040	131192	154214	163587	172760	203855	Displacement only: Forth & Tay WFs
24	2041	132510	156624	165992	175208	209593	Displacement only: Forth & Tay WFs
25	2042	134403	158828	168958	179092	213829	Displacement only: Forth & Tay WFs
26	2043	135110	161395	171916	182406	220116	Displacement only: Forth & Tay WFs
27	2044	136785	164036	175118	186138	226674	Displacement only: Forth & Tay WFs
28	2045	138446	167016	177778	189665	231426	Displacement only: Forth & Tay WFs
29	2046	139921	168947	181114	192918	238686	Displacement only: Forth & Tay WFs
30	2047	141554	172245	183950	196530	243960	Displacement only: Forth & Tay WFs
31	2048	142522	174880	186624	200430	251222	Displacement only: Forth & Tay WFs
32	2049	144752	177327	190067	204746	257349	Displacement only: Forth & Tay WFs
33	2050	147022	179910	193111	208703	265179	Displacement only: Forth & Tay WFs
34	2051	148037	182622	197334	213139	272949	Displacement only: Forth & Tay WFs
35	2052	150115	185448	201388	217455	281517	Displacement only: Forth & Tay WFs
36	2053	152853	188546	205167	222562	289612	Displacement only: Forth & Tay WFs
37	2054	154720	192220	208744	227427	298844	Displacement only: Forth & Tay WFs
38	2055	156582	195312	212902	232367	307478	Displacement only: Forth & Tay WFs
39	2056	157455	198512	217061	237399	318416	Displacement only: Forth & Tay WFs
40	2057	159479	201518	220650	242253	326402	Displacement only: Forth & Tay WFs
41	2058	161045	204528	225092	247317	333925	Displacement only: Forth & Tay WFs
42	2059	163217	208482	229480	252626	345423	Displacement only: Forth & Tay WFs
43	2060	165158	211582	233756	257790	355226	Displacement only: Forth & Tay WFs
44	2061	166795	215001	238512	262684	366148	Displacement only: Forth & Tay WFs
45	2062	169041	220024	243279	268682	378743	Displacement only: Forth & Tay WFs
46	2063	171932	224613	247987	275696	391433	Displacement only: Forth & Tay WFs
47	2064	173968	228733	252898	282025	404123	Displacement only: Forth & Tay WFs
48	2065	176181	232612	257598	289346	416520	Displacement only: Forth & Tay WFs
49	2066	176998	236432	263466	294410	429428	Displacement only: Forth & Tay WFs
50	2067	178839	240584	269160	303212	441852	Displacement only: Forth & Tay WFs
51	2068	181230	244372	274430	309174	457385	Displacement only: Forth & Tay WFs
52	2069	184627	248587	280938	316130	471515	Displacement only: Forth & Tay WFs
53	2070	186240	253595	287344	323968	484487	Displacement only: Forth & Tay WFs

RAZORBILLS – FORTH ISLANDS SPA

Projections placed in the following order of scenarios:

- **Baseline**
- **Development-alone**
- **Forth & Tay WFs**

	year	Q5	Q33	Q50	Q66	Q95	site	ptype
1	2018	3611	4111	4259	4380	4762	Forth Islands	Baseline
2	2019	3571	4162	4346	4506	5001	Forth Islands	Baseline
3	2020	3572	4218	4430	4638	5218	Forth Islands	Baseline
4	2021	3580	4287	4525	4762	5458	Forth Islands	Baseline
5	2022	3663	4386	4667	4944	5713	Forth Islands	Baseline
6	2023	3653	4489	4794	5090	5967	Forth Islands	Baseline
7	2024	3713	4585	4922	5251	6199	Forth Islands	Baseline
8	2025	3709	4687	5044	5395	6511	Forth Islands	Baseline
9	2026	3737	4751	5162	5556	6795	Forth Islands	Baseline
10	2027	3773	4863	5298	5730	7087	Forth Islands	Baseline
11	2028	3811	4952	5419	5895	7457	Forth Islands	Baseline
12	2029	3821	5080	5565	6085	7717	Forth Islands	Baseline
13	2030	3853	5192	5748	6287	8046	Forth Islands	Baseline
14	2031	3877	5300	5889	6449	8391	Forth Islands	Baseline
15	2032	3907	5410	6058	6697	8796	Forth Islands	Baseline
16	2033	3964	5523	6205	6906	9191	Forth Islands	Baseline
17	2034	3994	5629	6345	7100	9593	Forth Islands	Baseline
18	2035	4070	5773	6516	7301	10026	Forth Islands	Baseline
19	2036	4100	5865	6692	7525	10386	Forth Islands	Baseline
20	2037	4110	5995	6854	7743	10797	Forth Islands	Baseline
21	2038	4153	6116	7010	7980	11256	Forth Islands	Baseline
22	2039	4217	6251	7197	8214	11763	Forth Islands	Baseline
23	2040	4230	6409	7384	8451	12293	Forth Islands	Baseline
24	2041	4292	6504	7629	8675	12871	Forth Islands	Baseline
25	2042	4380	6639	7718	8958	13356	Forth Islands	Baseline
26	2043	4352	6775	7936	9164	14057	Forth Islands	Baseline
27	2044	4409	6911	8180	9468	14815	Forth Islands	Baseline
28	2045	4420	7105	8394	9758	15342	Forth Islands	Baseline
29	2046	4510	7256	8666	10084	15921	Forth Islands	Baseline
30	2047	4551	7432	8832	10401	16318	Forth Islands	Baseline
31	2048	4577	7497	9080	10762	16922	Forth Islands	Baseline
32	2049	4557	7665	9296	11022	17746	Forth Islands	Baseline
33	2050	4564	7834	9514	11403	18554	Forth Islands	Baseline
34	2051	4581	8100	9784	11696	19432	Forth Islands	Baseline
35	2052	4651	8272	10010	12082	20206	Forth Islands	Baseline
36	2053	4675	8470	10295	12538	21212	Forth Islands	Baseline

37	2054	4773	8586	10490	12773	22199	Forth Islands	Baseline
38	2055	4829	8811	10705	13188	23357	Forth Islands	Baseline
39	2056	4878	8984	11044	13600	23980	Forth Islands	Baseline
40	2057	4842	9181	11346	13963	25048	Forth Islands	Baseline
41	2058	4891	9348	11636	14413	25994	Forth Islands	Baseline
42	2059	5005	9500	12016	14910	26781	Forth Islands	Baseline
43	2060	5071	9709	12190	15402	28227	Forth Islands	Baseline
44	2061	5094	9933	12599	15727	29623	Forth Islands	Baseline
45	2062	5065	10139	12894	16274	30971	Forth Islands	Baseline
46	2063	5196	10347	13264	16760	32174	Forth Islands	Baseline
47	2064	5225	10573	13520	17096	33604	Forth Islands	Baseline
48	2065	5306	10789	13829	17625	35775	Forth Islands	Baseline
49	2066	5374	11034	14184	18087	37174	Forth Islands	Baseline
50	2067	5419	11270	14633	18661	38096	Forth Islands	Baseline
51	2068	5441	11554	15057	19293	40197	Forth Islands	Baseline
52	2069	5485	11800	15536	19912	41558	Forth Islands	Baseline
53	2070	5576	11959	15817	20532	43136	Forth Islands	Baseline
	year	Q5	Q33	Q50	Q66	Q95	Forth Islands	ptype
1	2018	3612	4103	4256	4386	4754	Forth Islands	Displacement only: Development-alone
2	2019	3564	4151	4352	4509	4971	Forth Islands	Displacement only: Development-alone
3	2020	3573	4218	4428	4631	5214	Forth Islands	Displacement only: Development-alone
4	2021	3591	4267	4526	4754	5427	Forth Islands	Displacement only: Development-alone
5	2022	3654	4378	4654	4920	5651	Forth Islands	Displacement only: Development-alone
6	2023	3645	4462	4787	5072	5938	Forth Islands	Displacement only: Development-alone
7	2024	3696	4554	4895	5213	6154	Forth Islands	Displacement only: Development-alone
8	2025	3697	4655	5019	5367	6458	Forth Islands	Displacement only: Development-alone
9	2026	3693	4730	5126	5512	6772	Forth Islands	Displacement only: Development-alone
10	2027	3744	4829	5259	5688	7040	Forth Islands	Displacement only: Development-alone
11	2028	3763	4914	5364	5832	7309	Forth Islands	Displacement only: Development-alone
12	2029	3773	5033	5524	5987	7582	Forth Islands	Displacement only: Development-alone
13	2030	3813	5130	5691	6204	7917	Forth Islands	Displacement only: Development-alone
14	2031	3813	5241	5822	6383	8288	Forth Islands	Displacement only: Development-alone
15	2032	3849	5340	5990	6574	8628	Forth Islands	Displacement only: Development-alone
16	2033	3906	5464	6112	6769	8973	Forth Islands	Displacement only: Development-alone
17	2034	3922	5555	6233	6997	9373	Forth Islands	Displacement only: Development-alone
18	2035	3990	5677	6427	7212	9739	Forth Islands	Displacement only: Development-alone
19	2036	3973	5766	6578	7369	10173	Forth Islands	Displacement only: Development-alone
20	2037	3995	5874	6714	7581	10608	Forth Islands	Displacement only: Development-alone
21	2038	4012	5997	6871	7782	11076	Forth Islands	Displacement only: Development-alone
22	2039	4121	6106	7012	8016	11586	Forth Islands	Displacement only: Development-alone
23	2040	4071	6247	7204	8246	12055	Forth Islands	Displacement only: Development-alone
24	2041	4133	6297	7416	8480	12585	Forth Islands	Displacement only: Development-alone
25	2042	4180	6415	7554	8679	13037	Forth Islands	Displacement only: Development-alone
26	2043	4167	6536	7762	8953	13732	Forth Islands	Displacement only: Development-alone
27	2044	4222	6705	7966	9205	14176	Forth Islands	Displacement only: Development-alone
28	2045	4212	6861	8152	9478	14871	Forth Islands	Displacement only: Development-alone

29	2046	4297	7025	8352	9733	15370	Forth Islands	Displacement only: Development-alone
30	2047	4323	7172	8581	10043	15847	Forth Islands	Displacement only: Development-alone
31	2048	4393	7293	8764	10346	16588	Forth Islands	Displacement only: Development-alone
32	2049	4391	7406	8959	10656	17241	Forth Islands	Displacement only: Development-alone
33	2050	4379	7561	9164	10962	18011	Forth Islands	Displacement only: Development-alone
34	2051	4370	7763	9416	11299	18693	Forth Islands	Displacement only: Development-alone
35	2052	4422	7945	9623	11586	19419	Forth Islands	Displacement only: Development-alone
36	2053	4441	8113	9898	11940	20286	Forth Islands	Displacement only: Development-alone
37	2054	4584	8239	10062	12169	21114	Forth Islands	Displacement only: Development-alone
38	2055	4609	8387	10318	12581	22171	Forth Islands	Displacement only: Development-alone
39	2056	4645	8583	10556	12964	22794	Forth Islands	Displacement only: Development-alone
40	2057	4607	8728	10804	13329	23821	Forth Islands	Displacement only: Development-alone
41	2058	4677	8897	11078	13700	24755	Forth Islands	Displacement only: Development-alone
42	2059	4750	9079	11379	14205	25421	Forth Islands	Displacement only: Development-alone
43	2060	4829	9250	11651	14634	26826	Forth Islands	Displacement only: Development-alone
44	2061	4854	9449	11950	15038	28005	Forth Islands	Displacement only: Development-alone
45	2062	4879	9607	12244	15537	29154	Forth Islands	Displacement only: Development-alone
46	2063	4938	9863	12472	15936	30177	Forth Islands	Displacement only: Development-alone
47	2064	4980	10028	12795	16418	31636	Forth Islands	Displacement only: Development-alone
48	2065	5027	10197	13134	16724	33581	Forth Islands	Displacement only: Development-alone
49	2066	5115	10395	13514	17089	35101	Forth Islands	Displacement only: Development-alone
50	2067	5131	10604	13893	17605	36235	Forth Islands	Displacement only: Development-alone
51	2068	5066	10866	14228	18096	37710	Forth Islands	Displacement only: Development-alone
52	2069	5157	11086	14620	18559	38914	Forth Islands	Displacement only: Development-alone
53	2070	5157	11209	14893	19310	40405	Forth Islands	Displacement only: Development-alone
	year	Q5	Q33	Q50	Q66	Q95	Forth Islands	ptype
1	2018	3612	4113	4256	4385	4754	Forth Islands	Displacement only: Forth & Tay WFs
2	2019	3577	4160	4343	4501	4963	Forth Islands	Displacement only: Forth & Tay WFs
3	2020	3543	4212	4424	4620	5185	Forth Islands	Displacement only: Forth & Tay WFs
4	2021	3576	4264	4514	4742	5410	Forth Islands	Displacement only: Forth & Tay WFs
5	2022	3608	4366	4636	4898	5680	Forth Islands	Displacement only: Forth & Tay WFs
6	2023	3610	4451	4741	5026	5909	Forth Islands	Displacement only: Forth & Tay WFs
7	2024	3671	4530	4861	5178	6132	Forth Islands	Displacement only: Forth & Tay WFs
8	2025	3657	4619	4975	5315	6416	Forth Islands	Displacement only: Forth & Tay WFs
9	2026	3646	4695	5078	5465	6675	Forth Islands	Displacement only: Forth & Tay WFs
10	2027	3718	4770	5200	5638	6999	Forth Islands	Displacement only: Forth & Tay WFs
11	2028	3699	4851	5310	5769	7250	Forth Islands	Displacement only: Forth & Tay WFs
12	2029	3727	4954	5440	5909	7507	Forth Islands	Displacement only: Forth & Tay WFs
13	2030	3756	5041	5602	6105	7779	Forth Islands	Displacement only: Forth & Tay WFs
14	2031	3784	5155	5706	6250	8159	Forth Islands	Displacement only: Forth & Tay WFs
15	2032	3768	5246	5862	6449	8467	Forth Islands	Displacement only: Forth & Tay WFs
16	2033	3803	5337	5972	6666	8845	Forth Islands	Displacement only: Forth & Tay WFs
17	2034	3844	5431	6090	6842	9173	Forth Islands	Displacement only: Forth & Tay WFs
18	2035	3843	5544	6242	7013	9530	Forth Islands	Displacement only: Forth & Tay WFs
19	2036	3906	5611	6354	7192	9859	Forth Islands	Displacement only: Forth & Tay WFs
20	2037	3924	5716	6496	7378	10339	Forth Islands	Displacement only: Forth & Tay WFs

21	2038	3940	5828	6632	7585	10785	Forth Islands	Displacement only: Forth & Tay WFs
22	2039	3974	5926	6790	7828	11078	Forth Islands	Displacement only: Forth & Tay WFs
23	2040	3943	6043	6940	7967	11631	Forth Islands	Displacement only: Forth & Tay WFs
24	2041	4002	6164	7124	8163	12112	Forth Islands	Displacement only: Forth & Tay WFs
25	2042	4061	6243	7266	8389	12667	Forth Islands	Displacement only: Forth & Tay WFs
26	2043	4031	6361	7430	8608	13191	Forth Islands	Displacement only: Forth & Tay WFs
27	2044	4124	6474	7618	8856	13563	Forth Islands	Displacement only: Forth & Tay WFs
28	2045	4103	6613	7836	9097	14233	Forth Islands	Displacement only: Forth & Tay WFs
29	2046	4143	6721	8048	9313	14700	Forth Islands	Displacement only: Forth & Tay WFs
30	2047	4201	6895	8213	9604	15148	Forth Islands	Displacement only: Forth & Tay WFs
31	2048	4266	6973	8406	9889	15788	Forth Islands	Displacement only: Forth & Tay WFs
32	2049	4249	7092	8553	10122	16368	Forth Islands	Displacement only: Forth & Tay WFs
33	2050	4193	7232	8714	10408	17134	Forth Islands	Displacement only: Forth & Tay WFs
34	2051	4210	7371	8963	10710	17878	Forth Islands	Displacement only: Forth & Tay WFs
35	2052	4256	7526	9184	10965	18700	Forth Islands	Displacement only: Forth & Tay WFs
36	2053	4340	7704	9454	11325	19378	Forth Islands	Displacement only: Forth & Tay WFs
37	2054	4356	7809	9584	11525	20082	Forth Islands	Displacement only: Forth & Tay WFs
38	2055	4392	7996	9750	11941	21078	Forth Islands	Displacement only: Forth & Tay WFs
39	2056	4439	8142	9980	12293	21773	Forth Islands	Displacement only: Forth & Tay WFs
40	2057	4377	8348	10228	12581	22691	Forth Islands	Displacement only: Forth & Tay WFs
41	2058	4379	8428	10447	12916	23699	Forth Islands	Displacement only: Forth & Tay WFs
42	2059	4482	8609	10742	13316	24621	Forth Islands	Displacement only: Forth & Tay WFs
43	2060	4504	8731	11000	13683	25709	Forth Islands	Displacement only: Forth & Tay WFs
44	2061	4552	8863	11233	14049	26914	Forth Islands	Displacement only: Forth & Tay WFs
45	2062	4494	9052	11450	14535	27632	Forth Islands	Displacement only: Forth & Tay WFs
46	2063	4570	9216	11683	14880	28642	Forth Islands	Displacement only: Forth & Tay WFs
47	2064	4584	9420	11922	15107	30004	Forth Islands	Displacement only: Forth & Tay WFs
48	2065	4609	9597	12198	15434	31787	Forth Islands	Displacement only: Forth & Tay WFs
49	2066	4666	9736	12510	15868	32765	Forth Islands	Displacement only: Forth & Tay WFs
50	2067	4660	9922	12892	16295	33916	Forth Islands	Displacement only: Forth & Tay WFs
51	2068	4672	10176	13233	16740	35498	Forth Islands	Displacement only: Forth & Tay WFs
52	2069	4662	10414	13522	17318	36542	Forth Islands	Displacement only: Forth & Tay WFs
53	2070	4709	10485	13846	17712	37972	Forth Islands	Displacement only: Forth & Tay WFs

RAZORBILLS – FOWLSHEUGH SPA

Projections placed in the following order of scenarios:

- **Baseline**
- **Development-alone**
- **Forth & Tay WFs**

	year	Q5	Q33	Q50	Q66	Q95	site	ptype
1	2018	3604	4100	4263	4405	4842	Fowlsheugh	Baseline
2	2019	3577	4152	4344	4516	5065	Fowlsheugh	Baseline
3	2020	3549	4210	4430	4635	5270	Fowlsheugh	Baseline
4	2021	3529	4274	4516	4733	5445	Fowlsheugh	Baseline
5	2022	3517	4309	4582	4835	5637	Fowlsheugh	Baseline
6	2023	3545	4361	4654	4970	5866	Fowlsheugh	Baseline
7	2024	3508	4419	4729	5044	6079	Fowlsheugh	Baseline
8	2025	3536	4467	4803	5177	6337	Fowlsheugh	Baseline
9	2026	3508	4523	4908	5285	6579	Fowlsheugh	Baseline
10	2027	3542	4593	4988	5402	6771	Fowlsheugh	Baseline
11	2028	3577	4663	5091	5509	7026	Fowlsheugh	Baseline
12	2029	3619	4723	5194	5635	7256	Fowlsheugh	Baseline
13	2030	3599	4802	5265	5789	7508	Fowlsheugh	Baseline
14	2031	3608	4826	5351	5898	7825	Fowlsheugh	Baseline
15	2032	3571	4906	5454	5981	8067	Fowlsheugh	Baseline
16	2033	3586	4948	5534	6143	8306	Fowlsheugh	Baseline
17	2034	3580	5001	5652	6293	8592	Fowlsheugh	Baseline
18	2035	3557	5083	5719	6430	8987	Fowlsheugh	Baseline
19	2036	3589	5143	5848	6566	9243	Fowlsheugh	Baseline
20	2037	3602	5204	5968	6727	9588	Fowlsheugh	Baseline
21	2038	3604	5231	6065	6856	9798	Fowlsheugh	Baseline
22	2039	3588	5295	6142	7008	10196	Fowlsheugh	Baseline
23	2040	3560	5396	6228	7149	10585	Fowlsheugh	Baseline
24	2041	3555	5476	6318	7233	10929	Fowlsheugh	Baseline
25	2042	3597	5532	6458	7408	11247	Fowlsheugh	Baseline
26	2043	3625	5597	6623	7598	11747	Fowlsheugh	Baseline
27	2044	3600	5693	6755	7741	11993	Fowlsheugh	Baseline
28	2045	3585	5786	6864	7907	12451	Fowlsheugh	Baseline
29	2046	3598	5859	6976	8093	12871	Fowlsheugh	Baseline
30	2047	3628	5904	7051	8281	13317	Fowlsheugh	Baseline
31	2048	3637	6002	7156	8478	13702	Fowlsheugh	Baseline
32	2049	3655	6082	7266	8596	14333	Fowlsheugh	Baseline
33	2050	3631	6162	7430	8814	14729	Fowlsheugh	Baseline
34	2051	3668	6252	7576	9053	15240	Fowlsheugh	Baseline
35	2052	3709	6310	7718	9177	15773	Fowlsheugh	Baseline
36	2053	3650	6395	7829	9408	16241	Fowlsheugh	Baseline

37	2054	3668	6501	7946	9618	16935	Fowsheugh	Baseline
38	2055	3665	6596	8104	9777	17649	Fowsheugh	Baseline
39	2056	3708	6676	8246	10015	17943	Fowsheugh	Baseline
40	2057	3739	6760	8360	10287	18872	Fowsheugh	Baseline
41	2058	3703	6900	8510	10436	19564	Fowsheugh	Baseline
42	2059	3715	6965	8720	10684	20143	Fowsheugh	Baseline
43	2060	3700	7045	8838	10973	20806	Fowsheugh	Baseline
44	2061	3710	7116	9012	11302	21699	Fowsheugh	Baseline
45	2062	3670	7251	9198	11547	22397	Fowsheugh	Baseline
46	2063	3728	7281	9308	11774	23192	Fowsheugh	Baseline
47	2064	3710	7357	9452	11996	24182	Fowsheugh	Baseline
48	2065	3729	7481	9635	12289	24862	Fowsheugh	Baseline
49	2066	3710	7562	9814	12524	25711	Fowsheugh	Baseline
50	2067	3743	7646	10030	12715	26427	Fowsheugh	Baseline
51	2068	3749	7774	10204	12954	27460	Fowsheugh	Baseline
52	2069	3808	7893	10332	13341	28168	Fowsheugh	Baseline
53	2070	3757	7955	10485	13567	29198	Fowsheugh	Baseline
	year	Q5	Q33	Q50	Q66	Q95	Fowsheugh	ptype
1	2018	3608	4099	4263	4413	4862	Fowsheugh	Displacement only: Development-alone
2	2019	3561	4153	4348	4515	5077	Fowsheugh	Displacement only: Development-alone
3	2020	3558	4202	4428	4632	5267	Fowsheugh	Displacement only: Development-alone
4	2021	3548	4267	4501	4726	5441	Fowsheugh	Displacement only: Development-alone
5	2022	3523	4285	4577	4840	5646	Fowsheugh	Displacement only: Development-alone
6	2023	3545	4345	4650	4945	5834	Fowsheugh	Displacement only: Development-alone
7	2024	3506	4385	4714	5018	6089	Fowsheugh	Displacement only: Development-alone
8	2025	3506	4436	4778	5137	6319	Fowsheugh	Displacement only: Development-alone
9	2026	3531	4490	4882	5258	6570	Fowsheugh	Displacement only: Development-alone
10	2027	3545	4563	4953	5350	6707	Fowsheugh	Displacement only: Development-alone
11	2028	3562	4617	5042	5461	6965	Fowsheugh	Displacement only: Development-alone
12	2029	3567	4686	5119	5573	7168	Fowsheugh	Displacement only: Development-alone
13	2030	3551	4753	5195	5737	7422	Fowsheugh	Displacement only: Development-alone
14	2031	3542	4763	5284	5819	7699	Fowsheugh	Displacement only: Development-alone
15	2032	3567	4849	5366	5950	7995	Fowsheugh	Displacement only: Development-alone
16	2033	3563	4891	5475	6059	8257	Fowsheugh	Displacement only: Development-alone
17	2034	3556	4942	5559	6196	8519	Fowsheugh	Displacement only: Development-alone
18	2035	3535	4993	5656	6339	8845	Fowsheugh	Displacement only: Development-alone
19	2036	3534	5074	5769	6470	9153	Fowsheugh	Displacement only: Development-alone
20	2037	3576	5132	5862	6607	9413	Fowsheugh	Displacement only: Development-alone
21	2038	3546	5165	5985	6737	9638	Fowsheugh	Displacement only: Development-alone
22	2039	3551	5226	6022	6857	10040	Fowsheugh	Displacement only: Development-alone
23	2040	3512	5289	6126	6994	10296	Fowsheugh	Displacement only: Development-alone
24	2041	3558	5382	6204	7164	10663	Fowsheugh	Displacement only: Development-alone
25	2042	3513	5419	6328	7307	10996	Fowsheugh	Displacement only: Development-alone
26	2043	3474	5499	6466	7444	11512	Fowsheugh	Displacement only: Development-alone
27	2044	3532	5534	6564	7606	11851	Fowsheugh	Displacement only: Development-alone
28	2045	3483	5618	6684	7766	12231	Fowsheugh	Displacement only: Development-alone

29	2046	3552	5691	6774	7902	12636	Fowlsheugh	Displacement only: Development-alone
30	2047	3543	5757	6836	8053	12973	Fowlsheugh	Displacement only: Development-alone
31	2048	3517	5848	6964	8232	13313	Fowlsheugh	Displacement only: Development-alone
32	2049	3554	5881	7095	8334	13875	Fowlsheugh	Displacement only: Development-alone
33	2050	3539	5947	7214	8530	14472	Fowlsheugh	Displacement only: Development-alone
34	2051	3542	6049	7375	8746	14697	Fowlsheugh	Displacement only: Development-alone
35	2052	3558	6140	7484	8926	15237	Fowlsheugh	Displacement only: Development-alone
36	2053	3544	6173	7581	9130	15773	Fowlsheugh	Displacement only: Development-alone
37	2054	3568	6271	7710	9281	16300	Fowlsheugh	Displacement only: Development-alone
38	2055	3567	6352	7820	9419	16937	Fowlsheugh	Displacement only: Development-alone
39	2056	3616	6403	7930	9634	17364	Fowlsheugh	Displacement only: Development-alone
40	2057	3574	6526	8096	9876	18139	Fowlsheugh	Displacement only: Development-alone
41	2058	3621	6590	8236	10086	18712	Fowlsheugh	Displacement only: Development-alone
42	2059	3631	6699	8366	10320	19235	Fowlsheugh	Displacement only: Development-alone
43	2060	3581	6768	8510	10526	19935	Fowlsheugh	Displacement only: Development-alone
44	2061	3613	6811	8710	10751	20848	Fowlsheugh	Displacement only: Development-alone
45	2062	3581	6938	8819	11006	21687	Fowlsheugh	Displacement only: Development-alone
46	2063	3574	6971	8884	11208	22184	Fowlsheugh	Displacement only: Development-alone
47	2064	3602	7021	9032	11453	22813	Fowlsheugh	Displacement only: Development-alone
48	2065	3622	7137	9214	11686	23746	Fowlsheugh	Displacement only: Development-alone
49	2066	3606	7249	9396	11884	24543	Fowlsheugh	Displacement only: Development-alone
50	2067	3613	7301	9650	12139	25121	Fowlsheugh	Displacement only: Development-alone
51	2068	3583	7383	9735	12458	26337	Fowlsheugh	Displacement only: Development-alone
52	2069	3606	7484	9898	12780	26845	Fowlsheugh	Displacement only: Development-alone
53	2070	3604	7521	10076	12962	27881	Fowlsheugh	Displacement only: Development-alone
year	Q5	Q33	Q50	Q66	Q95	Fowlsheugh	ptype	
1	2018	3605	4111	4268	4409	4835	Fowlsheugh	Displacement only: Forth & Tay WFs
2	2019	3549	4153	4352	4516	5056	Fowlsheugh	Displacement only: Forth & Tay WFs
3	2020	3553	4194	4420	4618	5261	Fowlsheugh	Displacement only: Forth & Tay WFs
4	2021	3509	4254	4482	4711	5428	Fowlsheugh	Displacement only: Forth & Tay WFs
5	2022	3516	4266	4540	4830	5623	Fowlsheugh	Displacement only: Forth & Tay WFs
6	2023	3536	4308	4626	4910	5811	Fowlsheugh	Displacement only: Forth & Tay WFs
7	2024	3476	4364	4676	4978	6059	Fowlsheugh	Displacement only: Forth & Tay WFs
8	2025	3477	4388	4726	5088	6255	Fowlsheugh	Displacement only: Forth & Tay WFs
9	2026	3483	4441	4812	5192	6479	Fowlsheugh	Displacement only: Forth & Tay WFs
10	2027	3498	4503	4900	5300	6673	Fowlsheugh	Displacement only: Forth & Tay WFs
11	2028	3510	4553	4976	5395	6910	Fowlsheugh	Displacement only: Forth & Tay WFs
12	2029	3523	4611	5052	5512	7105	Fowlsheugh	Displacement only: Forth & Tay WFs
13	2030	3497	4675	5111	5637	7337	Fowlsheugh	Displacement only: Forth & Tay WFs
14	2031	3514	4692	5204	5715	7586	Fowlsheugh	Displacement only: Forth & Tay WFs
15	2032	3473	4744	5271	5822	7867	Fowlsheugh	Displacement only: Forth & Tay WFs
16	2033	3495	4776	5346	5957	8103	Fowlsheugh	Displacement only: Forth & Tay WFs
17	2034	3489	4814	5408	6082	8406	Fowlsheugh	Displacement only: Forth & Tay WFs
18	2035	3433	4879	5507	6160	8705	Fowlsheugh	Displacement only: Forth & Tay WFs
19	2036	3465	4935	5608	6322	8952	Fowlsheugh	Displacement only: Forth & Tay WFs
20	2037	3487	4994	5703	6477	9211	Fowlsheugh	Displacement only: Forth & Tay WFs

21	2038	3452	5037	5779	6553	9469	Fowlisheugh	Displacement only: Forth & Tay WFs
22	2039	3466	5080	5851	6688	9829	Fowlisheugh	Displacement only: Forth & Tay WFs
23	2040	3461	5148	5913	6789	10151	Fowlisheugh	Displacement only: Forth & Tay WFs
24	2041	3422	5202	6031	6922	10386	Fowlisheugh	Displacement only: Forth & Tay WFs
25	2042	3453	5264	6104	7066	10706	Fowlisheugh	Displacement only: Forth & Tay WFs
26	2043	3432	5301	6246	7209	11117	Fowlisheugh	Displacement only: Forth & Tay WFs
27	2044	3406	5346	6344	7321	11476	Fowlisheugh	Displacement only: Forth & Tay WFs
28	2045	3385	5425	6450	7467	11939	Fowlisheugh	Displacement only: Forth & Tay WFs
29	2046	3435	5496	6530	7641	12251	Fowlisheugh	Displacement only: Forth & Tay WFs
30	2047	3434	5578	6564	7773	12595	Fowlisheugh	Displacement only: Forth & Tay WFs
31	2048	3399	5601	6706	7873	12954	Fowlisheugh	Displacement only: Forth & Tay WFs
32	2049	3432	5696	6768	8013	13415	Fowlisheugh	Displacement only: Forth & Tay WFs
33	2050	3372	5744	6926	8193	13870	Fowlisheugh	Displacement only: Forth & Tay WFs
34	2051	3393	5809	7017	8366	14413	Fowlisheugh	Displacement only: Forth & Tay WFs
35	2052	3428	5865	7157	8504	14703	Fowlisheugh	Displacement only: Forth & Tay WFs
36	2053	3367	5892	7239	8689	15146	Fowlisheugh	Displacement only: Forth & Tay WFs
37	2054	3378	5970	7338	8884	15615	Fowlisheugh	Displacement only: Forth & Tay WFs
38	2055	3382	6067	7427	9042	16132	Fowlisheugh	Displacement only: Forth & Tay WFs
39	2056	3421	6140	7564	9182	16440	Fowlisheugh	Displacement only: Forth & Tay WFs
40	2057	3437	6188	7676	9420	17241	Fowlisheugh	Displacement only: Forth & Tay WFs
41	2058	3411	6227	7781	9608	18016	Fowlisheugh	Displacement only: Forth & Tay WFs
42	2059	3425	6371	7923	9780	18391	Fowlisheugh	Displacement only: Forth & Tay WFs
43	2060	3386	6419	8010	9961	19074	Fowlisheugh	Displacement only: Forth & Tay WFs
44	2061	3394	6445	8146	10225	19527	Fowlisheugh	Displacement only: Forth & Tay WFs
45	2062	3409	6583	8336	10433	20140	Fowlisheugh	Displacement only: Forth & Tay WFs
46	2063	3437	6623	8461	10603	20929	Fowlisheugh	Displacement only: Forth & Tay WFs
47	2064	3391	6662	8550	10824	22126	Fowlisheugh	Displacement only: Forth & Tay WFs
48	2065	3372	6735	8632	11020	22378	Fowlisheugh	Displacement only: Forth & Tay WFs
49	2066	3371	6806	8742	11212	22982	Fowlisheugh	Displacement only: Forth & Tay WFs
50	2067	3402	6914	8960	11461	23623	Fowlisheugh	Displacement only: Forth & Tay WFs
51	2068	3433	6965	9065	11667	24531	Fowlisheugh	Displacement only: Forth & Tay WFs
52	2069	3396	7076	9158	11925	25175	Fowlisheugh	Displacement only: Forth & Tay WFs
53	2070	3385	7101	9330	12177	26190	Fowlisheugh	Displacement only: Forth & Tay WFs

RAZORBILLS – REGIONAL – FORTH ISLANDS SPA + FOWLSHEUGH SPA

Projections placed in the following order of scenarios:

- Baseline
- Development-alone
- Forth & Tay WFs

	year	Q5_1	Q33_1	Q50_1	Q66_1	Q95_1	scen
1	2018	7601	8271	8501	8706	9289	Baseline
2	2019	7586	8385	8662	8920	9660	Baseline
3	2020	7657	8534	8858	9152	10024	Baseline
4	2021	7641	8701	9030	9355	10391	Baseline
5	2022	7783	8876	9256	9608	10755	Baseline
6	2023	7851	9062	9474	9884	11186	Baseline
7	2024	7924	9209	9661	10137	11601	Baseline
8	2025	8025	9363	9878	10396	12001	Baseline
9	2026	8152	9546	10104	10660	12432	Baseline
10	2027	8195	9717	10319	10925	12899	Baseline
11	2028	8274	9927	10538	11212	13321	Baseline
12	2029	8411	10123	10834	11506	13740	Baseline
13	2030	8488	10336	11083	11817	14217	Baseline
14	2031	8553	10519	11310	12108	14817	Baseline
15	2032	8679	10747	11574	12414	15353	Baseline
16	2033	8835	10940	11896	12715	15857	Baseline
17	2034	8795	11146	12162	13088	16541	Baseline
18	2035	8948	11348	12452	13408	17177	Baseline
19	2036	9020	11617	12714	13753	17733	Baseline
20	2037	9182	11849	12982	14148	18337	Baseline
21	2038	9205	12037	13267	14591	18944	Baseline
22	2039	9340	12305	13545	14978	19635	Baseline
23	2040	9422	12567	13824	15283	20314	Baseline
24	2041	9469	12794	14179	15650	21167	Baseline
25	2042	9685	13029	14471	16123	21833	Baseline
26	2043	9747	13321	14846	16476	22652	Baseline
27	2044	9855	13571	15244	16940	23308	Baseline
28	2045	9972	13833	15598	17417	24268	Baseline
29	2046	10112	14213	15962	17902	25222	Baseline
30	2047	10223	14450	16318	18397	26168	Baseline
31	2048	10329	14729	16734	18894	27120	Baseline
32	2049	10406	14981	17148	19361	27981	Baseline
33	2050	10539	15352	17578	19871	29217	Baseline
34	2051	10657	15736	17930	20402	30421	Baseline
35	2052	10742	16018	18336	20911	31372	Baseline
36	2053	10856	16290	18789	21523	32512	Baseline

37	2054	10897	16634	19250	22144	34034	Baseline
38	2055	11072	16977	19793	22779	35062	Baseline
39	2056	11211	17398	20248	23370	36687	Baseline
40	2057	11335	17786	20684	24115	38056	Baseline
41	2058	11560	18144	21235	24667	39563	Baseline
42	2059	11766	18526	21629	25303	41017	Baseline
43	2060	11984	18915	22259	26068	42498	Baseline
44	2061	12013	19351	22744	26778	43799	Baseline
45	2062	12236	19732	23398	27666	45582	Baseline
46	2063	12269	20179	23904	28252	47001	Baseline
47	2064	12463	20576	24440	29058	48730	Baseline
48	2065	12601	20925	25092	29852	51268	Baseline
49	2066	12560	21307	25719	30586	53345	Baseline
50	2067	12850	21846	26313	31526	55205	Baseline
51	2068	12912	22376	27036	32283	57540	Baseline
52	2069	13267	22771	27798	33312	59742	Baseline
53	2070	13381	23225	28442	34231	61927	Baseline
	year	Q5_2	Q33_2	Q50_2	Q66_2	Q95_2	scen
1	2018	7585	8275	8497	8712	9271	Displacement only: Development-alone
2	2019	7576	8395	8667	8919	9660	Displacement only: Development-alone
3	2020	7628	8523	8853	9134	10021	Displacement only: Development-alone
4	2021	7656	8676	9024	9339	10360	Displacement only: Development-alone
5	2022	7754	8855	9222	9581	10704	Displacement only: Development-alone
6	2023	7823	9034	9429	9840	11118	Displacement only: Development-alone
7	2024	7856	9164	9606	10096	11535	Displacement only: Development-alone
8	2025	7939	9313	9842	10340	11912	Displacement only: Development-alone
9	2026	8050	9453	10042	10598	12314	Displacement only: Development-alone
10	2027	8093	9649	10234	10844	12780	Displacement only: Development-alone
11	2028	8212	9830	10450	11086	13190	Displacement only: Development-alone
12	2029	8357	10020	10702	11388	13609	Displacement only: Development-alone
13	2030	8349	10230	10963	11685	14065	Displacement only: Development-alone
14	2031	8463	10403	11170	11940	14607	Displacement only: Development-alone
15	2032	8518	10610	11428	12275	15115	Displacement only: Development-alone
16	2033	8667	10781	11676	12540	15676	Displacement only: Development-alone
17	2034	8726	10981	11936	12899	16285	Displacement only: Development-alone
18	2035	8803	11245	12198	13201	16874	Displacement only: Development-alone
19	2036	8868	11440	12461	13514	17325	Displacement only: Development-alone
20	2037	8986	11626	12794	13837	17964	Displacement only: Development-alone
21	2038	9026	11843	13048	14303	18513	Displacement only: Development-alone
22	2039	9119	12034	13322	14645	19146	Displacement only: Development-alone
23	2040	9181	12258	13624	14908	19716	Displacement only: Development-alone
24	2041	9265	12516	13906	15313	20554	Displacement only: Development-alone
25	2042	9452	12740	14162	15696	21250	Displacement only: Development-alone
26	2043	9447	12992	14468	16064	22004	Displacement only: Development-alone
27	2044	9593	13214	14857	16523	22749	Displacement only: Development-alone
28	2045	9720	13464	15186	16967	23623	Displacement only: Development-alone

29	2046	9888	13778	15502	17480	24513	Displacement only: Development-alone
30	2047	9995	13975	15854	17831	25330	Displacement only: Development-alone
31	2048	10049	14280	16196	18323	26316	Displacement only: Development-alone
32	2049	10177	14567	16536	18774	27121	Displacement only: Development-alone
33	2050	10239	14856	16912	19305	28220	Displacement only: Development-alone
34	2051	10373	15151	17361	19795	29054	Displacement only: Development-alone
35	2052	10456	15462	17752	20294	30093	Displacement only: Development-alone
36	2053	10628	15725	18168	20764	30966	Displacement only: Development-alone
37	2054	10599	15988	18554	21366	32077	Displacement only: Development-alone
38	2055	10671	16283	18968	21926	33322	Displacement only: Development-alone
39	2056	10824	16597	19406	22471	34950	Displacement only: Development-alone
40	2057	10905	16966	19880	23040	35965	Displacement only: Development-alone
41	2058	11111	17276	20392	23693	37473	Displacement only: Development-alone
42	2059	11348	17662	20708	24114	38755	Displacement only: Development-alone
43	2060	11459	18030	21199	24789	40582	Displacement only: Development-alone
44	2061	11576	18485	21698	25598	41512	Displacement only: Development-alone
45	2062	11765	18843	22294	26425	43220	Displacement only: Development-alone
46	2063	11799	19199	22717	26929	44735	Displacement only: Development-alone
47	2064	11940	19628	23202	27560	46013	Displacement only: Development-alone
48	2065	12008	20051	23794	28418	48541	Displacement only: Development-alone
49	2066	12146	20420	24365	29027	50447	Displacement only: Development-alone
50	2067	12356	20813	24880	29840	52124	Displacement only: Development-alone
51	2068	12493	21191	25523	30688	54584	Displacement only: Development-alone
52	2069	12584	21584	26150	31466	56231	Displacement only: Development-alone
53	2070	12729	22040	26706	32205	58058	Displacement only: Development-alone
year	Q5_3	Q33_3	Q50_3	Q66_3	Q95_3	scen	
1	2018	7591	8272	8502	8725	9273	Displacement only: Forth & Tay WFs
2	2019	7564	8393	8666	8926	9652	Displacement only: Forth & Tay WFs
3	2020	7617	8519	8830	9116	10009	Displacement only: Forth & Tay WFs
4	2021	7656	8658	8995	9314	10345	Displacement only: Forth & Tay WFs
5	2022	7723	8800	9185	9543	10679	Displacement only: Forth & Tay WFs
6	2023	7788	8970	9380	9780	11039	Displacement only: Forth & Tay WFs
7	2024	7816	9078	9530	10018	11446	Displacement only: Forth & Tay WFs
8	2025	7890	9244	9745	10248	11822	Displacement only: Forth & Tay WFs
9	2026	7972	9389	9934	10469	12229	Displacement only: Forth & Tay WFs
10	2027	8072	9553	10121	10731	12676	Displacement only: Forth & Tay WFs
11	2028	8117	9712	10325	10922	13036	Displacement only: Forth & Tay WFs
12	2029	8239	9883	10554	11193	13461	Displacement only: Forth & Tay WFs
13	2030	8259	10084	10786	11487	13909	Displacement only: Forth & Tay WFs
14	2031	8315	10243	10964	11748	14392	Displacement only: Forth & Tay WFs
15	2032	8393	10427	11208	12044	14872	Displacement only: Forth & Tay WFs
16	2033	8533	10613	11458	12312	15374	Displacement only: Forth & Tay WFs
17	2034	8503	10749	11689	12589	15853	Displacement only: Forth & Tay WFs
18	2035	8644	10944	11960	12882	16465	Displacement only: Forth & Tay WFs
19	2036	8687	11164	12150	13188	16946	Displacement only: Forth & Tay WFs
20	2037	8721	11376	12428	13520	17502	Displacement only: Forth & Tay WFs

21	2038	8803	11511	12652	13894	17994	Displacement only: Forth & Tay WFs
22	2039	8899	11665	12889	14222	18589	Displacement only: Forth & Tay WFs
23	2040	8958	11889	13142	14480	19341	Displacement only: Forth & Tay WFs
24	2041	9028	12147	13426	14815	19849	Displacement only: Forth & Tay WFs
25	2042	9101	12347	13639	15163	20560	Displacement only: Forth & Tay WFs
26	2043	9190	12506	13970	15493	21403	Displacement only: Forth & Tay WFs
27	2044	9244	12713	14366	15927	22027	Displacement only: Forth & Tay WFs
28	2045	9323	12924	14582	16286	22794	Displacement only: Forth & Tay WFs
29	2046	9493	13222	14894	16777	23579	Displacement only: Forth & Tay WFs
30	2047	9578	13460	15210	17120	24367	Displacement only: Forth & Tay WFs
31	2048	9643	13690	15552	17559	25212	Displacement only: Forth & Tay WFs
32	2049	9647	13864	15884	17971	25959	Displacement only: Forth & Tay WFs
33	2050	9802	14152	16213	18415	26923	Displacement only: Forth & Tay WFs
34	2051	9811	14402	16560	18816	27852	Displacement only: Forth & Tay WFs
35	2052	9916	14694	16940	19326	28940	Displacement only: Forth & Tay WFs
36	2053	10032	14960	17372	19714	29667	Displacement only: Forth & Tay WFs
37	2054	10090	15211	17646	20254	30762	Displacement only: Forth & Tay WFs
38	2055	10156	15457	18054	20783	32145	Displacement only: Forth & Tay WFs
39	2056	10319	15767	18414	21243	33270	Displacement only: Forth & Tay WFs
40	2057	10387	16084	18798	21748	34526	Displacement only: Forth & Tay WFs
41	2058	10542	16362	19192	22300	35936	Displacement only: Forth & Tay WFs
42	2059	10624	16705	19552	22792	37234	Displacement only: Forth & Tay WFs
43	2060	10829	17083	19948	23383	38482	Displacement only: Forth & Tay WFs
44	2061	10858	17455	20448	23995	39248	Displacement only: Forth & Tay WFs
45	2062	10995	17765	20872	24731	41119	Displacement only: Forth & Tay WFs
46	2063	11039	17962	21271	25202	42384	Displacement only: Forth & Tay WFs
47	2064	10995	18307	21681	25745	43841	Displacement only: Forth & Tay WFs
48	2065	11095	18668	22288	26341	46012	Displacement only: Forth & Tay WFs
49	2066	11267	19012	22722	27027	47088	Displacement only: Forth & Tay WFs
50	2067	11430	19448	23198	27713	49055	Displacement only: Forth & Tay WFs
51	2068	11500	19815	23908	28339	51080	Displacement only: Forth & Tay WFs
52	2069	11565	20055	24472	29083	52186	Displacement only: Forth & Tay WFs
53	2070	11759	20373	24896	29870	54092	Displacement only: Forth & Tay WFs

PUFFINS – FORTH ISLANDS SPA

Projections placed in the following order of scenarios:

- **Baseline**
- **Development-alone**
- **Forth & Tay WFs**

	year	Q5	Q33	Q50	Q66	Q95	site	ptype
1	2018	47058	66615	74300	82231	110314	Forth Islands	Baseline
2	2019	48427	69701	78440	87168	117620	Forth Islands	Baseline
3	2020	49933	73245	82712	92326	125822	Forth Islands	Baseline
4	2021	51579	76601	86820	97649	133926	Forth Islands	Baseline
5	2022	53313	80120	91427	103100	142723	Forth Islands	Baseline
6	2023	54723	83703	96149	108674	152026	Forth Islands	Baseline
7	2024	56579	87302	100809	114424	161744	Forth Islands	Baseline
8	2025	58346	91474	105834	120902	172133	Forth Islands	Baseline
9	2026	60134	95636	111230	127581	184085	Forth Islands	Baseline
10	2027	61828	100001	116951	134403	195728	Forth Islands	Baseline
11	2028	63473	104779	122870	141999	208474	Forth Islands	Baseline
12	2029	65438	109198	129207	150152	222015	Forth Islands	Baseline
13	2030	67693	114557	136054	158680	237145	Forth Islands	Baseline
14	2031	69759	119781	142810	167389	252761	Forth Islands	Baseline
15	2032	71883	125379	149696	176671	268627	Forth Islands	Baseline
16	2033	74140	131432	157442	186729	286544	Forth Islands	Baseline
17	2034	76179	137043	165778	196675	305587	Forth Islands	Baseline
18	2035	78597	143251	174310	207574	325332	Forth Islands	Baseline
19	2036	80532	149588	182936	219088	346646	Forth Islands	Baseline
20	2037	83270	156417	192560	231393	369664	Forth Islands	Baseline
21	2038	86311	163719	202753	243711	394291	Forth Islands	Baseline
22	2039	89109	171374	212650	257581	420178	Forth Islands	Baseline
23	2040	92125	179027	223494	272214	446838	Forth Islands	Baseline
24	2041	94846	186899	234948	287762	478146	Forth Islands	Baseline
25	2042	97691	195544	247262	303463	507847	Forth Islands	Baseline
26	2043	100286	204489	259964	320840	540016	Forth Islands	Baseline
27	2044	103394	214030	273516	339735	577709	Forth Islands	Baseline
28	2045	106860	224117	286974	357461	614566	Forth Islands	Baseline
29	2046	110016	234095	301960	377792	652200	Forth Islands	Baseline
30	2047	114072	245450	317082	399299	698116	Forth Islands	Baseline
31	2048	117325	256326	334697	421374	742073	Forth Islands	Baseline
32	2049	120251	267794	351286	444527	793252	Forth Islands	Baseline
33	2050	124372	280652	367948	469670	843226	Forth Islands	Baseline
34	2051	128439	293538	387295	495783	902039	Forth Islands	Baseline
35	2052	131253	306930	406817	523998	959702	Forth Islands	Baseline
36	2053	135768	320963	427836	551773	1023965	Forth Islands	Baseline

37	2054	140068	335054	448976	583681	1084819	Forth Islands	Baseline
38	2055	143649	350155	472082	616029	1160961	Forth Islands	Baseline
39	2056	147515	365408	496378	648057	1236855	Forth Islands	Baseline
40	2057	152523	383723	522653	684996	1322099	Forth Islands	Baseline
41	2058	157617	401502	548518	722379	1406374	Forth Islands	Baseline
42	2059	161791	418469	576885	763541	1496480	Forth Islands	Baseline
43	2060	167550	436552	607716	804979	1600303	Forth Islands	Baseline
44	2061	171807	457422	638618	848899	1700300	Forth Islands	Baseline
45	2062	177762	479977	671928	900899	1808116	Forth Islands	Baseline
46	2063	183412	500355	706638	949778	1923488	Forth Islands	Baseline
47	2064	190212	523859	742699	1002834	2054147	Forth Islands	Baseline
48	2065	194541	547428	781220	1058353	2195490	Forth Islands	Baseline
49	2066	200451	572851	821332	1117123	2343854	Forth Islands	Baseline
50	2067	205949	600056	863407	1180198	2492094	Forth Islands	Baseline
51	2068	212778	627010	908380	1246620	2671766	Forth Islands	Baseline
52	2069	215569	655404	956687	1320665	2843744	Forth Islands	Baseline
53	2070	225038	686282	1002254	1390520	3043029	Forth Islands	Baseline
	year	Q5	Q33	Q50	Q66	Q95	site	ptype
1	2018	47028	66562	74276	82225	110273	Forth Islands	Displacement only: Development-alone
2	2019	48431	69727	78458	87196	117695	Forth Islands	Displacement only: Development-alone
3	2020	49962	73218	82669	92267	125791	Forth Islands	Displacement only: Development-alone
4	2021	51540	76556	86778	97581	133788	Forth Islands	Displacement only: Development-alone
5	2022	53189	80025	91356	103093	142546	Forth Islands	Displacement only: Development-alone
6	2023	54752	83598	96036	108609	151959	Forth Islands	Displacement only: Development-alone
7	2024	56521	87181	100738	114294	161361	Forth Islands	Displacement only: Development-alone
8	2025	58153	91308	105668	120740	171741	Forth Islands	Displacement only: Development-alone
9	2026	59954	95392	111042	127381	183603	Forth Islands	Displacement only: Development-alone
10	2027	61573	99756	116720	134126	195288	Forth Islands	Displacement only: Development-alone
11	2028	63350	104461	122658	141566	207768	Forth Islands	Displacement only: Development-alone
12	2029	65302	108806	128868	149834	221118	Forth Islands	Displacement only: Development-alone
13	2030	67420	114201	135646	158329	236045	Forth Islands	Displacement only: Development-alone
14	2031	69508	119486	142300	166806	251974	Forth Islands	Displacement only: Development-alone
15	2032	71657	124946	149178	176077	267583	Forth Islands	Displacement only: Development-alone
16	2033	73837	130831	156996	186069	285668	Forth Islands	Displacement only: Development-alone
17	2034	75904	136607	165158	195733	304624	Forth Islands	Displacement only: Development-alone
18	2035	78077	142662	173505	206641	323692	Forth Islands	Displacement only: Development-alone
19	2036	80167	148979	182081	218099	345259	Forth Islands	Displacement only: Development-alone
20	2037	82915	155720	191607	230130	367890	Forth Islands	Displacement only: Development-alone
21	2038	85814	162952	201768	242249	392169	Forth Islands	Displacement only: Development-alone
22	2039	88494	170220	211582	256375	417506	Forth Islands	Displacement only: Development-alone
23	2040	91336	177709	222160	270693	445254	Forth Islands	Displacement only: Development-alone
24	2041	94248	185688	233588	286102	475884	Forth Islands	Displacement only: Development-alone
25	2042	96963	194176	245636	301556	505258	Forth Islands	Displacement only: Development-alone
26	2043	99508	202999	258420	318924	536888	Forth Islands	Displacement only: Development-alone
27	2044	102409	212211	271370	337081	574144	Forth Islands	Displacement only: Development-alone
28	2045	106142	222334	285102	355129	610573	Forth Islands	Displacement only: Development-alone

29	2046	109068	232256	299811	374836	648217	Forth Islands	Displacement only: Development-alone
30	2047	113064	243483	314841	396626	691675	Forth Islands	Displacement only: Development-alone
31	2048	116277	254212	331758	418438	736330	Forth Islands	Displacement only: Development-alone
32	2049	119408	265540	348290	440805	786824	Forth Islands	Displacement only: Development-alone
33	2050	123255	277975	365300	465378	838040	Forth Islands	Displacement only: Development-alone
34	2051	127193	290774	383834	491523	894040	Forth Islands	Displacement only: Development-alone
35	2052	130106	304221	403110	518532	949786	Forth Islands	Displacement only: Development-alone
36	2053	134500	317493	423859	547107	1014260	Forth Islands	Displacement only: Development-alone
37	2054	138567	331590	444786	578052	1074678	Forth Islands	Displacement only: Development-alone
38	2055	142329	346519	467468	609537	1148940	Forth Islands	Displacement only: Development-alone
39	2056	146397	361993	491512	641262	1223124	Forth Islands	Displacement only: Development-alone
40	2057	151301	379420	517252	677443	1307566	Forth Islands	Displacement only: Development-alone
41	2058	156194	396723	543012	715439	1391699	Forth Islands	Displacement only: Development-alone
42	2059	159762	413846	570636	755593	1483220	Forth Islands	Displacement only: Development-alone
43	2060	164995	431515	600597	795588	1580957	Forth Islands	Displacement only: Development-alone
44	2061	169696	452149	631532	839384	1680242	Forth Islands	Displacement only: Development-alone
45	2062	175646	474048	664890	890894	1786763	Forth Islands	Displacement only: Development-alone
46	2063	180874	494255	697210	937690	1899438	Forth Islands	Displacement only: Development-alone
47	2064	187642	516795	733354	990406	2031861	Forth Islands	Displacement only: Development-alone
48	2065	192423	540616	770666	1044584	2168217	Forth Islands	Displacement only: Development-alone
49	2066	197910	565862	810764	1103348	2313792	Forth Islands	Displacement only: Development-alone
50	2067	203529	592426	852014	1163972	2465290	Forth Islands	Displacement only: Development-alone
51	2068	210378	618150	896212	1230061	2634836	Forth Islands	Displacement only: Development-alone
52	2069	213302	645503	943116	1303431	2798939	Forth Islands	Displacement only: Development-alone
53	2070	221692	677121	989456	1370932	2999660	Forth Islands	Displacement only: Development-alone
	year	Q5	Q33	Q50	Q66	Q95	site	ptype
1	2018	47019	66549	74305	82193	110301	Forth Islands	Displacement only: Forth & Tay WFs
2	2019	48381	69741	78461	87209	117611	Forth Islands	Displacement only: Forth & Tay WFs
3	2020	49856	73110	82687	92225	125711	Forth Islands	Displacement only: Forth & Tay WFs
4	2021	51487	76480	86658	97465	133635	Forth Islands	Displacement only: Forth & Tay WFs
5	2022	53145	79915	91186	102821	142260	Forth Islands	Displacement only: Forth & Tay WFs
6	2023	54523	83346	95823	108232	151453	Forth Islands	Displacement only: Forth & Tay WFs
7	2024	56266	86906	100385	113889	161062	Forth Islands	Displacement only: Forth & Tay WFs
8	2025	57987	90957	105288	120137	171058	Forth Islands	Displacement only: Forth & Tay WFs
9	2026	59636	94987	110494	126796	182891	Forth Islands	Displacement only: Forth & Tay WFs
10	2027	61392	99213	115995	133355	194300	Forth Islands	Displacement only: Forth & Tay WFs
11	2028	63056	103872	121789	140828	206521	Forth Islands	Displacement only: Forth & Tay WFs
12	2029	64899	108151	127950	148753	219764	Forth Islands	Displacement only: Forth & Tay WFs
13	2030	66972	113286	134610	157014	234209	Forth Islands	Displacement only: Forth & Tay WFs
14	2031	68924	118413	141196	165539	249645	Forth Islands	Displacement only: Forth & Tay WFs
15	2032	70942	123855	147886	174502	265280	Forth Islands	Displacement only: Forth & Tay WFs
16	2033	73066	129623	155496	184321	282916	Forth Islands	Displacement only: Forth & Tay WFs
17	2034	74941	135086	163364	193901	301244	Forth Islands	Displacement only: Forth & Tay WFs
18	2035	77537	141106	171655	204433	319919	Forth Islands	Displacement only: Forth & Tay WFs
19	2036	79284	147149	180020	215565	341027	Forth Islands	Displacement only: Forth & Tay WFs
20	2037	81923	153657	189041	227393	363049	Forth Islands	Displacement only: Forth & Tay WFs

21	2038	84885	160710	199154	239220	387469	Forth Islands	Displacement only: Forth & Tay WFs
22	2039	87219	168026	208612	252720	411989	Forth Islands	Displacement only: Forth & Tay WFs
23	2040	89977	175267	218989	266720	438590	Forth Islands	Displacement only: Forth & Tay WFs
24	2041	92640	183063	229888	282003	467496	Forth Islands	Displacement only: Forth & Tay WFs
25	2042	95429	191255	241872	297088	496490	Forth Islands	Displacement only: Forth & Tay WFs
26	2043	97844	199704	254048	313584	528879	Forth Islands	Displacement only: Forth & Tay WFs
27	2044	100771	208670	266723	331265	563905	Forth Islands	Displacement only: Forth & Tay WFs
28	2045	104308	218487	279828	348749	599441	Forth Islands	Displacement only: Forth & Tay WFs
29	2046	106928	228123	294200	367939	635426	Forth Islands	Displacement only: Forth & Tay WFs
30	2047	110571	238650	308757	388818	678950	Forth Islands	Displacement only: Forth & Tay WFs
31	2048	113967	249124	325274	409852	722048	Forth Islands	Displacement only: Forth & Tay WFs
32	2049	117360	260379	340998	431738	770598	Forth Islands	Displacement only: Forth & Tay WFs
33	2050	120377	271979	356944	455948	820110	Forth Islands	Displacement only: Forth & Tay WFs
34	2051	124709	284205	375474	480772	873994	Forth Islands	Displacement only: Forth & Tay WFs
35	2052	127206	297411	394134	507326	929737	Forth Islands	Displacement only: Forth & Tay WFs
36	2053	131305	310549	413888	533962	992510	Forth Islands	Displacement only: Forth & Tay WFs
37	2054	135318	323911	433750	563857	1049674	Forth Islands	Displacement only: Forth & Tay WFs
38	2055	138999	338172	455574	594484	1121368	Forth Islands	Displacement only: Forth & Tay WFs
39	2056	142464	352876	478864	624658	1193565	Forth Islands	Displacement only: Forth & Tay WFs
40	2057	147179	369221	503414	659861	1274485	Forth Islands	Displacement only: Forth & Tay WFs
41	2058	151952	386513	528326	695575	1352973	Forth Islands	Displacement only: Forth & Tay WFs
42	2059	155232	402616	555175	734798	1442322	Forth Islands	Displacement only: Forth & Tay WFs
43	2060	160428	419816	583882	773401	1536049	Forth Islands	Displacement only: Forth & Tay WFs
44	2061	164904	439236	613448	815601	1631405	Forth Islands	Displacement only: Forth & Tay WFs
45	2062	170137	459462	644384	863631	1733509	Forth Islands	Displacement only: Forth & Tay WFs
46	2063	175548	479598	675907	910973	1844390	Forth Islands	Displacement only: Forth & Tay WFs
47	2064	181647	501083	710528	961033	1969916	Forth Islands	Displacement only: Forth & Tay WFs
48	2065	185965	523255	746982	1010297	2100225	Forth Islands	Displacement only: Forth & Tay WFs
49	2066	191036	547253	784123	1067882	2237973	Forth Islands	Displacement only: Forth & Tay WFs
50	2067	196784	573498	823858	1126657	2379403	Forth Islands	Displacement only: Forth & Tay WFs
51	2068	203199	597968	866184	1186827	2548140	Forth Islands	Displacement only: Forth & Tay WFs
52	2069	207223	624610	912193	1258468	2702894	Forth Islands	Displacement only: Forth & Tay WFs
53	2070	213364	653271	955086	1323727	2894515	Forth Islands	Displacement only: Forth & Tay WFs

Annex 11E.2 Outputs from the Forth Islands gannet PVA

Distribution of the predicted un-impacted population sizes for 25 and 50 year projection periods

End-point population size at 25 years	Percentile	End-point population size at 50 years	Percentile
144269.27	1%	153169.71	1%
146941.38	2%	158615.92	2%
149045.22	3%	161488.2	3%
150366.28	4%	163909.68	4%
151755.75	5%	165364.65	5%
152871	6%	167162.22	6%
153998.16	7%	168406.86	7%
154761.04	8%	169673.48	8%
155570.82	9%	171150.64	9%
156290.5	10%	172381.2	10%
156937.57	11%	173448.28	11%
157589.92	12%	174499.28	12%
158251.48	13%	175431.41	13%
158835.6	14%	176451.92	14%
159466.4	15%	177469.55	15%
159936.12	16%	178346.68	16%
160411.96	17%	179169.79	17%
160881.82	18%	180022.46	18%
161355.81	19%	180845.05	19%
161808.6	20%	181684	20%
162367.58	21%	182464.06	21%
162845.02	22%	183097.56	22%
163267.77	23%	183822	23%
163618.76	24%	184406.04	24%

End-point population size at 25 years	Percentile	End-point population size at 50 years	Percentile
164012.75	25%	184941.5	25%
164329	26%	185895.14	26%
164661.11	27%	186471.65	27%
164998.16	28%	187156.96	28%
165430	29%	187711.52	29%
165791.9	30%	188266.5	30%
166161.59	31%	188828.73	31%
166489.52	32%	189301.44	32%
166820	33%	189988.05	33%
167260	34%	190639.3	34%
167607.95	35%	191236.95	35%
167987.48	36%	191856.76	36%
168241.26	37%	192356.41	37%
168527.86	38%	192941.96	38%
168953	39%	193481.1	39%
169282	40%	194067.8	40%
169512.31	41%	194698.44	41%
169859.58	42%	195313.74	42%
170214.85	43%	195792.57	43%
170595.56	44%	196414.68	44%
170961.95	45%	196875.3	45%
171232.1	46%	197422.24	46%
171576.12	47%	197871.18	47%
171879.04	48%	198439.56	48%
172201.04	49%	198902.65	49%
172530	50%	199490.5	50%

End-point population size at 25 years	Percentile	End-point population size at 50 years	Percentile
172855.98	51%	199901.47	51%
173195.44	52%	200441.4	52%
173520.29	53%	200899.04	53%
173834.92	54%	201417.14	54%
174191.25	55%	201895.75	55%
174462.04	56%	202412.52	56%
174790.15	57%	202930.86	57%
175064.84	58%	203518.26	58%
175447.05	59%	204090.89	59%
175825	60%	204841	60%
176219.17	61%	205531.07	61%
176467.9	62%	206061.38	62%
176783.37	63%	206660.99	63%
177105.08	64%	207120	64%
177446.85	65%	207563.05	65%
177768.68	66%	208200.44	66%
178175.64	67%	208796.65	67%
178524.52	68%	209424.96	68%
178920.17	69%	210010.51	69%
179386.7	70%	210609.1	70%
179725.16	71%	211284.9	71%
180104.12	72%	212053.48	72%
180563.86	73%	212710.54	73%
181005.64	74%	213585.32	74%
181374	75%	214231.75	75%
181857.4	76%	215001.24	76%

End-point population size at 25 years	Percentile	End-point population size at 50 years	Percentile
182426.84	77%	215876.38	77%
182771.88	78%	216672.36	78%
183290.2	79%	217556	79%
183823.8	80%	218463.4	80%
184327.26	81%	219305.07	81%
185048.54	82%	220065.78	82%
185621.82	83%	221063.85	83%
186323.44	84%	221900.48	84%
186902.3	85%	222829.5	85%
187515.54	86%	223849.52	86%
188123.95	87%	225179.3	87%
188766.16	88%	226324.12	88%
189650.42	89%	227678.2	89%
190349.6	90%	228806.3	90%
191153.42	91%	230133.14	91%
192061.72	92%	231798.8	92%
193109.61	93%	233752.35	93%
194091.98	94%	235306.02	94%
195340.45	95%	237281.15	95%
197054.48	96%	240941.48	96%
198551.47	97%	243710.96	97%
201411.32	98%	248200.54	98%
205892.01	99%	255970.3	99%

Values of the centile metric associated with varying additional mortality (from 0 to 1500 individuals, apportioned in a ratio of 97:3 breeding adults to sub-adults)

Additional mortality (number of individuals)	Median number of adults after 25 years	Matching centile from un-impacted 25 year population (lower value)	Matching centile from un-impacted 25 year population (upper value)	Median number of adults after 50 years	Matching centile from un-impacted 50 year population (lower value)	Matching centile from un-impacted 50 year population (upper value)
0	172530	50%	50%	199490.5	50%	50%
25	171870	47%	48%	197304.5	45%	46%
50	171578.5	47%	48%	195938	43%	44%
75	171028.5	45%	46%	195232.5	41%	42%
100	170593.5	43%	44%	194315.5	40%	41%
125	169653	41%	42%	192823.5	37%	38%
150	169428.5	40%	41%	191813	35%	36%
175	169195.5	39%	40%	190561	33%	34%
200	168457	37%	38%	190128.5	33%	34%
225	167912.5	35%	36%	188450.5	30%	31%
250	167527.5	34%	35%	187529.5	28%	29%
275	167177	33%	34%	186821.5	27%	28%
300	166625	32%	33%	184938.5	24%	25%
325	166095.5	30%	31%	184352.5	23%	24%
350	165804	30%	31%	182966	21%	22%
375	165030.5	28%	29%	181766	20%	21%
400	164825	27%	28%	181157	19%	20%
425	164159.5	25%	26%	180098	18%	19%
450	163190.5	22%	23%	178045	15%	16%
475	162904.5	22%	23%	177172.5	14%	15%
500	162498.5	21%	22%	176090.5	13%	14%

Additional mortality (number of individuals)	Median number of adults after 25 years	Matching centile from un-impacted 25 year population (lower value)	Matching centile from un-impacted 25 year population (upper value)	Median number of adults after 50 years	Matching centile from un-impacted 50 year population (lower value)	Matching centile from un-impacted 50 year population (upper value)
525	162118	20%	21%	175265.5	12%	13%
550	161737.5	19%	20%	174166	11%	12%
575	161283.5	18%	19%	173344	10%	11%
600	160894.5	18%	19%	172102.5	9%	10%
625	159959.5	16%	17%	170419.5	8%	9%
650	159935	15%	16%	170386	8%	9%
675	159187.5	14%	15%	169319.5	7%	8%
700	158554.5	13%	14%	167656	6%	7%
725	157742.5	12%	13%	166484	5%	6%
750	157510.5	11%	12%	165643	5%	6%
775	157430.5	11%	12%	164856	4%	5%
800	156501	10%	11%	164415.5	4%	5%
825	156734.5	10%	11%	163280.5	3%	4%
850	155787.5	9%	10%	161607	3%	4%
875	155708.5	9%	10%	161354.5	2%	3%
900	155000	8%	9%	160263.5	2%	3%
925	154222.5	7%	8%	158580.5	1%	2%
950	154168	7%	8%	158265.5	1%	2%
975	153294	6%	7%	157588	1%	2%
1000	153319.5	6%	7%	156545	1%	2%
1025	152696.5	5%	6%	155257	1%	2%
1050	152077.5	5%	6%	154098.5	1%	2%
1075	152025	5%	6%	153660.5	1%	2%

Additional mortality (number of individuals)	Median number of adults after 25 years	Matching centile from un-impacted 25 year population (lower value)	Matching centile from un-impacted 25 year population (upper value)	Median number of adults after 50 years	Matching centile from un-impacted 50 year population (lower value)	Matching centile from un-impacted 50 year population (upper value)
1100	151293.5	4%	5%	152940.5	NA	NA
1125	150650	4%	5%	151596.5	NA	NA
1150	150333.5	3%	4%	150946.5	NA	NA
1175	149725.5	3%	4%	149923	NA	NA
1200	149564.5	3%	4%	149285.5	NA	NA
1225	149155	3%	4%	147892.5	NA	NA
1250	148739.5	2%	3%	146770	NA	NA
1275	147864	2%	3%	145733	NA	NA
1300	147639.5	2%	3%	144802.5	NA	NA
1325	147049	2%	3%	144124	NA	NA
1350	146794	1%	2%	143238.5	NA	NA
1375	146406.5	1%	2%	142396	NA	NA
1400	146243.5	1%	2%	141727	NA	NA
1425	145329.5	1%	2%	140618	NA	NA
1450	145161.5	1%	2%	140103	NA	NA
1475	144401.5	1%	2%	139005.5	NA	NA
1500	144337	1%	2%	138420	NA	NA

Values of the counterfactual of population size for different levels of additional mortality (from 0 to 1500 individuals, apportioned in a ratio of 97:3 breeding adults to sub-adults)

Additional mortality	After 5 years	After 10 years	After 15 years	After 20 years	After 25 years	After 30 years	After 35 years	After 40 years	After 45 years	After 50 years
0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
25	0.999	0.998	0.998	0.995	0.996	0.993	0.993	0.991	0.990	0.989
50	0.998	0.997	0.997	0.995	0.994	0.991	0.991	0.988	0.986	0.982
75	0.998	0.997	0.995	0.994	0.991	0.990	0.989	0.984	0.983	0.979
100	0.998	0.994	0.993	0.990	0.989	0.986	0.985	0.981	0.979	0.974
125	0.996	0.993	0.990	0.985	0.983	0.979	0.976	0.973	0.972	0.967
150	0.996	0.994	0.991	0.986	0.982	0.977	0.974	0.968	0.967	0.962
175	0.996	0.993	0.989	0.984	0.981	0.975	0.970	0.966	0.963	0.955
200	0.997	0.990	0.989	0.981	0.976	0.969	0.967	0.962	0.958	0.953
225	0.995	0.989	0.985	0.979	0.973	0.966	0.961	0.955	0.950	0.945
250	0.994	0.988	0.983	0.978	0.971	0.962	0.958	0.951	0.948	0.940
275	0.993	0.987	0.980	0.975	0.969	0.960	0.957	0.947	0.943	0.936
300	0.993	0.986	0.980	0.973	0.966	0.958	0.951	0.943	0.936	0.927
325	0.992	0.984	0.977	0.969	0.963	0.954	0.947	0.938	0.930	0.924
350	0.992	0.984	0.978	0.968	0.961	0.952	0.943	0.933	0.927	0.917
375	0.992	0.983	0.974	0.966	0.957	0.946	0.939	0.930	0.920	0.911
400	0.991	0.981	0.972	0.963	0.955	0.944	0.938	0.926	0.918	0.908
425	0.991	0.981	0.971	0.961	0.951	0.942	0.934	0.924	0.915	0.903
450	0.989	0.978	0.967	0.955	0.946	0.934	0.924	0.914	0.905	0.892
475	0.988	0.977	0.966	0.956	0.944	0.930	0.921	0.909	0.900	0.888
500	0.988	0.976	0.965	0.952	0.942	0.929	0.920	0.907	0.896	0.883
525	0.988	0.977	0.963	0.951	0.940	0.926	0.916	0.903	0.893	0.879
550	0.988	0.974	0.963	0.947	0.937	0.923	0.913	0.899	0.886	0.873
575	0.987	0.972	0.960	0.947	0.935	0.920	0.908	0.893	0.882	0.869

Additional mortality	After 5 years	After 10 years	After 15 years	After 20 years	After 25 years	After 30 years	After 35 years	After 40 years	After 45 years	After 50 years
600	0.985	0.971	0.959	0.946	0.933	0.917	0.905	0.889	0.878	0.863
625	0.986	0.971	0.956	0.941	0.927	0.911	0.898	0.882	0.869	0.854
650	0.984	0.968	0.956	0.942	0.927	0.911	0.898	0.883	0.869	0.854
675	0.984	0.969	0.954	0.937	0.923	0.906	0.893	0.877	0.862	0.849
700	0.984	0.968	0.952	0.933	0.919	0.900	0.887	0.871	0.856	0.840
725	0.984	0.966	0.949	0.932	0.914	0.899	0.885	0.867	0.851	0.835
750	0.983	0.964	0.948	0.930	0.913	0.896	0.880	0.864	0.848	0.830
775	0.982	0.964	0.947	0.929	0.912	0.894	0.878	0.860	0.845	0.826
800	0.982	0.963	0.944	0.926	0.907	0.889	0.875	0.856	0.838	0.824
825	0.981	0.963	0.944	0.924	0.908	0.888	0.872	0.853	0.835	0.818
850	0.981	0.962	0.943	0.921	0.903	0.882	0.866	0.847	0.829	0.810
875	0.980	0.959	0.940	0.920	0.903	0.882	0.865	0.846	0.827	0.809
900	0.979	0.959	0.936	0.916	0.898	0.877	0.859	0.839	0.821	0.803
925	0.979	0.958	0.936	0.914	0.894	0.871	0.853	0.831	0.814	0.795
950	0.979	0.957	0.936	0.915	0.894	0.871	0.852	0.831	0.812	0.793
975	0.977	0.954	0.934	0.912	0.889	0.867	0.849	0.828	0.811	0.790
1000	0.977	0.954	0.933	0.909	0.889	0.866	0.846	0.824	0.805	0.785
1025	0.977	0.953	0.931	0.906	0.885	0.862	0.841	0.818	0.800	0.778
1050	0.976	0.952	0.927	0.904	0.881	0.858	0.837	0.815	0.794	0.772
1075	0.976	0.951	0.928	0.904	0.881	0.857	0.836	0.812	0.792	0.770
1100	0.974	0.949	0.925	0.899	0.877	0.852	0.832	0.808	0.786	0.767
1125	0.974	0.948	0.922	0.897	0.873	0.848	0.827	0.802	0.781	0.760
1150	0.974	0.948	0.922	0.896	0.871	0.846	0.825	0.798	0.778	0.757
1175	0.974	0.946	0.920	0.892	0.868	0.843	0.821	0.796	0.775	0.752
1200	0.974	0.946	0.919	0.892	0.867	0.841	0.820	0.794	0.772	0.748
1225	0.973	0.944	0.916	0.890	0.865	0.837	0.815	0.790	0.767	0.741

Additional mortality	After 5 years	After 10 years	After 15 years	After 20 years	After 25 years	After 30 years	After 35 years	After 40 years	After 45 years	After 50 years
1250	0.972	0.944	0.917	0.889	0.862	0.834	0.813	0.785	0.761	0.736
1275	0.971	0.941	0.912	0.885	0.857	0.828	0.804	0.777	0.754	0.731
1300	0.971	0.940	0.913	0.882	0.856	0.828	0.803	0.775	0.752	0.726
1325	0.970	0.938	0.910	0.881	0.852	0.824	0.799	0.772	0.748	0.722
1350	0.970	0.939	0.908	0.878	0.851	0.821	0.797	0.768	0.745	0.718
1375	0.968	0.938	0.906	0.876	0.849	0.818	0.792	0.765	0.741	0.714
1400	0.968	0.937	0.907	0.875	0.848	0.817	0.790	0.762	0.734	0.710
1425	0.967	0.934	0.903	0.872	0.842	0.813	0.785	0.757	0.731	0.705
1450	0.967	0.935	0.902	0.869	0.841	0.810	0.783	0.754	0.728	0.702
1475	0.966	0.932	0.900	0.868	0.837	0.806	0.778	0.750	0.725	0.697
1500	0.966	0.932	0.900	0.867	0.837	0.805	0.776	0.745	0.719	0.694

Median population growth rates (with the 2.5 and 97.5 centiles) and values of the counterfactual of population growth rate for different levels of additional mortality (from 0 to 1500 individuals, apportioned in a ratio of 97:3 breeding adults to sub-adults)

Additional mortality	Median population growth rate	2.5 centile of population growth rate	97.5 centile of population growth rate	Counterfactual of population growth rate
0	1.0057	0.9985	1.0128	1.000
25	1.0056	0.9984	1.0125	1.000
50	1.0056	0.9983	1.0126	1.000
75	1.0053	0.9982	1.0127	1.000
100	1.0052	0.9977	1.0124	1.000
125	1.005	0.9980	1.0122	0.999
150	1.005	0.9976	1.0118	0.999
175	1.005	0.9977	1.0121	0.999
200	1.0048	0.9975	1.012	0.999
225	1.0045	0.9974	1.0117	0.999
250	1.0045	0.9971	1.0115	0.999
275	1.0045	0.9972	1.0118	0.999
300	1.0043	0.9968	1.0115	0.999
325	1.0043	0.9968	1.0114	0.999
350	1.0042	0.9969	1.0111	0.999
375	1.0039	0.9966	1.0112	0.998
400	1.0039	0.9967	1.0108	0.998
425	1.0037	0.9963	1.0107	0.998
450	1.0035	0.9964	1.0106	0.9978
475	1.0034	0.9962	1.0104	0.9977
500	1.0033	0.9959	1.0102	0.9976
525	1.0032	0.9959	1.0104	0.9975
550	1.0031	0.9960	1.0102	0.9975

Additional mortality	Median population growth rate	2.5 centile of population growth rate	97.5 centile of population growth rate	Counterfactual of population growth rate
575	1.003	0.9955	1.01	0.9974
600	1.0029	0.9956	1.0097	0.9972
625	1.0026	0.9954	1.0099	0.997
650	1.0027	0.9952	1.01	0.997
675	1.0024	0.9953	1.0094	0.9968
700	1.0022	0.9950	1.0094	0.9966
725	1.0021	0.9950	1.0092	0.9964
750	1.002	0.9949	1.0092	0.9964
775	1.0019	0.9946	1.0091	0.9963
800	1.0018	0.9945	1.0089	0.9961
825	1.0018	0.9944	1.009	0.9962
850	1.0015	0.9943	1.0086	0.9958
875	1.0015	0.9943	1.0086	0.9959
900	1.0013	0.9942	1.0084	0.9957
925	1.0011	0.9940	1.0081	0.9954
950	1.0011	0.9937	1.0082	0.9955
975	1.001	0.9940	1.008	0.9953
1000	1.0009	0.9935	1.0078	0.9953
1025	1.0007	0.9934	1.0079	0.9951
1050	1.0005	0.9932	1.0076	0.9948
1075	1.0006	0.9933	1.0076	0.995
1100	1.0004	0.9931	1.0073	0.9948
1125	1.0002	0.9928	1.0074	0.9946
1150	1.0001	0.9930	1.0073	0.9945
1175	0.9999	0.9927	1.0073	0.9943
1200	0.9999	0.9927	1.0068	0.9943

Additional mortality	Median population growth rate	2.5 centile of population growth rate	97.5 centile of population growth rate	Counterfactual of population growth rate
1225	0.9997	0.9925	1.007	0.9941
1250	0.9997	0.9923	1.0069	0.9941
1275	0.9994	0.9921	1.0063	0.9937
1300	0.9994	0.9921	1.0067	0.9938
1325	0.9993	0.9921	1.0066	0.9936
1350	0.9992	0.9917	1.0062	0.9935
1375	0.999	0.9916	1.0062	0.9934
1400	0.9989	0.9916	1.0062	0.9933
1425	0.9988	0.9915	1.0057	0.9932
1450	0.9987	0.9915	1.0059	0.9931
1475	0.9985	0.9912	1.0055	0.9929
1500	0.9984	0.9913	1.0057	0.9928

Stable age structure produced from the gannet population model

<u>Age-class (years)</u>	<u>Proportion</u>
--------------------------	-------------------

0 – 1:	0.1905
--------	--------

1 – 2:	0.0803
--------	--------

2 – 3:	0.0661
--------	--------

3 – 4:	0.0586
--------	--------

4 +:	0.6044
------	--------

Annex 11E.3 Stable age structure from the Forth Islands SPA herring gull population model

No PVA was undertaken in relation to SPA herring gull populations but a population model was developed for the Forth islands SPA population. This model was based upon the earlier Forth Islands SPA herring gull population model produced by Freeman *et al.* (2014). The stable age structure from this model is used to inform the assessment of the regional herring gull population (*Chapter 11*), and is estimated to be as follows:

<u>Age-class</u>	<u>Proportion</u>
Sub-adults	0.60
Recruits to adult population	0.059
Established adults	0.34