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Dynamic Coast - National Coastal Change Assessment: Vulnerability Assessment





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Vulnerability Assessment

Dynamic Coast – Scotland's National Coastal Change Assessment

Executive Summary

- The NCCA seeks to address a gap in the national understanding of the resilience and vulnerability of Scotland's coastal assets. No organisation has an overarching view of the past and recent coastal changes affecting the country nor the implications for society's adjacent assets. Whilst some Local Authorities and advisors have a good understanding of some local areas, the lack of consistent national overview hinders strategic assessments and the implementation of numerous national and regional policies by the Scottish Government and its public bodies.
- The NCCA assessment is summarised in 21 reports supported by web-maps that allow public access to the evidence base (dynamiccoast.com) and allow inspection of the underlying data and trends. The source data is available to public sector organisations and should be used to support the delivery of relevant statutory duties, particularly for flood risk management and climate change adaptation planning. The NCCA does not take account any future management choices (improving resilience) or accelerating erosion due to climate change (increasing vulnerability).
- Based on the past trends and rates of movement of MHWS identified by the NCCA, a forward projection to 2050 and 2100 can be performed to give an indication of the potential for future erosion and the assets that may be at increased risk. The 2100 projection can also be perceived as a near doubling of rates by 2050 which has been termed 2050+.
- If recent erosion rates continue then by 2050 at least 50 residential and non-residential buildings will be affected by coastal erosion, with a total of 448 buildings lying adjacent (within next 50m of the anticipated areas of erosion).
- If recent erosion rates continue then by 2050 at least 1.6km of railway, 5.2 km of road and 2.4km of clean water network will be affected by coastal erosion as well as significant areas of runways, cultural and natural heritage sites.
- The statistics presented in this report are conservative in that they do not consider the assets that currently lie behind stable or accretionary shores but might be at risk in the future if conditions change.

Contents

Executive Summary.....	1
1.0 Vulnerability Assessment based on Future Coast 2050 and 2100.....	3
1.1 Overview	3
1.2 Methods and Context	3
1.3 Results: National level.....	4
2.0 Assets/Receptors and Coincident assets at specific sites.....	5
2.1.1 Buildings (Residential and Non-Residential Property, Community Services & Utilities) 6	
2.1.2 Infrastructure (Roads and Rail)	7
2.1.3 Water supplies	8
2.1.4 Runways.....	9
2.1.5 Flooding.....	10
2.1.6 Cultural Heritage.....	11
2.1.7 Natural Heritage.....	13
2.1.8 Scottish Water Network.....	15
References	16
Appendix A: Buildings	17
Appendix B: Infrastructure.....	18
Appendix C: Water Supply	19
Appendix D: Runways	20
Appendix E: Potentially Vulnerable Areas (Flooding).....	20
Appendix F: Cultural Heritage.....	21
Appendix G: Natural Heritage.....	22

1.0 Vulnerability Assessment based on Future Coast 2050 and 2100

1.1 Overview

If the past trend of landward shifts in the position of MHWS continues, then projecting these movement rates forward to 2050 and 2100 gives an indication of the potential for future erosion and by association, the assets that may find themselves at increased risk. This is the first national risk assessment of this kind, and is intended to improve our understanding of coastal erosion risk and underpin follow-up assessments. It is based on the best available national data and attempts to assess the implications of future erosion at the coast in terms of the potential impact on both natural and socioeconomic assets affected. As a result, the statistics presented are indicative and conservative in that they do not consider the assets that currently lie behind stable or accretionary shores but might be at risk in the future if conditions change.

1.2 Methods and Context

The NCCA's vulnerability assessment seeks to identify those locations where assets/receptors are intersected against areas of anticipated erosion by 2050 and 2100 (i.e. Future Coast 2050 and 2100). To ensure consistency between this project and SEPA's National Flood Risk Assessments, the same asset/receptor dataset was used, supplemented by a more detailed dataset for cultural and natural heritage interests. In this regard, caution is advised when quoting these data since double counting is a risk. For example, the same area of ground may be designated under multiple designations (including Special Areas of Conservation, Special Protection Areas, Sites of Special Scientific Interests or National Nature Reserves). In addition, data on all roads, trunk and local, are included within the NCCA vulnerability assessment (only trunk roads are included within SEPA's NFRA flood risk assessment). In rural areas, such local roads often serve a lifeline function in the absence of alternatives and are expected to be included in SEPA's next National Flood Risk Assessment (for further information on the NRFA see SEPA's [webpage](#)).

The results here assume that recent past erosion and accretion rates will continue but will be curtailed where erosion is halted by resilient rocks (using the method of Fitton et al., 2016). Two additions to the area anticipated to be directly affected by erosion are included here: an area of 'erosion influence' or the area immediately adjacent to and +10 m landward beyond the anticipated position of MHWS in 2050; and an area of 'erosion vicinity' lying a further +50 m landward beyond the erosion influenced area in 2050. The results show the assets (eg. a road) at increased risk of erosion by 2050 if past rates continue and if management remains unchanged. However, if erosion accelerates in the future then the asset may be compromised sooner, equally if the erosion rate slows or coastal protection is installed then the asset may not be affected within this time frame. Given the observed modern increases in rates of erosion (see National Overview) from an average of 0.5 to 1.0 m/yr, the suitability of using recent rates for future projections can be questioned. To provide a sense of the additional assets potentially at risk if rates were to increase, the 2050+ values presented below are based on a near doubling of the recent rates. These rates are included to simply reflect a 'what if' scenario and no certainty should be implied from their inclusion. The observed 39% increase in the extent of erosion post- 1970s (compared with before) strongly suggests future erosion is likely to expand into new areas and affect more assets than are reported here. Past increases in observed erosion may be partly due to past changes in climate but any impact of future climate change is beyond the scope of the existing project but is likely to be considered in follow-up work.

Further to the points noted within the Disclaimer at the beginning of this document, the national scale analysis below is indicative and should not be used to infer precise local changes. For example, the point datasets used to represent buildings are points sited in the centre point of the property irrespective of its size. Similarly, the road network is represented by a single (infinitely narrow) line in the centre of the road. As a result, precise predictions cannot be made and the 'erosion' and 'erosion influence' areas provide indicative risk assessments only. For further information on the processing, please see Methodology report.

1.3 Results: National level

The results of the vulnerability assessment at a national level are summarised in Table 1.1 Headline messages for 2050 include:

- 17 residential and 12 non-residential properties are expected to experience erosion (i.e. lie seaward of the anticipated 2050 MHWS line)
- 16 residential and 7 non-residential properties lie within the next 10m (the erosion influenced area) of the anticipated MHWS line.
- 382 residential and 66 non-residential properties lie within the next 50m (i.e. within the 2050 erosion vicinity area), a total of 415 buildings.
- One community services building is within the anticipated erosion vicinity area. The further education college Liniclate in Benbecula (Western Isles) lies on low-lying land less than 30 m from the anticipated position of MHWS in 2050.
- 1km of rail is located within the anticipated erosion area, a further 0.6 km is located within +10 m of the anticipated shoreline and a further 2.5 km lies within the next 50 m.
- 2.7 km of roads are within the anticipated erosion area, 2.5 km lie within +10m and 15.3 km lie within the +50 m area.

Table 1.1: National results for the vulnerability assessment identifying the number, length and area of assets within areas of anticipated erosion by 2050 and 2050+, or adjacent to them.

All	Units	Modern to 2050				Modern to 2050+			
		Erosion	Erosion Influence	Erosion Vicinity	Total	Erosion	Erosion Influence	Erosion Vicinity	Total
Community Services	#	0	0	1	1	0	0	1	1
Non Residential Property		12	7	66	85	24	14	88	126
Residential Property		17	16	382	415	72	40	537	649
Septic Water		2	0	17	19	3	4	15	22
Utilities		1	0	3	4	1	0	6	7
Rail	Length (km)	1.0	0.6	2.5	4.0	1.6	0.4	3.0	4.9
Roads (incl. SEPA's flood risk assesment)		2.2	1.9	11.0	15.1	5.6	1.6	13.0	20.3
Roads (additional minor roads)		0.5	0.6	4.3	5.5	1.8	0.8	4.8	7.4
Clean Water		0.8	1.6	11.5	13.9	4.5	1.8	14.1	20.4
Total Anticipated Erosion	Area (hectares)	560.2	176.5	1,041.4	1,778.1	1,103.0	199.7	1,116.5	2,419.2
Runways		0.4	0.4	2.3	3.2	3.2	0.6	2.8	6.6
Cultural Heritage		19.8	6.0	41.1	66.9	20.9	6.3	40.5	67.7
Environment		355.7	91.1	436.6	883.4	672.6	87.1	409.8	1,169.5
Flooding (200 year return period)		345.6	68.2	315.6	729.3	537.0	63.5	306.7	907.3
Flooding (1000 year return period)		364.0	75.4	356.2	795.5	576.3	70.7	351.3	998.3
within Potentially Vulnerable Areas (flooding)		211.1	70.1	418.8	700.1	427.5	76.8	455.1	959.3
outwith Potentially Vulnerable Areas (flooding)		349.5	106.6	624.4	1,078.0	676.5	123.3	663.5	1,459.9
Battlefields		0.000	0.000	0.036	0.036	0.000	0.000	0.405	0.405
Garderns and Designed Landscapes		3.5	2.6	22.2	28.3	6.6	3.7	24.8	35.1
Properties in Care		0.000	0.002	0.435	0.438	0.000	0.002	0.477	0.480
Scheduled Monuments		24.7	4.2	28.8	57.7	34.0	5.5	32.3	71.8
Nature Conservation MPAs		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
National Nature Reserves		87.6	13.2	71.1	172.0	131.6	11.5	61.7	204.8
Special Areas of Conservation		222.9	50.1	240.9	513.9	410.5	53.0	233.4	697.0
Special Protection Areas		266.8	62.4	290.2	619.3	486.9	55.9	275.1	817.9
Sites of Special Scientific Interest		360.4	88.3	410.8	859.5	677.9	86.0	397.7	1,161.6

For areas anticipated to be at heightened risk of erosion by 2050, Table 1.1 identifies a total of 562 ha distributed across a wide range of sites. Use caution when using this value in isolation, as the NCCA has not projected future accretion to 2050 and 2100 which may offset losses. As a result, these figures are inherently conservative as they exclude assets which lie behind currently accreting shores. Table 1.1 indicates that 62 % of the anticipated 2050 erosion areas fall within SEPA's Coastal Flood Risk (1:200 year) area. Whilst the largest of these coincident areas may be extensive low-lying sand dune or salt marshes (for example), there are locations where features such as beaches and dunes may also provide a vital protective function for built assets. Thus, where erosion areas and flood risk areas coincide there is likely to be a change in flood frequency and perhaps extent of inundation. The figures can also be considered in another light whereby 38 % of the anticipated erosion area is located outwith the limits of SEPA's 1:200 year coastal flood risk areas. These erodible areas may be of only slightly higher altitude yet if eroded, may contribute significant volumes of sediment to improve the resilience of adjacent down-drift shores. If erosion does occur in this manner then coastal flood extent and frequency will be changed at these locations.

Table 1.1 also allows the relationships between anticipated areas of erosion and those areas identified by SEPA as Potentially Vulnerable Areas for flooding (PVAs) from three sources of flooding (river-borne, coastal and standing water). Although the PVA is the mechanism used to prioritise where most assets are at risk, they are essentially a management unit based on sections of river-catchments and, as a result, not all the PVA is at flood risk. Only 38% of the NCCA anticipated erosion areas fall within PVAs (213 ha of 562 ha) with 62 % lying outwith and beyond PVAs and so there are extensive areas where erosion is anticipated and may influence flood risk in those areas. Since PVAs (along with Shoreline Management Plans (SMPs) which only partially cover the Scottish coast), are the only existing policy mechanisms available for considering asset risk, mitigation and adaptation works, any areas lying outwith PVAs and SMPs present policy issues. Other policies exist which have national coverage, their implementation prior to the NCCA has been mixed. It is beyond the scope of the NCCA to address this further, but a more detailed consideration of the interaction of erosion areas, flooding areas and policy provision (via FRM/PVAs SMPs and duties under SPP and SCCAP) is required and is a recommendation below.

The 'Cultural Heritage' and 'Environment' rows in the centre of Table 1.1 provide an aggregate figure and the individual categories are considered in turn. Note that repetition occurs between these rows, as Sites of Special Scientific Interest may also be Special Protection Areas (for example), with both areas shown. Assuming recent erosion continues, the greatest area of cultural heritage at risk are Scheduled Monuments where 25 ha are anticipated to be affected by erosion by 2050 with a further 4 ha located within the erosion influence area (+10 m) and a further 29 ha within the next 50 m (erosion vicinity).

National Nature Reserves, Special Areas of Conservation, Special Protection Areas and Sites of Special Scientific Interest each contain large areas where erosion is anticipated (360 ha for SSSIs for example). However, the sites often carry multiple designations, and the same erosion may be reported in each of the rows. 64% of the anticipated erosion on Scotland's coast falls within the designated site boundaries for SSSIs (360 ha of 562 ha).

2.0 Assets/Receptors and Coincident assets at specific sites

A benefit of this spatial analysis of coincident assets is that different assets and threats can be compared to improve management. Table 2.2 to Table 2.19 display at a more detailed and site specific level the coincidence of anticipated erosion areas and assets. The erosion vicinity data is available as

an appendix at the end of this report. Whilst these are considered in detail below, the relationships are summarised in Table 2.1. For example, when erosion risk to cultural heritage interests is considered, there is a high coincidence with natural heritage interests.

Table 2.1: Summary of coincident assets.

Assets at risk from erosion	Coincident assets / factors										Examples
	Airports	Buildings	Roads	Rail	Fresh Water Network	Septic Water	Cultural Heritage	Natural Heritage	Flood risk	PVA	
Airports	-	-	-	-	-	-	-	xx	xxx	-	Islay & Benbecula Airport
Buildings	-	x	-	-	x	-	x	xxx	xx	-	Southernness (Solway)
Roads	-	-	x	-	-	-	x	xx	xxx	-	Strone Point (Clyde), Monifieth (Tay), Balephetrish Bay (Tiree)
Rail	-	-	-	x	-	-	-	-	xxx	-	Corpach (Loch Linnhe), Brora (Moray Firth)
Fresh Water Network	-	x	xxx	-	-	-	x	-	xxx	xx	Broughty Ferry (Tay), Toward (Clyde), Elie (Fife), Inellan (Clyde)
Septic Water	-	xxx	xx	-	-	-	-	xx	xxx	xxx	Corpach (Loch Linnhe), Western Isles Orkney, Wemyss (Fife)
Cultural Heritage	-	x	x	-	-	-	-	xxx	xxx	xx	Dysart, St Andrews & Wemyss (Fife), Dalmeny (Forth), Dunrobin (Moray)
Natural Heritage	-	-	-	-	-	-	x	-	xxx	xx	Solway, Culbin Sands & Dornoch (Moray), Tiree,
Flood risk	-	-	x	-	-	-	x	xxx	-	x	Solway, Uists, Culbin Sands & Golspie (Moray Firth), Barry Links (Tay)
PVA	-	xxx	x	-	xx	-	x	xx	xxx	-	Southernness (Solway), Prestonpans (Forth), Broughty Ferry (Tay)
Key	-	no coincidence					xx	often coincident			
	x	some coincidence					xxx	high coincidence			

2.1.1 Buildings (Residential and Non-Residential Property, Community Services & Utilities)

The indicative results shown in Table 2.2 detail the location of building assets which fall within the 2050 erosion areas. If recent change rates continue, 53 buildings are anticipated to be at increased risk as they lie within the erosion and erosion influence area by 2050. These cluster within 12 locations and allow further investigations to be closely targeted.

Table 2.3 identifies the buildings that fall within the erosion influence areas should recent erosion rates continue unchanged until 2050.

The key points are:

- 10 residential properties and 8 non-residential properties in Prestonpans (Forth)
- 7 residential properties within Southernness (Solway Firth)
- single non-residential properties within Scottas (Knoydart), Wemyss Castle (Fife), North Berwick (Forth) and Cairnryan (Loch Ryan).
- One utility is located at Kilcreggan (Clyde).
- all fall within the SEPA 1:200 year coastal flood limit, whilst only a small proportion falls within Potentially Vulnerable Areas for flooding.

Table 2.2: Indicative results for buildings within 2050 Erosion areas

Cell	Erosion classification	Buildings Total (#)	Coincident assets					Location	Flood Risk 200yr (ha)	Potentially Vulnerable Area (ha)	Freshwater Network (km)	Septic tanks (#)	Natural Heritage (ha)	Cultural Heritage (ha)
			Residential Properties (#)	Non Residential Properties (#)	Community Services (#)	Utilities (#)								
1b	Erosion	18	10	8	-	-	Prestonpans, Forth	0.58	0.96	-	-	-	-	
7	Erosion	7	7	-	-	-	Southernness, Solway	0.88	0.80	-	-	1.34	-	
5b	Erosion	1	-	1	-	-	Scottas, Knoydart	0.08	-	-	-	-	-	
1c	Erosion	1	-	1	-	-	Wemyss Castle, Fife	0.48	-	-	-	-	-	
1a	Erosion	1	-	-	-	1	North Berwick, Forth	0.05	0.07	0.05	-	-	-	
6d	Erosion	1	-	1	-	-	Cairnryan, Loch Ryan	0.19	-	-	-	-	-	
6b	Erosion	1	-	1	-	-	Kilcreggan, Clyde	0.03	3.37	-	-	-	0.72	

Table 2.3: Indicative results for buildings within 2050 Erosion Influence areas

Cell	Erosion classification	Buildings Total (#)	Residential Properties (#)	Non Residential Properties (#)	Community Services (#)	Utilities (#)	Location	Coincident assets					
								Flood Risk 200yr (ha)	Potentially Vulnerable Area (ha)	Freshwater Network (km)	Septic tanks (#)	Natural Heritage (ha)	Cultural Heritage (ha)
2a	Erosion Influence	8	5	3	-	-	Broughty Ferry, Tay	0.03	0.12	0.05	-	-	-
1b	Erosion Influence	4	3	1	-	-	Prestonpans, Forth	0.08	0.46	-	-	-	-
1a	Erosion Influence	4	3	1	-	-	North Berwick, Forth	0.03	-	-	-	-	-
7	Erosion Influence	3	3	-	-	-	Southernness, Solway	0.49	0.48	-	-	0.43	-
5b	Erosion Influence	1	-	1	-	-	Kylerhea, Loch Alsh	0.15	-	-	-	-	-
3d	Erosion Influence	1	-	1	-	-	Kilmuir, Black Isle	0.03	0.41	-	-	-	-
6a	Erosion Influence	1	1	-	-	-	Brodick, Arran	0.46	0.13	-	-	0.03	-
10d	Erosion Influence	1	1	-	-	-	Sandquoy, Sanday	0.01	-	-	-	-	-

2.1.2 Infrastructure (Roads and Rail)

The anticipated impact on the road and railway infrastructure is shown in Table 2.4. Note that the following tables show only where the eroded section is greater than 50m in length (i.e. 0.05km). For smaller areas, the GIS datasets (www.dynamiccoast.com) should be used. Note also that the central line of any road or rail line has been plotted, rather than the full extent of the infrastructure which may be affected in advance of the centre line being compromised. Consequently, these are indicative results intended to target and support further investigations. Erosion is expected to impact more on roads than railways and in some cases extensive sections are expected to be at risk.

Table 2.5 identifies the roads and railway lines that lie within 10m of the anticipated erosion areas. For example, 370m of road behind Gott Bay (Tiree) is at risk of erosion and flooding (1:200 yr), and is backed by low-lying ground extending north toward the end of the runway at Tiree Airport.

Table 2.4: Indicative results for infrastructure (roads and rail) within 2050 erosion areas

Cell	Erosion Classification	Total Road & Rail (km)	Road (km)	Rail (km)	Location	Coincident assets			
						Buildings (#)	Flood risk 200yr (ha)	Cultural Heritage (ha)	Natural Heritage (ha)
6b	Erosion	0.51	0.51	-	Strone Point, Clyde	-	0.57	-	-
5b	Erosion	0.48	-	0.48	Attadale, Lochcarron	-	0.19	-	-
3e	Erosion	0.23	0.23	-	Tarbat House, Cromarty	-	0.27	-	0.62
3d	Erosion	0.21	0.21	-	Redcastle, Beaulie Firth	-	0.36	-	0.00
5b	Erosion	0.19	0.00	0.19	Attadale, Lochcarron	-	0.20	-	-
3d	Erosion	0.18	0.18	-	Redcastle, Beaulie Firth	-	0.32	-	-
5c	Erosion	0.18	0.18	-	Balephetrish Bay, Tiree	-	0.24	-	-
3e	Erosion	0.12	0.12	-	Alness, Cromarty Firth	-	1.07	-	0.12
3e	Erosion	0.11	0.11	-	Alness, Cromarty Firth	-	1.41	-	1.00
2a	Erosion	0.10	0.10	-	Monifieth, Tay	-	0.25	-	0.00
5c	Erosion	0.10	-	0.10	Corpach, Loch Linnhe	-	0.06	-	-
5c	Erosion	0.09	0.09	-	Ardchattan Priory	-	0.13	-	-
6b	Erosion	0.09	0.09	-	Toward Castle, Clyde	-	0.13	0.02	-
4	Erosion	0.09	0.09	-	Kyle of Durness, Sutherland	-	0.49	-	-
10d	Erosion	0.08	0.08	-	Sandquoy, Sanday	-	0.04	-	0.13
6b	Erosion	0.08	0.08	-	Toward Point, Clyde	-	0.14	-	-
6b	Erosion	0.08	0.08	-	Toward Point, Clyde	-	0.03	-	-
2a	Erosion	0.08	0.08	-	Kingoodie, Tay	-	0.17	-	-
6b	Erosion	0.07	0.07	-	Strone Point, Clyde	-	0.11	-	-
6b	Erosion	0.07	0.07	-	Toward Point, Clyde	-	0.06	-	-
5c	Erosion	0.06	-	0.06	Corpach, Loch Linnhe	-	0.06	-	-
6b	Erosion	0.06	0.06	-	Hunterston, Clyde	-	0.21	-	-
5c	Erosion	0.05	-	0.05	Corpach, Loch Linnhe	-	0.07	-	-
6b	Erosion	0.05	0.05	-	Kilcreggan, Clyde	1	0.03	-	-
6b	Erosion	0.05	0.05	-	Toward Point, Clyde	-	0.03	-	-

Table 2.5: Indicative results for infrastructure (roads and rail) within 2050 Erosion Influence areas

Cell	Erosion Classification	Total Road & Rail (km)	Road (km)	Rail (km)	Attadale, Loch Carron	Coincident assets			
						Buildings (#)	Flood risk (ha in 200yr)	Cultural Heritage (ha)	Natural Heritage (ha)
5c	Erosion Influence	0.37	0.37		Gott Bay, Tiree	-	1.06	-	-
5b	Erosion Influence	0.25		0.25	Attadale, Loch Carron	-	0.01	-	-
6b	Erosion Influence	0.18	0.18		Toward, Clyde	-	0.01	0.10	-
6b	Erosion Influence	0.17	0.17		Toward, Clyde	-	0.07	0.07	-
6b	Erosion Influence	0.15	0.15		Castle Toward, Clyde	-	0.01	0.16	-
3e	Erosion Influence	0.13	0.13		Alness, Cromarty Firth	-	0.38	-	0.00
3d	Erosion Influence	0.12	0.12		Alturle Point, Moray Firth	-	0.02	-	-
5c	Erosion Influence	0.11	0.11		Balephetrish Bay, Tiree	-	0.02	-	-
5c	Erosion Influence	0.10	0.06	0.04	Corpach, Loch Linnhe	-	0.03	-	-
2a	Erosion Influence	0.09	0.09		Monifieth, Tay	-	0.02	-	0.00
5b	Erosion Influence	0.08		0.08	Attadale, Loch Carron	-	0.03	-	-
7	Erosion Influence	0.08	0.08		Southernness, Solway	3	0.49	-	0.43
5c	Erosion Influence	0.08	0.05	0.03	Corpach, Loch Linnhe	-	0.02	-	-
5a	Erosion Influence	0.07	0.07		Kinlochbervie	-	0.01	-	-
2a	Erosion Influence	0.06	0.06		Broughty Ferry, Tay	8	0.03	-	-
10d	Erosion Influence	0.06	0.06		Lopness Bay, Sanday	-	0.21	-	0.29
10d	Erosion Influence	0.05	0.05		Bay of Sandquoy, Sanday	-	0.01	-	0.06
6b	Erosion Influence	0.05	0.05		Hunterston, Clyde	-	0.11	-	-
6c	Erosion Influence	0.05	0.05		Girvan, Firth of Clyde	-	0.04	-	0.04
6d	Erosion Influence	0.05	0.05		Leswal, Loch Ryan	-	0.08	-	-

2.1.3 Water supplies

Scottish Government data for the drinking water supply network and septic tank locations is represented in Table 11. Despite a clear need to include it, the coastal waste water network was not available. Table 2.6 identifies 13 locations and a total of 840 m where the drinking water supply network is anticipated to be at increased risk of erosion and of coastal flooding (1:200 yrs) since they occur on low-lying shores. Table 2.7 shows 18 locations where 1.6 km of drinking water supply network falls within 10 m of the anticipated erosion areas by 2050 (erosion influence areas) and the coincident interests.

Table 2.6: Indicative results for drinking water supply network within 2050 erosion areas

Cell	Erosion Classification	Fresh Water (km)	Location	Coincident assets							
				Flood Risk (1:200 yr)	Potentially Vulnerable Areas (ha)	Buildings (#)	Roads (km)	Gardens of designed Landscape (ha)	Special Areas of Conservation (ha)	Special Protection Areas (ha)	Special Sites of Scientific Interest (ha)
3d	Erosion	0.16	Redcastle, Beaully Firth	0.32	-	-	0.18	-	-	-	-
2a	Erosion	0.14	Broughty Ferry, Tay	0.05	0.13	-	0.02	-	-	-	-
5c	Erosion	0.12	Balephetrish Bay, Tiree	0.24	-	-	0.18	-	-	-	-
7	Erosion	0.09	Solway	3.80	-	-	-	-	-	-	-
5c	Erosion	0.08	Gott Bay, Tiree	4.56	-	-	0.04	-	-	-	-
6b	Erosion	0.07	Toward Castle, Clyde	0.13	0.48	-	0.09	0.02	-	-	-
6b	Erosion	0.05	Kilcreggan, Clyde	0.03	0.07	1.00	0.05	-	-	-	-
3e	Erosion	0.05	Balintore, Moray Firth	0.11	0.05	-	-	-	-	-	-
9f	Erosion	0.04	Baile na Creige, Barra	0.00	-	-	0.04	-	-	-	-
6b	Erosion	0.02	Toward Point, Clyde	0.26	0.72	-	0.05	0.00	-	-	-
1d	Erosion	0.02	Elie, Fife	0.00	-	-	0.04	-	-	-	-
6b	Erosion	0.02	Toward Point, Clyde	0.14	0.42	-	0.08	-	-	-	-
6b	Erosion	0.00	Innellan, Clyde	0.00	0.05	-	0.02	-	-	-	-

Table 2.7: Indicative results for freshwater supply network within 2050 Erosion Influence areas

Cell	Erosion Classification	Fresh Water (km)	Location	Coincident assets							
				Flood Risk (1:200 yr)	Potentially Vulnerable Areas (ha)	Buildings (#)	Roads (km)	Gardens of designed Landscape (ha)	Special Areas of Conservation (ha)	Special Protection Areas (ha)	Special Sites of Scientific Interest (ha)
7	Erosion Influence	0.23	Solway Firth, Solway	0.27	2.35	-	-	-	1.37	1.37	1.37
6b	Erosion Influence	0.21	Toward, Clyde	0.01	0.31	-	0.18	0.10	-	-	-
5c	Erosion Influence	0.18	Balephetrish Bay, Tiree	0.02	-	-	0.11	-	-	-	-
5c	Erosion Influence	0.17	Gott Bay, Tiree	1.06	-	-	0.37	-	-	-	-
6b	Erosion Influence	0.17	Castle Toward, Clyde	0.01	0.29	-	0.15	0.16	-	-	-
6b	Erosion Influence	0.14	Toward, Clyde	0.07	0.42	-	0.17	0.07	-	-	-
7	Erosion Influence	0.07	Eastrigs, Solway	1.89	-	-	-	-	-	-	-
5c	Erosion Influence	0.06	Corpach, Loch Linnhe	0.03	0.15	-	0.06	-	-	-	-
1d	Erosion Influence	0.06	Elie, Fife	0.00	-	-	0.03	-	-	-	-
2a	Erosion Influence	0.05	Broughy Ferry, Tay	0.03	0.12	8.00	0.06	-	-	-	-
8a	Erosion Influence	0.05	Am Baile, Eriskay	0.00	-	-	-	-	-	-	-
6b	Erosion Influence	0.04	Kilcreggan, Clyde	0.01	0.09	-	0.03	-	-	-	-
6b	Erosion Influence	0.04	Innellan, Clyde	0.01	0.09	-	0.04	-	-	-	-
6b	Erosion Influence	0.04	Largs, Clyde	0.02	0.13	-	0.04	-	-	-	-
3d	Erosion Influence	0.04	Charleston, Beaulie Firth	0.07	-	-	0.02	-	-	-	-
9f	Erosion Influence	0.02	Baile Na Creige, Barra	0.00	-	-	0.02	-	-	-	-
3e	Erosion Influence	0.02	Balintore, Moray Firth	0.06	0.10	-	-	-	-	-	-
1a	Erosion Influence	0.01	Dunbar, Forth	0.03	0.13	-	-	-	-	0.01	0.01
7	Erosion Influence	0.00	Carsethorn, Solway	0.10	0.08	-	0.02	-	0.00	0.00	0.00

Table 2.8 shows that very few locations have septic tanks at increased risk of erosion by 2050, although Table 2.9 identifies 14 locations where 17 septic tanks occur within the erosion influenced areas.

Table 2.8: Septic water within 2050 erosion areas

Cell	Erosion Classification	Septic Water (#)	Location	Coincident assets							
				Flood Risk (1:200 yr)	Potentially Vulnerable Areas (ha)	Buildings (#)	Roads (km)	Gardens of designed Landscape (ha)	Special Areas of Conservation (ha)	Special Protection Areas (ha)	Special Sites of Scientific Interest (ha)
7	Erosion	1	Solway Firth	2.99	4.21	-	0.08	-	4.02	4.02	4.02
10d	Erosion	1	Sandquoy, Sanday	0.04	0.17	-	-	-	-	0.06	0.06

Table 2.9: Septic water within 2050 erosion vicinity areas

Cell	Erosion Classification	Septic Water (#)	Location	Coincident assets							
				Flood Risk (1:200 yr)	Potentially Vulnerable Areas (ha)	Buildings (#)	Roads (km)	Gardens of designed Landscape (ha)	SAC (ha)	SPA (ha)	SSSI (ha)
5c	Erosion Vicinity	3	Corpach, Loch Linn	0.21	1.79	3.00	-	-	-	-	-
5b	Erosion Vicinity	2	Kylerhea	0.44	-	2.00	0.11	-	-	-	-
4	Erosion Vicinity	1	Kyle of Durness, St	0.09	-	3.00	-	-	-	-	-
5b	Erosion Vicinity	1	Boenesketaig, Skye	0.22	0.74	1.00	0.15	-	-	-	-
5c	Erosion Vicinity	1	Scaranich, Tiree	0.20	-	1.00	0.17	-	-	-	-
5c	Erosion Vicinity	1	Tiree	0.15	-	2.00	0.94	-	-	0.01	0.01
5c	Erosion Vicinity	1	Gott Bay, Tiree	1.89	-	1.00	0.15	-	-	0.13	0.13
6a	Erosion Vicinity	1	Lamlash, Arran	1.47	1.38	4.00	-	-	-	-	-
9e	Erosion Vicinity	1	Benbecula	0.11	0.71	2.00	-	-	-	-	-
9e	Erosion Vicinity	1	Cill Amhlaidh, N Uis	0.35	1.51	-	-	-	-	-	-
10a	Erosion Vicinity	1	Grimness, South R	0.29	1.94	-	0.63	-	-	-	-
10d	Erosion Vicinity	1	Lopness, Sanday	3.39	3.62	1.00	-	-	-	1.89	1.89
1c	Erosion Vicinity	1	West Wemyss, Fife	0.14	7.24	2.00	0.11	2.92	-	0.01	0.01
3d	Erosion Vicinity	1	Alturle Point, Moray	0.10	-	1.00	-	-	-	-	-

2.1.4 Runways

Two runways at Islay and Benbecula identified within the data set used by SEPA for Flood Risk Management purposes also fall within the NCCA anticipated erosion areas for 2050. Table 2.10 shows the extent of the runway locations and other asset types within 60 m of the anticipated positions of MHWS. Both runways are low-lying and at risk from coastal flooding (1:200 yr). Table 2.11 considers the extent of runways within 10 m of the anticipated position of MHWS in 2050. However, some airports / airfields are not included within the SEPA dataset. This includes the low-lying coastal strip

supporting the northern end of the runway at Stornoway (Lewis) and the main runway at Sumburgh (Shetland) both ends of which are currently protected by boulder revetments extending beyond the natural coastline.

Table 2.10: Indicative result for the runways within 2050 erosion area

Cell	Erosion Classification	Runways (ha)	Location	Coincident assets			
				Flood Risk 200yr (ha)	PVA (ha)	Special Protection Area (ha)	Site of Special Scientific Interest (ha)
5c	Erosion	0.36	Laggan Bay, Islay	8.96	-	18.37	18.37
5c	Erosion	0.03	Laggan Bay, Islay	3.17	-	6.13	6.13
9e	Erosion	0.02	Benbecula	0.36	-	-	-

Table 2.11: Indicative result for runways within 2050 Erosion Influence area

Cell	Erosion Classification	Runways (ha)	Location	Coincident assets			
				Flood Risk 200yr (ha)	PVA (ha)	Special Area of Conservation (ha)	Site of Special Scientific Interest (ha)
5c	Erosion Influence	0.30	Laggan Bay, Islay	0.12	-	2.90	2.90
5c	Erosion Influence	0.09	Laggan Bay, Islay	0.18	-	1.55	1.55
9e	Erosion Influence	0.05	Benbecula	0.06	1.63	-	-

2.1.5 Flooding

The areas of greatest anticipated erosion of flood prone land are the extensive areas of low-lying coastal dunes, machair and salt marshes. Table 2.12 outlines the areas at flood risk which lie seaward of the anticipated position of MHWS in 2050. Only a proportion of these areas fall within PVAs and this reflects the rural and less developed character of these areas. These areas contain natural heritage protected sites but few built assets and so flooding and erosion are accepted and managed as natural processes jointly affecting natural areas.

Table 2.13 includes Potentially Vulnerable Areas to identify those areas which may be at risk from flooding and erosion and contain built assets. No buildings lie directly within the 2050 erosion area and PVAs, but 15 buildings located in Southernness (Solway), Prestonpans (Forth) and Broughty Ferry (Tayside) are anticipated to be within 10m of the position of MHWS in 2050. Where relevant, coincident assets including roads, freshwater network and natural heritage sites are shown.

Table 2.12: Flood risk areas (1:200yr) within 2050 erosion area

Cell	Erosion Classification	Flood Risk 200yr (ha)	Location	Coincident assets				
				Potentially Vulnerable Areas (ha)	Buildings (#)	Roads (km)	Cultural Heritage (ha)	Natural Heritage (ha)
3c	Erosion	27.01	Culbin Bar, Moray Firth	-	-	-	7.60	83.21
7	Erosion	14.28	Solway Firth	14.28	-	-	-	57.11
9e	Erosion	13.11	Nort Uist Machair	-	-	-	-	15.23
7	Erosion	11.20	Solway Firth	11.20	-	-	-	44.81
7	Erosion	10.48	Solway Firth	10.48	-	-	-	41.92
3c	Erosion	8.99	Culbin	-	-	-	-	21.16
5c	Erosion	8.96	Islay	-	-	-	-	36.74
7	Erosion	8.88	Solway Firth	8.88	-	-	-	35.53
9d	Erosion	7.23	Udal	0.78	-	-	-	-
2a	Erosion	6.90	F of Tay & Eden Est. Fife	-	-	-	8.39	33.58
9e	Erosion	6.44	Kirkibost	-	-	-	-	19.87
3c	Erosion	6.03	Findhorn	-	-	-	-	-
3f	Erosion	5.10	Littleferry, Golspie	6.09	-	-	-	18.77
2a	Erosion	5.07	Firth of Tay and Eden Estuary	-	-	-	-	15.21
2a	Erosion	5.04	Barry Links, Tay	5.15	-	-	-	25.98
3c	Erosion	4.82	Whiteness	12.64	-	-	-	25.31
7	Erosion	4.80	Solway Firth	4.80	-	-	-	19.19
7	Erosion	4.76	Solway	8.16	-	-	-	22.93
2a	Erosion	4.62	Firth of Tay & Eden Estuary	-	-	-	5.74	22.97
5c	Erosion	4.56	Gott Bay, Tiree	-	-	0.04	-	-
7	Erosion	4.18	Solway Firth	-	-	-	-	-
8c	Erosion	4.16	Stornoway	2.47	-	-	-	4.76
3f	Erosion	4.16	Dornoch F & MM, Dornoch	15.01	-	-	-	45.04
7	Erosion	3.80	Solway	-	-	-	-	-
2d	Erosion	3.44	Foveran	-	-	-	-	6.85
7	Erosion	3.31	Caerlaverock, Solway	3.31	-	-	-	13.16
5c	Erosion	3.17	Laggan, Skye	-	-	-	-	12.26
5c	Erosion	3.10	Gruinart Flats, Islay	-	-	-	-	13.59
7	Erosion	2.99	Solway Firth	4.21	-	-	-	12.05
7	Erosion	2.98	Creetown, Solway	-	-	-	-	2.98
9e	Erosion	2.97	Gualan, N Uist	-	-	-	-	-
3b	Erosion	2.86	Spey Bay	-	-	-	-	1.18
7	Erosion	2.81	Creetown, Solway	-	-	-	-	2.81
6c	Erosion	2.75	Stevenson, Clyde	2.89	-	-	-	-
7	Erosion	2.74	Creetown, Solway	-	-	-	-	2.74
5c	Erosion	2.59	Crossapol, Tiree	-	-	-	-	24.29
2a	Erosion	2.19	Barry Links, Tay	-	-	-	-	31.50
7	Erosion	2.11	Caerlaverock, Solway	2.04	-	-	-	8.44
5c	Erosion	2.09	Balephuill, Tiree	-	-	-	-	5.00
5c	Erosion	2.05	Machrihanish, Kintyre	-	-	-	-	3.01

Table 2.13: Potentially Vulnerable Areas within 2050 erosion influence area

Cell	Erosion classification	Potential Vulnerable Area (ha)	Buildings Total (#)	Residential Properties (#)	Non Residential Properties (#)	Community Services (#)	Utilities (#)	Location	Coincident assets					
									Flood Risk 200yr (ha)	Roads (km)	Freshwater Network (km)	Septic tanks (#)	Natural Heritage (ha)	Cultural Heritage (ha)
7	Erosion Influence	0.48	3	3	-	-	-	Southernness, Solway	0.48	0.08	-	-	0.43	-
1b	Erosion Influence	0.46	4	3	1	-	-	Prestonpans, Forth	0.46	-	-	-	-	-
2a	Erosion Influence	0.12	8	5	3	-	-	Broughty Ferry, Tay	0.12	0.06	0.05	-	-	-

2.1.6 Cultural Heritage

The anticipated indicative impact on cultural heritage sites is summarised in Table 13. 9 Battlefields, 46 Gardens of Designed Landscape (GDLs), 460 Scheduled Monuments and 27 Properties in Care occur within 10m of MHWS. The greatest area of anticipated erosion is at Tentsmuir (Fife), where over 15.7 ha of the Tentsmuir Coastal Defences Scheduled Monument falls seaward of the 2050 MHWS line. The next largest area of anticipated erosion by 2050 is Culbin Bar (Moray Firth) where 5.7 ha of the scheduled monument will lie seaward of the anticipated MHWS position. Some of the individual interests at Tentsmuir and Culbin are Second World War anti-tank blocks inserted along the coastal edge and anti-glider poles pile-driven into intertidal sands and may be compromised if erosion leads to substantial reduction in beach levels.

Whilst all the cultural heritage interests in Table 2.14 are at risk from flooding (1:200yr), most GDL's also fall within SEPA's PVAs whereas Scheduled Monuments often lie beyond PVAs. There are 13 locations where cultural heritage interests are affected by anticipated erosion and erosion influenced areas (Table 24) including Arbigland (Solway), Ardgowan (Clyde), Balmacara (Kyle of Lochalsh), Culbin Bar (Moray Firth), Dalmeny (Forth), Dunrobin (Moray Firth), Dysart House (Kirkcaldy), Innes Links (Spey Bay), St Andrews Links (Fife), Tentsmuir (Fife), Tofts Ness (Sanday), Toward Castle (Clyde), and Wemyss Castle (Fife). The coincidence of cultural and natural heritage designated sites suggests that liaison between Historic Environment Scotland and Scottish Natural Heritage will be key in supporting informed mitigation and adaptation strategies.

Table 2.14: Indicative results for Cultural Heritage interests within 2050 erosion area

Cell	Erosion Classification	HES total (ha)	Battlefields (ha)	Garden & Designed Landscapes (ha)	Properties in Care (ha)	Scheduled Monuments (ha)	Location	Coincident assets					Natural Heritage (ha)
								Flood Risk 200yr (ha)	Potentially Vulnerable Areas (ha)	Buildings (#)	Roads (km)	Rail (km)	
2a	Erosion	8.39	-	-	-	8.39	Tentsmuir, Fife	6.90	-	-	-	-	33.58
3c	Erosion	7.60	-	-	-	7.60	Culbin Bar, Moray Firth	27.01	-	-	-	-	83.21
2a	Erosion	5.74	-	-	-	5.74	Tentsmuir, Fife	4.62	-	-	-	-	22.97
2a	Erosion	1.57	-	-	-	1.57	Tentsmuir, Fife	1.55	-	-	-	-	1.92
1c	Erosion	0.78	-	0.78	-	-	Dysart House..., Kirkcaldy	0.05	0.72	-	-	-	0.39
1c	Erosion	0.72	-	0.72	-	-	Wemyss Castle, Fife	0.48	3.37	1.00	-	-	-
1c	Erosion	0.55	-	0.55	-	-	Wymes Castle, Fife	0.00	0.52	-	-	-	-
3b	Erosion	0.48	-	-	-	0.48	Innes Links, Spey Bay	0.94	-	-	-	-	2.28
7	Erosion	0.45	-	0.45	-	-	Arbigland, Solway	0.44	0.32	-	-	-	1.29
2a	Erosion	0.34	-	0.34	-	-	St Andrews Links, Fife	0.33	0.34	-	-	-	1.01
2a	Erosion	0.30	-	-	-	0.30	Tentsmuir, Fife	0.30	-	-	-	-	0.90
10d	Erosion	0.26	-	-	-	0.26	Toftsness, Sanday	0.26	0.25	-	-	-	0.52
1b	Erosion	0.16	-	0.16	-	-	Dalmeny, Forth	0.07	0.16	-	-	-	-
10d	Erosion	0.13	-	-	-	0.13	Toftsness, Sanday	0.13	0.13	-	-	-	0.27
3f	Erosion	0.09	-	0.09	-	-	Dunrobin, Moray Firth	0.05	-	-	-	-	-
10d	Erosion	0.07	-	-	-	0.07	Toftsness, Sanday	0.07	0.07	-	-	-	0.14
5b	Erosion	0.07	-	0.07	-	-	Balmacara, Kyle of Lochalsh	0.07	-	-	-	-	-
2a	Erosion	0.06	-	0.06	-	-	St Andrews Links, Fife	0.27	0.27	-	-	-	0.66
10d	Erosion	0.06	-	-	-	0.06	Tofts Ness, Sanday	0.02	0.14	-	-	-	0.27
6b	Erosion	0.05	-	0.05	-	-	Ardgowan, Clyde	0.05	0.05	-	-	-	-
3f	Erosion	0.05	-	0.05	-	-	Dunrobin, Moray Firth	0.05	-	-	-	-	-
1b	Erosion	0.05	-	0.05	-	-	Dalmeny, Forth	0.05	0.05	-	-	-	-
10d	Erosion	0.05	-	-	-	0.05	Tofts Ness, Sanday	0.05	0.05	-	-	-	0.09
10d	Erosion	0.04	-	-	-	0.04	Tofts Ness, Sanday	0.04	0.04	-	-	-	0.09
6b	Erosion	0.04	-	0.04	-	-	Ardgowan, Clyde	0.09	0.14	-	-	-	-
6b	Erosion	0.03	-	0.03	-	-	Ardgowan, CLyde	0.03	0.06	-	-	-	-
6b	Erosion	0.02	-	0.02	-	-	Toward Castle, Clyde	0.13	0.48	-	0.09	-	-
1c	Erosion	0.01	-	0.01	-	-	Dysart House..., Kirkcaldy	0.19	-	-	-	-	0.13
10d	Erosion	0.00	-	-	-	0.00	Tofts Ness, Sanday	0.07	0.07	-	-	-	0.14
6b	Erosion	0.00	-	0.00	-	-	Toward Point, Clyde	0.26	0.72	-	0.05	-	-

Table 2.15 Indicative results for cultural Heritage interests within 2050 erosion influence area

Cell	Erosion Classification	Total Road & Rail (km)	Road (km)	Rail (km)	Location	Coincident assets			
						Buildings (#)	Flood risk 200yr (ha)	Cultural Heritage (ha)	Natural Heritage (ha)
6b	Erosion	0.51	0.51	-	Strone Point, Clyde	-	0.57	-	-
5b	Erosion	0.48	-	0.48	Attadale, Lochcarron	-	0.19	-	-
3e	Erosion	0.23	0.23	-	Tarbat House, Cromarty	-	0.27	-	0.62
3d	Erosion	0.21	0.21	-	Redcastle, Beaully Firth	-	0.36	-	0.00
5b	Erosion	0.19	0.00	0.19	Attadale, Lochcarron	-	0.20	-	-
3d	Erosion	0.18	0.18	-	Redcastle, Beaully Firth	-	0.32	-	-
5c	Erosion	0.18	0.18	-	Balephetrish Bay, Tiree	-	0.24	-	-
3e	Erosion	0.12	0.12	-	Aness, Cromarty Firth	-	1.07	-	0.12
3e	Erosion	0.11	0.11	-	Aness, Cromarty Firth	-	1.41	-	1.00
2a	Erosion	0.10	0.10	-	Monifieth, Tay	-	0.25	-	0.00
5c	Erosion	0.10	-	0.10	Corpach, Loch Linnhe	-	0.06	-	-
5c	Erosion	0.09	0.09	-	Ardchattan Priory	-	0.13	-	-
6b	Erosion	0.09	0.09	-	Toward Castle, Clyde	-	0.13	0.02	-
4	Erosion	0.09	0.09	-	Kyle of Durness, Sutherland	-	0.49	-	-
10d	Erosion	0.08	0.08	-	Sandquoy, Sanday	-	0.04	-	0.13
6b	Erosion	0.08	0.08	-	Toward Point, Clyde	-	0.14	-	-
6b	Erosion	0.08	0.08	-	Toward Point, Clyde	-	0.03	-	-
2a	Erosion	0.08	0.08	-	Kingoodie, Tay	-	0.17	-	-
6b	Erosion	0.07	0.07	-	Strone Point, Clyde	-	0.11	-	-
6b	Erosion	0.07	0.07	-	Toward Point, Clyde	-	0.06	-	-
5c	Erosion	0.06	-	0.06	Corpach, Loch Linnhe	-	0.06	-	-
6b	Erosion	0.06	0.06	-	Hunterston, Clyde	-	0.21	-	-
5c	Erosion	0.05	-	0.05	Corpach, Loch Linnhe	-	0.07	-	-
6b	Erosion	0.05	0.05	-	Kilcreggan, Clyde	1	0.03	-	-
6b	Erosion	0.05	0.05	-	Toward Point, Clyde	-	0.03	-	-

2.1.7 Natural Heritage

Slightly more than half of Scotland's shoreline is designated for its natural heritage and particularly the extensive areas of dune, machair and salt marsh, where changes are highly likely. Since dynamism within these areas contributes to the habitat complexity and therefore the scientific interest, dynamism is an intrinsic part rather than a risk. As such it is reasonable to have a modified perspective of the pro and cons of erosion within a site of natural heritage versus a site where socio-economic assets are involved, such as cultural heritage, buildings or infrastructure.

Table 17 shows the anticipated indicative erosion areas within natural heritage sites. It should be noted that this is a total sum of each of the designated site areas even though these often overlap each other. Use of the extent of each designated site will avoid double counting. The Culbin Bar (Moray Firth) has the greatest extent anticipated to erode by 2050 (27.74 ha), entirely consistent with the characteristics and evolution of this low strand plain. The second largest extent of anticipated erosion is within the Solway Firth where multiple sections are expected to continue to retreat and up to 68 ha anticipated to be lost. However as outlined in the discussion section of the National Overview two-dimensional changes in MHWS may not fully summarise the complex three-dimensional changes within salt marshes and mud flats.

Table 2.16 details further anticipated erosion areas up to 2050. Comparable erosion influence areas (i.e. the designated sites within 10m of the anticipated position of MHWS in 2050 are shown in Table 2.17. It is clear the areas of anticipated erosion are also at risk from flooding with about 25% notified by SEPA as Potentially Vulnerable Areas for flooding. There are no buildings, roads, rail and relatively few cultural heritage sites that coincide with the areas of greatest change within natural heritage designated sites. Since there are relatively few competing pressures at these natural heritage sites

then the potential for natural flood risk management techniques can be given full consideration when future mitigation and adaptation strategies are developed.

Table 2.16: Indicative results for natural heritage interests within 2050 Erosion area

Cell	Erosion Classification	Natural Heritage Total (ha)	Marine Protected Areas (ha)	National Nature Reserves (ha)	Special Areas of Conservation (ha)	Special Protection Areas (ha)	Sites of Special Scientific Interest (ha)	Location	Coincident assets					
									Flood Risk 200 yr (ha)	Potentially Vulnerable Area (ha)	Buildings (#)	Roads (km)	Rail (km)	Cultural Heritage (ha)
3c	Erosion	83.21	-	-	27.74	27.74	27.74	Culbin Bar, Moray Firth	27.01	-	-	-	-	7.60
7	Erosion	57.11	-	14.28	14.28	14.28	14.28	Solway Firth	14.28	14.28	-	-	-	-
3f	Erosion	45.04	-	-	15.01	15.01	15.01	Dornoch F & MM, Dornoch	4.16	15.01	-	-	-	-
7	Erosion	44.81	-	11.20	11.20	11.20	11.20	Solway Firth	11.20	11.20	-	-	-	-
7	Erosion	41.92	-	10.48	10.48	10.48	10.48	Solway Firth	10.48	10.48	-	-	-	-
5c	Erosion	36.74	-	-	-	18.37	18.37	Islay	8.96	-	-	-	-	-
7	Erosion	35.53	-	8.88	8.88	8.88	8.88	Solway Firth	8.88	8.88	-	-	-	-
2a	Erosion	33.58	-	8.39	8.39	8.39	8.39	Tentsmuir	6.90	-	-	-	-	8.39
2a	Erosion	31.50	-	-	15.75	-	15.75	Barry Links, Tay	2.19	-	-	-	-	-
2a	Erosion	25.98	-	-	10.84	2.15	12.99	Barry Links, Tay	5.04	5.15	-	-	-	-
3c	Erosion	25.31	-	-	-	12.66	12.66	Whiteness	4.82	12.64	-	-	-	-
5c	Erosion	24.29	-	-	7.68	8.30	8.30	Crossapol, Tiree	2.59	-	-	-	-	-
2a	Erosion	22.97	-	5.74	5.74	5.74	5.74	Firth of Tay & Eden Estuary	4.62	-	-	-	-	5.74
7	Erosion	22.93	-	-	7.64	7.64	7.64	Solway	4.76	8.16	-	-	-	-
3c	Erosion	21.16	-	-	-	6.52	14.64	Culbin	8.99	-	-	-	-	-
9e	Erosion	19.87	-	-	6.62	6.62	6.62	Kirkbost	6.44	-	-	-	-	-
7	Erosion	19.19	-	4.80	4.80	4.80	4.80	Solway Firth	4.80	4.80	-	-	-	-
3f	Erosion	18.77	-	6.26	-	6.26	6.26	Littleferry, Golspie	5.10	6.09	-	-	-	-
9e	Erosion	15.23	-	-	5.08	5.08	5.08	Nort Uist Machair	13.11	-	-	-	-	-
2a	Erosion	15.21	-	-	5.07	5.07	5.07	Firth of Tay and Eden Estuary	5.07	-	-	-	-	-
5c	Erosion	13.59	-	-	-	6.80	6.80	Gruinart Flats, Islay	3.10	-	-	-	-	-
7	Erosion	13.16	-	3.29	3.29	3.29	3.29	Caerlaverock, Solway	3.31	3.31	-	-	-	-
5c	Erosion	12.26	-	-	-	6.13	6.13	Laggan, Skye	3.17	-	-	-	-	-
7	Erosion	12.05	-	-	4.02	4.02	4.02	Solway Firth	2.99	4.21	-	-	-	-
9e	Erosion	11.97	-	-	3.99	3.99	3.99	N Uist Machair	1.01	-	-	-	-	-
7	Erosion	9.69	-	-	3.22	3.24	3.22	Solway, Solway Firth	1.17	3.22	-	-	-	-
7	Erosion	8.44	-	2.11	2.11	2.11	2.11	Caerlaverock, Solway	2.11	2.04	-	-	-	-
9e	Erosion	7.64	-	1.91	1.91	1.91	1.91	Monach Islands, WI	1.52	-	-	-	-	-
9e	Erosion	7.23	-	-	2.41	2.41	2.41	N.Uist Machair, N Uist	0.65	-	-	-	-	-
2d	Erosion	6.85	-	-	-	-	6.85	Foveran	3.44	-	-	-	-	-
3f	Erosion	6.24	-	-	2.08	2.08	2.08	Dornoch, Moray Firth	1.64	-	-	-	-	-
7	Erosion	5.75	-	1.44	1.44	1.44	1.44	Caerlaverock, Solway	1.44	1.44	-	-	-	-
5c	Erosion	5.19	-	-	-	2.60	2.60	Laggan Bay, Islay	1.16	-	-	-	-	-
7	Erosion	5.11	-	-	1.70	1.70	1.70	Solway Firth, Solway	1.70	1.70	-	-	-	-
5c	Erosion	5.00	-	-	-	-	5.00	Balephuil, Tiree	2.09	-	-	-	-	-
7	Erosion	4.86	-	1.22	1.22	1.22	1.22	Caerlaverock, Solway	1.22	1.22	-	-	-	-
5c	Erosion	4.83	-	-	2.41	-	2.41	Hogh Bya, Coll	0.05	-	-	-	-	-
8c	Erosion	4.76	-	-	-	-	4.76	Stornoway, Lewis	4.16	2.47	-	-	-	-
8c	Erosion	4.32	-	-	-	-	4.32	Stornoway, Lewis	1.29	-	-	-	-	-
9e	Erosion	4.28	-	-	1.50	1.39	1.39	N Usit Machair, N Uist	0.40	-	-	-	-	-
9e	Erosion	4.03	-	1.01	1.01	1.01	1.01	Monach Islands, WI	1.01	-	-	-	-	-
5c	Erosion	3.93	-	-	-	1.97	1.97	Loch Gruinart	1.31	-	-	-	-	-
7	Erosion	3.52	-	0.88	0.88	0.88	0.88	Solway Firth	0.88	0.67	-	-	-	-
9e	Erosion	3.45	-	0.86	0.86	0.86	0.86	Monach Islands, WI	0.82	1.12	-	-	-	-
7	Erosion	3.36	-	-	1.12	1.12	1.12	Solway Firth	0.82	1.12	-	-	-	-
9e	Erosion	3.34	-	-	1.11	1.11	1.11	Kirkbost, N Uist	1.11	-	-	-	-	-
3b	Erosion	3.29	-	-	1.64	-	1.64	Spey, Moray	1.18	-	-	-	-	-
3c	Erosion	3.18	-	-	-	1.59	1.59	Whiteness Head, Moray	0.72	1.60	-	-	-	-
7	Erosion	3.15	-	0.79	0.79	0.79	0.79	Solway Firth	0.79	0.77	-	-	-	-
3f	Erosion	3.07	-	1.02	-	1.02	1.02	Littleferry, Golspie	0.96	1.21	-	-	-	-
5c	Erosion	3.01	-	-	-	-	3.01	Machrihanish, Kintyre	2.05	-	-	-	-	-
7	Erosion	2.98	-	-	-	-	2.98	Creerstown, Solway	2.98	-	-	-	-	-
7	Erosion	2.81	-	-	-	-	2.81	Creerstown, Solway	2.81	-	-	-	-	-
7	Erosion	2.74	-	-	-	-	2.74	Creerstown, Solway	2.74	-	-	-	-	-
3c	Erosion	2.41	-	-	-	0.36	2.05	Culbin, Moray	1.21	-	-	-	-	-
3b	Erosion	2.41	-	-	1.20	-	1.20	Spey, Moray	0.76	-	-	-	-	-
3b	Erosion	2.28	-	-	1.11	-	1.17	Innes Links, Spey Bay	0.94	-	-	-	-	0.48
4	Erosion	2.17	-	-	1.09	-	1.09	Balnakeil, Sutherland	0.59	-	-	-	-	-
2d	Erosion	2.17	-	-	-	-	2.17	Ratray Head, Aberdeenshire	1.87	-	-	-	-	-
7	Erosion	2.07	-	-	0.69	0.69	0.69	Annan, Solway	0.69	0.69	-	-	-	-
5c	Erosion	1.96	-	-	-	-	1.96	Rhunahaorine, Kintyre	1.95	-	-	-	-	-
9e	Erosion	1.95	-	0.49	0.49	0.49	0.49	Monach Islands, WI	0.18	-	-	-	-	-
4	Erosion	1.95	-	-	0.98	-	0.98	Durness, North Coast	0.88	-	-	-	-	-
2a	Erosion	1.92	-	0.45	0.49	0.49	0.49	Tentsmuir CDefen, Fife	1.55	-	-	-	-	1.57
2b	Erosion	1.74	-	-	-	-	1.74	St Cyrus, Angus	1.10	1.65	-	-	-	-
7	Erosion	1.72	-	-	0.57	0.57	0.57	Southernness, Solway	0.49	0.57	-	-	-	-
10d	Erosion	1.72	-	-	-	1.68	0.04	Newark, Sanday	1.38	1.65	-	-	-	-
5c	Erosion	1.71	-	-	0.86	-	0.86	Hough Bay, Tiree	0.38	-	-	-	-	-
5c	Erosion	1.71	-	-	-	0.85	0.85	Laggan Bay, Islay	0.24	-	-	-	-	-
9e	Erosion	1.68	-	-	0.56	0.56	0.56	Kirkbost, N Uist	0.56	-	-	-	-	-
7	Erosion	1.64	-	-	0.55	0.55	0.55	Annan, Solway	0.55	0.55	-	-	-	-
9e	Erosion	1.62	-	0.41	0.41	0.41	0.41	Monach Islands, WI	-	-	-	-	-	-
5c	Erosion	1.60	-	-	-	0.80	0.80	Loch Gruinart	0.12	-	-	-	-	-
7	Erosion	1.45	-	0.36	0.36	0.36	0.36	Caerlaverock, Solway	0.36	0.36	-	-	-	-
5c	Erosion	1.36	-	-	-	0.68	0.68	Hynish Bay, Tiree	0.55	-	-	-	-	-
7	Erosion	1.34	-	-	0.45	0.45	0.45	Southernness, Solway	0.88	0.80	7.00	-	-	-
7	Erosion	1.29	-	-	0.43	0.43	0.43	Arbigland, Solway	0.44	0.32	-	-	-	0.45
5c	Erosion	1.21	-	-	-	0.61	0.61	Laggan, Skye	0.13	-	-	-	-	-
3b	Erosion	1.18	-	-	-	-	1.18	Spey Bay	2.86	-	-	-	-	-
5c	Erosion	1.09	-	-	-	0.54	0.54	Hynish Bay, Tiree	0.54	-	-	-	-	-
3e	Erosion	1.07	-	-	-	0.54	0.54	Dingwall, Cromarty	0.54	-	-	-	-	-
2a	Erosion	1.01	-	-	0.34	0.34	0.34	St Andrews Links, Fife	0.33	0.34	-	-	-	0.34

Table 2.17: Indicative results for the natural heritage interests within 2050 Erosion Influence area

Cell	Erosion Classification	Natural Heritage Total (ha)	Marine Protected Areas (ha)	National Nature Reserves (ha)	Special Areas of Conservation (ha)	Special Protection Areas (ha)	Sites of Special Scientific Interest (ha)	Location	Coincident assets					
									Flood Risk 200 yr (ha)	Potentially Vulnerable Area (ha)	Buildings (#)	Roads (km)	Rail (km)	Cultural Heritage (ha)
3f	Erosion Influence	12.64	-	-	4.21	4.21	4.21	Morrich More, Dornoch Firth	0.98	4.21	-	-	-	-
7	Erosion Influence	8.45	-	2.11	2.11	2.11	2.11	Caerlaverock, Solway	2.11	2.11	-	-	-	-
5c	Erosion Influence	5.80	-	-	-	2.90	2.90	Laggan, Islay	0.12	-	-	-	-	-
3c	Erosion Influence	5.55	-	-	-	2.78	2.78	Whiteness Head, Moray Firth	0.64	2.78	-	-	-	-
2a	Erosion Influence	5.51	-	-	2.50	0.25	2.75	Barry Links, Tay	0.99	0.54	-	-	-	-
9e	Erosion Influence	5.22	-	-	1.74	1.74	1.74	S. Uist, Uist	0.09	1.74	-	-	-	-
9e	Erosion Influence	5.18	-	-	1.73	1.73	1.73	Kirkibost, N Uist	1.47	-	-	-	-	-
7	Erosion Influence	4.95	-	1.24	1.24	1.24	1.24	Caerlaverock, Solway	1.24	1.24	-	-	-	-
3c	Erosion Influence	4.74	-	-	-	1.40	3.34	Culbin, Moray Firth	1.23	-	-	-	-	-
7	Erosion Influence	4.62	-	-	1.54	1.54	1.54	Solway Firth, Solway	1.22	1.75	-	-	-	-
5c	Erosion Influence	4.45	-	-	1.46	1.50	1.50	Crossapol, Tiree	0.10	-	-	-	-	-
7	Erosion Influence	4.11	-	-	1.37	1.37	1.37	Solway Firth, Solway	0.27	2.35	-	-	-	-
9a	Erosion Influence	4.04	-	-	1.35	1.35	1.35	Baleshare, N Uist	0.20	-	-	-	-	-
2a	Erosion Influence	3.86	-	0.97	0.97	0.97	0.97	Tentsmuir CDefen, Fife	0.88	-	-	-	-	0.97
2a	Erosion Influence	3.86	-	0.96	0.96	0.96	0.96	Tentsmuir CDefen, Fife	0.62	-	-	-	-	0.96
3f	Erosion Influence	3.57	-	1.19	-	1.19	1.19	Golspie, Sutherland	0.90	1.19	-	-	-	-
2a	Erosion Influence	3.46	-	-	1.73	-	1.73	Barry Links, Tay	0.01	-	-	-	-	-
7	Erosion Influence	3.30	-	-	1.07	1.15	1.07	Solway Firth	0.12	1.26	-	-	-	-
5c	Erosion Influence	3.10	-	-	-	1.55	1.55	Laggan, Islay	0.18	-	-	-	-	-
2a	Erosion Influence	3.07	-	-	1.02	1.03	1.03	Firth of Tay & Eden, Fife	1.01	-	-	-	-	-
7	Erosion Influence	3.02	-	-	1.01	1.01	1.01	Solway Firth	0.94	1.01	-	-	-	-
7	Erosion Influence	2.81	-	0.70	0.70	0.70	0.70	Caerlaverock, Solway	0.70	0.70	-	-	-	-
9e	Erosion Influence	2.69	-	0.67	0.67	0.67	0.67	Monach Isles, WI	0.53	-	-	-	-	-
3c	Erosion Influence	2.67	-	-	0.89	0.89	0.89	Culbin, Moray Firth	0.89	-	-	-	-	-
9e	Erosion Influence	2.58	-	-	0.86	0.86	0.86	Baleshare, N Uist	1.31	-	-	-	-	-
7	Erosion Influence	2.55	-	-	0.85	0.85	0.85	Solway Firth	0.20	0.85	-	-	-	-
2d	Erosion Influence	2.52	-	-	-	-	2.52	Foveran Links, Aberdeenshire	0.50	-	-	-	-	-
9e	Erosion Influence	2.45	-	0.61	0.61	0.61	0.61	Monach Isles, WI	0.17	-	-	-	-	-
3b	Erosion Influence	2.33	-	-	1.17	-	1.17	River Spey, Moray	0.07	-	-	-	-	-
7	Erosion Influence	2.33	-	0.58	0.58	0.58	0.58	Blackshaw, Solway	0.58	0.55	-	-	-	-
5c	Erosion Influence	2.27	-	-	1.13	-	1.13	Hogh Bay, Coll	-	-	-	-	-	-
5c	Erosion Influence	2.23	-	-	-	1.12	1.12	Laggan, Islay	0.06	-	-	-	-	-
9e	Erosion Influence	2.22	-	0.56	0.56	0.56	0.56	Monach Isles, WI	-	-	-	-	-	-
9e	Erosion Influence	2.19	-	-	0.73	0.73	0.73	Kirkibost, N Uist	0.73	-	-	-	-	-
3f	Erosion Influence	1.86	-	-	0.62	0.62	0.62	Morrich More, Dornoch Firth	0.23	-	-	-	-	-
5c	Erosion Influence	1.78	-	-	-	0.89	0.89	Loch Gruinart, Skye	0.16	-	-	-	-	-
5c	Erosion Influence	1.72	-	-	-	-	1.72	Balephuil Bay, Tiree	0.03	-	-	-	-	-
7	Erosion Influence	1.70	-	0.43	0.43	0.43	0.43	Caerlaverock, Solway	0.47	0.47	-	-	-	-
9e	Erosion Influence	1.67	-	-	0.56	0.56	0.56	Kirkibost, N Uist	0.14	-	-	-	-	-
5c	Erosion Influence	1.64	-	-	-	-	1.64	Machrihanish, Kintyre	0.44	-	-	-	-	-
3b	Erosion Influence	1.61	-	-	0.80	-	0.81	Innes Links, Spey Bay	0.19	-	-	-	-	0.52
9e	Erosion Influence	1.55	-	0.39	0.39	0.39	0.39	Monach Isles, WI	0.02	-	-	-	-	-
7	Erosion Influence	1.52	-	0.38	0.38	0.38	0.38	Blackshaw, Solway	0.38	0.34	-	-	-	-
5c	Erosion Influence	1.52	-	-	-	0.76	0.76	Loch Gruinart, Skye	0.21	-	-	-	-	-
3b	Erosion Influence	1.49	-	-	0.75	-	0.75	Innes Links, Spey Bay	0.02	-	-	-	-	0.02
3c	Erosion Influence	1.46	-	-	0.49	0.49	0.49	Culbin, Moray Firth	0.42	-	-	-	-	0.40
3f	Erosion Influence	1.41	-	0.47	-	0.47	0.47	Golspie, Sutherland	0.45	0.62	-	-	-	-
7	Erosion Influence	1.31	-	0.33	0.33	0.33	0.33	Caerlaverock, Solway	0.33	0.33	-	-	-	-
9e	Erosion Influence	1.22	-	-	0.43	0.40	0.40	Baleshare, N Uist	0.06	-	-	-	-	-
7	Erosion Influence	1.18	-	0.30	0.30	0.30	0.30	Blackshaw, Solway	0.30	0.29	-	-	-	-
7	Erosion Influence	1.13	-	-	0.38	0.38	0.38	Southernness, Solway	0.10	0.38	-	-	-	-
4	Erosion Influence	1.11	-	-	0.56	-	0.56	Balnakeil, Sutherland	0.01	-	-	-	-	-
9e	Erosion Influence	1.11	-	0.28	0.28	0.28	0.28	Monach Isles, WI	-	-	-	-	-	-
3c	Erosion Influence	1.07	-	-	-	0.53	0.53	Whiteness Head, Moray Firth	0.34	0.65	-	-	-	-
10d	Erosion Influence	1.04	-	-	-	0.93	0.11	Bay of Newark, Sanday	0.34	1.04	-	-	-	-
4	Erosion Influence	1.03	-	-	0.52	-	0.52	Balnakeil, Sutherland	0.20	-	-	-	-	-
2b	Erosion Influence	1.02	-	-	-	-	1.02	St Cyrus, Angus	0.22	0.94	-	-	-	-

2.1.8 Scottish Water Network

The Scottish drinking water network was considered within NCCA however, given the underlying inaccuracy of the data and the change analysis, the results are indicative and should be used only to support follow-up investigations. The greatest length of clean water network is adjacent to Redcastle (Beaully Firth) where 160m of pipe coincides with the anticipated 2050 erosion area. Broughty Ferry (Tay) and Balephetrish Bay (Tiree) also have over 100m within the anticipated 2050 erosion area. In total, 10 locations are identified in this analysis which would benefit from further investigation. Table 2.19 considers the clean water network which coincides with the anticipated erosion influence area, i.e. the assets within 10m of 2050 MHWS. As with all results in this analysis, these should be used as indicative results.

Further to the indicative assessment above, the Whole Coast Assessment suggests that 86 km of the network lies within 10 m of MHWS, just under half of which is on potentially erodible land. Further risk comes from the potential for increased saline influence on the water supplies for example on Tiree, that merit further investigation.

Table 2.18: Indicative results for fresh water network within 2050 Erosion area

Cell	Erosion Classification	Fresh Water (km)	Location	Coincident assets							
				Flood Risk (1:200 yr)	Potentially Vulnerable Areas (ha)	Buildings (#)	Roads (km)	Gardens of designed Landscape (ha)	Special Areas of Conservation (ha)	Special Protection Areas (ha)	Special Sites of Scientific Interest (ha)
3d	Erosion	0.16	Redcastle, Beaully Firth	0.32	-	-	0.18	-	-	-	-
2a	Erosion	0.14	Broughy Ferry, Tay	0.05	0.13	-	0.02	-	-	-	-
5c	Erosion	0.12	Balephetrish Bay, Tiree	0.24	-	-	0.18	-	-	-	-
7	Erosion	0.09	Solway	3.80	-	-	-	-	-	-	-
5c	Erosion	0.08	Gott Bay, Tiree	4.56	-	-	0.04	-	-	-	-
6b	Erosion	0.07	Toward Castle, Clyde	0.13	0.48	-	0.09	0.02	-	-	-
6b	Erosion	0.05	Kilcreggan, Clyde	0.03	0.07	1.00	0.05	-	-	-	-
3e	Erosion	0.05	Balintore, Moray Firth	0.11	0.05	-	-	-	-	-	-
9f	Erosion	0.04	Baile na Creige, Barra	0.00	-	-	0.04	-	-	-	-
6b	Erosion	0.02	Toward Point, Clyde	0.26	0.72	-	0.05	0.00	-	-	-
1d	Erosion	0.02	Elie, Fife	0.00	-	-	0.04	-	-	-	-
6b	Erosion	0.02	Toward Point, Clyde	0.14	0.42	-	0.08	-	-	-	-
6b	Erosion	0.00	Innellan, Clyde	0.00	0.05	-	0.02	-	-	-	-

Table 2.19: Indicative results for fresh water network within 2050 Erosion Influence area

Cell	Erosion Classification	Fresh Water (km)	Location	Coincident assets							
				Flood Risk (1:200 yr)	Potentially Vulnerable Areas (ha)	Buildings (#)	Roads (km)	Gardens of designed Landscape (ha)	Special Areas of Conservation (ha)	Special Protection Areas (ha)	Special Sites of Scientific Interest (ha)
7	Erosion Influence	0.23	Solway Firth, Solway	0.27	2.35	-	-	-	1.37	1.37	1.37
6b	Erosion Influence	0.21	Toward, Clyde	0.01	0.31	-	0.18	0.10	-	-	-
5c	Erosion Influence	0.18	Balephetrish Bay, Tiree	0.02	-	-	0.11	-	-	-	-
5c	Erosion Influence	0.17	Gott Bay, Tiree	1.06	-	-	0.37	-	-	-	-
6b	Erosion Influence	0.17	Castle Toward, Clyde	0.01	0.29	-	0.15	0.16	-	-	-
6b	Erosion Influence	0.14	Toward, Clyde	0.07	0.42	-	0.17	0.07	-	-	-
7	Erosion Influence	0.07	Eastrigs, Solway	1.89	-	-	-	-	-	-	-
5c	Erosion Influence	0.06	Corpach, Loch Linnhe	0.03	0.15	-	0.06	-	-	-	-
1d	Erosion Influence	0.06	Elie, Fife	0.00	-	-	0.03	-	-	-	-
2a	Erosion Influence	0.05	Broughy Ferry, Tay	0.03	0.12	8.00	0.06	-	-	-	-
8a	Erosion Influence	0.05	Am Baile, Eriskay	0.00	-	-	-	-	-	-	-
6b	Erosion Influence	0.04	Kilcreggan, Clyde	0.01	0.09	-	0.03	-	-	-	-
6b	Erosion Influence	0.04	Innellan, Clyde	0.01	0.09	-	0.04	-	-	-	-
6b	Erosion Influence	0.04	Largs, Clyde	0.02	0.13	-	0.04	-	-	-	-
3d	Erosion Influence	0.04	Charleston, Beaully Firth	0.07	-	-	0.02	-	-	-	-
9f	Erosion Influence	0.02	Baile Na Creige, Barra	0.00	-	-	0.02	-	-	-	-
3e	Erosion Influence	0.02	Balintore, Moray Firth	0.06	0.10	-	-	-	-	-	-
1a	Erosion Influence	0.01	Dunbar, Forth	0.03	0.13	-	-	-	-	0.01	0.01
7	Erosion Influence	0.00	Carsethorn, Solway	0.10	0.08	-	0.02	-	0.00	0.00	0.00

References

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Appendix A: Buildings

Buildings								Coincident assets					
Cell	Erosion classification	Buildings Total (#)	Residential Properties (#)	Non Residential Properties (#)	Community Services (#)	Utilities (#)	Location	Flood Risk 200yr (ha)	Potentially Vulnerable Area (ha)	Freshwater Network (km)	Septic tanks (#)	Natural Heritage (ha)	Cultural Heritage (ha)
1b	Erosion Vicinity	98	85	12	-	1	Prestonpans, Forth	0.25	2.84	0.33	-	-	-
2a	Erosion Vicinity	73	65	8	-	-	Broughty Ferry, Tay	0.20	1.11	0.36	-	0.01	-
1a	Erosion Vicinity	39	30	9	-	-	North Berwick, Forth	0.10	-	-	-	0.01	-
1c	Erosion Vicinity	23	23	-	-	-	Dysart	0.10	1.14	0.12	-	0.00	-
2a	Erosion Vicinity	22	21	1	-	-	St Andrews	0.08	-	0.08	-	-	-
7	Erosion Vicinity	20	20	-	-	-	Southernness, Solway	2.23	2.87	0.10	-	1.58	-
6b	Erosion Vicinity	18	17	1	-	-	Southernness	0.14	2.59	-	-	-	-
7	Erosion Vicinity	17	17	-	-	-	Carsethorm, Solway	0.41	0.83	0.05	-	-	-
1c	Erosion Vicinity	16	16	-	-	-	Pettycur, Fife	0.03	0.99	0.07	-	0.00	-
1d	Erosion Vicinity	15	14	1	-	-	Elie, Fife	0.00	-	0.15	-	-	-
1c	Erosion Vicinity	12	11	-	-	1	Buckhaven, Fife	0.13	4.94	0.12	-	0.27	-
6b	Erosion Vicinity	10	9	1	-	-	Kilcreggan, Clyde	0.06	0.89	0.16	-	-	-
6b	Erosion Vicinity	8	5	3	-	-	Toward, Clyde	0.37	5.61	0.28	-	-	4.65
1c	Erosion Vicinity	7	7	-	-	-	Kirkcaldy, Fife	0.23	3.00	0.03	-	0.17	2.78
2a	Erosion Vicinity	6	6	-	-	-	Broughty Ferry, Fife	0.17	1.58	0.00	-	0.00	-
6b	Erosion Vicinity	6	1	5	-	-	Cardross, Clyde	0.89	1.17	-	-	0.06	0.10
3e	Erosion Vicinity	4	4	-	-	-	Balintore, Moray Firth	0.19	1.38	0.17	1	0.02	-
6a	Erosion Vicinity	4	3	1	-	-	Lamlash, Arran	1.47	12.04	0.49	-	1.90	-
7	Erosion Vicinity	4	3	1	-	-	Powfoot, Solway	0.75	1.02	0.11	-	-	-
4	Erosion Vicinity	3	2	1	-	-	Castle of Mey, N.Coast	0.00	-	-	-	-	-
4	Erosion Vicinity	3	3	-	-	-	Kyle of Durness, Sutherland	0.09	-	0.18	1	-	-
5a	Erosion Vicinity	3	3	-	-	-	Kinlochberrie	0.05	-	0.16	-	-	-
5c	Erosion Vicinity	3	2	1	-	-	Corpach, Loch Linnhe	0.21	1.79	0.28	3	-	-
5c	Erosion Vicinity	3	1	2	-	-	Corpach, Loch Linnhe	0.14	1.85	0.35	-	-	-
6b	Erosion Vicinity	3	3	-	-	-	Toward, Clyde	0.07	0.79	-	-	-	-
7	Erosion Vicinity	3	1	2	-	-	Carsethorm, Solway	0.57	0.87	0.25	-	0.18	-
1c	Erosion Vicinity	2	2	-	-	-	West Wemyss, Fife	0.14	-	-	-	-	-
2a	Erosion Vicinity	2	1	1	-	-	Monifieth	0.06	-	-	-	-	-
2a	Erosion Vicinity	2	2	-	-	-	Kingoodie, Cromarty	0.26	-	-	2	-	-
5b	Erosion Vicinity	2	2	-	-	-	Attadale, Lochcarron	0.29	-	0.19	1	0.02	-
5b	Erosion Vicinity	2	-	2	-	-	Kylereha	0.44	2.46	-	-	-	-
5c	Erosion Vicinity	2	-	2	-	-	Tiree	0.15	1.49	0.06	-	-	-
6a	Erosion Vicinity	2	2	-	-	-	Brodick, Arran	2.74	1.24	-	-	-	-
6b	Erosion Vicinity	2	2	-	-	-	Largs, Skye	0.93	0.85	-	-	-	-
6b	Erosion Vicinity	2	2	-	-	-	Toward, Clyde	0.10	0.91	0.14	-	-	-
6b	Erosion Vicinity	2	1	1	-	-	Toward, Clyde	0.08	0.71	-	1	-	-
7	Erosion Vicinity	2	-	1	-	1	Carsethorm, Solway	0.70	3.46	-	-	-	-
9e	Erosion Vicinity	2	-	1	1	-	Benbecula	0.11	0.99	-	-	-	-
9e	Erosion Vicinity	2	1	1	-	-	Lionacleit, Benbecula	0.50	7.24	-	1	0.01	2.92
9e	Erosion Vicinity	1	-	1	-	-	Balavanich, Benbecula	0.00	2.06	-	-	0.00	-
2a	Erosion Vicinity	1	1	-	-	-	Broughty Ferry	0.13	-	-	-	0.38	-
2b	Erosion Vicinity	1	1	-	-	-	St Cyrus, Angus	0.05	-	-	-	-	-
3d	Erosion Vicinity	1	1	-	-	-	Alturle Point, Moray Firth	0.10	0.74	0.05	1	-	-
3e	Erosion Vicinity	1	-	1	-	-	Alness, Cromarty	0.95	-	0.05	-	-	-
5b	Erosion Vicinity	1	1	-	-	-	Scottas, Loch Nevis	0.11	-	0.14	1	-	-
5b	Erosion Vicinity	1	1	-	-	-	Boenesketaig, Skye	0.22	-	0.90	1	0.26	-
5b	Erosion Vicinity	1	1	-	-	-	Arisaig, Malaig	0.14	-	0.00	-	8.92	-
5c	Erosion Vicinity	1	-	1	-	-	Scaranich, Tiree	0.20	-	-	-	2.98	-
5c	Erosion Vicinity	1	-	1	-	-	Gott Bay, Tiree	1.89	-	0.27	-	-	-
5c	Erosion Vicinity	1	1	-	-	-	Balephuil, Tiree	0.14	-	-	-	-	-
5c	Erosion Vicinity	1	1	-	-	-	Rhunahaorine, Kintyre	2.65	-	-	-	-	-
6a	Erosion Vicinity	1	-	1	-	-	Machrie Bay, Arran	0.80	-	-	-	-	-
6b	Erosion Vicinity	1	-	1	-	-	Strone Point, Clyde	0.13	0.79	-	-	-	0.84
6b	Erosion Vicinity	1	-	1	-	-	Strone Point, Clyde	0.32	-	-	-	-	-
6b	Erosion Vicinity	1	1	-	-	-	Stron Point, Clyde	0.29	-	-	-	-	-
6b	Erosion Vicinity	1	-	1	-	-	Ardgowan, Clyde	0.31	4.51	-	-	-	-
6b	Erosion Vicinity	1	1	-	-	-	Lochgailhead, CLYDE	0.77	0.88	-	-	-	-
6b	Erosion Vicinity	1	1	-	-	-	Strone Point, Clyde	0.01	4.46	0.57	-	-	-
6c	Erosion Vicinity	1	1	-	-	-	Stevenston, Clyde	2.33	0.88	-	-	-	-
7	Erosion Vicinity	1	1	-	-	-	Annan, Solway	0.96	3.62	0.53	1	3.78	-
8b	Erosion Vicinity	1	1	-	-	-	Mealabost, Stonoway	1.69	0.87	0.15	-	0.25	-
10b	Erosion Vicinity	1	1	-	-	-	Little Ayre, Orkney	0.07	0.63	-	-	-	-
10d	Erosion Vicinity	1	1	-	-	-	Lopness, Sanday	3.39	-	-	1	-	-
10d	Erosion Vicinity	1	-	1	-	-	Sandquoy, Sanday	0.04	3.08	0.12	-	0.40	-
11a	Erosion Vicinity	1	1	-	-	-	Sandwick, Shetland	0.01	0.63	-	-	-	-

Appendix B: Infrastructure

Infrastructure						Coincident assets			
Cell	Erosion Classification	Total Road & Rail (km)	Road (km)	Rail (km)	Lopness, Sanday	Buildings (#)	Flood risk (ha in 200yr)	Cut Heritage (ha)	Nat Heritage (ha)
5c	Erosion Vicinity	0.94	0.94	0	Gott Bay, Tiree	1	1.89	-	0.26
7	Erosion Vicinity	0.83	0.83	0	Caerlaverock, Solway	-	6.64	-	23.62
10d	Erosion Vicinity	0.63	0.63	0	Lopness, Sanday	1	3.39	-	3.78
3f	Erosion Vicinity	0.57	0.28	0.29	Brora, Sutherland	-	0.19	-	-
5c	Erosion Vicinity	0.53	0.53	0	Rhunahaorine, Kintyre	1	2.65	-	2.98
6d	Erosion Vicinity	0.48	0.48	0	Ballantrae, Clyde	-	0.31	-	-
5c	Erosion Vicinity	0.44	0.29	0.15	Corpach, Loch Linnhe	3	0.14	-	-
3e	Erosion Vicinity	0.40	0.40	0	Aness, Cromarty	-	2.33	-	0.05
7	Erosion Vicinity	0.39	0.39	0	Southernness	20	2.23	-	1.58
5c	Erosion Vicinity	0.38	0.38	0	Gott bay, Tiree	-	0.97	-	-
5c	Erosion Vicinity	0.38	0.24	0.14	Corpach, Loch Linnhe	3	0.21	-	-
9e	Erosion Vicinity	0.34	0.34	0	Stonybridge, SUist	-	0.88	-	-
1c	Erosion Vicinity	0.33	0.33	0	Kirkcaldy, Fife	7	0.23	2.78	0.17
2a	Erosion Vicinity	0.33	0.12	0.21	Kingoodie, Cromarty	2	0.26	-	-
5c	Erosion Vicinity	0.31	0.31	0	Balephetrish, Tiree	-	0.04	-	-
1c	Erosion Vicinity	0.30	0.15	0.15	Burntisland, Fife	-	0.09	-	0.33
6b	Erosion Vicinity	0.29	0.29	0	Toward, Clyde	8	0.37	4.65	-
9e	Erosion Vicinity	0.28	0.28	0	Benbecula	-	0.07	-	0.27
5c	Erosion Vicinity	0.26	0.16	0.11	Corpach, Loch Linnhe	-	0.18	-	-
6b	Erosion Vicinity	0.25	0.00	0.25	Cardross, Clyde	6	0.89	-	0.00
8b	Erosion Vicinity	0.25	0.25	0	Mealabost, Stonoway	1	1.69	-	-
1b	Erosion Vicinity	0.25	0.25	0	Prestonpans, Forth	98	0.25	-	-
3d	Erosion Vicinity	0.25	0.14	0	Beaully Firth	-	0.03	-	0.03
3e	Erosion Vicinity	0.23	0.00	0.23	Dingwall, Cromarty Firth	-	1.08	-	2.60
6b	Erosion Vicinity	0.23	0.00	0.23	Ardmore, Clyde	-	0.32	-	0.30
5b	Erosion Vicinity	0.23	0.02	0.20	Attadale, Lochcarron	2	0.29	-	-
6a	Erosion Vicinity	0.22	0.22	0	Machrie Bay, Arran	1	0.80	-	-
10d	Erosion Vicinity	0.21	0.21	0	Lopness, Sanday	-	1.00	-	1.45
7	Erosion Vicinity	0.20	0.00	0	Gretna, Solway	-	5.16	-	-
5b	Erosion Vicinity	0.19	0.19	0	Scottas - Knoydart	-	0.07	-	-
10d	Erosion Vicinity	0.19	0.19	0	Lopness, Sanday	-	1.46	-	0.94
3a	Erosion Vicinity	0.18	0.18	0	Rosehearty, Aberdeenshire	-	0.10	-	0.01
5c	Erosion Vicinity	0.17	0.17	0	Tiree	2	0.15	-	0.02
2a	Erosion Vicinity	0.17	0.17	0	Broughty Ferry, Tay	73	0.20	-	0.01
6b	Erosion Vicinity	0.17	0.17	0	Hunterston, Clyde	-	1.61	-	0.06
7	Erosion Vicinity	0.16	0.16	0	Carsethorn, Solway	17	0.41	-	-
1a	Erosion Vicinity	0.16	0.16	0	North Berwick, Forth	39	0.10	-	0.01
8a	Erosion Vicinity	0.16	0.16	0	Causeway on Barra	-	0.23	-	-
6b	Erosion Vicinity	0.16	0.16	0	Kilcreggan, Clyde	10	0.06	-	-
10d	Erosion Vicinity	0.15	0.15	0	Bay of Holand, Stronsay	-	0.71	-	-
5c	Erosion Vicinity	0.15	0.15	0	Scaranich, Tiree	1	0.20	-	-
1d	Erosion Vicinity	0.15	0.15	0	Elie, Fife	15	0.00	-	-
6a	Erosion Vicinity	0.15	0.15	0	Lamlash, Arran	4	1.47	-	-
2c	Erosion Vicinity	0.14	0.14	0	Johnshaven, Tayside	-	0.07	-	-
1c	Erosion Vicinity	0.14	0.14	0	Dysart	23	0.10	-	0.00
1c	Erosion Vicinity	0.14	0.14	0	Buckhaven, Fife	12	0.13	-	0.27
1a	Erosion Vicinity	0.13	0.13	0	Dunbar, Forth	-	0.12	0.03	0.16
3e	Erosion Vicinity	0.13	0.13	0	Aness, Cromarty	1	0.95	-	0.40
2a	Erosion Vicinity	0.12	0.12	0	Broughty Ferry, Fife	6	0.17	0.10	0.06
6b	Erosion Vicinity	0.12	0.00	0.12	Largs, CLyde	-	0.40	-	-
5a	Erosion Vicinity	0.12	0.12	0	Kinlochbervie	3	0.05	-	-
6b	Erosion Vicinity	0.12	0.12	0	Southernness	18	0.14	-	-
2a	Erosion Vicinity	0.11	0.11	0	Monifeth	2	0.06	-	0.00
6c	Erosion Vicinity	0.11	0.11	0	Girvan, Clyde	-	0.20	-	0.21
7	Erosion Vicinity	0.11	0.11	0	Abbey Head, Solway	-	0.15	-	0.54
11b	Erosion Vicinity	0.11	0.11	0	Sumburgh, Shetland	-	0.01	-	-
3d	Erosion Vicinity	0.11	0.11	0	Alturie Point, Moray Firth	1	0.10	-	-
6d	Erosion Vicinity	0.11	0.11	0	Leswalt, Loch Ryan	-	0.83	-	-
4	Erosion Vicinity	0.11	0.11	0	Kyle of Durness, Sutherland	3	0.09	-	-
5c	Erosion Vicinity	0.11	0.11	0	Ardchattan, Loch Etive	-	0.41	-	-
10d	Erosion Vicinity	0.11	0.11	0	Sandquoy, Sanday	1	0.04	-	0.25
6b	Erosion Vicinity	0.11	0.11	0	Strone Point, Clyde	1	0.13	-	-
3d	Erosion Vicinity	0.10	0.10	0	Charleston, Beaully Firth	-	0.31	-	-
6b	Erosion Vicinity	0.10	0.10	0	Strone Point, Clyde	-	0.14	-	-
6b	Erosion Vicinity	0.10	0.10	0	Strone Point, Clyde	1	0.32	-	-
10d	Erosion Vicinity	0.10	0.10	0	Sandquoy, Sanday	-	0.04	-	0.20
11a	Erosion Vicinity	0.10	0.10	0	Sandwick, Shetland	1	0.01	-	-
6b	Erosion Vicinity	0.10	0.10	0	Strone Point, Clyde	-	0.02	-	-
6b	Erosion Vicinity	0.10	0.10	0	Stron Point, Clyde	1	0.29	-	-
6b	Erosion Vicinity	0.10	0.10	0	Innellan, Clyde	-	0.07	-	-
6b	Erosion Vicinity	0.10	0.10	0	Strone Point, Clyde	-	0.15	-	-
6b	Erosion Vicinity	0.10	0.10	0	Largs, Clyde	-	0.18	-	-
3e	Erosion Vicinity	0.10	0.10	0	Tarbat House	-	1.36	-	0.46
3d	Erosion Vicinity	0.10	0.10	0	Charleston, Beaully Firth	-	0.17	-	0.00
9f	Erosion Vicinity	0.10	0.10	0	Baile na Creige, Barra	-	0.03	-	-
6b	Erosion Vicinity	0.10	0.10	0	Strone Point, Clyde	1	0.01	-	-

Appendix C: Water Supply

Freshwater				Coincident assets							
Cell	Erosion Classification	Fresh Water (km)	Location	Flood Risk (1:200 yr)	Potentially Vulnerable Areas (ha)	Buildings (#)	Roads (km)	Gardens of designed Landscape (ha)	Special Areas of Conservation (ha)	Special Protection Areas (ha)	Special Sites of Scientific Interest (ha)
6	Erosion Vicinity	1.26	Ballantrae, Clyde	0.31	-	-	0.48	-	-	-	-
5	Erosion Vicinity	0.90	Gott Bay, Tiree	1.89	-	1.00	0.94	-	-	0.13	0.13
8	Erosion Vicinity	0.57	Mealabost, Stonoway	1.69	4.46	1.00	0.25	-	-	-	-
10	Erosion Vicinity	0.53	Lopness, Sanday	3.39	3.62	1.00	0.63	-	-	1.89	1.89
7	Erosion Vicinity	0.49	Powfoot, Solway	0.75	12.04	4.00	0.06	-	0.63	0.63	0.63
2	Erosion Vicinity	0.36	Broughy Ferry, Tay	0.20	1.11	73.00	0.17	-	0.01	-	-
5	Erosion Vicinity	0.35	Corpach, Loch Linnhe	0.14	1.85	3.00	0.29	-	-	-	-
1	Erosion Vicinity	0.33	Prestonpans, Forth	0.25	2.84	98.00	0.25	-	-	-	-
5	Erosion Vicinity	0.32	Balephetrish, Tiree	0.04	-	-	0.31	-	-	-	-
7	Erosion Vicinity	0.30	Gretna, Solway	5.16	-	-	-	-	-	-	-
5	Erosion Vicinity	0.28	Corpach, Loch Linnhe	0.21	1.79	3.00	0.24	-	-	-	-
1	Erosion Vicinity	0.28	Dunbar, Forth	0.12	1.10	-	0.13	-	-	0.08	0.08
6	Erosion Vicinity	0.28	Toward, Clyde	0.37	5.61	8.00	0.29	4.65	-	-	-
6	Erosion Vicinity	0.27	Machrie Bay, Arran	0.80	-	1.00	0.22	-	-	-	-
3	Erosion Vicinity	0.25	Brora, Sutherland	0.19	-	-	0.28	-	-	-	-
7	Erosion Vicinity	0.25	Carsehorn, Solway	0.57	0.87	3.00	-	-	0.06	0.06	0.06
10	Erosion Vicinity	0.22	Lopness, Sanday	1.46	1.52	-	0.19	-	-	0.47	0.47
6	Erosion Vicinity	0.22	Largs, Clyde	0.18	1.98	-	0.10	-	-	-	-
10	Erosion Vicinity	0.20	Sandquoy, Sanday	0.04	1.12	-	0.10	-	-	0.10	0.10
10	Erosion Vicinity	0.20	Lopness, Sanday	1.00	1.18	-	0.21	-	-	0.73	0.73
5	Erosion Vicinity	0.20	Hynish Bay, Tiree	0.33	-	-	0.08	-	-	0.04	0.43
5	Erosion Vicinity	0.19	Balephetrish Bay, Tiree	0.15	-	2.00	0.17	-	-	0.01	0.01
4	Erosion Vicinity	0.18	Kyle of Durness, Sutherland	0.09	-	3.00	0.11	-	-	-	-
5	Erosion Vicinity	0.17	Corpach, Loch Linnhe	0.18	1.34	-	0.16	-	-	-	-
6	Erosion Vicinity	0.17	Lamlash, Arran	1.47	1.38	4.00	0.15	-	-	-	-
5	Erosion Vicinity	0.16	Kinlochbervie	0.05	-	3.00	0.12	-	-	-	-
10	Erosion Vicinity	0.16	Bay of Holand, Stronsay	0.71	0.88	-	0.15	-	-	-	-
6	Erosion Vicinity	0.16	Kilcreggan, Clyde	0.06	0.89	10.00	0.16	-	-	-	-
1	Erosion Vicinity	0.15	Elie, Fife	0.00	-	15.00	0.15	-	-	-	-
10	Erosion Vicinity	0.15	Sandquoy, Sanday	0.04	0.87	1.00	0.11	-	-	0.13	0.12
7	Erosion Vicinity	0.14	Carsehorn, Solway	0.70	0.91	2.00	0.03	-	-	-	-
5	Erosion Vicinity	0.14	Scaranich, Tiree	0.20	-	1.00	0.15	-	-	-	-
2	Erosion Vicinity	0.13	Tentsmuir, Fife	0.99	-	-	-	-	0.63	0.63	0.63
1	Erosion Vicinity	0.12	Buckhaven, Fife	0.13	4.94	12.00	0.14	-	-	0.14	0.14
3	Erosion Vicinity	0.12	Aness, Cromarty	0.95	3.08	1.00	0.13	-	-	0.19	0.21
1	Erosion Vicinity	0.12	Dysart	0.10	1.14	23.00	0.14	-	-	0.00	-
3	Erosion Vicinity	0.11	Charleston, Beaulieu Firth	0.31	-	-	0.10	-	-	-	-
3	Erosion Vicinity	0.11	Balintore, Moray Firth	0.19	1.02	4.00	-	-	-	-	-
9	Erosion Vicinity	0.10	Baile na Creige, Barra	0.03	-	-	0.10	-	-	-	-
7	Erosion Vicinity	0.10	Southernness, Solway	2.23	2.87	20.00	0.39	-	0.53	0.53	0.53
7	Erosion Vicinity	0.09	Eastrigs, Solway	11.66	-	-	-	-	-	-	-
2	Erosion Vicinity	0.08	St Andrews	0.08	-	22.00	0.05	-	-	-	-
6	Erosion Vicinity	0.08	Innellan, Clyde	0.07	0.87	-	0.10	-	-	-	-
11	Erosion Vicinity	0.08	Sumburgh, Shetland	0.01	0.68	-	0.11	-	-	-	-
7	Erosion Vicinity	0.07	Mersehead sands, Solway	0.06	-	-	0.07	-	-	-	-
1	Erosion Vicinity	0.07	Pettycur, Fife	0.03	0.99	16.00	0.07	-	-	-	0.00
6	Erosion Vicinity	0.06	Largs, Skye	0.93	1.49	2.00	0.02	-	-	-	-
8	Erosion Vicinity	0.06	Am Baile, Eriskay	0.23	-	-	0.16	-	-	-	-
5	Erosion Vicinity	0.05	Arisaig, Malaig	0.14	-	1.00	-	-	-	-	-
7	Erosion Vicinity	0.05	Carsehorn, Solway	0.41	0.83	17.00	0.16	-	-	-	-
5	Erosion Vicinity	0.05	Boenesketaig, Skye	0.22	0.74	1.00	-	-	-	-	-
1	Erosion Vicinity	0.03	Kirkcaldy, Fife	0.23	3.00	7.00	0.33	2.01	-	-	0.17
5	Erosion Vicinity	0.00	Balephuil, Tiree	0.14	-	1.00	-	-	-	-	8.92
6	Erosion Vicinity	0.00	Cardross, Clyde	0.89	1.58	6.00	-	-	-	0.00	0.00
6	Erosion Vicinity	0.00	Ardrossan, Clyde	0.52	0.68	-	-	-	-	-	-

Appendix D: Runways

Runways				Coincident assets			
Cell	Erosion Classification	Runways (ha)	Location	Flood Risk 200yr (ha)	PVA (ha)	Special Area of Conservation (ha)	Site of Special Scientific Interest (ha)
5c	Erosion Vicinity	1.05	Laggan Bay, Isla	0.18	-	18.45	18.45
5c	Erosion Vicinity	0.51	Laggan Bay, Isla	0.21	-	5.62	5.62
9e	Erosion Vicinity	0.75	Benbecula	0.23	8.70	-	-

Appendix E: Potentially Vulnerable Areas (Flooding)

Cell	Erosion classification	Potential Vulnerable Area (ha)	Buildings Total (#)	Residential Properties (#)	Non Residential Properties (#)	Community Services (#)	Utilities (#)	Location	Coincident assets					
									Flood Risk 200yr (ha)	Roads (km)	Freshwater Network (km)	Septic tanks (#)	Natural Heritage (ha)	Cultural Heritage (ha)
7	Erosion Vicinity	12.04	4	3	1	-	-	Powfoot, Solway	12.04	0.06	0.49	-	1.90	-
1c	Erosion Vicinity	7.24	2	1	1	-	-	West Wemyss, Fife	7.24	-	-	1	0.01	2.86
6b	Erosion Vicinity	5.61	8	5	3	-	-	Toward, Clyde	5.61	0.29	0.28	-	-	4.65
1c	Erosion Vicinity	4.94	12	11	-	-	1	Buckhaven, Fife	4.94	0.14	0.12	-	0.27	-
9e	Erosion Vicinity	3.46	2	-	1	-	1	Lionacleit, Benbecula	3.46	-	-	-	-	-
1c	Erosion Vicinity	3.00	7	7	-	-	-	Kirkcaldy, Fife	3.00	0.33	0.03	-	0.17	1.93
7	Erosion Vicinity	2.87	20	20	-	-	-	Southernness, Solway	2.87	0.39	0.10	-	1.58	-
1b	Erosion Vicinity	2.84	98	85	12	-	1	Prestonpans, Forth	2.84	0.25	0.33	-	-	-
6b	Erosion Vicinity	2.59	18	17	1	-	-	Toward, Clyde	2.59	0.12	-	-	-	-
6a	Erosion Vicinity	2.46	2	-	2	-	-	Brodict, Arran	2.46	-	-	-	-	-
5c	Erosion Vicinity	1.85	3	1	2	-	-	Corpach, Loch Linnhe	1.85	0.29	0.35	-	-	-
5c	Erosion Vicinity	1.79	3	2	1	-	-	Corpach, Loch Linnhe	1.79	0.24	0.28	3	-	-
6b	Erosion Vicinity	1.58	6	6	-	-	-	Cardross, Clyde	1.58	-	0.00	-	0.00	-
6b	Erosion Vicinity	1.49	2	-	2	-	-	Largs, Clyde	1.49	0.02	0.06	-	-	-
6a	Erosion Vicinity	1.38	4	4	-	-	-	Lamlash Bay, Arran	1.38	0.15	0.17	1	0.02	-
6b	Erosion Vicinity	1.24	2	2	-	-	-	Toward, Clyde	1.24	-	-	-	-	-
2a	Erosion Vicinity	1.17	6	1	5	-	-	Broughy Ferry, Tay	1.17	0.12	-	-	0.06	0.01
1c	Erosion Vicinity	1.14	23	23	-	-	-	Dysart, Fife	1.14	0.14	0.12	-	0.00	-
2a	Erosion Vicinity	1.11	73	65	8	-	-	Broughy Ferry, Tay	1.11	0.17	0.36	-	0.01	-
3e	Erosion Vicinity	1.02	4	3	1	-	-	Balintore, Moray Firth	1.02	-	0.11	-	-	-
9e	Erosion Vicinity	0.99	2	-	1	1	-	Benbecula	0.99	-	-	-	-	-
1c	Erosion Vicinity	0.99	16	16	-	-	-	Pettycur, Fife	0.99	0.07	0.07	-	0.00	-
7	Erosion Vicinity	0.91	2	2	-	-	-	Carsethorn, Solway	0.91	0.03	0.14	-	-	-
6b	Erosion Vicinity	0.89	10	9	1	-	-	Kilcreggan, Clyde	0.89	0.16	0.16	-	-	-
7	Erosion Vicinity	0.87	3	1	2	-	-	Carsethorn, Solway	0.87	-	0.25	-	0.18	-
6b	Erosion Vicinity	0.85	2	2	-	-	-	Toward, Clyde	0.85	-	-	-	-	-
7	Erosion Vicinity	0.83	17	17	-	-	-	Carsethorn, Solway	0.83	0.16	0.05	-	-	-
6b	Erosion Vicinity	0.79	3	3	-	-	-	Toward, Clyde	0.79	-	-	-	-	-
9e	Erosion Vicinity	0.71	2	1	1	-	-	Griminis, Benbecula	0.71	-	-	1	-	-

Appendix F: Cultural Heritage

Cultural Heritage								Coincident assets					
Cell	Erosion Classification	HES total (ha)	Battlefields (ha)	Garden & Designed Landscapes (ha)	Properties in Care (ha)	Scheduled Monuments (ha)	Location	Flood Risk 200yr (ha)	Potentially Vulnerable Areas (ha)	Buildings (#)	Roads (km)	Rail (km)	Natural Heritage (ha)
2a	Erosion Vicinity	10.32	-	-	-	10.32	Tentsmuir, Fife	6.91	-	-	-	-	40.38
6b	Erosion Vicinity	4.65	-	4.65	-	-	Toward, Clyde	0.37	5.61	8.00	0.29	-	-
10d	Erosion Vicinity	3.42	-	-	-	3.42	Tofts Ness, Sanday	0.74	3.81	-	-	-	1.46
2a	Erosion Vicinity	3.22	-	-	-	3.22	Tentsmuir CDefen, Fife	2.22	-	-	-	-	2.03
1c	Erosion Vicinity	2.92	-	2.92	-	-	West Wemyss, Fife	0.14	7.24	2.00	-	-	0.01
1c	Erosion Vicinity	2.78	-	2.01	0.35	0.42	Kirkcaldy, Fife	0.23	3.00	7.00	0.33	-	0.17
3b	Erosion Vicinity	2.34	-	-	-	2.34	Spey Bay	0.15	-	-	-	-	10.13
3c	Erosion Vicinity	2.31	-	-	-	2.31	Culbin	2.50	-	-	-	-	8.43
6b	Erosion Vicinity	2.05	-	2.05	-	-	Ardgowan, Clyde	0.63	2.35	-	-	-	-
7	Erosion Vicinity	2.03	-	2.03	-	-	Abigland, Solway	0.13	1.96	-	-	-	0.78
3b	Erosion Vicinity	2.01	-	-	-	2.01	Innes Links, Spey Bay	0.11	-	-	-	-	5.19
2a	Erosion Vicinity	1.41	-	1.41	-	-	St Andrews Links, Fife	0.52	1.28	-	-	-	4.04
1b	Erosion Vicinity	1.26	-	1.26	-	-	Dalmeny, Fife	0.10	1.29	-	-	-	0.03
2a	Erosion Vicinity	1.18	-	1.18	-	-	St Andrews Links	3.81	3.81	-	-	-	0.56
3b	Erosion Vicinity	1.10	-	-	-	1.10	Innes Links, Spey Bay	0.17	-	-	-	-	8.55
3f	Erosion Vicinity	1.08	-	1.08	-	-	Dunrobin Castle, Sutherland	0.09	-	-	-	-	-
3f	Erosion Vicinity	0.96	-	0.96	-	-	Dunrobin Castle, Sutherland	0.16	-	-	-	-	0.02
6b	Erosion Vicinity	0.84	-	0.84	-	-	Ardgowan, Clyde	0.31	0.79	1.00	-	-	-
1b	Erosion Vicinity	0.82	-	0.82	-	-	Dalmeny, Forth	0.75	0.85	-	-	-	0.10
3b	Erosion Vicinity	0.77	-	-	-	0.77	Innes Links, Spey Bay	0.20	-	-	-	-	5.35
5b	Erosion Vicinity	0.71	-	0.71	-	-	Balmacara, Kyle	0.28	-	-	-	-	-
10d	Erosion Vicinity	0.69	-	-	-	0.69	Tofts Ness, Sanday	0.04	1.57	-	-	-	1.30
2a	Erosion Vicinity	0.63	-	-	-	0.63	Tentsmuir, Fife	0.99	-	-	-	-	1.90
2a	Erosion Vicinity	0.59	-	-	-	0.59	Tentsmuir, Fife	3.97	-	-	-	-	14.44
3c	Erosion Vicinity	0.42	-	-	-	0.42	Culbin	5.76	-	-	-	-	23.60
3b	Erosion Vicinity	0.40	-	-	-	0.40	Innes Links, Spey Bay	0.11	-	-	-	-	3.68
7	Erosion Vicinity	0.32	-	0.32	-	-	Solway Firth	1.59	6.87	-	0.04	-	9.12
7	Erosion Vicinity	0.15	-	-	-	0.15	Solway	10.15	10.92	-	-	-	42.84
2a	Erosion Vicinity	0.10	-	-	0.08	0.01	Broughty Ferry, Fife	0.17	1.17	6.00	0.12	-	0.06
1a	Erosion Vicinity	0.03	0.03	-	-	-	Dunbar, Forth	0.12	1.10	-	0.13	-	0.16
1b	Erosion Vicinity	0.00	0.00	-	-	-	Prestonpans, Forth	0.32	3.08	-	-	-	0.15

Appendix G: Natural Heritage

Natural Heritage								Coincident assets						
Cell	Erosion Classification	Natural Heritage Total (ha)	Marine Protected Areas (ha)	National Nature Reserves (ha)	Special Areas of Conservation (ha)	Special Protection Areas (ha)	Sites of Special Scientific Interest (ha)	Location	Flood Risk 200 yr (ha)	Potentially Vulnerable Area (ha)	Buildings (#)	Roads (km)	Rail (km)	Cultural Heritage (ha)
3f	Erosion Vicinity	63.66	-	-	21.22	21.22	21.22	Morrish More, Dornoch Firth	5.20	21.52	-	-	-	-
7	Erosion Vicinity	42.84	-	10.71	10.71	10.71	10.71	Caerlaverock, Solway	10.15	10.92	-	-	-	0.15
2a	Erosion Vicinity	40.38	-	10.08	10.10	10.10	10.10	Tentsmuir, Fife	6.91	-	-	-	-	10.32
5c	Erosion Vicinity	36.91	-	-	-	18.45	18.45	Laggan Bay, Islay	0.18	-	-	-	-	-
9e	Erosion Vicinity	36.62	-	-	12.21	12.21	12.21	Baleshare, N Uist	7.30	-	-	-	-	-
2a	Erosion Vicinity	28.65	-	-	13.37	0.95	14.32	Barry Links	4.27	2.58	-	-	-	-
7	Erosion Vicinity	23.62	-	5.90	5.90	5.90	5.90	Caerlaverock, Solway	6.64	6.65	-	0.83	-	-
3c	Erosion Vicinity	23.60	-	-	-	6.87	16.73	Culbin, Moray Firth	5.76	-	-	-	-	0.42
5c	Erosion Vicinity	22.92	-	-	7.58	7.67	7.67	Crossapol, Tiree	0.24	-	-	-	-	-
3c	Erosion Vicinity	22.91	-	-	-	11.46	11.46	Whiteness Head, Moray F	6.14	10.95	-	-	-	-
9e	Erosion Vicinity	21.84	-	-	7.28	7.28	7.28	Baleshare, N Uist	1.94	-	-	-	-	-
7	Erosion Vicinity	21.02	-	-	7.01	7.01	7.01	Southernness, Solway	7.28	9.08	-	-	-	-
3f	Erosion Vicinity	18.60	-	6.20	-	6.20	6.20	Loch Fleet, Sutherland	4.51	6.20	-	-	-	-
2a	Erosion Vicinity	17.82	-	-	8.85	0.06	8.91	Barry Links, Tay	0.09	-	-	-	-	-
9e	Erosion Vicinity	17.67	-	4.42	4.42	4.42	4.42	Monach Isles, WI	0.00	-	-	-	-	-
9e	Erosion Vicinity	17.55	-	4.39	4.39	4.39	4.39	Monach Isles, WI	0.43	-	-	-	-	-
9e	Erosion Vicinity	15.30	-	3.82	3.82	3.82	3.82	Monach Isles, WI	0.40	-	-	-	-	-
2a	Erosion Vicinity	14.44	-	-	3.50	5.47	5.47	Tentsmuir, Fife	3.97	-	-	-	-	0.59
9e	Erosion Vicinity	14.44	-	-	4.81	4.81	4.81	Baleshare, N Uist	6.89	-	-	-	-	-
7	Erosion Vicinity	13.50	-	3.38	3.38	3.38	3.38	Caerlaverock, Solway	3.38	3.38	-	-	-	-
9e	Erosion Vicinity	12.71	-	-	4.24	4.24	4.24	Kirkibost	3.90	-	-	-	-	-
3c	Erosion Vicinity	12.09	-	-	4.03	4.03	4.03	Culbin, Moray Firth	4.03	-	-	-	-	-
7	Erosion Vicinity	12.08	-	-	3.71	4.66	3.71	Southernness, Solway	0.49	6.83	-	-	-	-
7	Erosion Vicinity	12.08	-	-	4.03	4.03	4.03	Southernness, Solway	0.16	4.75	-	-	-	-
5c	Erosion Vicinity	11.83	-	-	5.91	-	5.91	Coll Machair	0.02	-	-	-	-	-
5c	Erosion Vicinity	11.24	-	-	-	5.62	5.62	Laggan Bay, Islay	0.21	-	-	-	-	-
9e	Erosion Vicinity	11.11	-	2.78	2.78	2.78	2.78	Monach Isles, WI	0.07	-	-	-	-	-
7	Erosion Vicinity	10.96	-	2.74	2.74	2.74	2.74	Blackshaw, Solway	2.74	2.57	-	-	-	-
9e	Erosion Vicinity	10.75	-	2.69	2.69	2.69	2.69	Monach Isles, WI	0.60	-	-	-	-	-
7	Erosion Vicinity	10.71	-	2.68	2.68	2.68	2.68	Blackshaw, Solway	2.68	2.61	-	-	-	-
10d	Erosion Vicinity	10.56	-	-	-	9.07	1.49	Bay of Newark, Sanday	4.32	10.92	-	-	-	-
3f	Erosion Vicinity	10.44	-	-	3.48	3.48	3.48	Morrish More, Dornoch Firth	1.63	-	-	-	-	-
3b	Erosion Vicinity	10.13	-	-	5.07	-	5.07	Spey Bay	0.15	-	-	-	-	2.34
5c	Erosion Vicinity	9.14	-	-	-	4.57	4.57	Loch Gruinart, Skye	1.33	-	-	-	-	-
7	Erosion Vicinity	9.12	-	-	3.04	3.04	3.04	Southernness, Solway	1.59	6.87	-	0.04	-	0.32
5c	Erosion Vicinity	8.97	-	-	-	-	8.97	Machrihanish, Kintyre	0.82	-	-	-	-	-
5c	Erosion Vicinity	8.92	-	-	-	-	8.92	Balephuil, Tiree	0.14	-	1.00	-	-	-
7	Erosion Vicinity	8.81	-	2.20	2.20	2.20	2.20	Caerlaverock, Solway	2.67	2.67	-	-	-	-
3b	Erosion Vicinity	8.55	-	-	4.26	-	4.29	Innes Links, Spey Bay	0.17	-	-	-	-	1.10
5c	Erosion Vicinity	8.44	-	-	-	4.22	4.22	Loch Gruinart, Skye	0.89	-	-	-	-	-
3c	Erosion Vicinity	8.43	-	-	2.81	2.81	2.81	Culbin, Moray Firth	2.50	-	-	-	-	2.31
7	Erosion Vicinity	8.38	-	2.10	2.10	2.10	2.10	Caerlaverock, Solway	2.10	2.10	-	-	-	-
7	Erosion Vicinity	7.97	-	-	2.66	2.66	2.66	Annan, Solway	2.89	2.86	-	-	-	-
3f	Erosion Vicinity	7.73	-	2.58	-	2.58	2.58	Golspie, Sutherland	2.93	3.55	-	-	-	-
7	Erosion Vicinity	7.46	-	-	2.49	2.49	2.49	Annan, Solway	2.49	2.49	-	-	-	-
4	Erosion Vicinity	6.90	-	-	3.45	-	3.45	Balnakeil, Sutherland	0.06	-	-	-	-	-
9e	Erosion Vicinity	6.72	-	1.68	1.68	1.68	1.68	Monach Isles, WI	0.60	-	-	-	-	-
7	Erosion Vicinity	6.64	-	-	2.21	2.21	2.21	Southernness, Solway	0.46	2.51	-	-	-	-
3c	Erosion Vicinity	6.48	-	-	-	0.07	6.41	Culbin, Moray Firth	0.39	-	-	-	-	-
4	Erosion Vicinity	6.13	-	-	3.06	-	3.06	Balnakeil, Sutherland	0.38	-	-	-	-	-
9d	Erosion Vicinity	5.88	-	-	1.96	1.96	1.96	Baile Mhic Phail, N Uist	1.10	1.93	-	-	-	-
9e	Erosion Vicinity	5.80	-	1.45	1.45	1.45	1.45	Monach Isles, WI	0.31	-	-	-	-	-
2b	Erosion Vicinity	5.42	-	-	-	-	5.42	St Cyrus, Angus	1.53	4.54	-	-	-	-
3b	Erosion Vicinity	5.35	-	-	2.68	-	2.68	Innes Links, Spey Bay	0.20	-	-	-	-	0.77
3b	Erosion Vicinity	5.19	-	-	2.60	-	2.59	Innes Links, Spey Bay	0.11	-	-	-	-	2.01
5c	Erosion Vicinity	4.99	-	-	-	2.49	2.49	Laggan Bay, Islay	0.13	-	-	-	-	-
5c	Erosion Vicinity	4.97	-	-	-	2.49	2.49	Loch Gruinart, Skye	0.26	-	-	-	-	-
5c	Erosion Vicinity	4.88	-	-	2.44	-	2.44	Hough Bay, Tiree	0.17	-	-	-	-	-
5c	Erosion Vicinity	4.39	-	-	1.46	1.46	1.46	Gunna, Coll	0.32	-	-	-	-	-
9e	Erosion Vicinity	4.35	-	-	-	4.35	-	Benbecula	0.40	4.99	-	-	-	-
9d	Erosion Vicinity	4.31	-	-	1.44	1.44	1.44	Vallay, N Usist	0.11	-	-	-	-	-
5c	Erosion Vicinity	4.22	-	-	-	2.11	2.11	Loch Gruinart, Skye	0.32	-	-	-	-	-
9e	Erosion Vicinity	4.05	-	-	1.35	1.35	1.35	Paibeil, N Uist	0.56	1.31	-	-	-	-
2a	Erosion Vicinity	4.04	-	-	1.35	1.35	1.35	St Andrews Links, Fife	0.52	1.28	-	-	-	1.41
5c	Erosion Vicinity	3.90	-	-	1.30	1.30	1.30	Gunna, Coll	0.34	-	-	-	-	-
10d	Erosion Vicinity	3.78	-	-	-	1.89	1.89	Lopness, Sanday	3.39	3.62	1.00	0.63	-	-
3b	Erosion Vicinity	3.68	-	-	1.84	-	1.84	Innes Links, Spey Bay	0.11	-	-	-	-	0.40
7	Erosion Vicinity	3.56	-	-	1.19	1.19	1.19	Annan, Solway	0.58	1.92	-	-	-	-
2d	Erosion Vicinity	3.56	-	-	-	-	3.56	Ratray Head/St Fergus, Aberd	1.14	-	-	-	-	-
7	Erosion Vicinity	3.41	-	-	1.14	1.14	1.14	Southernness, Solway	0.80	1.16	-	-	-	-
3f	Erosion Vicinity	3.37	-	-	1.12	1.12	1.12	Ardjackie Point, Dornoch	0.13	-	-	-	-	-
5c	Erosion Vicinity	3.29	-	-	1.64	-	1.64	Crossapol Bay, Tiree	0.03	-	-	-	-	-
7	Erosion Vicinity	3.15	-	-	1.05	1.05	1.05	Annan, Solway	1.39	1.43	-	-	-	-

Natural Heritage (continued)

Natural Heritage								Coincident assets						
Cell	Erosion Classification	Natural Heritage Total (ha)	Marine Protected Areas (ha)	National Nature Reserves (ha)	Special Areas of Conservation (ha)	Special Protection Areas (ha)	Sites of Special Scientific Interest (ha)	Location	Flood Risk 200 yr (ha)	Potentially Vulnerable Area (ha)	Buildings (#)	Roads (km)	Rail (km)	Cultural Heritage (ha)
7	Erosion Vicinity	3.09	-	-	-	-	3.09	Creetown, Solway	3.09	-	-	-	-	-
3c	Erosion Vicinity	3.03	-	-	-	1.51	1.51	Whiteness head, Moray Firth	2.02	3.57	-	-	-	-
5c	Erosion Vicinity	2.98	-	-	-	-	2.98	Rhunahaoirine, Kintyre	2.65	-	1.00	0.53	-	-
7	Erosion Vicinity	2.92	-	-	0.97	0.97	0.97	Blackshaw, Solway	0.97	-	-	-	-	-
9e	Erosion Vicinity	2.76	-	-	0.92	0.92	0.92	Baleshare, N Uist	0.15	-	-	-	-	-
10d	Erosion Vicinity	2.74	-	-	-	1.37	1.37	Scuthvie Bay, Sanday	0.30	2.08	-	-	-	-
5c	Erosion Vicinity	2.60	-	-	1.30	-	1.30	Crossapol Bay, Tiree	0.09	-	-	-	-	-
3e	Erosion Vicinity	2.60	-	-	-	1.30	1.30	Dingwall, Cromarty Firth	1.08	-	-	-	0.23	-
1a	Erosion Vicinity	2.55	-	-	-	0.13	2.42	J. Muir CP Dunbar, Forth	0.67	-	-	-	-	-
9e	Erosion Vicinity	2.54	-	-	0.85	0.85	0.85	Ardvacher, S Uist	0.09	0.80	-	-	-	-
5c	Erosion Vicinity	2.50	-	-	-	1.25	1.25	Laggan Bay, Islay	0.05	-	-	-	-	-
10d	Erosion Vicinity	2.41	-	-	-	1.21	1.21	Sty Wick, Sanday	1.21	1.21	-	-	-	-
5c	Erosion Vicinity	2.34	-	-	1.17	-	1.17	Crossapol Bay, Tiree	0.06	-	-	-	-	-
7	Erosion Vicinity	2.32	-	-	0.77	0.77	0.77	Annan, Solway	0.88	1.99	-	-	-	-
3c	Erosion Vicinity	2.30	-	-	-	0.17	2.14	Culbin, Moray Firth	0.37	-	-	-	-	-
5c	Erosion Vicinity	2.29	-	-	1.15	-	1.15	Crossapol Bay, Tiree	0.04	-	-	-	-	-
2a	Erosion Vicinity	2.03	-	0.42	0.54	0.54	0.54	Tentsmuir CDefen, Fife	2.22	-	-	-	-	3.22
10d	Erosion Vicinity	1.97	-	-	-	0.99	0.99	Bay of Newark, Sanday	0.99	0.93	-	-	-	-
2a	Erosion Vicinity	1.90	-	-	0.63	0.63	0.63	Tentsmuir, Fife	0.99	-	-	-	-	0.63
7	Erosion Vicinity	1.90	-	-	0.63	0.63	0.63	Powfoot, Solway	0.75	12.04	4.00	0.06	-	-
5c	Erosion Vicinity	1.87	-	-	0.93	-	0.93	Crossapol Bay, Tiree	0.04	-	-	-	-	-
7	Erosion Vicinity	1.85	-	-	0.62	0.62	0.62	Annan, Solway	0.62	0.60	-	-	-	-
7	Erosion Vicinity	1.81	-	0.45	0.45	0.45	0.45	Caerlaverock, Solway	0.45	0.45	-	-	-	-
6b	Erosion Vicinity	1.71	-	-	-	0.86	0.86	Dumbarton, Clyde	0.30	1.05	-	-	0.07	-
5c	Erosion Vicinity	1.70	-	-	-	0.85	0.85	Hynish Bay, Tiree	0.48	-	-	-	-	-
7	Erosion Vicinity	1.70	-	-	0.57	0.57	0.57	Annan, Solway	0.57	0.55	-	0.06	-	-
5c	Erosion Vicinity	1.68	-	-	-	1.68	-	Uig, Coll	0.04	-	-	-	-	-
7	Erosion Vicinity	1.58	-	-	0.53	0.53	0.53	Southernness, Solway	2.23	2.87	20.00	0.39	-	-
7	Erosion Vicinity	1.52	-	-	-	-	1.52	Creetown, Solway	1.52	-	-	-	-	-
7	Erosion Vicinity	1.52	-	-	-	-	1.52	Wigton, Solway	1.52	-	-	-	-	-
7	Erosion Vicinity	1.52	-	-	-	-	1.52	Kirkcudbright, Solway	0.34	-	-	-	-	-
4	Erosion Vicinity	1.49	-	-	-	-	1.49	Strathy Beach, Sutherland	0.03	-	-	-	-	-
10d	Erosion Vicinity	1.46	-	-	-	0.73	0.73	Tofts Ness, Sanday	0.74	3.81	-	-	-	3.42
10d	Erosion Vicinity	1.45	-	-	-	0.73	0.73	Lopness, Sanday	1.00	1.18	-	0.21	-	-
5c	Erosion Vicinity	1.45	-	-	-	0.81	0.65	Hynish Bay, Tiree	0.19	-	-	-	-	-
9e	Erosion Vicinity	1.41	-	-	-	1.41	-	Lionacleit, Benbecula	0.24	1.37	-	-	-	-
7	Erosion Vicinity	1.41	-	0.35	0.35	0.35	0.35	Caerlaverock, Solway	0.35	0.35	-	-	-	-
5a	Erosion Vicinity	1.38	-	-	-	-	1.38	Scourie, Kinlochbervie	0.05	-	-	-	-	-
10d	Erosion Vicinity	1.33	-	-	0.01	0.69	0.63	Sty Wick, Sanday	1.33	1.29	-	-	-	-
5c	Erosion Vicinity	1.32	-	-	-	-	1.32	Machrihanish, Kintyre	0.34	-	-	-	-	-
10d	Erosion Vicinity	1.30	-	-	-	0.65	0.65	Tofts Ness, Sanday	0.04	1.57	-	-	-	0.69
10d	Erosion Vicinity	1.30	-	-	0.00	0.65	0.65	Tofts Ness, Sanday	1.05	3.53	-	-	-	-
10d	Erosion Vicinity	1.17	-	-	-	0.58	0.58	Tofts Ness, Sanday	0.71	1.66	-	-	-	-
5c	Erosion Vicinity	1.09	-	-	-	-	1.09	Machrihanish, Kintyre	0.24	-	-	-	-	-
2d	Erosion Vicinity	1.05	-	-	-	-	1.05	Ratray Head/St Fergus, Aberd	0.57	-	-	-	-	-
7	Erosion Vicinity	1.02	-	-	-	-	1.02	Wigton, Solway	1.02	-	-	-	-	-
2b	Erosion Vicinity	1.01	-	-	-	-	1.01	St Cyrus, Angus	0.12	0.99	-	-	-	-
10d	Erosion Vicinity	1.00	-	-	-	0.50	0.50	Scuthvie Bay, Sanday	0.25	0.94	-	-	-	-
3f	Erosion Vicinity	0.97	-	-	0.32	0.32	0.32	Dornoch Sands, Dornoch Firth	1.93	4.04	-	-	-	-



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