

## Sanday (Potentially Vulnerable Area 03/01)

Local Plan District	Local authority	Main catchment
Orkney	Orkney Islands Council	Sanday coastal

### Summary of flooding impacts



#### At risk of flooding

- 60 residential properties
- 20 non-residential properties
- £740,000 Annual Average Damages

(damages by flood source shown left)

Summary of flooding impacts

### Summary of objectives to manage flooding

Objectives have been set by SEPA and agreed with flood risk management authorities. These are the aims for managing local flood risk. The objectives have been grouped in three main ways: by reducing risk, avoiding increasing risk or accepting risk by maintaining current levels of management.

Many organisations, such as Scottish Water and energy companies, actively maintain and manage their own assets including their risk from flooding. Where known, these actions are described here. Scottish Natural Heritage and Historic Environment Scotland work with site owners to manage flooding where appropriate at designated environmental and/or cultural heritage sites. These actions are not detailed further in the Flood Risk Management Strategies.

Objectives

### Summary of actions to manage flooding

The actions below have been selected to manage flood risk.

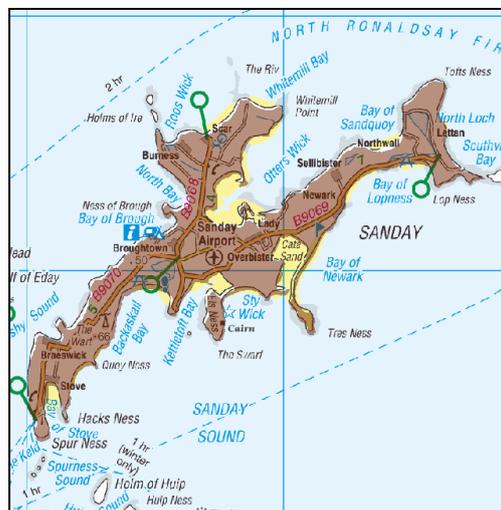
<i>Flood protection scheme/works</i>	<i>Natural flood management works</i>	<b>New flood warning</b>	<i>Community flood action groups</i>	<i>Property level protection scheme</i>	<i>Site protection plans</i>
<i>Flood protection study</i>	<i>Natural flood management study</i>	<i>Maintain flood warning</i>	<b>Awareness raising</b>	<i>Surface water plan/study</i>	<b>Emergency plans/response</b>
<i>Maintain flood protection scheme</i>	<b>Strategic mapping and modelling</b>	<b>Flood forecasting</b>	<b>Self help</b>	<b>Maintenance</b>	<b>Planning policies</b>

Actions

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### Background



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This Potentially Vulnerable Area covers the island of Sanday (shown left). It has an area of approximately 50km<sup>2</sup> and includes all the settlements on the island, the road network and the airport.

There are approximately 60 residential and 20 non-residential properties at risk of flooding.

The Annual Average Damages are estimated to be £740,000 with all of these attributed to coastal flooding.

### Summary of flooding impacts

Coastal flood risk affects extensive parts of the island, including the main settlements. There is the potential for the island to be split into two or more smaller islands during coastal floods.

The risk of flooding to people and property, as well as to community facilities, utilities, the transport network, designated sites and agricultural land is summarised in Table 1.

Roads affected by flooding include the B9068, B9069 and B9070. Flooding of roads affects commuting to the mainland and disrupts access to farmland, amenities and the emergency services. The air ambulance relies on access to the air strip, which becomes cut off when the road is flooded.

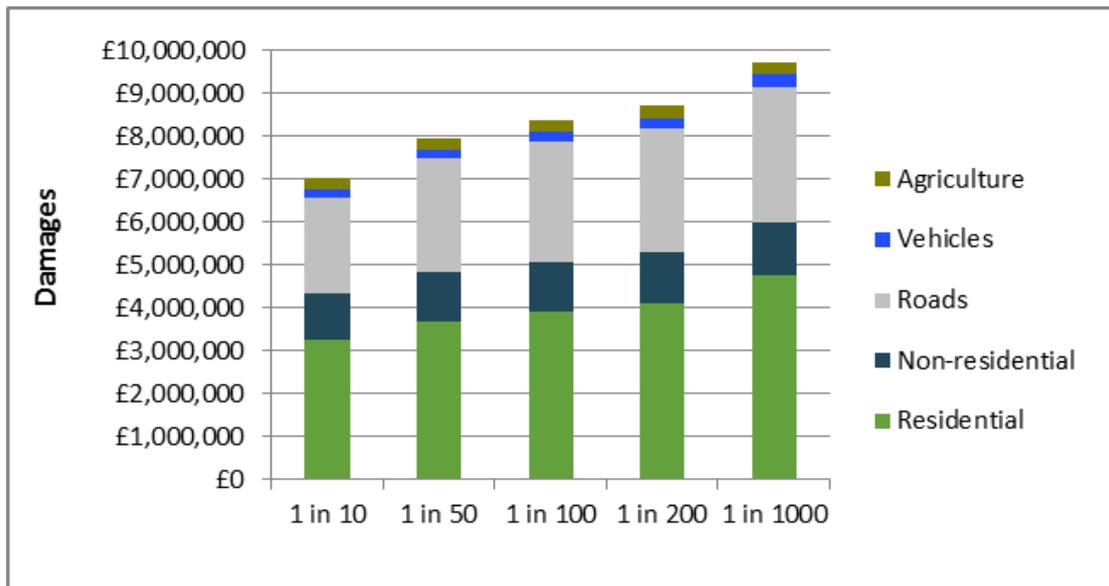
Eight designated cultural heritage sites, including scheduled monuments, are at risk of flooding. Significant areas of agricultural land and environmental importance are also at risk. The sites include East Sanday Coast Special Protection Area, Central Sanday Site of Special Scientific Interest (SSSI) and Northwall SSSI.

The damages associated with floods of different likelihood are shown in Figure 1. Residential properties and roads experience the greatest economic impact. Note that cultural heritage and environmental sites are not included in the estimation of the economic impact of flooding due to the difficulty in placing an economic value on these impacts.

The location of the impacts of flooding is shown in Figure 2.

	1 in 10 High likelihood	1 in 200 Medium likelihood	1 in 1000 Low likelihood
Residential properties (total 260)	30	60	70
Non-residential properties (total 70)	20	20	20
People	70	130	160
Community facilities	0	0	0
Utilities assets	0	0	0
Transport links (excluding minor roads)	Roads at 40 locations	Roads at 50 locations	Roads at 50 locations
Environmental designated areas (km <sup>2</sup> )	7	7	8
Designated cultural heritage sites	8	8	8
Agricultural land (km <sup>2</sup> )	11	13	14

**Table 1:** Summary of flooding impacts<sup>1</sup>



**Figure 1:** Damages by flood likelihood

<sup>1</sup> Some receptors are counted more than once if flooded from multiple sources

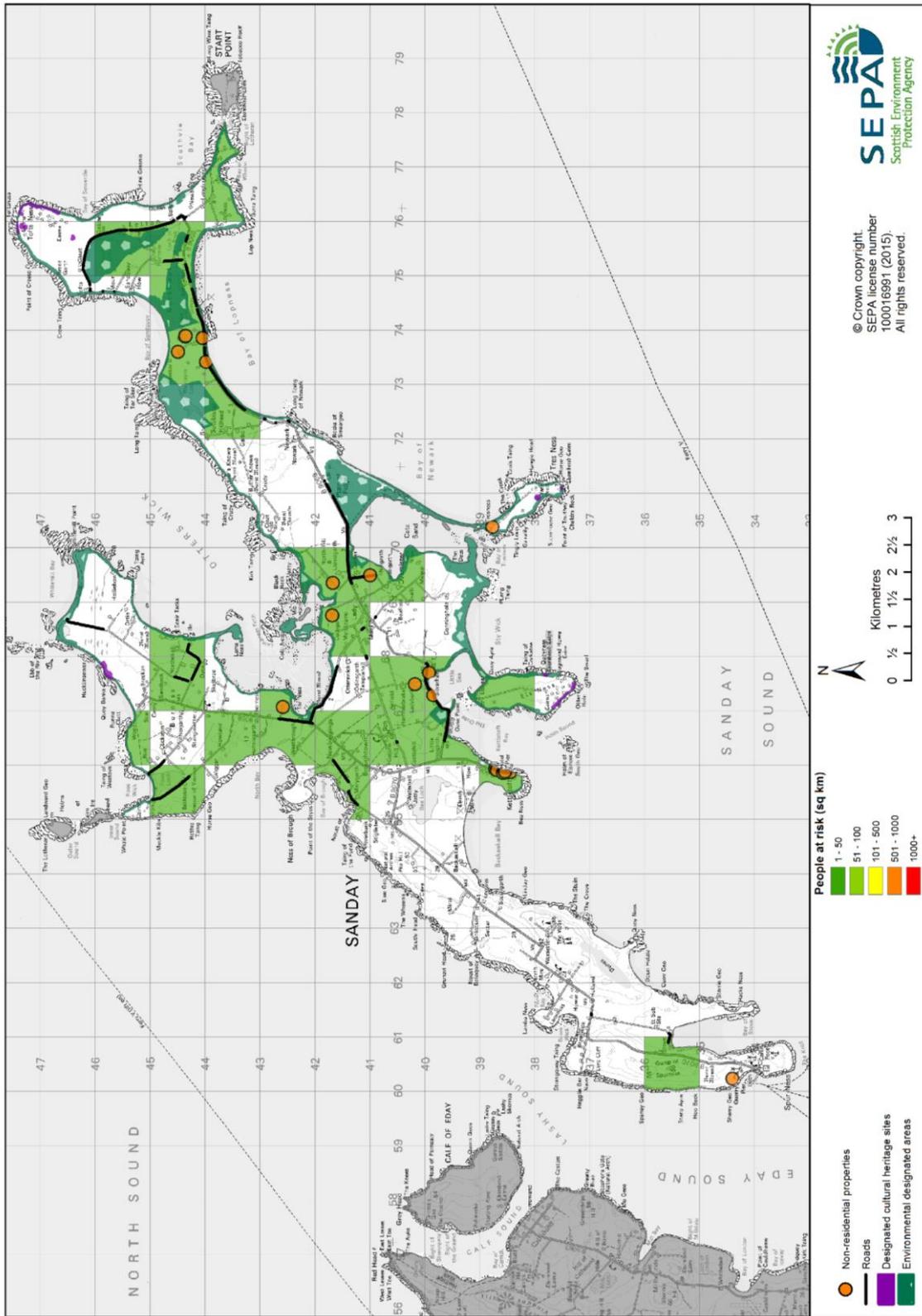


Figure 2: Impacts of flooding

## History of flooding

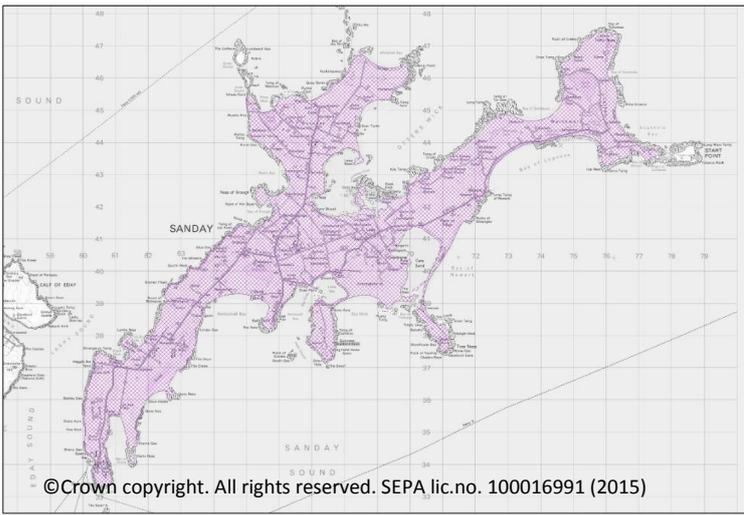
Anecdotal reports of flooding in Sanday have been noted at regular intervals in the last 100 years, often closely linked to other factors such as coastal erosion, which is very pertinent to the island given its topography and geology.

More recently, floods have been recorded affecting different areas of the island. In January 2005 a coastal storm destroyed a section of road and seawall at Cleat / Klondyke, damaged the sea wall at Tofts and a section of defences to the north of Kettletoft Bay increasing the vulnerability of the road to future events.

In August 2007, roads and fields flooded due to a burn being unable to cope with runoff from surrounding land. In January 2013 sea defences along the B9069 were breached at Isegarth causing flooding to the road.

## Objectives to manage flooding in Potentially Vulnerable Area 03/01

Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA’s flood map. The objectives below have been set for Sanday Potentially Vulnerable Area.

Reduce risk in Sanday from coastal flooding	
Indicators:	Target area:
<ul style="list-style-type: none"> <li>110 people</li> <li>£350,000 Annual Average Damages from residential properties</li> <li>£110,000 Annual Average Damages from non-residential properties</li> <li>B9069 (Newark to Northwall, Little Isegarth to Silverhall)</li> </ul>	
Objective ID: 300101	

Target area	Objective	ID	Indicators within PVA
Applies across Orkney Local Plan District	Avoid an overall increase in flood risk	300001	<ul style="list-style-type: none"> <li>60 residential properties</li> <li>£740,000 Annual Average Damages</li> </ul>
Applies across Orkney Local Plan District	Reduce overall flood risk	300002	<ul style="list-style-type: none"> <li>60 residential properties</li> <li>£740,000 Annual Average Damages</li> </ul>
Applies across Orkney Local Plan District	Organisations such as Scottish Water, energy companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

## Actions to manage flooding in Potentially Vulnerable Area 03/01

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation. Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Sanday Potentially Vulnerable Area.

Selected actions					
<i>Flood protection scheme/works</i>	<i>Natural flood management works</i>	<b>New flood warning</b>	<i>Community flood action groups</i>	<i>Property level protection scheme</i>	<i>Site protection plans</i>
<i>Flood protection study</i>	<i>Natural flood management study</i>	<i>Maintain flood warning</i>	<b>Awareness raising</b>	<i>Surface water plan/study</i>	<b>Emergency plans/response</b>
<i>Maintain flood protection scheme</i>	<b>Strategic mapping and modelling</b>	<b>Flood forecasting</b>	<b>Self help</b>	<b>Maintenance</b>	<b>Planning policies</b>

<b>Action (ID):</b>	<b>NEW FLOOD WARNING (3000020010)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (300002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Not started</b>	Indicative delivery:	<b>2016-2021</b>
<b>Description:</b>	The area under consideration covers the coastline of the Orkney Islands. Forecasting capability is currently under development.		

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (3001010016)</b>		
<b>Objective (ID):</b>	Reduce risk in Sanday from coastal flooding (300101)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Not started</b>	Indicative delivery:	<b>2016-2021</b>
<b>Description:</b>	SEPA will be seeking to develop the flood hazard mapping on Sanday to improve understanding of the coastal flood risk. The extent and timing of the completed improvements will be dependent on detailed scoping and data availability.		

<b>Action (ID):</b>	<b>FLOOD FORECASTING (3000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (300002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>	<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information please visit SEPA's website.</p> <p>The Potentially Vulnerable Area is within the 'Orkney' flood alert area.</p>		

<b>Action (ID):</b>	<b>SELF HELP (3000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (300002)		
<b>Delivery lead:</b>	—		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>	<p>Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.</p>		

<b>Action (ID):</b>	<b>AWARENESS RAISING (3000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (300002)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>	<p>SEPA and the responsible authorities have a duty to raise public awareness of flood risk. Improved awareness of flood risk and actions that prepare individuals, homes and businesses for flooding can reduce the overall impact.</p> <p>From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible. Local authorities will be undertaking additional awareness raising activities. Further details will be set out in the Local FRM Plan.</p>		

<b>Action (ID):</b>	<b>MAINTENANCE (3000020007)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (300002)		
<b>Delivery lead:</b>	Orkney Islands Council, asset / land managers		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>	Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. They produce schedules of clearance and repair works and make these available for public inspection. Scottish Water undertake inspection and repair on the public sewer network. Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk.		

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (3000020014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (300002)		
<b>Delivery lead:</b>	Category 1 and 2 Responders		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>	Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders. The emergency response by these organisations is co-ordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. Orkney Islands Council monitors the flood risk daily by comparing forecast tide and surge levels with land levels. This enables advanced warning of coastal flood events to be provided.		

<b>Action (ID):</b>	<b>PLANNING POLICIES (3000010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (300001) Reduce overall flood risk (300002)		
<b>Delivery lead:</b>	Planning authority		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>	Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided. For further information on the application of national planning policies see Annex 2.		