Cairngorms
NATIONAL PARK
Pàirc Nàiseanta a' Mhonaidh Ruaidh

Cairngorms National Park
Local Development Plan 2020

Strategic Flood Risk Assessment – Proposed Plan Update

CONTENTS

Part 1 Strategic Flood Risk Overview

1 Introduction

1.1 It is best practice for Local Development Plans (LDPs) to be informed by an overview of flood risk management issues within the plan area in the form of a Strategic Flood Risk Assessment (SFRA).

1.2 Undertaking an SFRA allows flood risk issues to be considered from an early stage in the production of the LDP. In particular, an SFRA helps to inform the LDP strategy by identifying areas that are not likely to be appropriate for development as a result of flood risk. This helps the LDP to avoid wherever possible creating any future increase in flood risk. The SFRA process can also be used to identify areas that are most suited to sustainable flood management.

1.3 This SFRA has been undertaken to inform the Cairngorms National Park LDP. It has been prepared in accordance with Scottish Environment Protection Agency (SEPA) guidance[1]. The SFRA has been undertaken in consultation with SEPA and flood risk specialists within the five Local Authorities in the Cairngorms National Park.

2 Legislation and Policy Context

2.1 The Flood Risk Management (Scotland) Act 2009 (the Act) outlines a statutory framework for delivering a sustainable and risk-based approach to managing flooding. The Act places a duty on responsible authorities to exercise their flood risk related functions with a view to reducing overall flood risk and promoting sustainable flood risk management. The Cairngorms National Park Authority (CNPA) is a responsible authority for the purposes of the Act. Undertaking an SFRA to inform the production of the Cairngorms National Park LDP therefore helps the CNPA to satisfy its duties in terms of the Act.

2.2 SFRA is also consistent with the aims of National Planning Framework 3 (NPF3) and Scottish Planning Policy (SPP).

2.3 NPF3 supports a catchment-scale approach to sustainable flood risk management. Its spatial strategy aims to build the resilience of our cities and towns, and to encourage sustainable land management in our rural areas.

2.4 SPP requires the planning system to prevent development which would have a significant probability of being affected by flooding or would increase the probability of flooding elsewhere. Planning authorities must take the probability of flooding from all sources and the associated risks involved into account when preparing

[1] Strategic Flood Risk Assessment: SEPA Technical Guidance to Support Development Planning (2015) https://www.sepa.org.uk/media/143351/lups-gu23-strategic-flood-risk-assessment-sepa-technical-guidance-to-support-development-planning.pdf

development plans. SPP states that planning authorities should undertake an SFRA to inform choices about the location of development and policies for flood risk management within their development plans.

3 Aims and Objectives

3.1 This SFRA has been undertaken to provide an evidence-based report on flooding and drainage issues in order to inform the Cairngorms National Park LDP.

3.2 Its primary aims are to ensure that future development is directed wherever possible towards areas of little or no flood risk and to ensure that new development does not increase flood risk elsewhere (for example by affecting the storage or conveyance capacity of flood plains).

3.3 Its main objectives are to:

- identify flood risk areas within the Cairngorms National Park (based on the Flood Risk Framework identified in Scottish Planning Policy), helping to determine the appropriate planning response to development proposals in these areas;
- identify functional flood plain areas within the Cairngorms National Park (even if already developed) to help ensure that development on these areas does not increase the risk of flooding elsewhere;
- inform future LDP policies relating to flood risk management; and
- provide the baseline on flooding issues for the Environmental Report

4 Study Area Flood Sources

4.1 All of the rivers and watercourses within the Cairngorms National Park have the potential to flood to some degree. Most concern is generated along the Park's main straths and glens, as when the rivers and tributaries that flow along these, namely the Spey, Dee, Don and Tay, break their banks they often result in economic and occasionally human cost. Small watercourses also represent a risk but are often poorly understood with respect to the severity of the flood hazard that can be generated on a catchment scale. Furthermore, in some areas surface water flooding, which can arise for a number of reasons, is a significant risk.

4.2 The Flood Risk Management Act promotes a risk-based, plan-led approach to managing flood risk. It requires SEPA and other designated responsible authorities to develop and implement Flood Risk Management Strategies (FRMSs) and Local Flood Risk Management Plans (LFRMPs). These contain a significant amount of information on potential flood hazards and risks which can be drawn upon to inform the SFRA.

4.3 The FRMSs and LFRMPs are prepared for geographical areas known as Local Plan Districts, which are based on whole river catchments. The following five Local Plan Districts intersect CNPA's administrative area:

- LPD1 Highland & Argyll

- LPD5 Findhorn, Nairn & Speyside
- LPD6 North East
- LPD7 Tay Estuary & Montrose Basin
- LPD8 Tay

4.4 Of these, only two Local Plan Districts intersect the Park to any significant degree. These are the Findhorn, Nairn & Speyside District and the North East District. The former includes the River Spey and its tributaries, whilst the latter incorporates the catchments of the River Dee and the River Don.

4.5 The FRMSs and LFRMPs outline objectives and actions for tackling flood risk at a Local Plan District wide level and within Potentially Vulnerable Areas (PVAs). These are specifically defined areas where the risks to property from flooding, and the estimated average annual damages occurring as a result of flooding, are greatest.

4.6 A summary of the most significant flooding risks and hazards within the Cairngorms National Park is provided below. This includes information obtained from the relevant FRMSs and LFRMPs. Appendix 1 also provides more detailed extracts from the relevant FRMS for each of the PVAs. These extracts provide further background information on flood risk and impact, along with information on historical flooding, for each PVA.

River Spey

4.7 The River Spey rises in the high ground of the Monadhliath and Cairngorm Mountain ranges and flows in a north-easterly direction through narrow straths and scenic river valleys before discharging into the Moray Firth beyond the fertile farmlands of Morayshire. The upper part of the catchment is characterised by its mountainous areas, the highest point being the summit of Ben Macdui at 1,309 metres above sea level.

4.8 The River Spey is the seventh largest river in Britain, with a catchment area of over 3,000 km^2, and a stream network length of about 36,500 km, of which the main river comprises 157 km (Spey Catchment Steering Group, 2003).

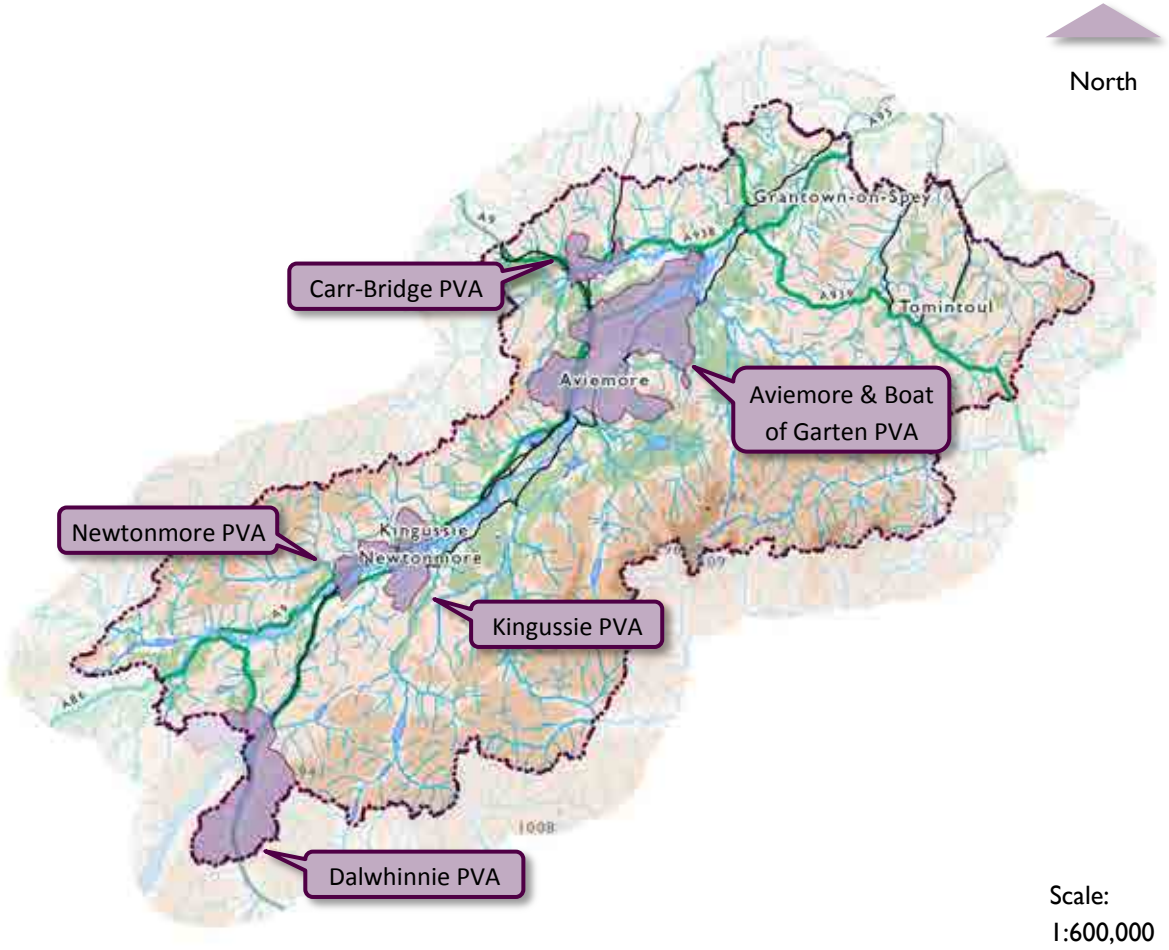
4.9 There is a long history of flooding within the Spey catchment area, with a notable event, known as the Great Muckle Spate, destroying several bridges in 1829. The River Spey and its tributaries continue to flood regularly, with heavy rains and melting snows increasing the volumes of water in the catchment. These floods have damaged properties in Newtonmore, Aviemore and Carr-Bridge on a number of occasions. Most recently in 2014, Gynack Burn broke its banks in Kingussie, damaging local buildings and infrastructure (SEPA, 2015).

4.10 Flood management practices are being undertaken at a number of locations. The Spey Catchment Initiative has carried out natural flood management / river restoration works on a tributary upstream of the River Dulnain (Spey Catchment Initiative, 2013). There are also agricultural embankments along the River Spey between Aviemore and Boat of Garten and further embankments at Dalwhinnie. The

standard of protection (and condition) provided by these embankments is however unknown (SEPA, 2015).

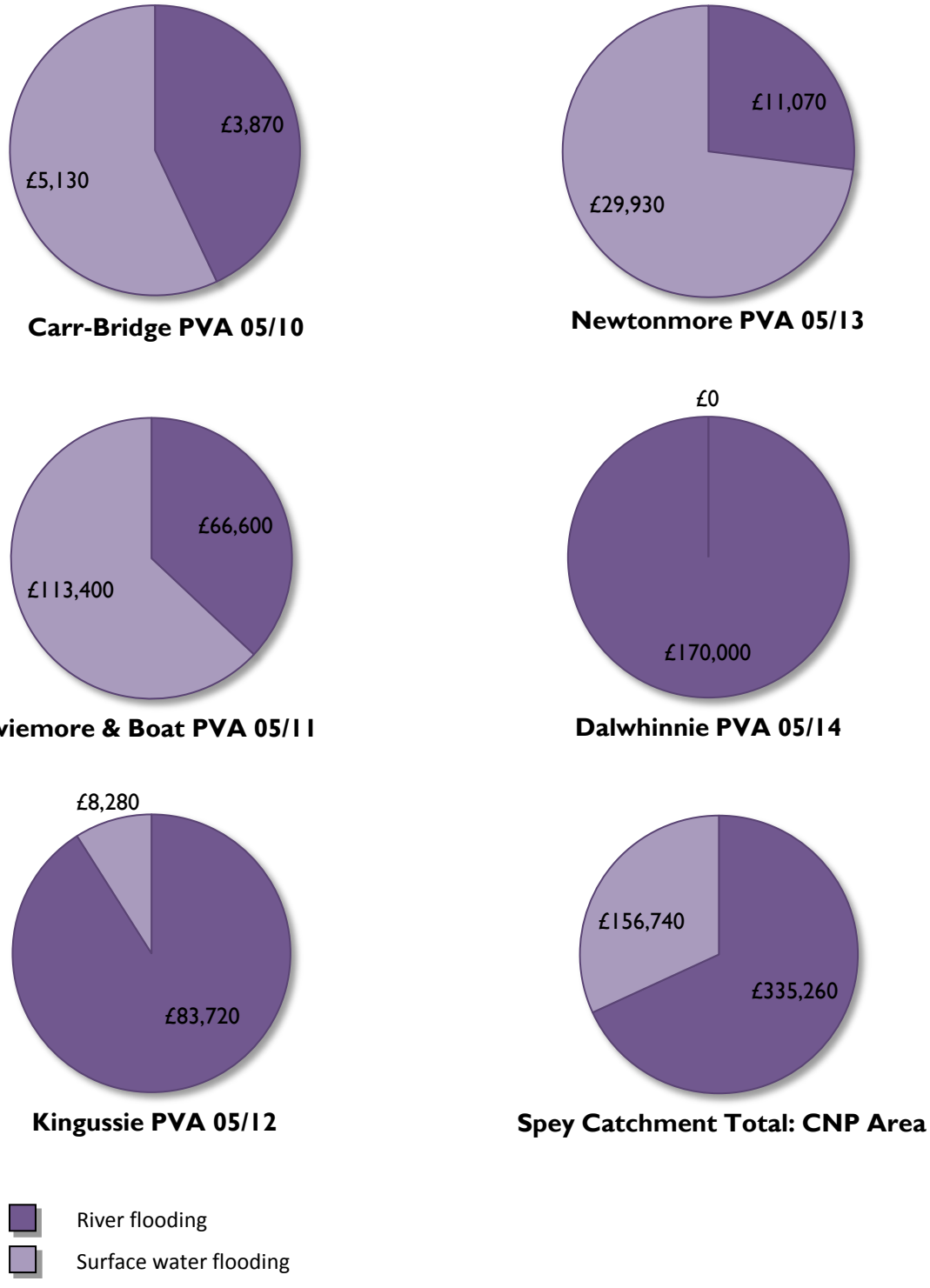
4.11 Due to the potential risk caused by flooding within the catchment area, five Potentially Vulnerable Areas (PVAs) have been identified within the National Park, at:

- Carr-Bridge (PVA 05/10);
- Aviemore and Boat of Garten (PVA 05/11);
- Kingussie (PVA 05/12);
- Newtonmore (PVA 05/13); and
- Dalwhinnie (PVA 05/14).



4.12 The estimated total average annual cost of damage in the PVAs within the National Park part of the Spey catchment is £492,000. Around £335,000 (68%) of this damage is caused by river flooding (SEPA, 2015).

Figure 1 – Estimated annual averages damages in Spey catchment



River Dee

4.13 The River Dee rises in the Cairngorm Mountains east of Braemar on the semi-arctic Braeriach-Cairn Toul plateau. For the majority of its course, the river flows eastwards through a broadening valley, which becomes much gentler in relief as it

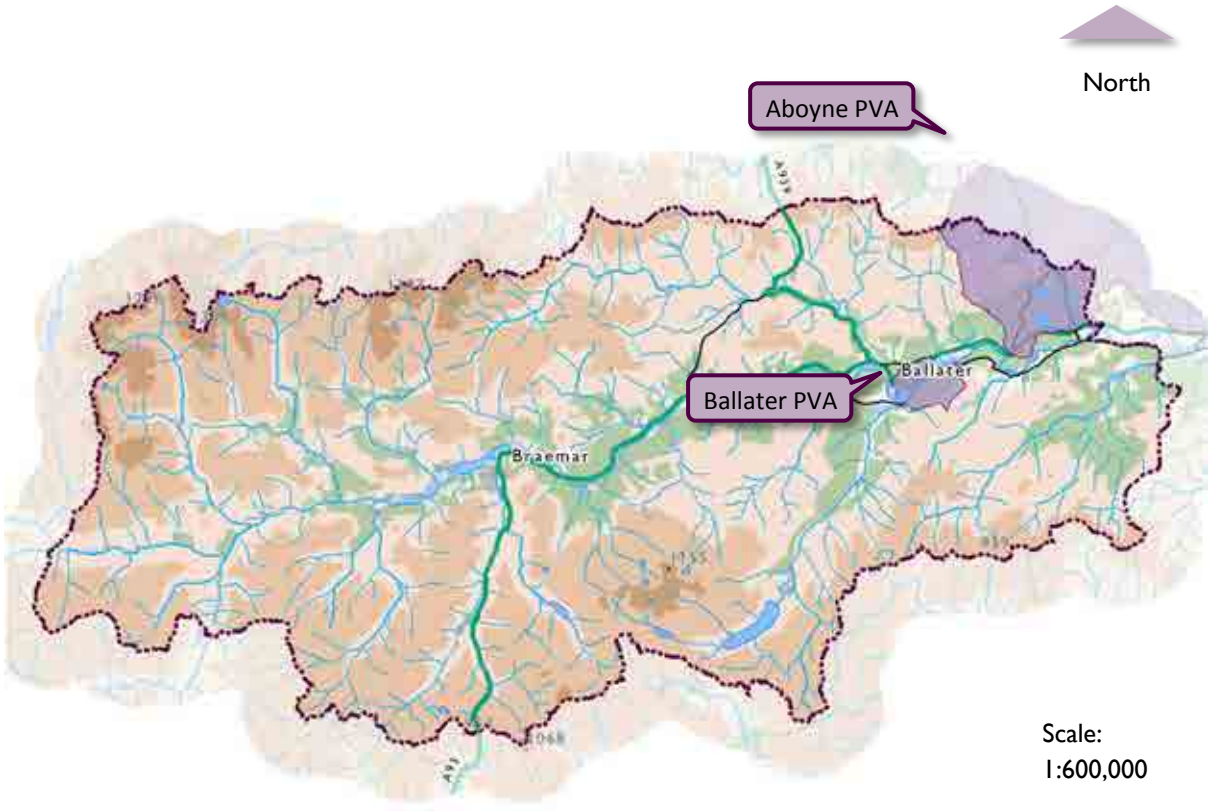
leaves the National Park. Within the National Park, the river is fed by a number of important tributaries, namely the Lui, Clunie, Gairn, Muick and Tanar, the latter's confluence being located just outwith the National Park Boundary (Dee Catchment Partnership, 2007).

4.14 The river is considered to be the best example of a natural highland river in Scotland (Maitland, 1985). The notable characteristics of the river include its great altitudinal range, its unique succession of plant communities, and its steep profile compared to other large British rivers (Dee Catchment Partnership, 2007).

4.15 Like the Spey, the Dee suffers from flooding related to heavy rain and melting snows. Major floods have been recorded in 1769, 1829 (the Great Muckle Spate), 1920 and 1956 (the Cairngorm Flood) (Dee Catchment Partnership, 2007). In 2008 surface run-off entered the Netherly Guesthouse in Ballater and in 2014 the town's caravan park and a number of roads were closed due to flooding (SEPA, 2015). More recently, in December 2015 / January 2016, the Dee experienced widespread flooding, which caused significant damage to property and transport infrastructure.

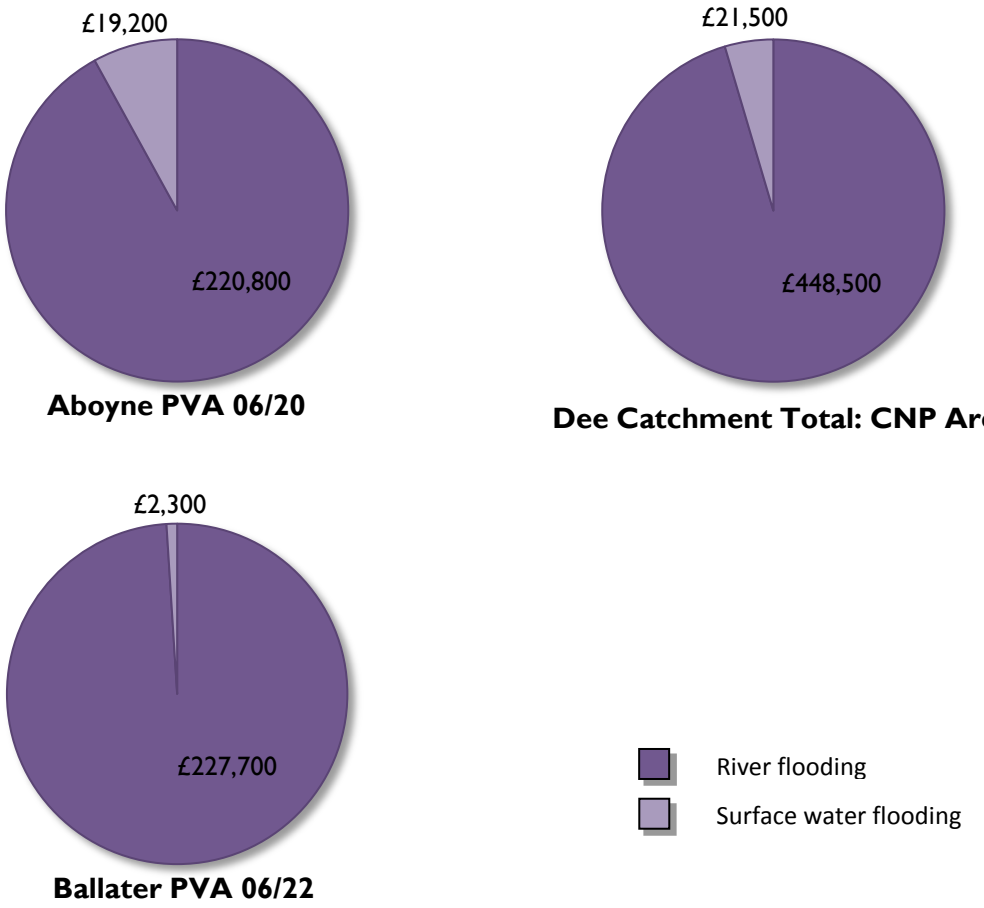
4.16 The Dee catchment contains two PVAs that fall within or across the National Park boundary:

- Aboyne (PVA 06/20); and
- Ballater (PVA 06/22).



4.17 The Aboyne PVA is only partly within the National Park boundary, with the majority of the population and the associated risk located outwith. As one of the National Park's main settlements, the PVA around Ballater therefore offers most concern. The estimated average annual cost of damage here is £230,000, 99% of which is associated with river flooding. The majority of estimated damages are due to flooding to non-residential properties (80%), although more significantly, the fire station is located in an area which has a medium likelihood of flooding (SEPA, 2015).

Figure 2 – Estimated annual averages damages in Dee catchment

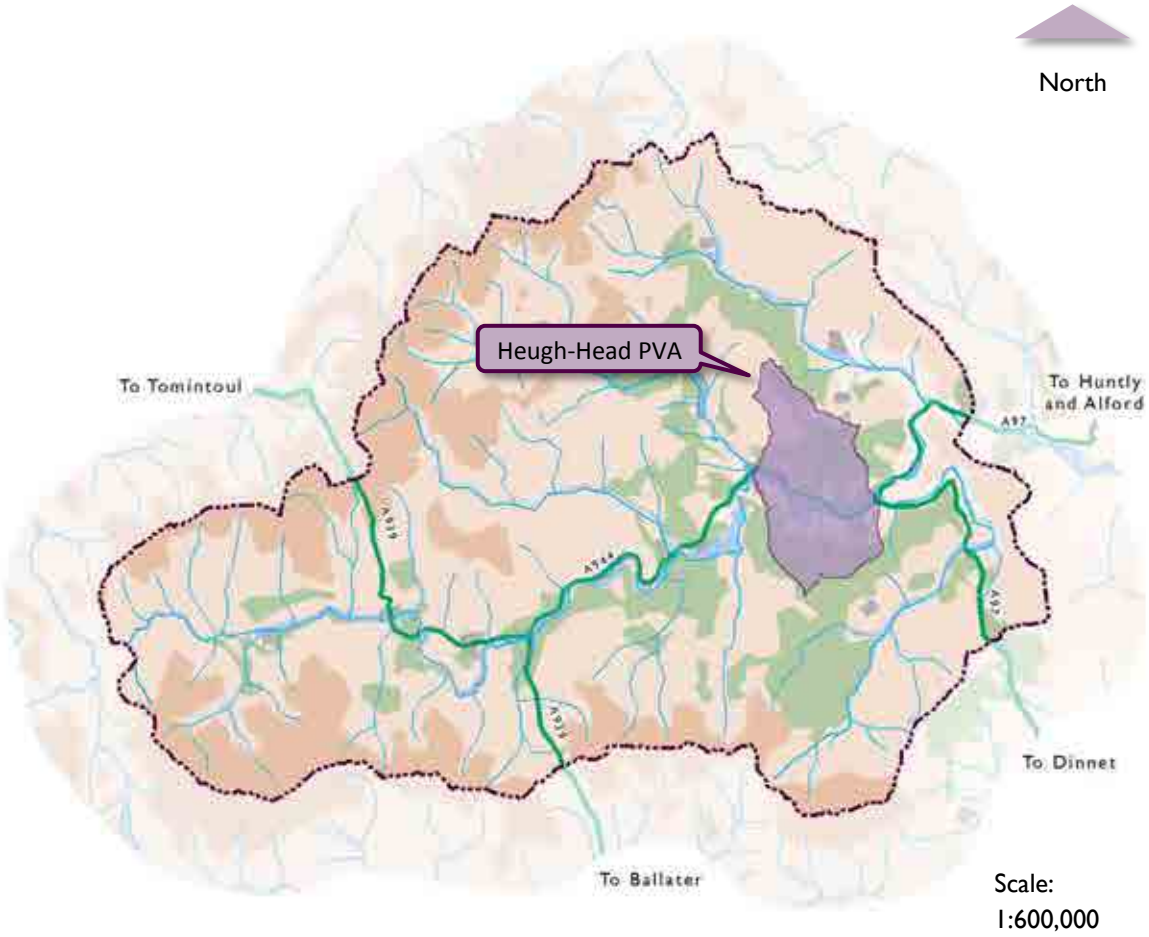


River Don

4.18 Rising in the in the peat flat beneath Druim na Feithe, and in the shadow of Glen Avon, the River Don flows 135km east to the sea in Aberdeen. It is Scotland's 6th largest river, draining a catchment of around 1,300km^2.

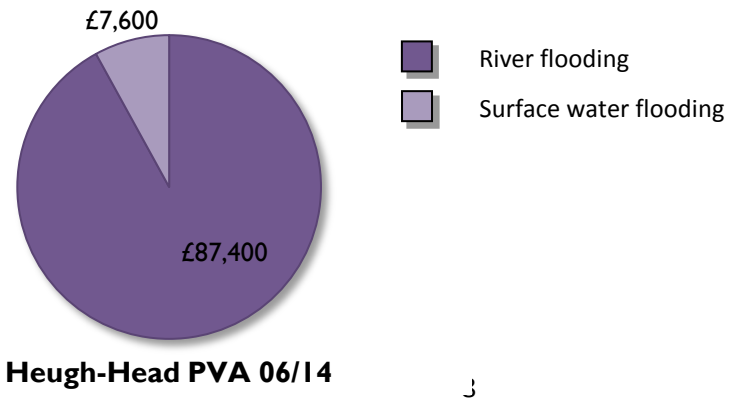
4.19 The Don catchment contains one PVA that falls across the National Park boundary:

- Heugh-Head (PVA 06/14).



4.20 There was a surface water flood in August 2006 affecting Strathdon, Waterside and Bellabeg when water ponded in low points of the road, with heavy rainfall and steep sloping fields to the south resulting in significant amounts of flood water. Parts of the upper River Don and associated tributaries were also impacted by flooding in January 2016, and there were reports of some damage to roads in the upper catchment. Most of the PVA's estimated annual average damages, which equate to £95,000, are associated with river flooding (92%). These damages mostly affect residential properties (60%) (SEPA, 2015).

Figure 3 – Estimated annual averages damages in Don catchment



River Tay

4.21 The River Tay has the largest catchment area and is the longest river in Scotland, with many of its headwaters lying within the Cairngorms National Park. It covers an area of 5,088km^2 and is around 190km in length. More water flows through the River Tay than any other river in the United Kingdom. The main tributaries include the River Garry, River Tummel, River Lyon, River Braan, River Isla and River Almond. The largest lochs in the River Tay catchment include Loch Ericht, Loch Rannoch and Loch Tay (SEPA, 2015).

4.22 The Tay catchment contains one PVA that falls across the National Park boundary:

- Blair Atholl (PVA 08/01).

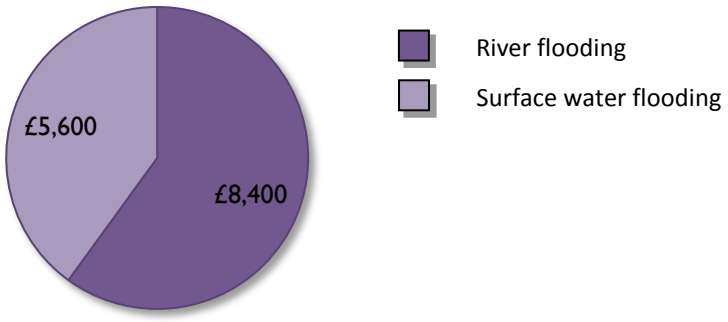
4.23 A number of river floods have been recorded in this area. These include:

- 5 December 2015: A large number of properties flooded at Garry Side and Ford Road.
- 13 December 2006: Properties at Garry Side were flooded from the River Garry
- 13 June 1931: Evacuation was required as River Garry flooded near Blair Atholl, the railway was also affected.
- July 1916: Evacuation was required as River Garry flooded near Blair Atholl, the railway was also flooded.

4.24 Blair Atholl continues to be at risk of flooding from the Garry Burn and from surface water. The risk of flooding to people, property, as well as to community facilities,

utilities, the transport network, designated sites and agricultural land is presented in Figure 4.

Figure 4 – Estimated annual averages damages in Tay catchment



Blair Atholl PVA 08/01

4.25 Currently there is relatively low confidence in SEPA's river flood hazard maps due to limitations arising from the data used and techniques applied in the national modelling. The number of properties at risk of flooding in the Blair Atholl area is therefore likely to be underestimated (Scottish Environmental Protection Agency, 2015).

5 Functional Flood Plain

5.1 SPP defines the functional flood plain as *"the areas of land where water flows in times of flood which should be safeguarded from further development because of their function as flood water storage areas"*.

5.2 SPP goes on to specify that for planning purposes the functional flood plain will generally have a greater that 0.5% probability of flooding in any year (equating to a 1 in 200 year return event). For the purposes of this SFRA, the functional flood plain will therefore be considered to be the area of medium fluvial flood risk probability (1 in 200 years) within the Flood Maps produced by SEPA.

5.3 Further development on the functional flood plain is generally inappropriate as it will not only be at risk itself but might also increase the risk of flooding downstream due to the loss of flood water storage capacity.

5.4 SPP outlines the following flood risk framework that should be applied for planning purposes. It states that this should be used to guide development allocations within LDPs.

5.5 New development should be directed to areas of no or little risk of flooding in the first instance. Only in cases where this is not considered feasible should higher risk areas be considered for development. Planning authorities are expected to demonstrate that there are no reasonable alternative sites in areas with a lower probability of flooding that would be appropriate for development before

considering allocating development sites in higher risk areas. This approach will be applied during the site specific assessments within this SFRA.

SPP Flood Risk Framework

Little or No Risk – Annual probability of watercourse or coastal flooding is less than 0.1% (1:1000 years)
• No constraints due to coastal or watercourse flooding
Low to Medium Risk – Annual probability of watercourse of coastal flooding is between 0.1% and 0.5% (1:1000 years to 1:200 years)
• Suitable for most development. A flood risk assessment may be required at the upper end of the probability range (i.e. close to 0.5%), and for essential infrastructure and the most vulnerable uses. Water resistant materials and construction may be required. • Generally not suitable for civil infrastructure. Where civil infrastructure must be located in these areas or is being substantially extended, it should be designed to be capable of remaining operational and accessible during extreme flood events.
Medium to High Risk – Annual probability of watercourse or coastal flooding is greater than 0.5% (1:200 years)
• May be suitable for: o residential, institutional, commercial and industrial development within built-up areas provided flood protection measures to the appropriate standard already exist and are maintained, are under construction, or are a planned measure in a current risk management plan; o essential infrastructure within built-up areas, designed and constructed to remain operational during floods and not impede water flow; o some recreational, sport, amenity and nature conservation uses, provided appropriate evacuation procedures are in place; and o job-related accommodation, e.g. for caretakers or operational staff • Generally not suitable for: o civil infrastructure and the most vulnerable uses; o additional development in undeveloped and sparsely developed areas, unless a location is essential for operational reasons, e.g. for navigation and water-based recreation, agriculture, transport or utilities infrastructure (which should be designed and constructed to be operational during floods and not impede water flow), and an alternative, lower risk location is not available; and o new caravan and camping sites • Where built development is permitted, measures to protect against or manage flood risk will be required and any loss of flood storage capacity mitigated to achieve a neutral or better outcome. • Water resistant materials and construction should be used where appropriate. Elevated buildings on structures such as stilts are unlikely to be acceptable.

6 Flood Risk Management

6.1 The FRMSs and LFRMPs set out a range of actions that will be undertaken to manage flood risk in the PVAs within the Cairngorms National Park. These actions are programmed to be undertaken during the period 2016-2022 and are summarised below. It is important to note that there may be other flood risk management actions being undertaken outside PVAs which are not specifically referenced within the FRMSs and LFRMPs. Any such actions are not listed below. It is also important to note that detailed consideration will still need to be given to the vulnerability of future development proposals located behind any existing or proposed flood defence schemes.

Carrbridge PVA

- SEPA will continue to maintain the Sluggan to Dulnain Bridge flood warning area on the River Dulnain

Aviemore and Boat of Garten PVA

- Highland Council will undertake/commission a Flood Protection Study to investigate the feasibility of developing a flood protection scheme (or works) for the Dalfaber Road areas within Aviewmore
- Scottish Water will undertake further investigation and modelling in the Aviemore Sewer catchment to improve knowledge and understanding of flood risk
- SEPA will continue to maintain the Aviemore/Dalfaber and Aviemore/Dalfaber to Grantown flood warning areas

Kingussie PVA

- Highland Council will undertake/commission a Flood Protection Study to assess the feasibility of developing a flood protection scheme (or works) in Kingussie. The study will assess the residual risk in the town from the Gynack Burn (assuming the planned diversion of flood flows to Loch Gynack is implemented). It will investigate the potential benefits of providing direct defences downstream of the High Street bridge, and improvements to (or removal of) structures such as the road and railway bridges. It will also include investigation of benefits of including Natural Flood Management techniques to manage sediment
- Scottish Water will undertake further investigation and modelling in the Kingussie sewer catchment to improve knowledge and understanding of flood risk
- SEPA will continue to maintain the Kingussie to Kincraig and Newtonmore to KIngussie flood warning areas

Newtonmore PVA

- The area will be covered by a Surface Water Management Plan(s), led by Highland Council, to describe existing and future actions to reduce the flood risk from small watercourses (less than 3 km^2) and surface water runoff (e.g. overland flows across roads, fields and other areas). It will identify appropriate specific actions to alleviate surface water flooding in Newtonmore

- Scottish Water will undertake further investigation and modelling in the Newtonmore sewer catchment to improve knowledge and understanding of flood risk
- SEPA will continue to maintain the Spey Dam to Newtonmore flood warning area
- Community groups such as the Newtonmore Community Council and Newtonmore Community Woodlands & Development Trust have engaged with the authorities with respect to flooding issues in the past

Dalwhinnie PVA

- SEPA will review existing modelling for this area to determine if any improvements can be made to the flood maps

Aboyne PVA *(note that most of this PVA lies outwith the Cairngorms National Park, so the specific actions listed below may be undertaken outside the Park boundary)*

- Aberdeenshire Council will undertake a Surface Water Plan/Study to increase understanding of the causes, probability and consequences of surface water flooding and to evaluate options for surface water flood management
- SEPA will continue to maintain the Aboyne flood warning area
- Scottish Water will undertake further investigation and modelling in the Aboyne sewer catchment to improve knowledge and understanding of flood risk

Ballater PVA

- Aberdeenshire Council will work with the Ballater Flood Liaison Group to reduce flood risk, improve preparedness and increase resilience against flooding
- Scottish Water will undertake further investigation and modelling in the Ballater sewer catchment to improve knowledge and understanding of flood risk
- In addition to these measures, Aberdeenshire Council will also bring forward a Flood Protection Study for Ballater to consider flood protection works to reduce the risk of flooding from the River Dee. This will be undertaken outside the LFRMP.

Heugh Head PVA

- Aberdeenshire Council will engage with the asset managers for the fire station and doctor's surgery to advise on the requirements to develop their own site protection plans

Blair Atholl PVA

- SEPA will seek to develop flood mapping in the River Garry area to improve understanding of flood risk
- Blair Atholl Community Council is currently in the process of developing a community resilience plan which includes plans to mitigate the impact of flooding

7 Natural Flood Management

7.1 Natural flood management (NFM) means working with natural processes with the aim of restoring a catchment's natural capacity to deal with floods, thereby reducing

flood risk and delivering other important social and environmental benefits. Wetlands, floodplains and woodland can act to slow the flow of water, store water in the catchment and reduce the risk of flooding to settlements downstream.

7.2 Measures that utilise natural habitats and restore natural processes can be used in combination with more traditional engineered flood risk management measures such as flood walls and embankments. An advantage of working with nature to manage flood risk is that these measures can deliver multiple benefits for people and the environment, such as:

- tackling diffuse pollution – for example buffer strips can reduce excess nutrients and sediment run-off entering watercourses and can also contribute to slowing and storing flood water;
- restoring natural processes and habitats in a catchment and so improving biodiversity and geodiversity – for example removing flood embankments and reconnecting a river with its floodplain; and
- improvements in amenity and landscape

7.3 NFM is a catchment-based approach, selecting the functional flood control areas within the catchment to modify or restoring land uses that together reduce downstream flooding. The key components of NFM comprise the suite of techniques that are used, their spatial distribution around the catchment and the quantification of how effective they will be in the short and long terms.

7.4 SEPA has undertaken a national assessment to identify potential opportunities for NFM[2]. This has resulted in a source of information on areas where NFM measures are likely to be most effective within Scotland. The assessment identifies where there may be opportunities for:

- runoff reduction;
- floodplain storage;
- sediment management;
- estuarine surge attenuation; and
- wave energy dissipation

7.5 The assessment identifies a number of broad opportunity areas for NFM within the Cairngorms National Park. Further work will be required to examine in greater detail the case for NFM measures within these areas. However, NFM has already been successfully implemented in some parts of the Park. For example, a recent project was undertaken through the River Spey Catchment Initiative to restore a section of the Allt Lorgy – a moderately high energy tributary of the River Dulnain in the Spey Catchment. The project aimed to restore the morphology and habitats of the watercourse and its adjoining floodplain by removing significant artificial constraints that have, over time, canalised the watercourse from a multi-braided to a single channel. This is expected to improve both the in-water and surrounding

[2] Identifying Opportunities for Natural Flood Management, December 2013 – see https://www.sepa.org.uk/media/163412/natural_flood_management_guidance.pdf

habitat and enable the watercourse and its floodplain to contribute to better upland water flow management in times of prolonged rainfall or flood.

7.6 The Cairngorms National Park Partnership Plan for 2017-2022 seeks to support and encourage further NFM within the Park, and work will therefore continue in developing the case for future NFM projects. Detailed NFM proposals will need to be assessed to ensure they do not increase flood risk elsewhere in the locality or further downstream. It will be important for the emerging LDP to include policies to support future NFM projects in appropriate locations.

8 Climate Change

8.1 It is generally expected that flooding will become a greater problem in the future due to the impact of climate change. SPP advises that there is a need to take account of the effects of climate change in applying the flood risk framework to proposed development.

8.2 Current best practice advice indicates that an increase of 20% in the estimated 200 year peak flood flow should be used to allow for future climate change when undertaking Flood Risk Assessments to support new development proposals. This requirement will be kept under review in line with the best available science. LDP policy will ensure that future development proposals take account of the effects of climate change in line with the best available science and in accordance with SEPA's Technical Flood Risk Guidance[3].

8.3 It is also important to consider freeboard when calculating flood risk. Freeboard is defined as the difference between the flood defence level and the design flood level. It can also however be the difference between the design flood level and the finished floor levels of any development. A minimum freeboard allowance of 500mm to 600mm is currently recommended by SEPA. This allowance is in addition to any allowance for climate change. Again, LDP policy will ensure that an appropriate freeboard allowance will be made when assessing future planning applications.

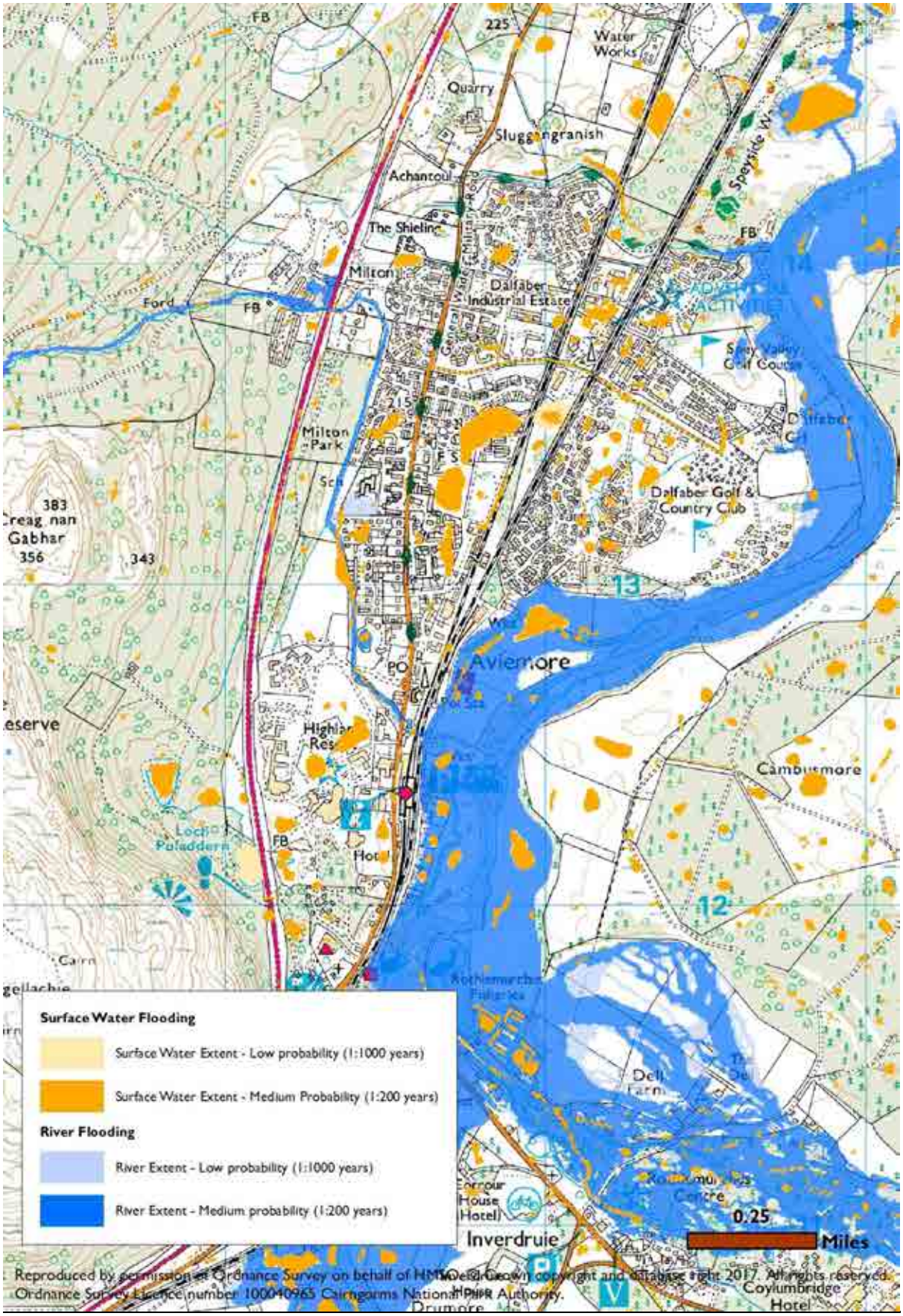
9 Strategic Flood Map Overview

9.1 The maps in the following section provide an overview of flood risk for each of the main settlements within the Cairngorms National Park. They display information from SEPA's flood risk maps, which indicate the areas that are likely to be at risk from both river flooding and surface water flooding. The maps indicate areas of medium risk (where the annual probability of flooding is greater than 0.5% - also often referred to as 1 in 200 years) and low risk (where the annual probability of flooding is greater than 0.1% - or 1 in 1,000 years).

9.2 Please note that the SEPA flood risk data does not include any consideration of flood risk from smaller watercourses with a catchment area of less than 3 km^2.

[3] http://www.sepa.org.uk/media/162602/ss-nfr-p-002-technical-flood-risk-guidance-for-stakeholders.pdf

Aviemore


Surface Water Flooding
Surface Water Extent - Low probability (1:1000 years)
Surface Water Extent - Medium Probability (1:200 years)
River Flooding
River Extent - Low probability (1:1000 years)
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Inverdruie
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Milton
Milton Park
Dalfaber Industrial Estate
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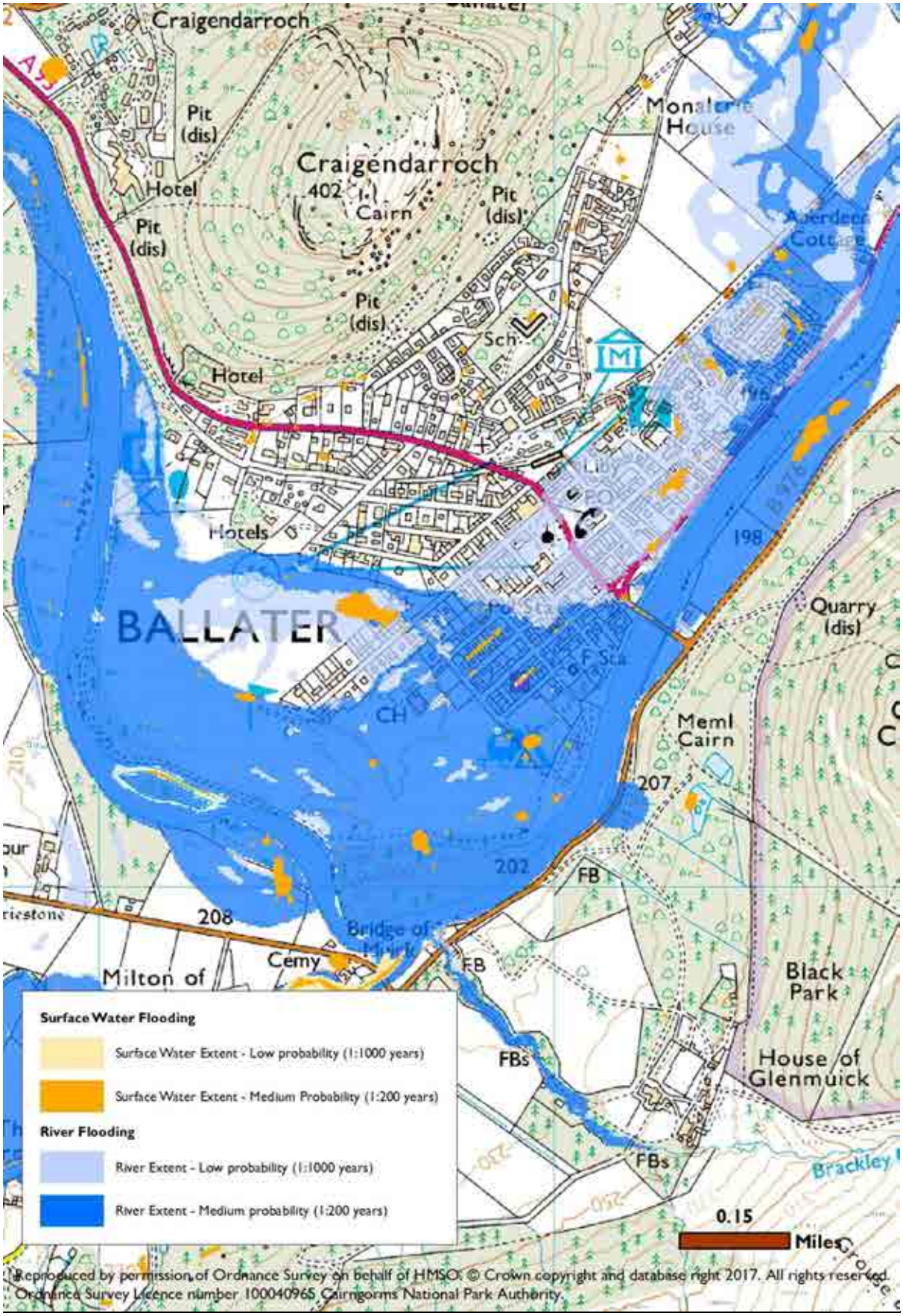
Quarry
Water Works
Ford
Loch Puladdern
Craig nan Gabhar
Cairngorms National Park Authority.

Ballater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Surface Water Flooding
Surface Water Extent - Low probability (1:1000 years)
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River Flooding
River Extent - Low probability (1:1000 years)
River Extent - Medium probability (1:200 years)
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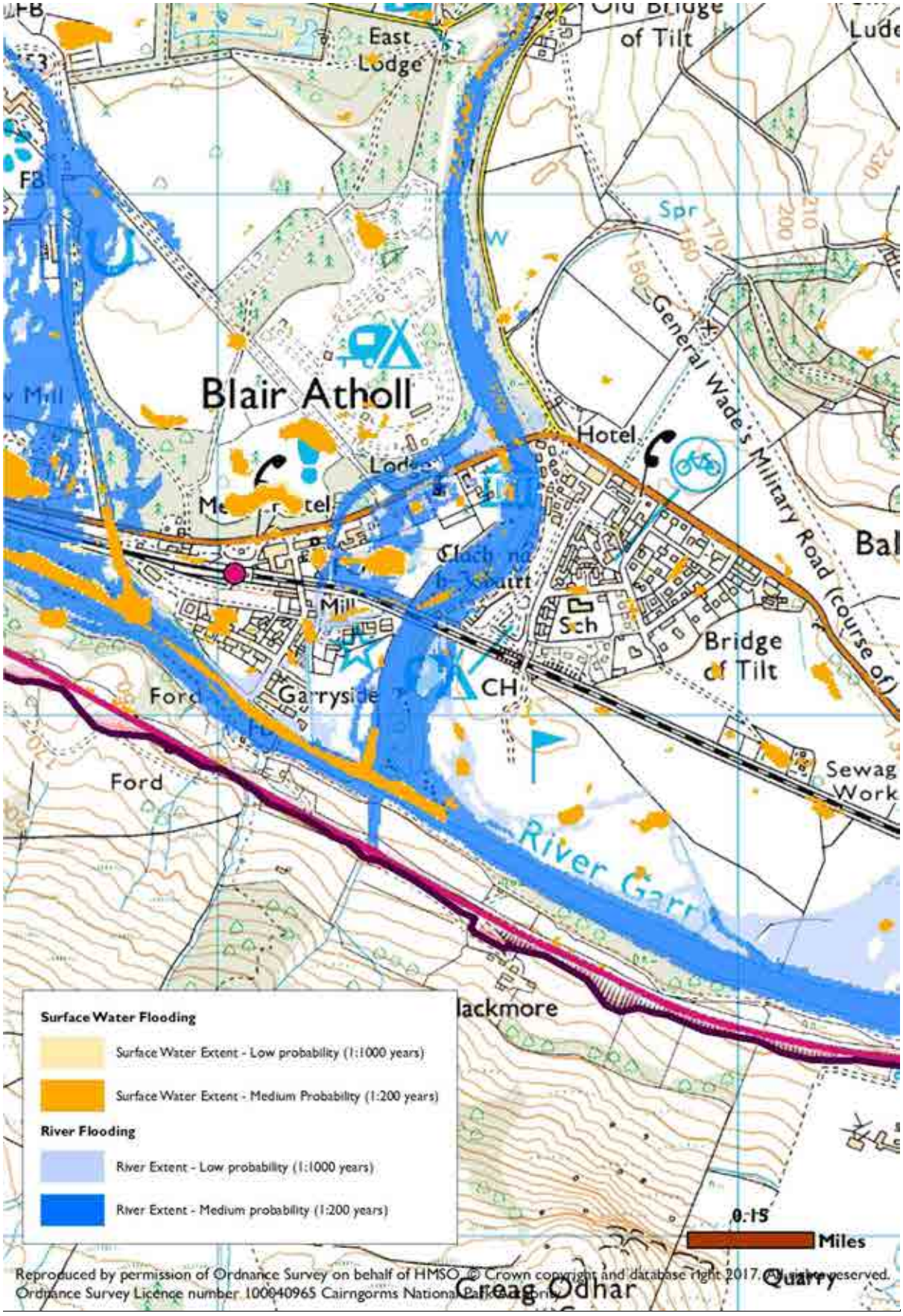
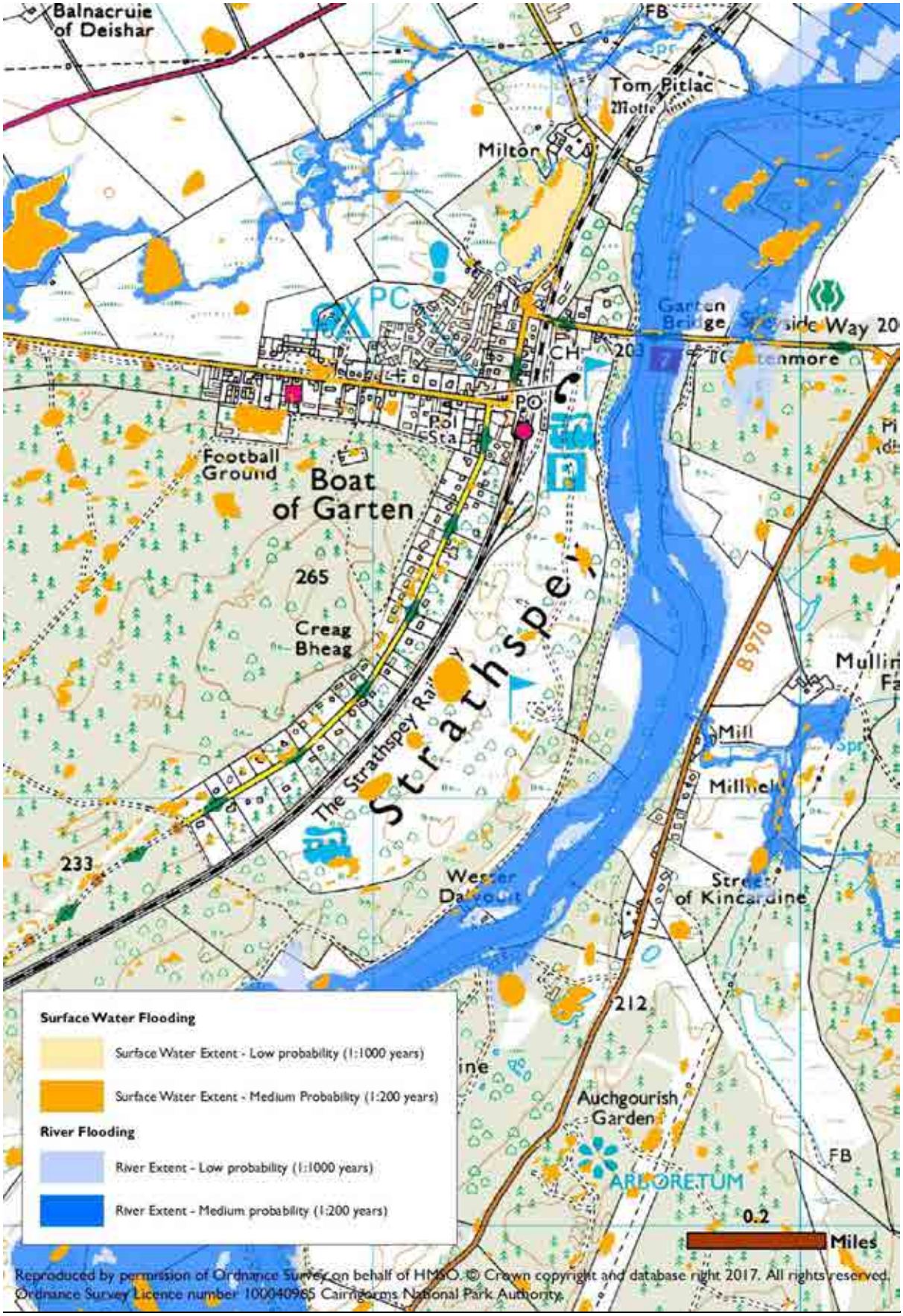
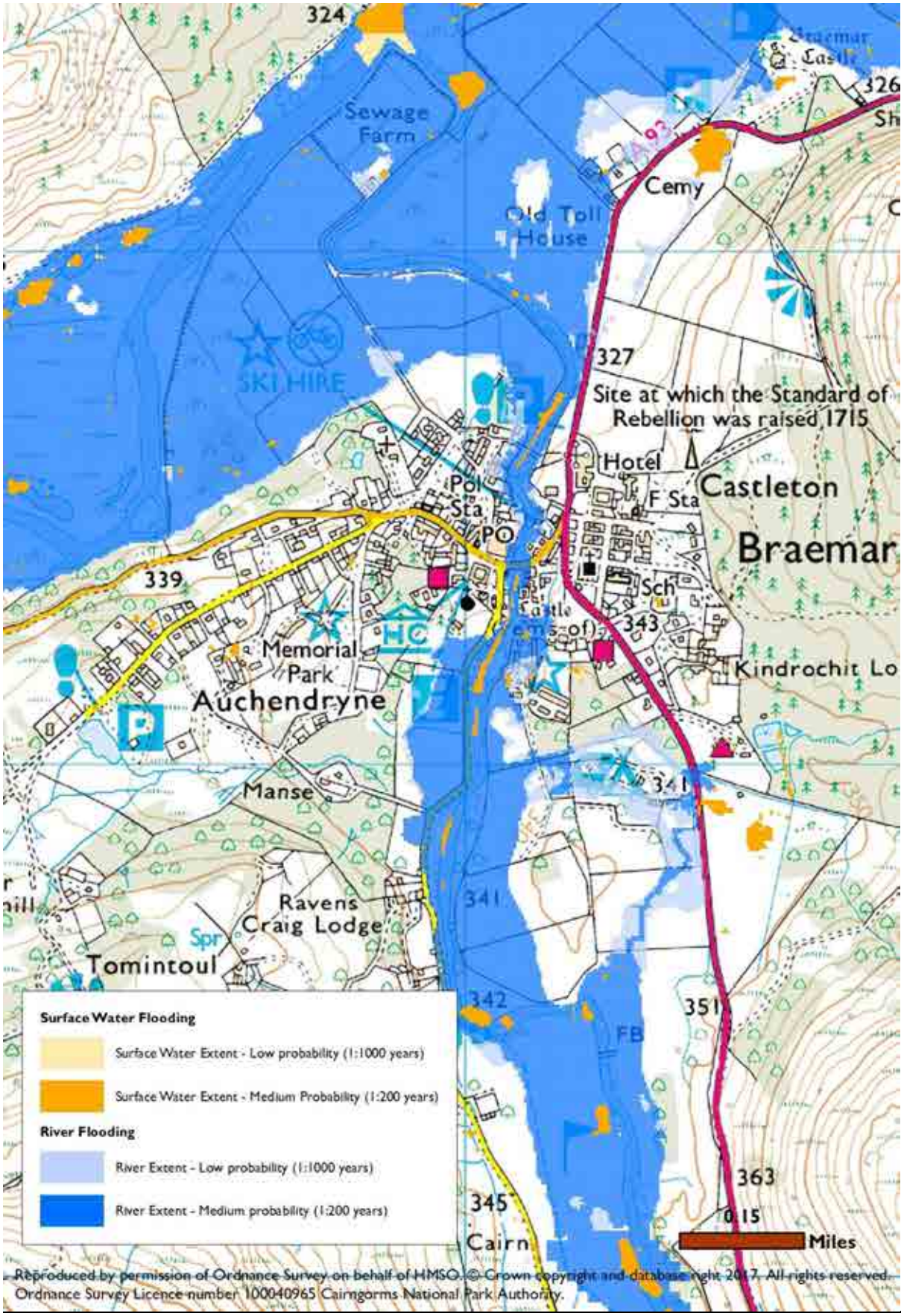
Blair Atholl



Boat of Garten



Braemar


Surface Water Flooding
Surface Water Extent - Low probability (1:1000 years)
Surface Water Extent - Medium Probability (1:200 years)
River Flooding
River Extent - Low probability (1:1000 years)
River Extent - Medium probability (1:200 years)
Site at which the Standard of Rebellion was raised 1715
Castleton
Braemar
Auchendryne
Memorial Park
Manse
Ravens Craig Lodge
Tomintoul
Cairn
Cemy
Old Toll House
Sewage Farm
Kindrochit Lo
Miles
0 15
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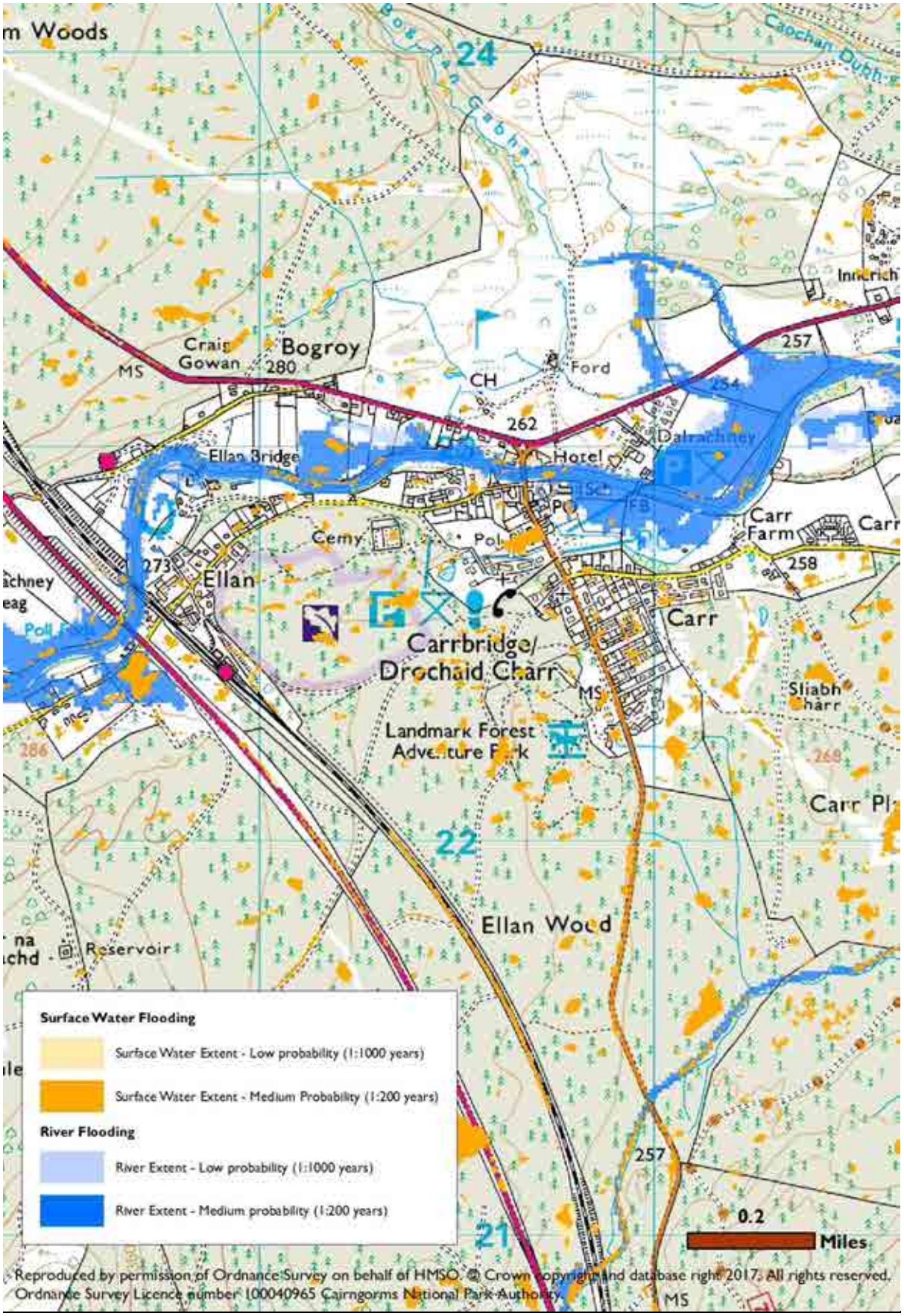
Carr-Bridge


Surface Water Flooding
Surface Water Extent - Low probability (1:1000 years)
Surface Water Extent - Medium Probability (1:200 years)
River Flooding
River Extent - Low probability (1:1000 years)
River Extent - Medium probability (1:200 years)
0.2
Miles
Carrbridge/
Drochaid Charr
Ellan
Bogroy
Craig
Gowan
Ellan Bridge
Hotel
Carr
Carr Farm
Landmark Forest
Ellan Wood
Reservoir
Dalrachney
Sliabh
Charr
Cemy
Ford
CH
MS
24
22
21
257
258
262
273
280
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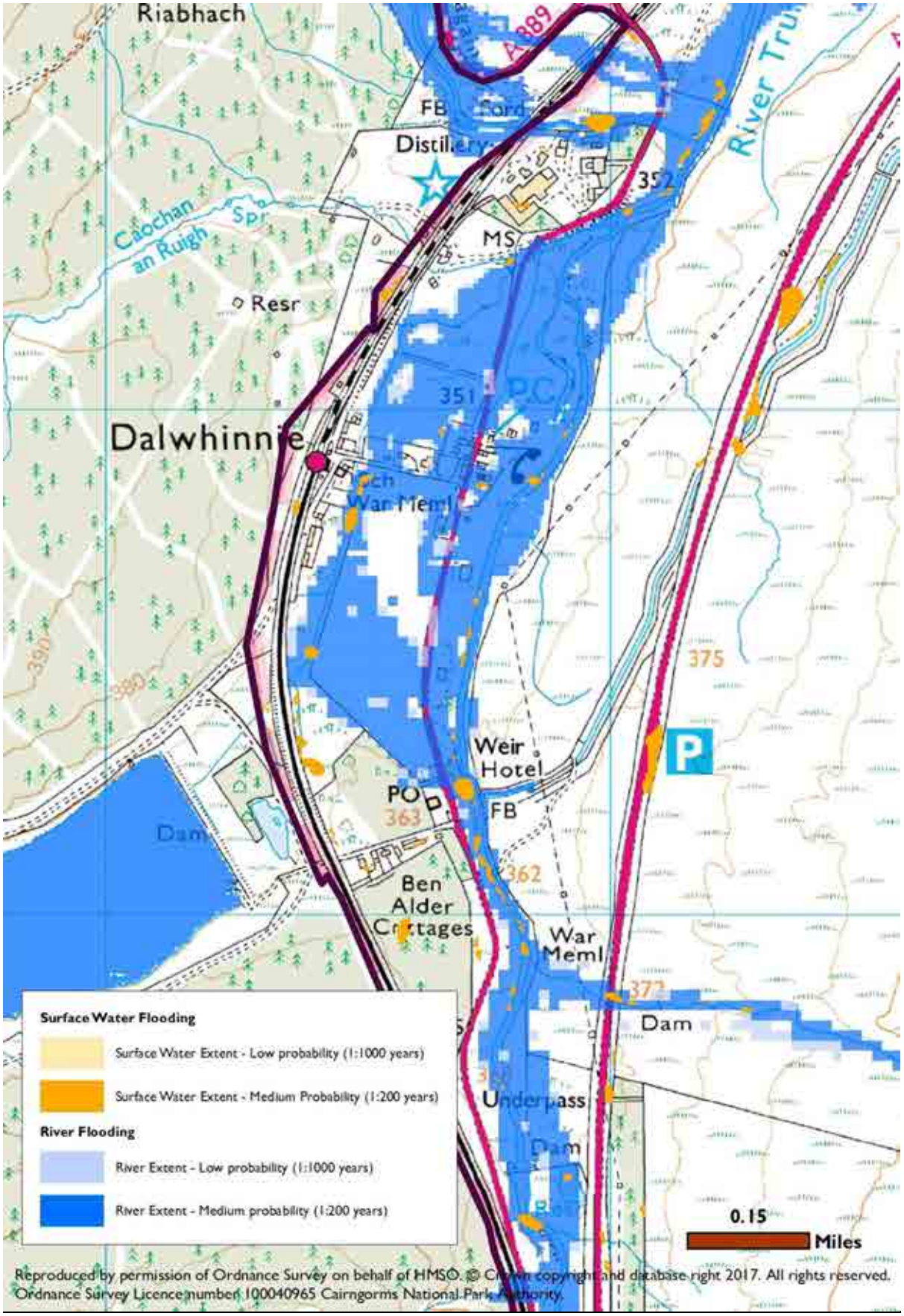
Dalwninnie


Riabhach
A889
FB
Distillery
River Truim
Caochan an Ruigh
Spr
MS
Resr
351
P.C
Dalwhinnie
War Meml
375
Weir Hotel
P
PO
363
FB
362
Dam
Ben Alder Cottages
War Meml
372
Dam
Underpass
Dam
Surface Water Flooding
Surface Water Extent - Low probability (1:1000 years)
Surface Water Extent - Medium Probability (1:200 years)
River Flooding
River Extent - Low probability (1:1000 years)
River Extent - Medium probability (1:200 years)
0.15
Miles
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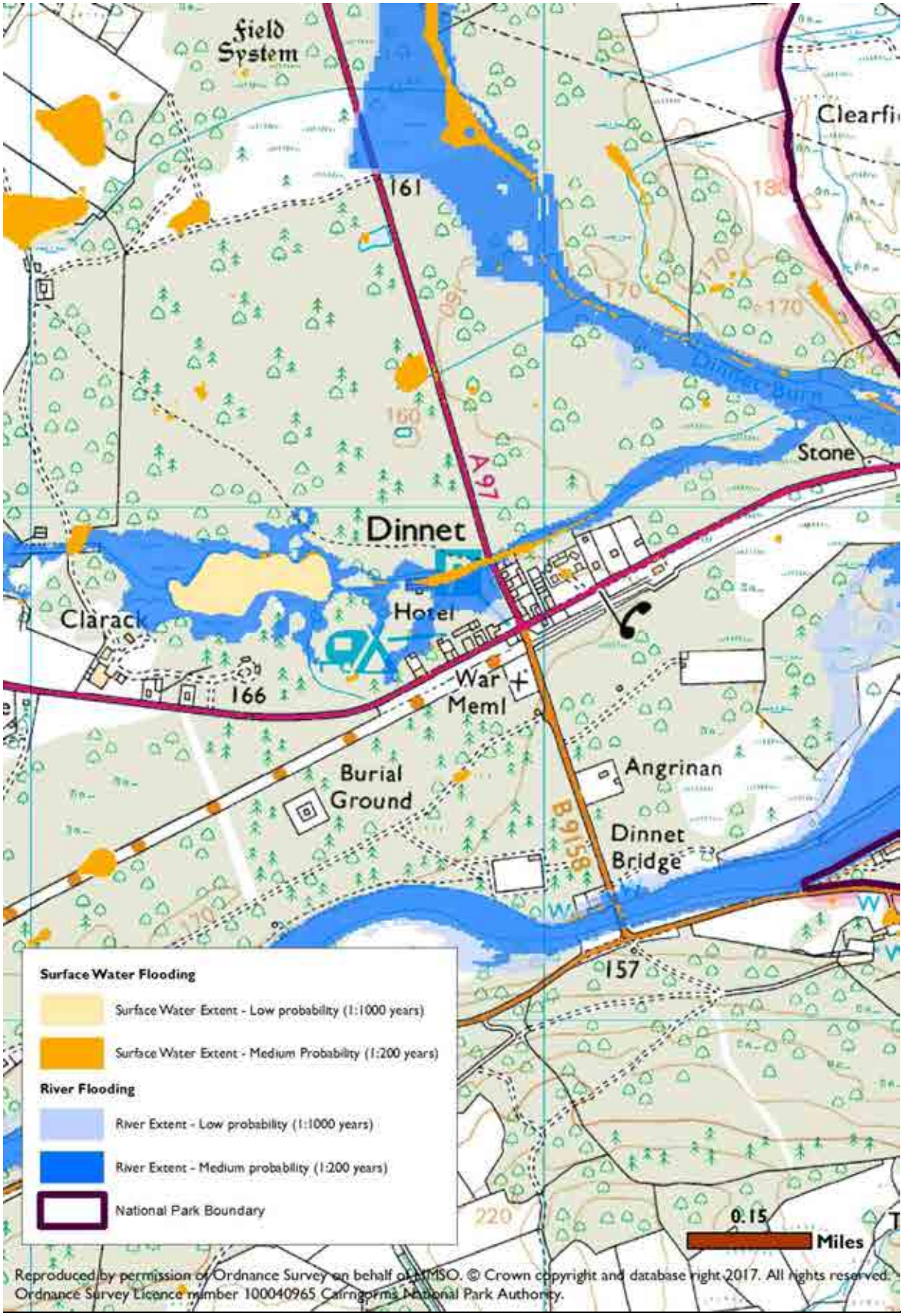
Dinnet


Field System
161
Clearfi
170
Dinnet Burn
160
A97
Stone
Dinnet
Clarack
Hotel
166
War Meml
Burial Ground
Angrinan
B9119
Dinnet Bridge
157
220
Surface Water Flooding
Surface Water Extent - Low probability (1:1000 years)
Surface Water Extent - Medium Probability (1:200 years)
River Flooding
River Extent - Low probability (1:1000 years)
River Extent - Medium probability (1:200 years)
National Park Boundary
0.15
Miles
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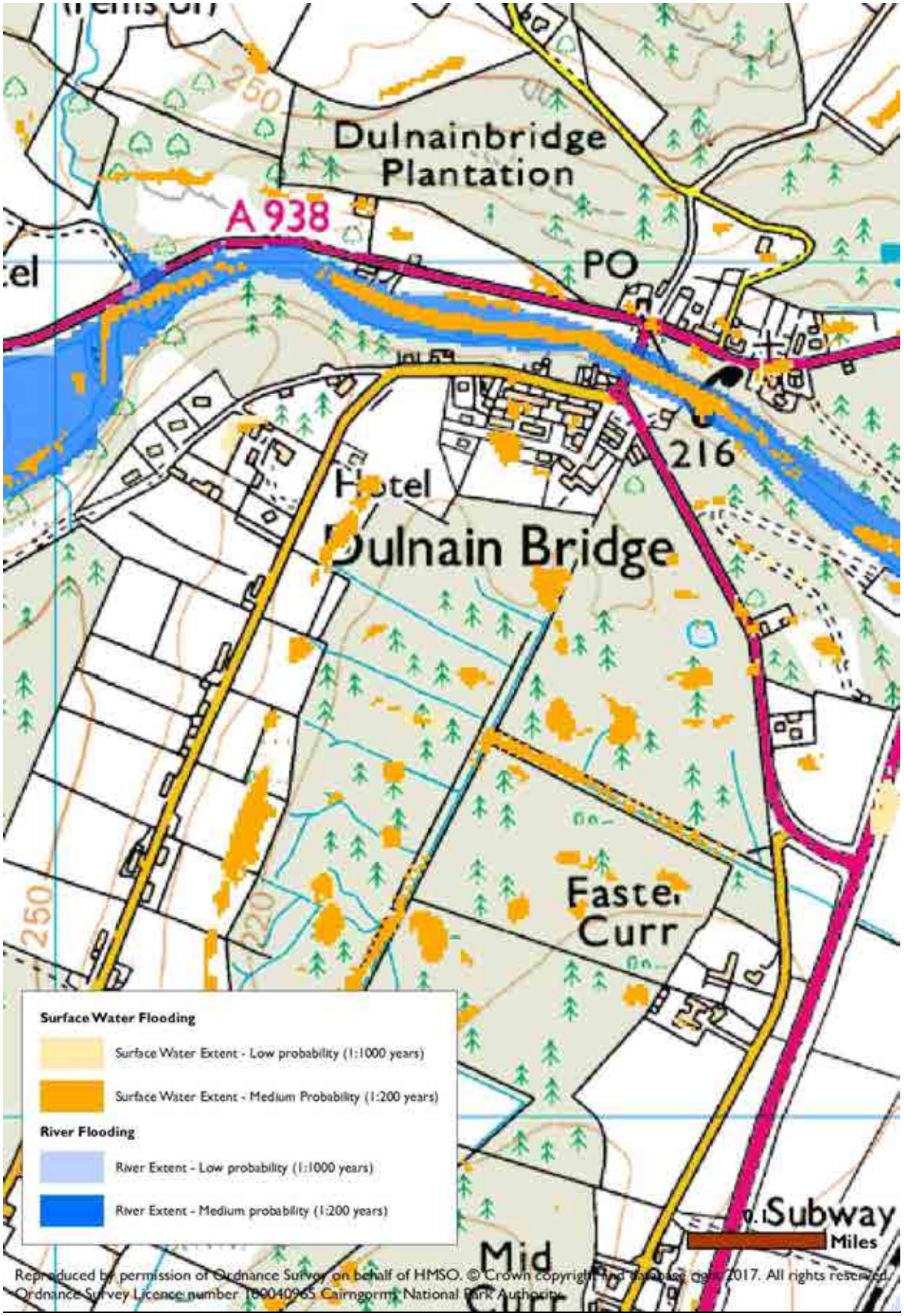
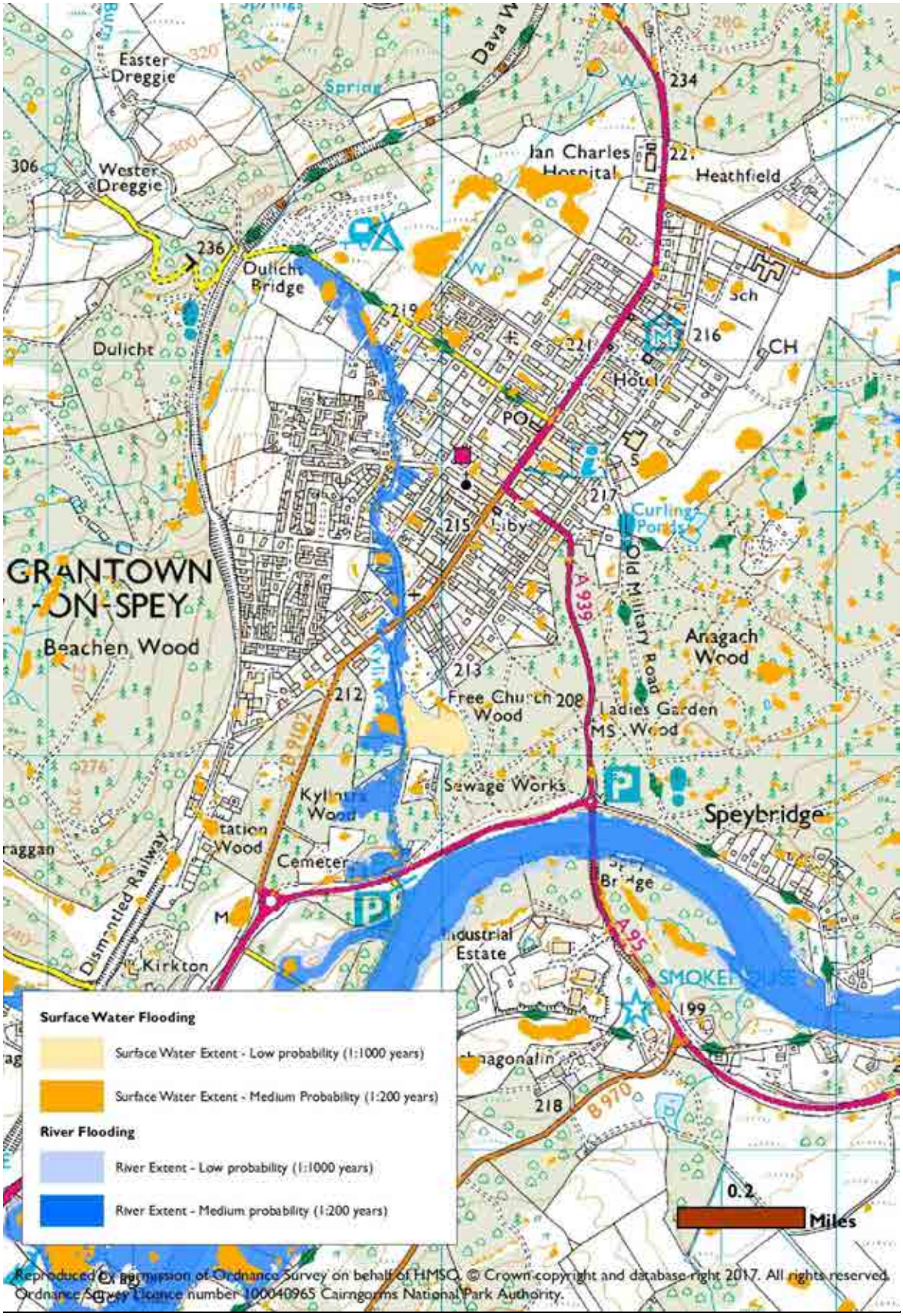
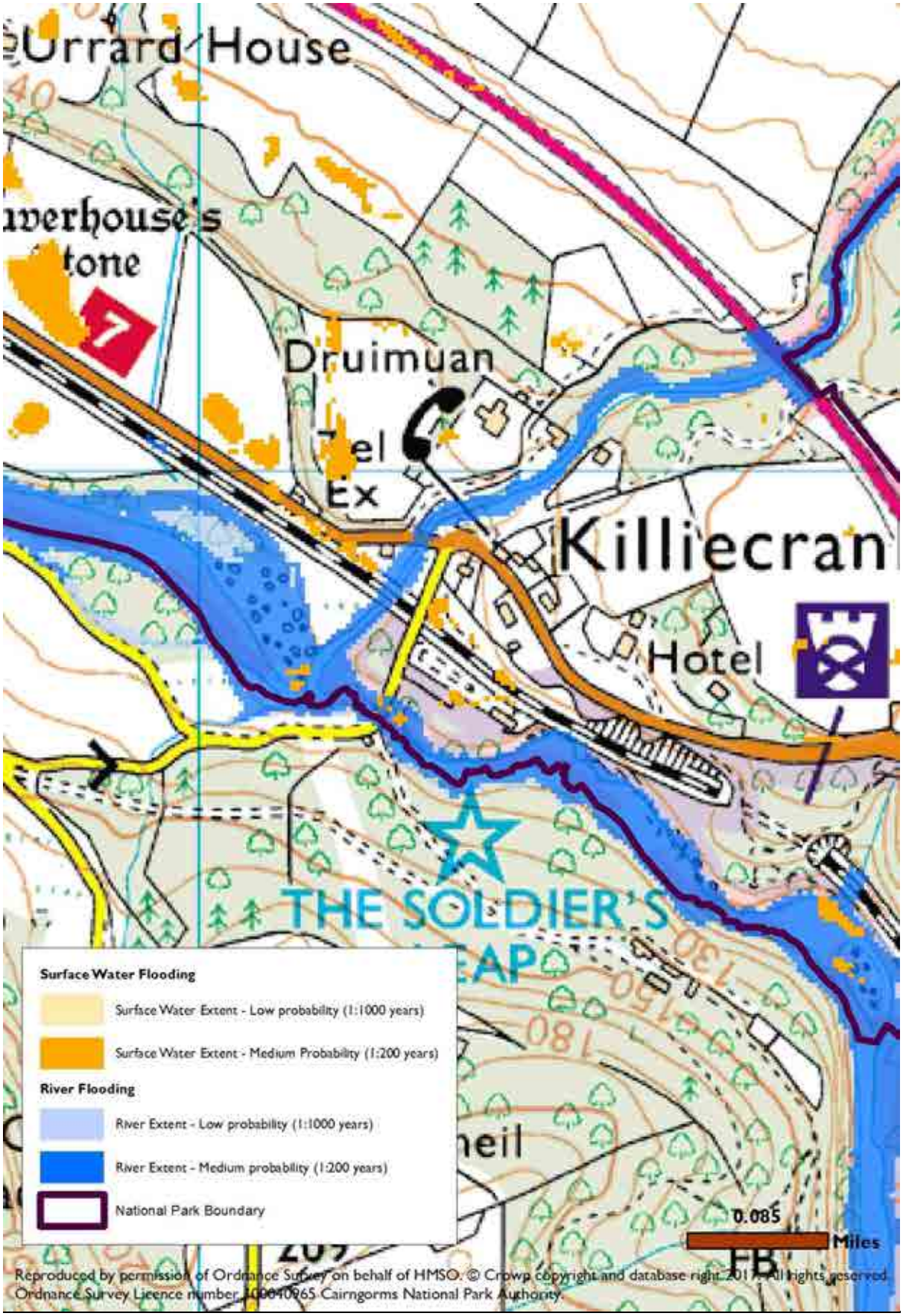
Dulnain Bridge



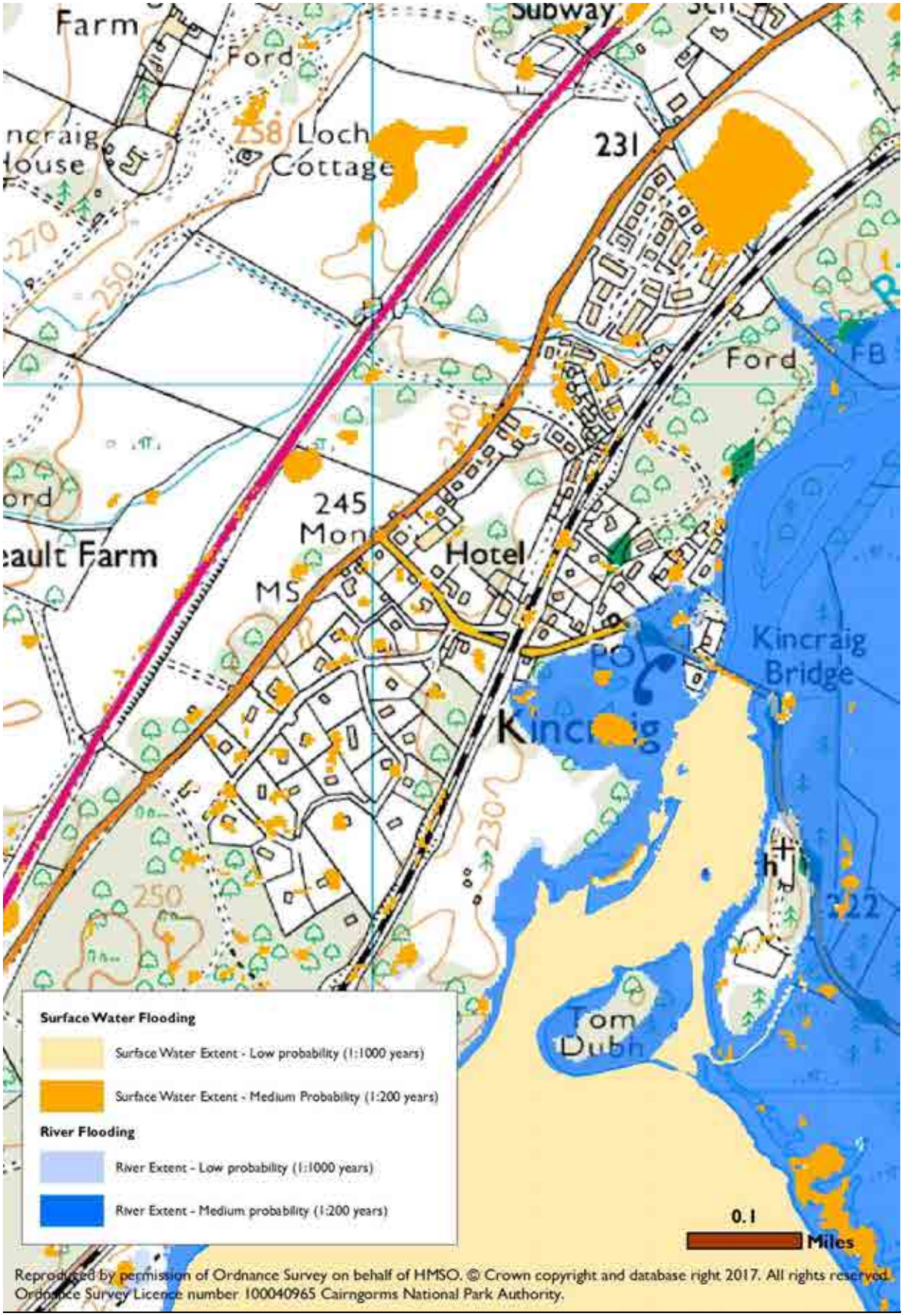
Grantown-on-Spey



Killiecrankie



Kincraig


Farm
Ford
Subway
Loch
Cottage
231
Ford
FB
245
Hotel
MS
Kincraig
Bridge
Tom
Dubh
Surface Water Flooding
Surface Water Extent - Low probability (1:1000 years)
Surface Water Extent - Medium Probability (1:200 years)
River Flooding
River Extent - Low probability (1:1000 years)
River Extent - Medium probability (1:200 years)
0.1
Miles
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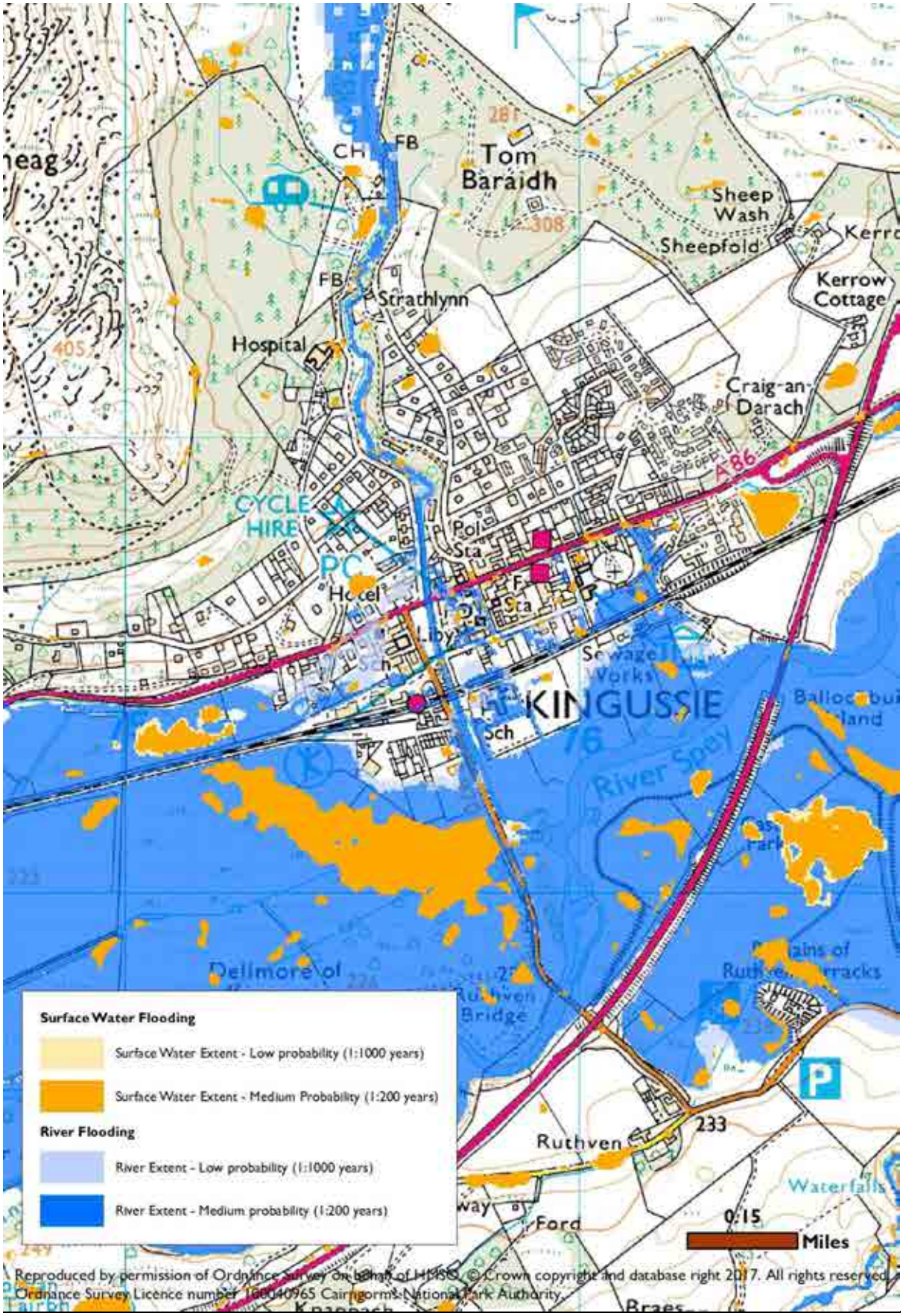
Kingussie


Tom Baraidh
Sheep Wash
Sheepfold
Kerrow Cottage
Strathlynn
Hospital
Craig-an-Darach
A86
CYCLE HIRE
PC
Pol Sta
Sta
Sch
KINGUSSIE
River Spey
Ruthven
233
Ford
Waterfalls
Surface Water Flooding
Surface Water Extent - Low probability (1:1000 years)
Surface Water Extent - Medium Probability (1:200 years)
River Flooding
River Extent - Low probability (1:1000 years)
River Extent - Medium probability (1:200 years)
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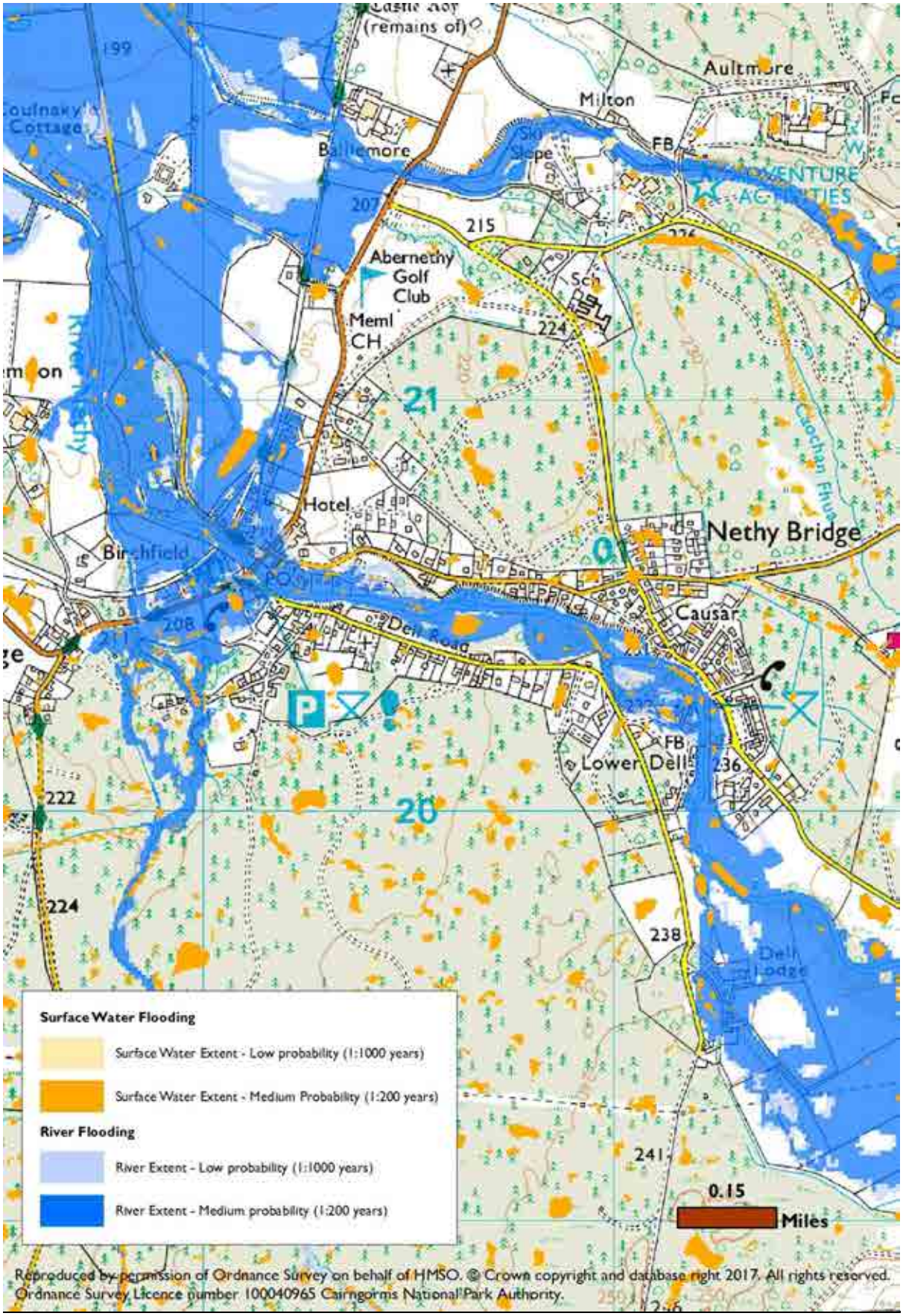
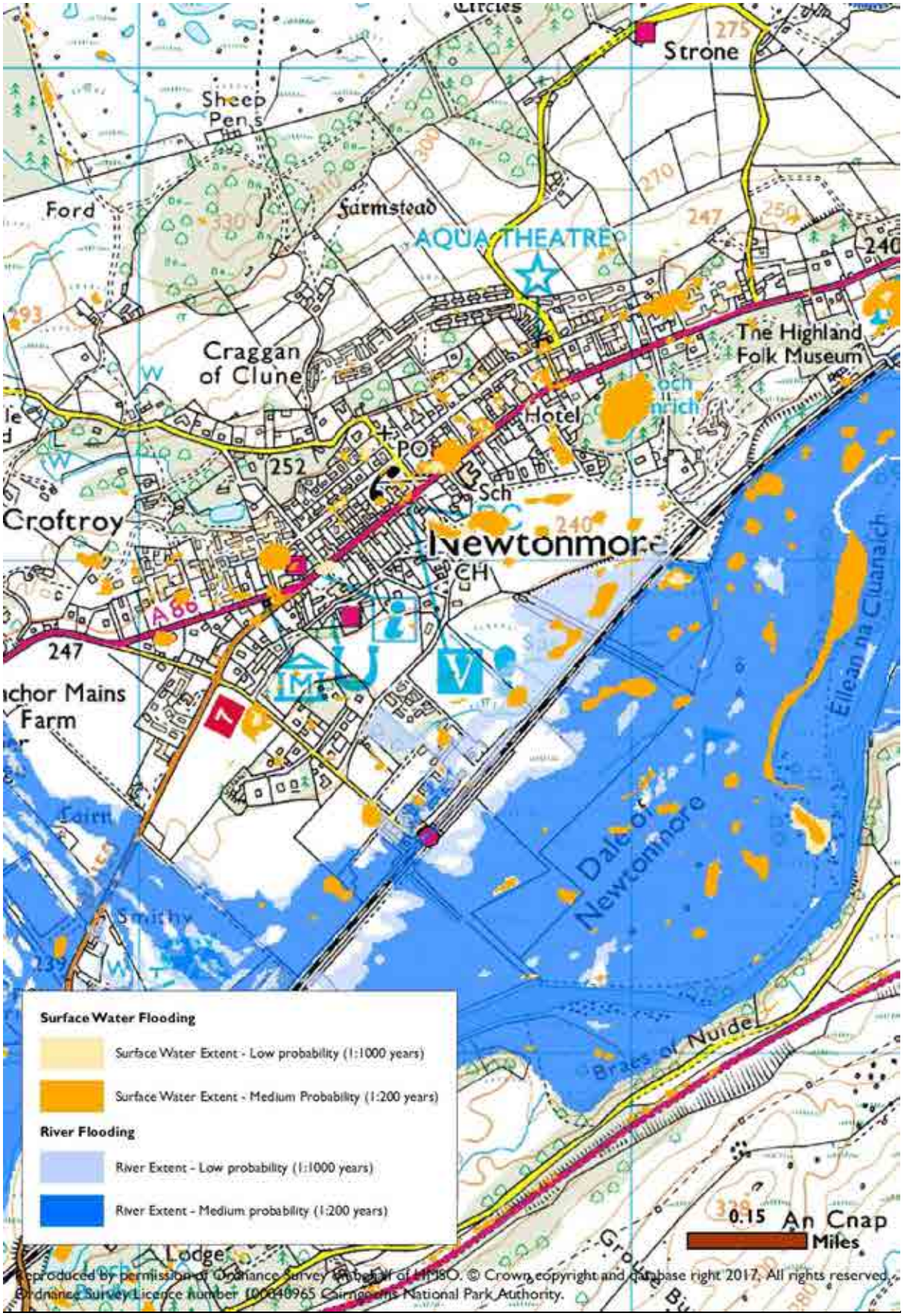
Nethy Bridge



Newtonmore


Strone
Sheep Pens
Ford
Farmstead
AQUA THEATRE
The Highland Folk Museum
Craggan of Clune
Hotel
PO
Sch
Croftroy
Newtonmore
CH
A86
247
Farm
Dalcross Newtonmore
Braes of Nuide
Lodge
Surface Water Flooding
Surface Water Extent - Low probability (1:1000 years)
Surface Water Extent - Medium Probability (1:200 years)
River Flooding
River Extent - Low probability (1:1000 years)
River Extent - Medium probability (1:200 years)
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Miles
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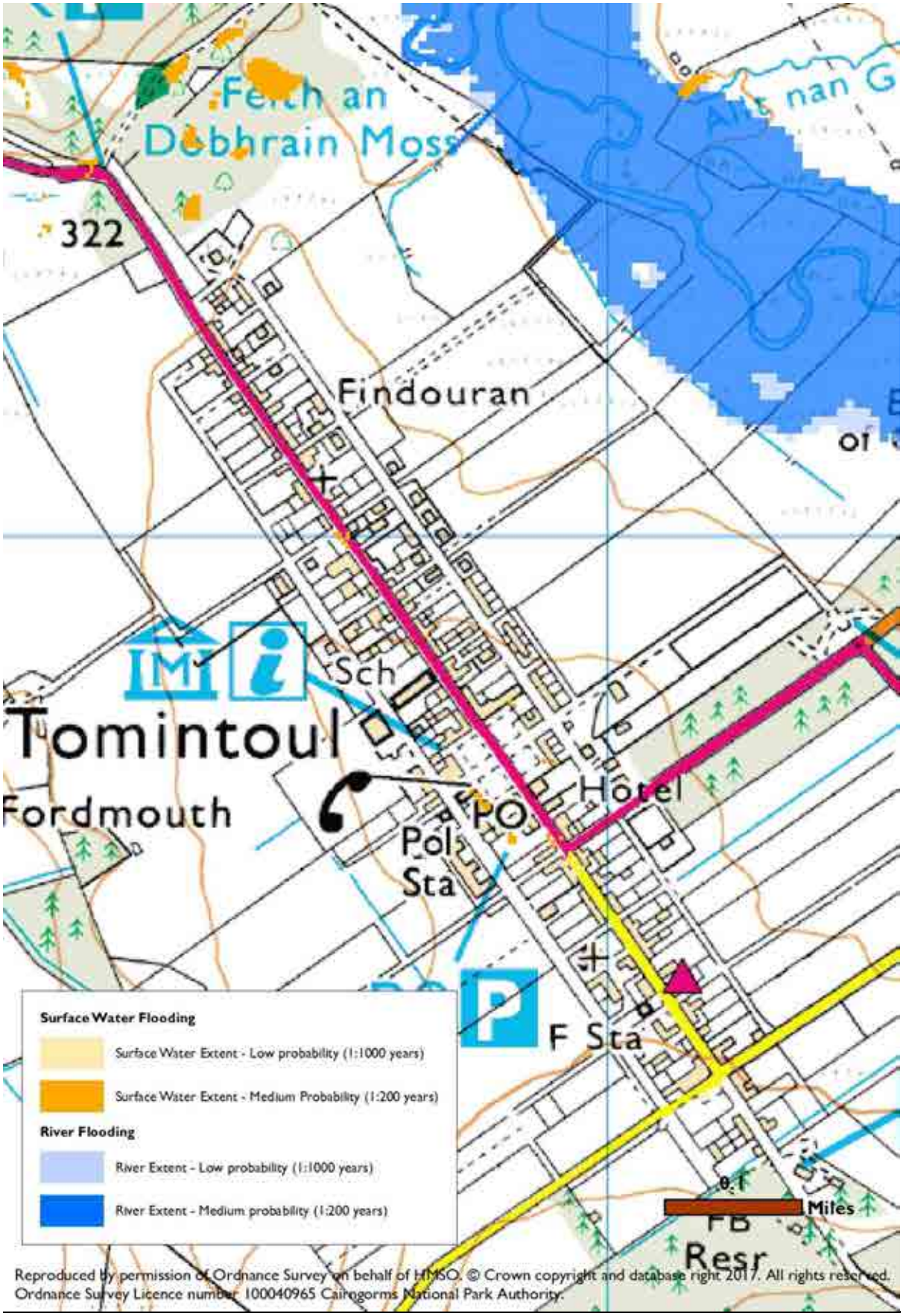
Tomintoul


Feith an Dobhrain Moss
322
Findouran
Sch
Tomintoul
Fordmouth
Hotel
PO
Pol Sta
F Sta
Surface Water Flooding
Surface Water Extent - Low probability (1:1000 years)
Surface Water Extent - Medium Probability (1:200 years)
River Flooding
River Extent - Low probability (1:1000 years)
River Extent - Medium probability (1:200 years)
0 1
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Resr
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Part 2 Site Assessments

10 Site Assessment Process

10.1 Site assessments have been undertaken for all sites that are included within the Cairngorms National Park Proposed LDP. This includes existing site allocations from the 2015 LDP that have been carried forward into the Proposed LDP, along with other site allocations that have been newly identified in the Proposed LDP.

10.2 The assessments outlined in the table below use information from SEPA's flood risk maps together with other local knowledge where available. The SEPA flood data does not include any consideration of flood risk from smaller watercourses with a catchment area of less than 3 km^2. However, smaller watercourses have been taken into account within the assessments wherever possible.

Table 1: Proposed LDP Development Allocations – Site Assessments

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
Aberdeenshire							
Ballater	Monaltrie Park	H1	Residential – 50 dwellings during LDP period. Forms part of a larger site with overall capacity for 250 units	Y (Site adjacent to 1 in 200 flood extent)	N	Y (Parts of site may be at risk of surface water flooding)	Site adjacent to medium likelihood fluvial flood extent based on current SEPA mapping. Part of the site appears to be within the observed flood extent from Storm Frank but SEPA have no reports of flooding at the site. Recent modelling undertaken on behalf of Aberdeenshire Council shows that the 1 in 200 flood extent may affect the eastern corner of the site. LDP will need to highlight that further information will be required to assess the flood risk at this site. Site layout may be limited depending on findings of FRA.
	Ballater Business Park	ED1	Economic development	Y (Part of site lies within 1 in 200	N	N	Existing business park. Part of site lies within medium probability flood zone and within

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
				flood extent)			the observed flood extent from Storm Frank. LDP will need to identify that if further business development is proposed then flood risk information is likely to be required to inform design levels, ensure flood risk is not increased elsewhere and to ensure safe access/egress.
	Former school site	C1	Re-development opportunity which benefits the community	N	N	N	Site is located outside the SEPA indicative flood zones and SEPA hold no information to indicate that is was affected by flooding during Storm Frank. No flooding issues anticipated.
	Caravan and camping site	T1	Tourism	Y (Site lies entirely within 1 in 200 flood extent)	N	Y (Parts of site may be at risk of surface water flooding)	Existing caravan and camping site. It was well documented that this site was severely impacted during Storm Frank. SEPA are likely to have no objection to proposals for like-for-like replacement/reuse but they are likely to strongly object to an increase in the number of

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
							caravans on site, and to any mitigation measures that may increase flood risk to neighbouring sites such as bunding or landraising.
Braemar	Chapel Brae	H1	Residential – 6 dwellings	N	N	Y (Some areas adjacent to site may be at risk of surface water flooding)	Some small areas adjacent to the site may be at risk of surface water flooding, and development may need to consider this. SEPA hold no new records of flooding on the site.
	St Andrews Terrace	H2	Residential – 30 dwellings	Y (Part of site is within 1 in 200 flood extent)	Y (A small watercourse runs adjacent to the eastern boundary of the site)	N	Existing planning permission. LDP will need to identify that further flood risk information will be required to support any further/amended application and that this may affect site layout.
	Kindrochit Court	H3	Residential – 11 dwellings	N	N	N	Site is located outside the SEPA indicative flood zones. No significant flooding issues

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
							anticipated.
	Chapel Brae	H4	Residential – 6 dwellings	N	N	N – although some medium probability surface water flood areas in close proximity	Site is located outside the SEPA indicative flood zones. No significant flooding issues anticipated.
	North Braemar	H5	Residential – 30 dwellings as first phase of a larger longer-term development	Y (Site adjacent to 1 in 200 flood extent)	N	N – although some medium probability surface water flood areas in close proximity	Site adjacent to medium likelihood fluvial flood extent. SEPA have records of flooding at Invercauld Gardens, thought to be during Storm Frank. LDP will need to highlight that further information may be required to assess the flood risk at this site, although this may be avoided through suitable site layout. Drainage Impact Assessment may be required to address

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
							surface water issues.
	Ambul-ance Station	ED1	Economic development	N	N	N	Existing economic development site. No known flooding issues. Site is located outside SEPA's indicative flood zones.
	The Mews	ED2	Economic development	Y (Site adjacent to 1 in 200 flood extent)	N	N	Existing economic development site located adjacent to medium probability food zone. Although SEPA hold no records of flooding at the site during Storm Frank they do have records of flooding nearby. LDP will need to state that FRA may be required to support any future development proposals on the site.
	Caravan Park	T1	Tourism	Y (Eastern part of site is within 1 in 200 flood extent)	Y (Some small watercourses/ drains run through the site)	N (Although an area adjacent to the eastern boundary may be at	Existing caravan and camping site. Part of the site is within the 1 in 200 flood extent. SEPA hold records of flooding at the site during Storm Frank and their mapping may not fully account for the small watercourse that flows through the site. LDP will

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
						risk from surface water flooding)	need to highlight that if further development or change of layout is proposed flood risk information will be required. Site layout may be limited depending on findings of FRA.
Dinnet	Land to east	H1	Residential – 15 dwellings	Y (Site adjacent to 1 in 200 flood extent)	N	Y (Some small areas adjacent to site may be at risk of surface water flooding)	Site is adjacent to medium likelihood fluvial flood extent. SEPA have no records of flooding at the site, although record of high water levels in Loch Kinord causing burn to burst its banks in Jan 2016. The LDP will need to highlight that further flood risk information will be required and that site layout may be limited depending on findings of FRA.
	Former Steading	ED1	Economic Development	Y (Site adjacent to 1 in 200 flood extent)	N	Y (Small part of site may be at risk of surface water	Site is adjacent to medium likelihood fluvial flood extent, and a small area within the site may be at risk of surface water flooding. LDP will need to identify that further flood risk

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
						flooding)	information may be required depending on site layout and proposed use.
Highland							
An Camas Mor	An Camas Mor	EP1	Existing consent for development of a new community (1500 houses; associated business, community facilities and provision of infrastructure).	Y (Part of the site is within the 1 in 200 flood extent)	N	Y (Some parts of the site may be at risk of surface water flooding)	A FRA has shown that the site and new access road is free from flood risk, but that the access road may increase flood risk elsewhere. LDP will need to highlight that detailed plans will need to demonstrate that proposal will not increase flood risk elsewhere. Should the extant permission expire or be varied a revised FRA will be required to identify the functional floodplain and developable area of the site.
Aviemore	Aviemore Highland Resort	M1	Mixed use	Y (Small part of the site is within the 1 in 200 flood extent)	Y (Small watercourse runs through part of the site and feeds into the	Y (Some small parts of the site may be at risk of	Existing planning permission for residential use in northern part of site, which has been implemented. SEPA hold no new flood information in relation to this site. FRA may be required

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
					Aviemore Burn)	surface water flooding)	depending on proposed future uses and site layout. Drainage Impact Assessment may be required to address surface water flooding.
	Land at Laurel Bank	M2	Mixed use	Y (1 in 200 flood extent lies along / adjacent to northern boundary)	N	Y (Small area of potential surface water flood risk in northern part of site)	LDP will need to highlight that further flood risk information may be required depending on site layout and proposed uses. Drainage Impact Assessment may be required to address surface water flooding.
	Dalfaber	H1	Residential – 10 dwellings	Y (Part of the site is within the 1 in 200 flood extent)	N	Y (Part of the site may be at risk of surface water flooding)	Existing planning permission. SEPA hold no new flood information for the site. Should the existing permission expire or be varied, a revised FRA will be required to identify the functional floodplain and developable area. This should be

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
							used to inform any revised site layout.
	Dalfaber	H2	Residential – 83 dwellings	Y (Part of the site is within the 1 in 200 flood extent)	N	Y (Part of the site may be at risk of surface water flooding)	Existing planning permission. SEPA hold no new flood information for the site. Should the existing permission expire or be varied, a revised FRA will be required to identify the functional floodplain and developable area. This should be used to inform any revised site layout.
	North Aviemore	LTH1 / LTH2	Long-term housing	N	Y (No. of small watercourses / drains cross the site)	Y (Parts of the site may be at risk of surface water flooding)	Parts of the site may be at risk of surface water flooding and a no. of small watercourses / drains cross the site. Although not allocated for development within the plan period, LDP will need to identify that FRA may be required to support any planning application depending on site layout. Drainage Impact Assessment may also be required to address surface

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
							water flooding issues.
	Dalfaber Industrial Estate	ED1	Economic development	N	Y (Small watercourse just outside northern boundary)	Y (Parts of site may be at risk of surface water flooding)	Existing economic development site with minor new extension to the north. SEPA hold no new flood information. Any future development / redevelopment proposals will need to take account of potential risk of surface water flooding.
	Myrtlefield Industrial Estate	ED2	Economic development	N	N	N (Although some areas of surface water flood risk in vicinity of site)	SEPA hold no new flood information for the site. No significant flooding issues anticipated.
	Granish	ED3	Economic development	N	N	Y (Parts of site may be at risk of surface water	Parts of the site may be at risk of surface water flooding. Drainage Impact Assessment may be required to address surface water flooding issues.

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
						flooding)	
	Land off Dalfaber Drive	C1	Community uses	N	N	N	SEPA hold no new flood information for the site.
	Former School Playing Field	C2	Community uses	N (although 1 in 200 year flood extent lies just outside western boundary)	N	Y (Parts of the site may be at risk of surface water flooding)	SEPA hold no new flood information for the site. FRA may be required depending on proposed use of the site. FRA should identify functional flood plain and be used to inform site layout.
	South of Dalfaber Industrial Estate	C3	Community uses (proposed new hospital)	N	N	Y (Parts of site may be at risk of surface water flooding)	SEPA hold no new flood information. Parts of the site may be at risk of surface water flooding. Drainage Impact Assessment may be required to address surface water flooding issues.
Boat of Garten	Steam Railway Station	ED1	Economic development	N	N	Y (Small parts of site may be at risk	SEPA hold no new flood records for the site. No significant flooding issues anticipated.

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
						of surface water flooding)	
	Caravan Park	T1	Tourism	N	N	N	SEPA hold no new flood records for the site. No significant flooding issues anticipated.
Carr-Bridge	Carr Road	H1	Residential – 36 dwellings	N	N	Y (Parts of site may be at risk of surface water flooding)	SEPA hold no new flood records for the site. Drainage Impact Assessment may be required to address surface water flooding issues.
	Crannich Park	H2	Residential – 22 dwellings	N	Y (Small watercourse runs through the site)	Y (Parts of site may be at risk of surface water flooding)	A watercourse runs through the site which has historically been straightened. LDP should encourage space to be provided to allow restoration and development of natural processes in future. An adequate buffer strip will also be required within the detailed design. Some parts of the site may be at risk of surface water flooding. FRA

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
							will be required and should be used to inform the site layout.
	Land at Railway Station	ED1	Economic development	N	N	Y (Parts of site may be at risk of surface water flooding)	Existing economic development allocation. Drainage Impact Assessment may be required to address surface water flooding issues.
	Garage	ED2	Economic development	Y (Southern part of site lies within 1 in 200 flood extent)	N	Y (Parts of site may be at risk of surface water flooding)	Existing economic development site. SEPA hold no new flood information, but do have records of high water levels from River Dulnain in August 2014. LDP will need to identify that further flood risk information may be required to support any further development proposals on the site.
	Former Saw Mill	ED3	Economic development	Y (Northern and central parts of the site are within	Y (Small watercourse / drain runs	Y (Parts of the site may be at	SEPA hold no records of flooding at the site, but do have records of flooding in the immediate vicinity. The LDP will

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
				1 in 200 flood extent)	through northern part of site)	risk of surface water flooding)	need to identify that a FRA will be required and should be used to inform site layout.
	Landmark	T1	Tourism	N	Y (Small watercourse runs through the site)	Y (Parts of site may be at risk of surface water flooding)	Existing tourism site with allocation providing scope for additional expansion. SEPA hold no new flood information for the site. The LDP will need to identify that FRA may be required to assess the risk from the small watercourse. Drainage Impact Assessment may be required to address surface water flooding issues.
Cromdale	Kirk Road	H1	Residential – 20 dwellings	N	N	Y (Small part of site may be at risk of surface water flooding	SEPA hold no new flood records for this site. Although no significant flooding issues anticipated, Drainage Impact Assessment may be required to address surface water flood risk.
	Auchroisk Park	H2	Residential – 22 dwellings	N	N	N	SEPA hold no new flood records for this site. No significant

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
							flooding issues anticipated.
	The Smoke House	ED1	Economic development	Y (Northern part of site is within 1 in 200 flood extent. Western boundary lies adjacent to 1 in 200 flood extent)	N	N (Although an area adjacent to the southern boundary may be at risk of surface water flooding)	Existing economic development allocation. SEPA hold no new flood information for this site. As the site is located adjacent to the medium likelihood fluvial flooding zone, the LDP will need to identify that flood risk information may be required to support any future planning application for the site. Drainage Impact Assessment may also be required to address surface water flood risk.
Dalwhinnie	Land by Garage	H1	Residential – 6 dwellings	N (Site is outwith but close to 1 in 200 flood extent)	N	N	Site is outwith but close to medium likelihood flood extent. SEPA have no records of flooding at the site. The LDP will need to highlight that further flood risk information may be required and that site layout may be limited depending on findings of FRA.
	Garage	ED1	Economic	Y	N	N	SEPA hold no new flood

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
			development	(Northern part of site lies within 1 in 200 flood extent)			information for this site. A small part of the site is within the medium likelihood fluvial flood zone. The LDP will therefore need to highlight that further flood risk information may be required to support any future development proposals, and that site layout may be limited depending on findings of FRA.
Dulnain Bridge	West of Play Area	H1	Residential – 20 dwellings	N	N	Y (Part of the site may be at risk of surface water flooding)	SEPA hold no new flood records for this site. It is outwith the medium likelihood fluvial flood extent and elevated above River Dulnain. Part of the site may be at risk of surface water flooding. Drainage Impact Assessment may be required to address surface water flood risk.
	Adjacent to A938	H2	Residential – 20 dwellings	Y (1 in 200 flood extent is located just outside the southern	Y (Small watercourse runs along the northern	Y (Part of the site may be at risk of	Existing planning permission. SEPA hold no new flood records for the site, although note that there is also a drain within the site boundary. LDP will need to

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
				boundary)	boundary)	surface water flooding)	identify that further flood risk information will be required to support any future application for the site.
	Garage site	ED1	Economic development	N	N	N (Although areas of surface water flood risk in vicinity of site)	Existing economic development site. SEPA hold no new flood information for this site. If further development / redevelopment is proposed Drainage Impact Assessment may be required to address surface water issues.
Glenmore	Camping Site	T1	Tourism	Y (Parts of the site are within 1 in 200 flood extent)	Y (Small watercourses run through the site)	Y (Parts of site may be at risk of surface water flooding)	Existing camp site. SEPA hold no new flood information for the site. LDP will need to identify that FRA will be required for any new development or change in layout on the site.
	Glenmore Lodge	T2	Tourism	Y (1 in 200 flood extent close to southern boundary)	N	Y (Small parts of site may be at risk	Existing tourism related business. SEPA hold no new flood information for the site. LDP will need to identify that FRA may be required for any

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
						of surface water flooding)	future development on the site, depending on site layout and proposed use.
Grantown-on-Spey	Beachen Court	H1	Residential – 53 dwellings	Y	N	Y (Part of the site may be at risk of surface water flooding)	Kylintra Burn runs along north-west boundary of the site. FRA was prepared to inform recent planning permission and enabled SEPA to withdraw their original objection to the application. LDP will need to highlight that a revised FRA may need to be submitted in support of any further planning applications for the site.
	Castle Road	H2	Residential – 50 dwellings	N	Y (Small watercourses run along the boundary of the site)	Y (Parts of the site may be at risk of surface water flooding)	SEPA hold no new flood records for this site. LDP will need to highlight requirement for FRA to consider implications of small watercourses. Drainage Impact Assessment may also be required to address surface water issues.
	Wood-lands	ED1	Economic development	N	N	Y (Some	SEPA hold no new flood records for the site. Site is in current use

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
	Industrial Estate					parts of the site may be at risk of surface water flooding)	for economic development purposes. LDP will need to identify that any future development proposals may require Drainage Impact Assessment to address surface water issues.
	Caravan Park	T1	Tourism	Y (Site lies adjacent to 1 in 200 flood extent)	Y (Small watercourse runs through part of site)	Y (Some parts of the site may be at risk of surface water flooding)	Site is in current use for tourism purposes and allocation provides some scope for expansion of current use. LDP will need to identify that proposals for further development or revision to site layout will require FRA to identify functional flood plain and developable area.
	Adjacent play area, Mossie Road	C1	Community use	N	N	N (Although areas of surface water flood risk in vicinity of site)	SEPA hold no new flood information for the site. No significant flood risk issues anticipated, although Drainage Impact Assessment may be required to address surface water issues.

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
	Speyside Railway extension – future terminus	C2	Community use – proposed site of terminus for steam railway extension	N (1 in 200 flood extent close to eastern boundary)	Y (Small watercourses run along site boundary)	Y (Some parts of the site may be at risk of surface water flooding)	LDP will need to identify that FRA will be required to identify functional flood plain and developable area. Drainage Impact Assessment may also be required to address surface water issues.
Inverdruie & Coylum-bridge	Camping Site	T1	Tourism	Y (Parts of the site are within 1 in 200 flood extent)	Y (Small watercourse runs through the site)	Y (Parts of site may be at risk of surface water flooding)	Existing camp site. SEPA hold no new flood information for the site. LDP will need to identify that FRA will be required for any new development or change in layout on the site.
Kincraig	Opposite School	H1	Residential – 40 dwellings	N	Y (Small watercourse runs along western boundary)	Y (Part of site may be at risk of surface water flooding)	SEPA hold no new flood records for the site. A small watercourse runs along the site boundary which is culverted under a nearby road. LDP will need to highlight that an FRA may be required to support development proposals.

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
							Drainage Impact Assessment may also be required to address surface water issues.
	Baldow Smiddy	ED1	Economic development	N	Y (Small watercourse adjacent to south-western boundary)	N	Existing economic development site. SEPA hold no new flood risk information. LDP will need to identify that an FRA may be required to support any future development proposals.
	North of B9152	ED2	Economic development	N	Y (Small watercourses run along northern and southern boundaries)	N	Small watercourses run along site boundaries. LDP will need to highlight that an FRA may be required depending on proposed use and site layout.
Kingussie	Land between Ard-broilach Road and Craig an Darach	H1	Residential – 300 dwellings	N	N	Y (Some small areas within the site may be at risk of surface water flooding)	Existing planning permission. SEPA hold no new flood records for this site. Some small parts of the site may be at risk of surface water flooding. LDP will need to highlight that Drainage Impact Assessment may be required to address surface water issues.

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
	Council Depot	ED1	Economic development	Y (Southern part of site is located in 1 in 200 flood extent)	N	N	Existing economic development site. SEPA hold records of flooding from 1990. LDP will need to identify that further flood risk information may be required to support any future development proposals. FRA will need to identify functional flood plain and inform site layout.
	Mc Cormack's Garage	ED2	Economic development	Y (Site lies adjacent to 1 in 200 flood extent)	N	N	Existing economic development site. SEPA hold no new flood information. LDP will need to identify that FRA may be required to support any future development proposals.
	Car Park	C1	Car parking	Y (Small part of site lies within 1 in 200 flood extent)	N	N	Existing car park, identified to be protected from development.
	Car Park	C2	Car parking	N	N	Y (Area of surface water flood risk	Existing car park, identified to be protected from development.

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
						adjacent to site)	
	Am Fasgadh	C3	Community uses – Site of former Highland Folk Museum, identified for community uses	Y (Site located within 1 in 200 flood extent)	N	Y (Part of site may be at risk of surface water flooding)	SEPA hold records of flooding along Spey Street and at the sewage works. LDP will need to identify that FRA will be required to support any redevelopment proposals. FRA will need to identify functional flood plain and developable part of the site.
	Caravan Park	T1	Tourism	Y (Eastern part of site lies within 1 in 200 flood extent)	Y (Small watercourses within / adjacent to site boundary)	Y (Part of site may be at risk of surface water flooding)	Site is in current use for tourism purposes and allocation provides some scope for expansion of current use. LDP will need to identify that proposals for further development or revision to site layout will require FRA to identify functional flood plain and inform site layout.
Nethy Bridge	Lettoch Road	H1	Residential – 20 dwellings	Y (Western boundary of site is adjacent to 1 in	Y (Small watercourse runs along northern	N	LDP will need to identify that FRA may be required depending on site layout.

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
				200 flood extent)	boundary)		
	Land at Lynstock Crescent	H2	Residential – 4 dwellings	Y (Part of site is within 1 in 200 flood extent)	N	Y (Small part of site may be at risk of surface water flooding)	LDP will need to identify that FRA will be required and this should be used to inform site layout. Parts of the site may not be appropriate for development so FRA will need to establish developable area.
Newton-more	Land between Perth Road and Station Road	H1	Residential – capacity for 120 dwellings and consent for 81 houses	Y (Part of the site lies within the 1 in 200 flood extent)	N	Y (Some parts of the site may be at risk of surface water flooding)	The southern part of the site and areas along the SE and SW boundaries are located within the 1 in 200 flood extent. SEPA hold no new flood records for the site. The LDP will need to highlight that FRA will be required to support any further applications for the site. FRA will need to identify functional flood plain. Drainage Impact Assessment may also be required to address surface water issues.
	Rear of Café	ED1	Economic development	Y (1 in 200 flood	N	N	SEPA hold no new flood information for the site. LDP will

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
				extent lies adjacent to southern part of site)			need to identify that FRA may be required depending on site layout.
	Industrial Park	ED2	Economic development	Y (Southern part of site is located in 1 in 200 flood extent)	Y (Small watercourses run through site and along north-eastern boundary)	Y (Part of site may be at risk of surface water flooding)	SEPA hold no new flood information for the site. LDP will need to highlight that FRA may be required to support any future development proposals, depending on site layout. Drainage Impact Assessment may also be required to address surface water issues.
	Highland Folk Museum	T1	Tourism	Y (Parts of site lie within 1 in 200 flood extent)	Y (Multiple watercourses run through the site)	Y (Parts of site may be at risk of surface water flooding)	Existing tourism use with allocation providing scope to enhance existing use. A large site, and although small parts may be affected by flood risk it is likely that most of the area could be developable. LDP will need to identify that FRA may be required to support future development proposals depending on site layout.

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
Moray							
Tomintoul	Land to North East	H1	Residential – 8 houses	N	N	N	SEPA hold no new flood record for this site. The site is outwith flood extent and elevated above Conglass Water. No significant flooding issues are anticipated.
	Lecht Drive	H2	Residential – 8 houses	N	Y (Small watercourse runs adjacent to site boundary)	N	SEPA hold no new flood records for this site. The site is outwith flood extent and elevated above Conglass Water. However, a small watercourse runs along the boundary of the site and the LDP will therefore need to highlight that FRA may be required to assess the risk from this depending on site layout.
	Garage site to North East	ED1	Economic development	N	N	N	Existing economic development use. SEPA hold no new flood information for the site. No significant flooding issues are anticipated.
	Land by A939	ED2	Economic development	N	N	N	SEPA hold no new flood information for the site. No significant flooding issues are

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
							anticipated.
	Land to South West	T1	Tourism Development	N	Y (Small watercourse adjacent to site boundary)	N	Existing tourism use with allocation providing scope to enhance existing use. SEPA hold no new flood information for the site. LDP will need to identify that if further development is proposed, and depending on site layout, FRA may be required to assess the risk from the small watercourse.
Perth and Kinross							
Blair Atholl	Old Bridge of Tilt	H1	Residential – 20 dwellings	N (Although 1 in 200 flood extent lies approx. 30m to west of site)	N	N	The site lies outwith the medium probability fluvial flood area. SEPA hold no new flood information for the site. However, due to steep topography Drainage Impact Assessment will be required to address surface water flooding.
	Main Road	H2	Residential – 10 dwellings	N	Y (Small watercourse runs along eastern	N (Although small areas of	SEPA hold no new flood information for the site. LDP will therefore need to highlight that FRA will be required to assess

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
					boundary)	potential surface water flood risk lie close to site boundary)	the risk from the small watercourse adjoining the site. Due to steep topography Drainage Impact Assessment will be required to address surface water flooding.
	Sawmill Yard	ED1	Economic development	Y (Majority of site lies within 1 in 200 flood extent)	N	Y (Parts of site may be at risk of surface water flooding)	Existing economic development site. SEPA hold no new flood information for the site. LDP will need to highlight that, should any further development be proposed, FRA will be required depending on proposed use. Drainage Impact Assessment may also be required to address surface water flooding.
	Blair Castle Caravan Park	T1	Tourism	Y (1 in 200 year flood extent lies adjacent to eastern and southern boundaries and	N	Y (Parts of site may be at risk of surface water flooding)	Existing caravan park. SEPA hold no new flood information for the site. LDP will need to identify that any further development or increase in caravan numbers will require a Flood Risk Assessment to

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
				intersects a small area in the southernmost part of the site)			identify the functional floodplain and developable area. Drainage Impact Assessment may also be required to address surface water flooding.
	Caravan Park	T2	Tourism	Y (Western part of site lies within 1 in 200 year flood extent)	N	N	Existing caravan park. SEPA hold records of flooding from the River Tilt in November 2014. LDP will need to identify that any further development or increase in caravan numbers will require a Flood Risk Assessment to identify the functional floodplain and developable area. Drainage Impact Assessment may also be required to address surface water flooding.
	Visitor Gateway	T3	Tourism	Y (1 in 200 year flood extent adjacent to site)	N	Y (Areas of surface water flood risk adjacent to site)	Existing visitor gateway centre, with extant planning permission for some further development which has not yet been implemented. SEPA hold no new flood record for this site. LDP will need to highlight that should

Site Information				Flood Risk Appraisal			
Settlement	**Site Name**	**Site Ref.**	**Proposed Use**	**Medium-High Risk of Fluvial Flooding? (Y/N) (within or adjacent to indicative 1:200 flood outline)**	**Small watercourse(s)? (Y/N)**	**Surface water hazard? (Y/N)**	**Comments**
							the existing consent be varied, or any further development proposed, FRA will be required. Drainage Impact Assessment may also be required to address surface water flooding.
Calvine	Old Struan School	C1	Community uses	N	N	N	No significant flooding issues anticipated.

Appendix 1

Flood Risk Management Strategy Extracts – Potentially Vulnerable Areas within the Cairngorms National Park

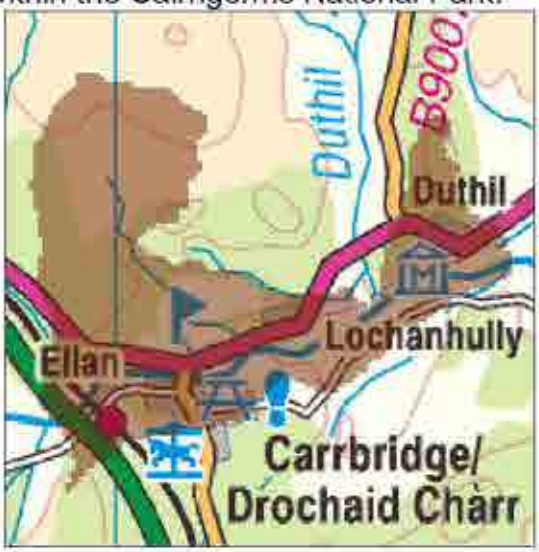
Carrbridge (Potentially Vulnerable Area 05/10)

Local Planning District	Local authority	Main catchment
Findhorn, Nairn and Speyside	The Highland Council	River Spey

Background

This Potentially Vulnerable Area covers the community of Carrbridge and the surrounding mainly rural areas (shown below).

It is approximately 10km^2 and is located within the Cairngorms National Park.



The A9, A938 and B9153 pass through the area. The main watercourse in the area is the River Dulnain.

There are fewer than 10 residential and non-residential properties at risk of flooding.

The Annual Average Damages are approximately £9,000 with the majority caused by surface water flooding.

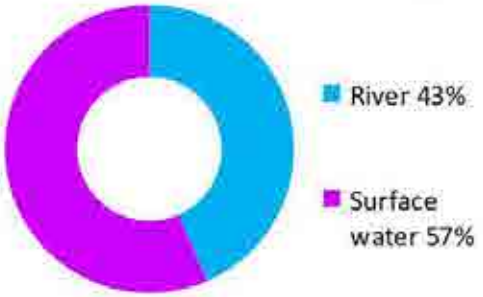


Figure 1: Annual Average Damages by flood source

Summary of flooding impacts

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 potentially affected by flooding include the A9, A938 and B9153. The Inverness to Perth railway line has a risk of being flooded in several locations.

Designated cultural heritage sites and small areas of environmental importance are at risk. This includes parts of the Special Area of Conservation along the River Spey.

The damages associated with floods of different likelihood are shown in Figure 2. For this Potentially Vulnerable Area the highest damages are to non-residential properties and agricultural land.

The location of the impacts of flooding is shown in Figure 3.

	1 in 10 High likelihood	1 in 200 Medium likelihood	1 in 1000 Low likelihood
Residential properties (total 380)	<10	<10	<10
Non-residential properties (total 60)	<10	<10	<10
People	<10	<10	10
Community facilities	0	0	0
Utilities assets	0	0	0
Transport links (excluding minor roads)	Roads at 20 locations Rail at <10 locations	Roads at 30 locations Rail at <10 locations	Roads at 30 locations Rail at <10 locations
Environmental designated areas (km^2)	0.2	0.3	0.3
Designated cultural heritage sites	1	1	1
Agricultural land (km^2)	0.3	0.6	0.7

Table 1: Summary of flooding impacts[1]

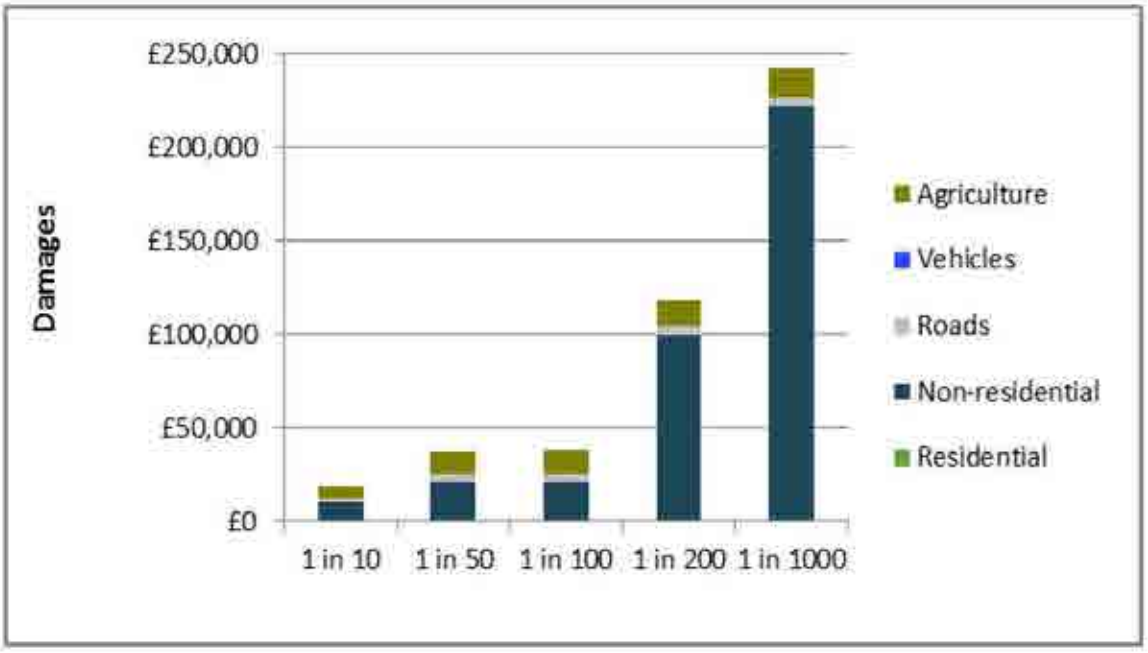


Figure 2: Damages by flood likelihood

History of flooding

The earliest recorded flood was on the River Dulnain in 1829 during the Great Muckle Spate, which severely damaged the local bridge. There were river floods in 1875 and 1892. In 1914 a serious rail accident occurred at Carrbridge, when a bridge was swept away resulting in the death of five people. In 1923 there was flooding at Carrbridge, resulting in four bridges being destroyed and a two mile stretch of road closed for over a month. More recently, the River Dulnain flooded in 2004 and 2014.

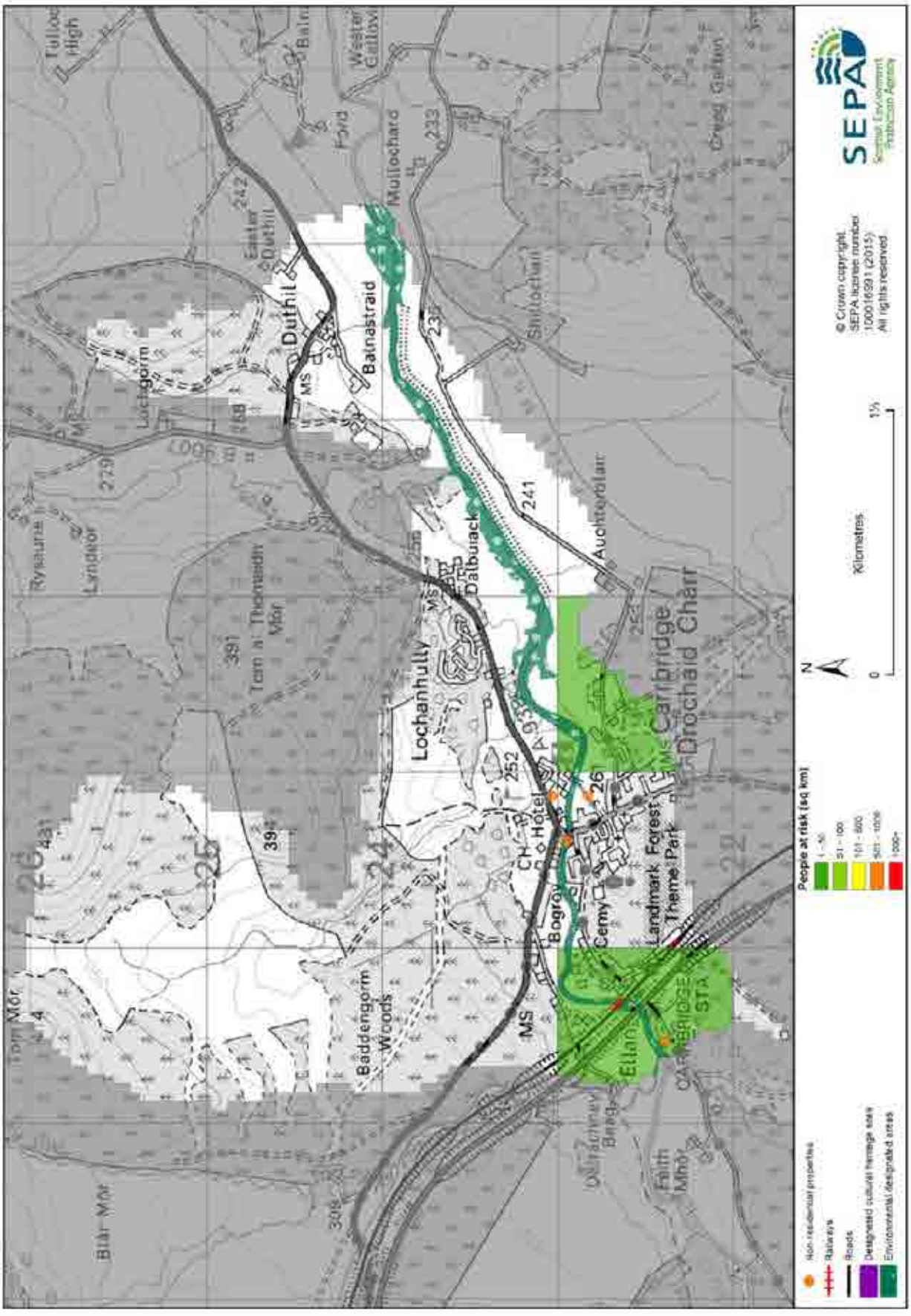


Figure 3: Impacts of flooding

Aviemore and Boat of Garten (Potentially Vulnerable Area 05/11)

Local Planning District	Local authority	Main catchment
Findhorn, Nairn and Speyside	The Highland Council	River Spey

Background

This Potentially Vulnerable Area covers Aviemore, Boat of Garten and the surrounding area (shown below). It is approximately 94km^2 and is within the Cairngorms National Park.

The A95, A9, B970 and B9153 roads pass through the area and the main watercourse is the River Spey.

There are approximately 70 residential and 30 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £180,000 with the majority caused by surface water flooding.

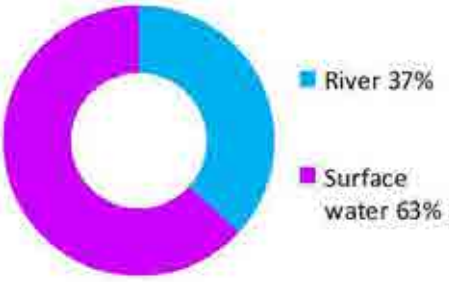


Figure 1: Annual Average Damages by flood source

Summary of flooding impacts

There are areas of surface water flood risk located across Aviemore. River flood risk mostly affects agricultural land adjacent to the River Spey but also impacts on small parts of built-up areas in Aviemore including from the Aviemore Burn.

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 potentially affected by flooding include the A95, A9, B970 and B9153. The Inverness to Perth railway line and the historic Strathspey railway line are at risk of flooding in several locations.

Two designated cultural heritage sites and small areas of environmental importance are also shown to be at risk within this area. These include Special Areas of Conservation, Special Protection Areas, and Sites of Special Scientific Interest at Abernethy, Kinveachy Forest, Glenmore Forest, and the Cairngorms National Park.

The damages associated with floods of different likelihood are shown in Figure 2. For this Potentially Vulnerable Area the highest damages are to residential properties followed by damages to non-residential properties.

The location of the impacts of flooding is shown in Figure 3.

	1 in 10 High likelihood	1 in 200 Medium likelihood	1 in 1000 Low likelihood
Residential properties (total 2,400)	20	70	100
Non-residential properties (total 490)	10	30	30
People	40	160	220
Community facilities	0	0	0
Utilities assets	<10	<10	<10
Transport links (excluding minor roads)	Roads at 60 locations Rail at 20 locations	Roads at 80 locations Rail at 30 locations	Roads at 90 locations Rail at 30 locations
Environmental designated areas (km^2)	4	4	4
Designated cultural heritage sites	2	2	2
Agricultural land (km^2)	5	7	7

Table 1: Summary of flooding impacts[1]

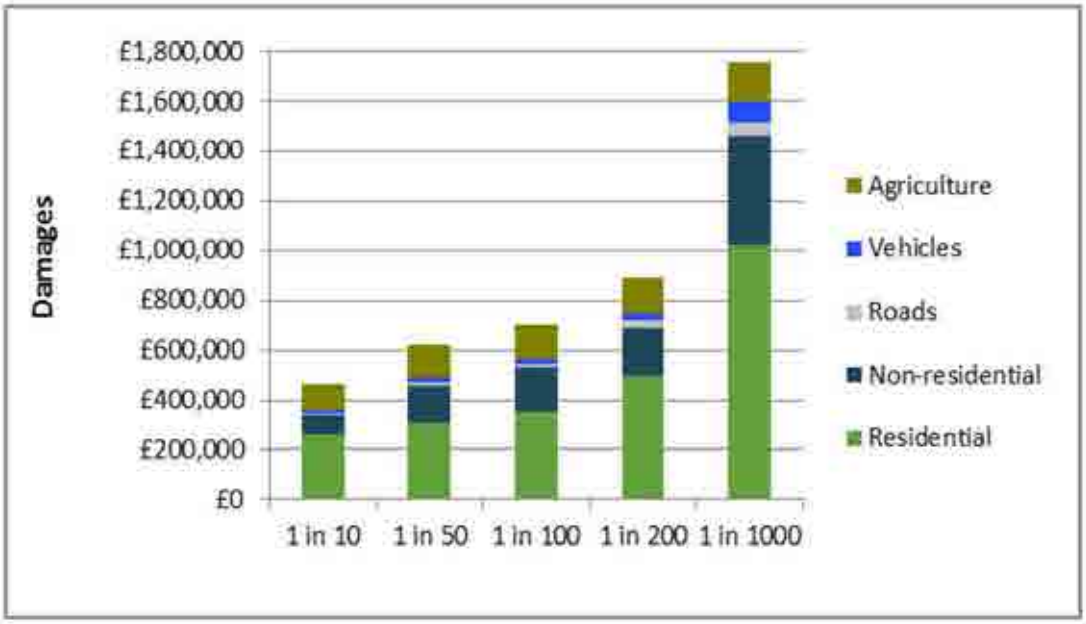


Figure 2: Damages by flood likelihood

[1] Some receptors are counted more than once if flooded from multiple sources

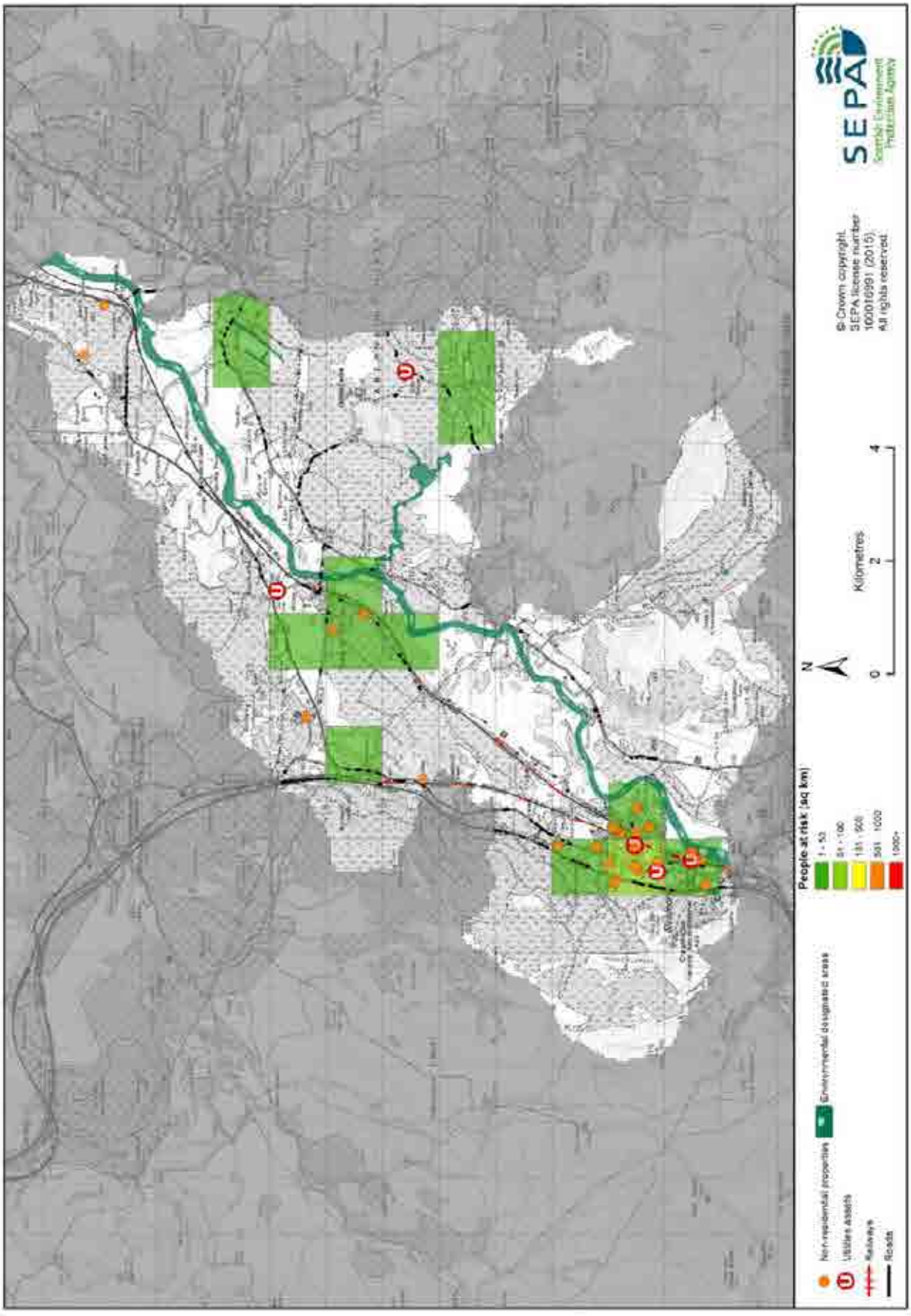


Figure 3: Impacts of flooding

History of flooding

The earliest recorded flood was in 1763, when the Ruidh Magaig Burn damaged the road bridge. The River Spey flooded in 1829 (The Great Muckle Spate), 1865, 1868, 1869, 1875, 1887, 1888, 1892, 1894, 1898, 1906, 1973, 1975, 1978, 1979, 1981, 1983, 1984, 1986, 1989, 1990, 1997 and 2006.

Flooding on the Aviemore Burn also occurred in 1990 and at the same time the Spey was in spate. In January 2005 the Aviemore Burn flooded due to an undersized culvert which has subsequently been replaced.

Kingussie (Potentially Vulnerable Area 05/12)

Local Planning District	Local authority	Main catchment
Findhorn, Nairn and Speyside	The Highland Council	River Spey

Background

This Potentially Vulnerable Area covers the town of Kingussie and surrounding rural areas (shown below). It is approximately 24km^2 and located within the Cairngorms National Park.

The main river in the area is the River Spey. There are also several smaller burns including the Gynack Burn which flows through the centre of Kingussie.

There are approximately 30 residential and 20 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £92,000 with the majority caused by river flooding.

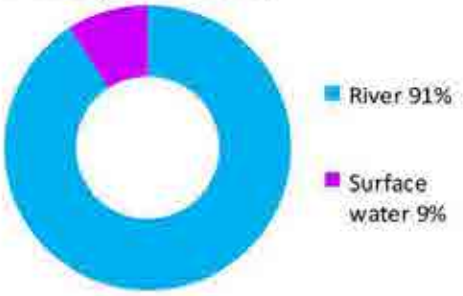


Figure 1: Annual Average Damages by flood source

Summary of flooding impacts

Kingussie is mostly elevated above the floodplain of the River Spey. The Gynack Burn, a tributary of the River Spey, flows through the town and is the main source of river flooding to properties in Kingussie.

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 potentially affected by flooding include the A9, A86, B970 and B9152. The Inverness to Perth railway line has a risk of being flooded at several locations. Two designated cultural heritage sites and an extensive area of environmental importance are shown to be at risk within this area. This includes small areas of Insh Marshes, however it should be noted that flooding of Insh Marshes is essential to maintain the natural characteristics of the site and its designated features.

The damages associated with floods of different likelihood are shown in Figure 2. For this Potentially Vulnerable Area the highest damages are to residential properties followed by damages to non-residential properties. The location of the impacts of flooding is shown in Figure 3.

	1 in 10 High likelihood	1 in 200 Medium likelihood	1 in 1000 Low likelihood
Residential properties (total 700)	<10	30	40
Non-residential properties (total 130)	<10	20	30
People	<10	70	100
Community facilities	0	0	<10 Educational buildings
Utilities assets	0	<10	<10
Transport links (excluding minor roads)	Roads at 20 locations Rail at <10 locations	Roads at 30 locations Rail at 10 locations	Roads at 30 locations Rail at 10 locations
Environmental designated areas (km^2)	12	12	12
Designated cultural heritage sites	2	2	2
Agricultural land (km^2)	4	4	4

Table 1: Summary of flooding impacts[1]

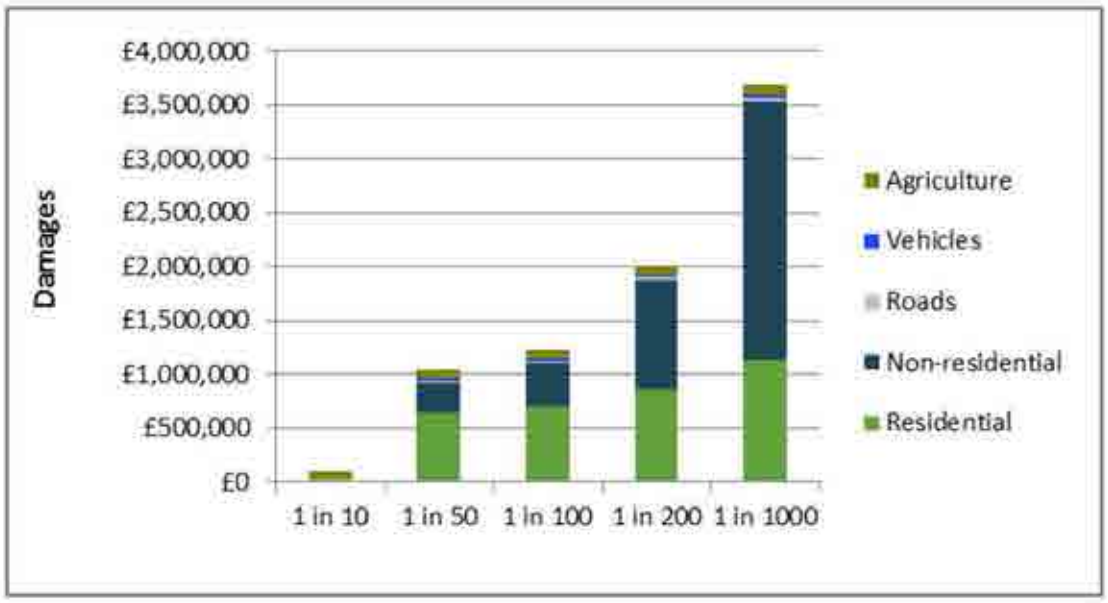


Figure 2: Damages by flood likelihood

[1] Some receptors are counted more than once if flooded from multiple sources

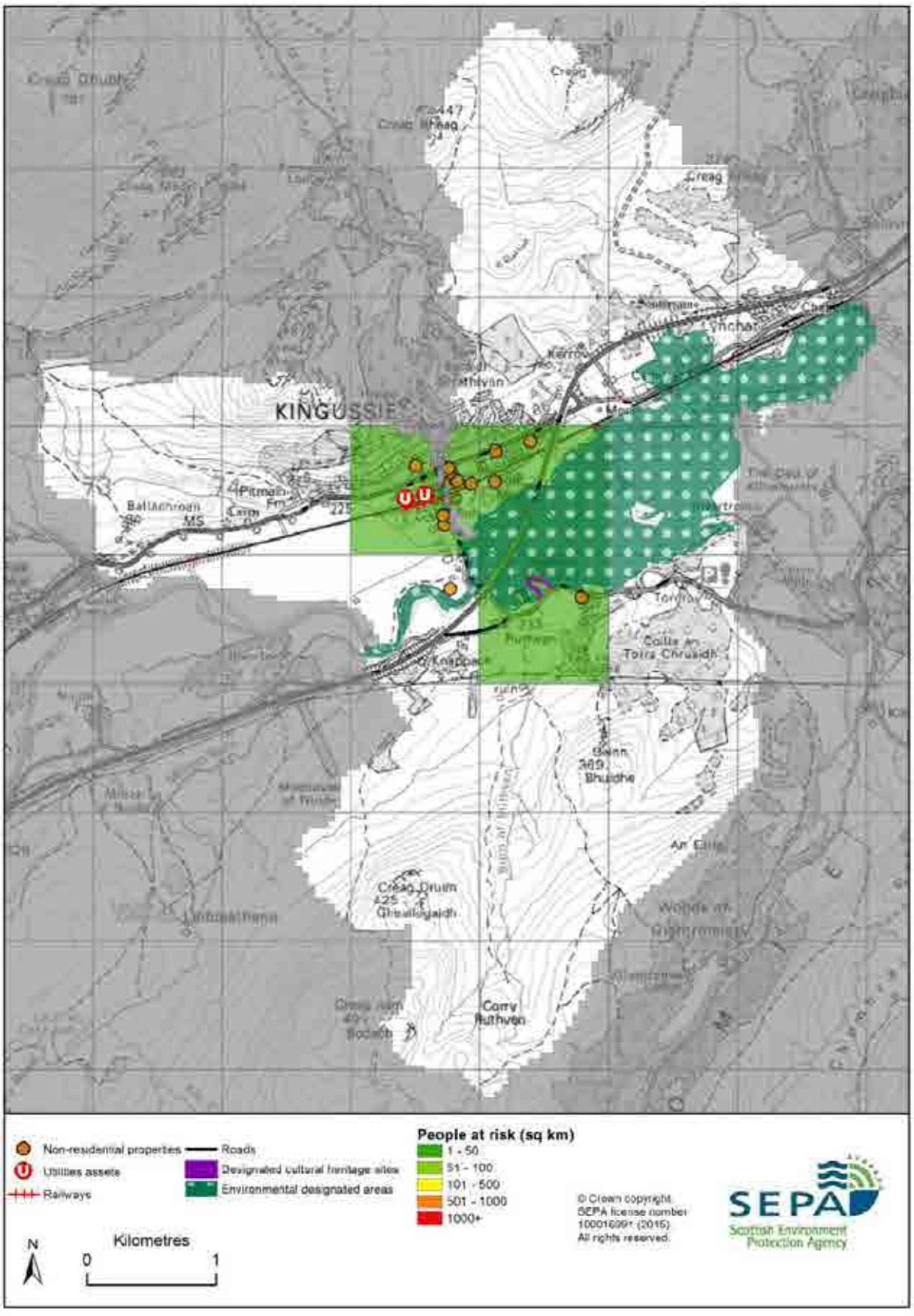


Figure 3: Impacts of flooding

History of flooding

This Potentially Vulnerable Area was affected by the Great Muckle Spate in 1829. The River Spey flooded in 1849, 1883, 1901, 1903, 1904, 1906, 1989, and 1990 with some of these floods associated with snow melt. Flooding affected properties, roads and the railway. Flooding of the railway has sometimes led to the closure of the main line from Perth to Inverness resulting in considerable disruption and economic impacts outside the Potentially Vulnerable Area.

There were floods from the Gynack Burn in 1888, 1990, 2005, 2006, 2008 and 2014, affecting properties and making roads impassable. In 2014, the railway line was closed due to flooding from the Gynack Burn.

Newtonmore (Potentially Vulnerable Area 05/13)

Local Planning District	Local authority	Main catchment
Findhorn, Nairn and Speyside	The Highland Council	River Spey

Background

This Potentially Vulnerable Area covers the town of Newtonmore and surrounding rural area (shown below). It is located within the Cairngorms National Park and is approximately 6km^2.

The A9, A86 roads and the Inverness to Perth railway pass through the area. The main watercourse is the River Spey.

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

The Annual Average Damages are approximately £41,000 with the majority caused by surface water flooding.

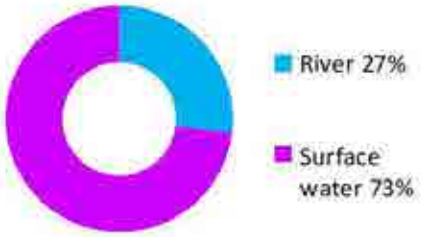


Figure 1: Annual Average Damages by flood source

Summary of flooding impacts

Surface water flood risk is found in localised areas mainly to the south east of Newtonmore. Local knowledge indicates that this assessment underestimates the surface water flood risk in Newtonmore.

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 potentially affected by flooding include the A9, A86 and B9150. The Inverness to Perth railway line is potentially at risk of flooding at several locations. Designated environmental sites are at risk, including small areas of Insh Marshes. However, it should be noted that flooding of Insh Marshes is essential to maintain the natural characteristics of the site and its designated features.

The damages associated with floods of different likelihood are shown in Figure 2. For this Potentially Vulnerable Area the highest damages are to non-residential properties followed by damages to residential properties.

The location of the impacts of flooding is shown in Figure 3.

	1 in 10 High likelihood	1 in 200 Medium likelihood	1 in 1000 Low likelihood
Residential properties (total 660)	<10	20	20
Non-residential properties (total 110)	<10	20	30
People	20	40	50
Community facilities	0	0	0
Utilities assets	0	0	0
Transport links (excluding minor roads)	Roads at 10 locations Rail at <10 locations	Roads at 20 locations Rail at <10 locations	Roads at 20 locations Rail at <10 locations
Environmental designated areas (km^2)	1	2	2
Designated cultural heritage sites	0	0	0
Agricultural land (km^2)	0.5	1	1

Table 1: Summary of flooding impacts[1]

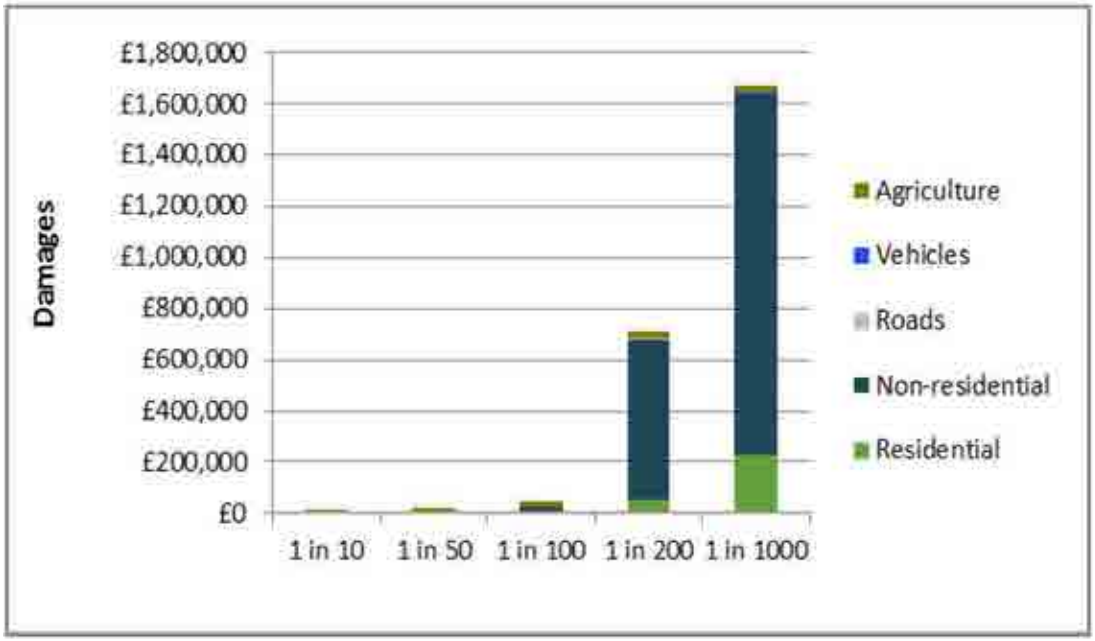


Figure 2: Damages by flood likelihood

[1] Some receptors are counted more than once if flooded from multiple sources

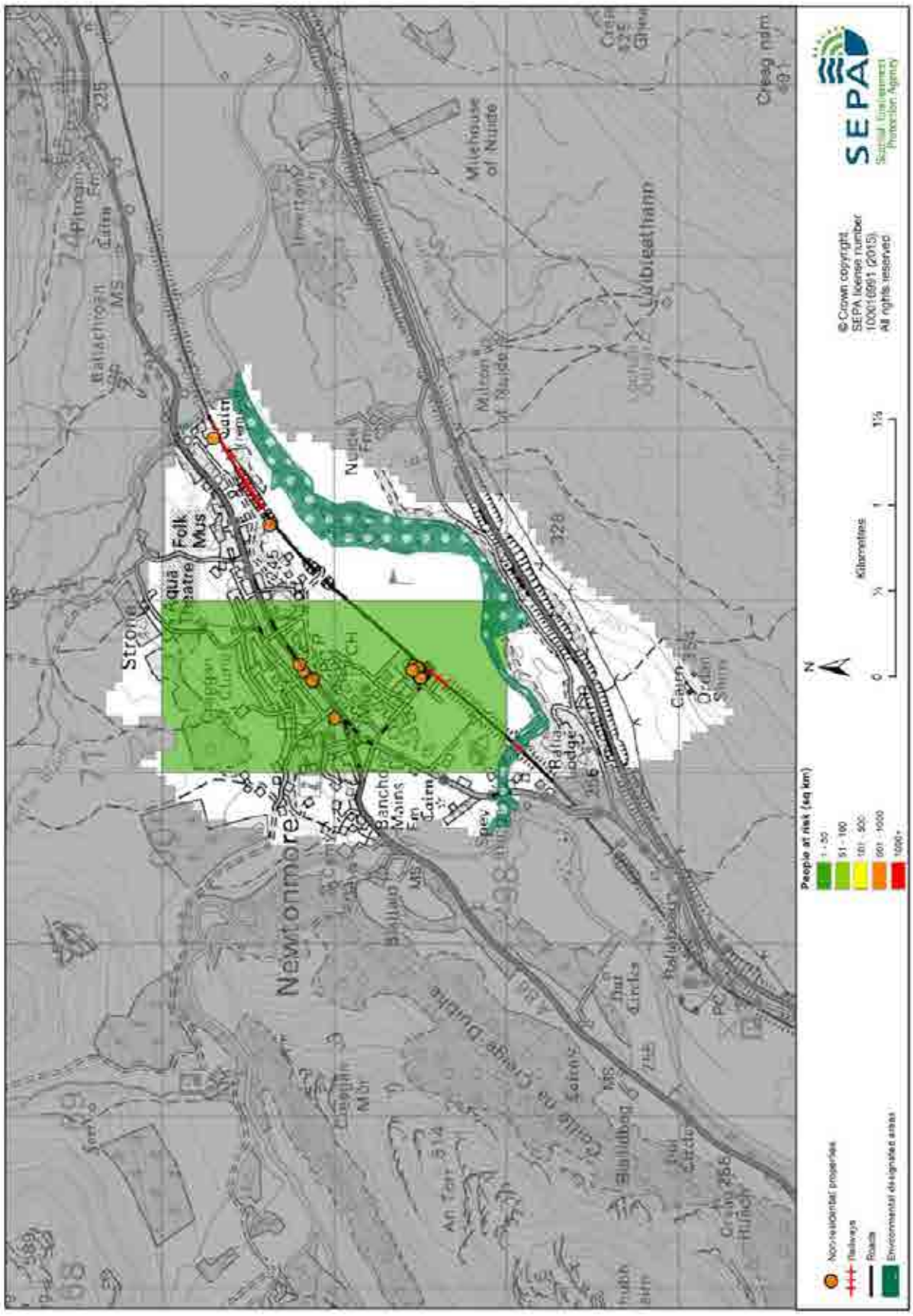


Figure 3: Impacts of flooding

History of flooding

The earliest recorded flood is the Great Muckle Spate of 1829. In 1894 property in Newtonmore was flooded by a burn overtopping its banks. The River Spey caused flooding in 1989 and 1990. In 1997 torrential rain overwhelmed gullies causing the A86 to be flooded.

Surface water and sewer flooding occurred in 2010, 2011 and 2012. The main areas affected by surface water flooding are:

- Main Street between the junctions of Old Glen Road and Laggan Road;
- Main Street from Balavil Hotel to Church Terrace junction and from the village hall to the war memorial and school;
- Church Terrace from Balavil Brae south west towards Craighdu Road.

Dalwhinnie (Potentially Vulnerable Area 05/14)

Local Planning District	Local authority	Main catchment
Findhorn, Nairn and Speyside	The Highland Council	River Spey

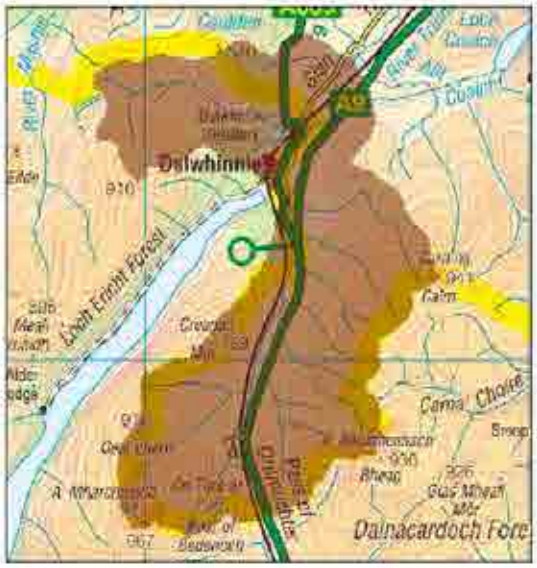
Background

This Potentially Vulnerable Area covers the town of Dalwhinnie and the surrounding rural area (shown right). It is approximately 63km^2 and large parts of it are within the Cairngorms National Park.

The River Truim is the main river in this Potentially Vulnerable Area and there are many small burns draining off the steep hillsides.

There are approximately 20 residential and fewer than 10 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £170,000, all caused by river flooding.



Summary of flooding impacts

The risk of river flooding in this area is associated with the River Truim and its tributaries, particularly around Dalwhinnie and along the A9 corridor. A number of the tributaries have been dammed and diverted for hydropower projects and there is a need to improve understanding of how this affects flood risk.

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 including the A9 and A889, and several locations on the Inverness to Perth railway line have a risk of being flooded. One designated cultural heritage site and small areas of environmental importance are at risk.

The damages associated with floods of different likelihood are shown in Figure 1. For this Potentially Vulnerable Area the highest damages are to non-residential properties and residential properties.

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 80)	20	20	20
Non-residential properties (total 20)	<10	<10	<10
People	40	50	50
Community facilities	0	0	0
Utilities assets	<10	<10	<10
Transport links (excluding minor roads)	Roads at <10 locations Rail at <10 locations	Roads at <10 locations Rail at <10 locations	Roads at <10 locations Rail at <10 locations
Environmental designated areas (km^2)	1	1	1
Designated cultural heritage sites	1	1	1
Agricultural land (km^2)	1	2	2

Table 1: Summary of flooding impacts[1]

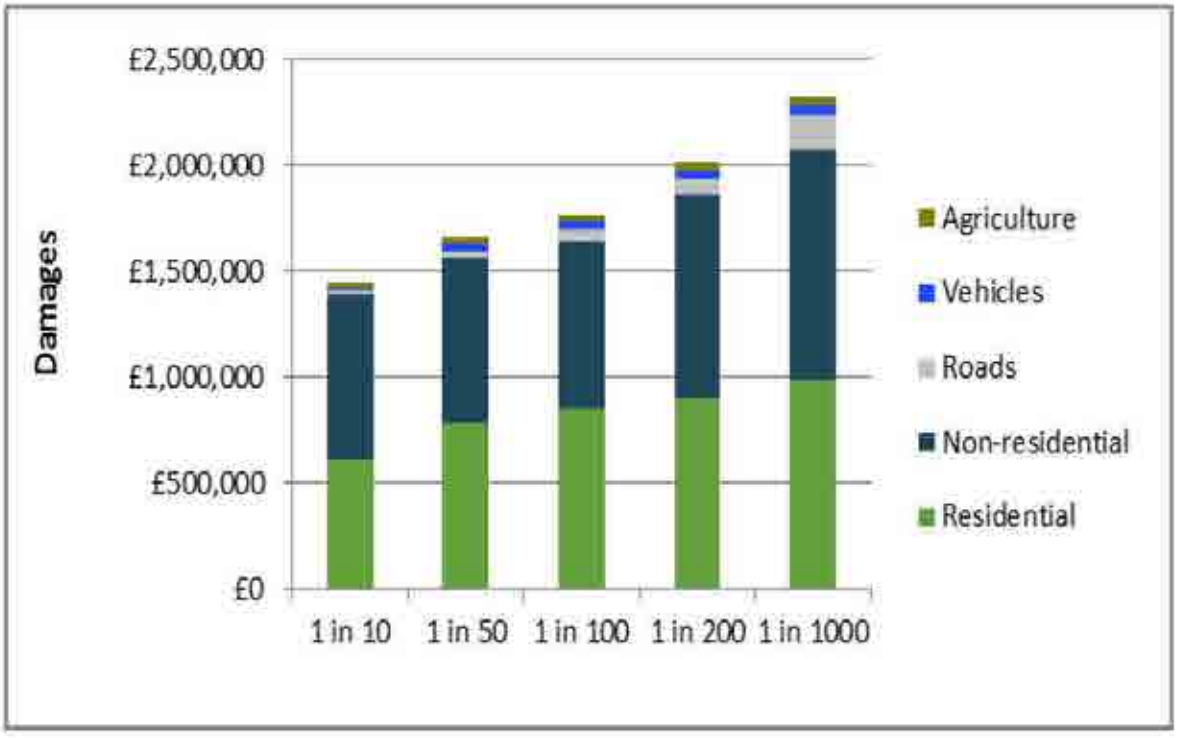


Figure 1: Damages by flood likelihood

History of flooding

There is no record of flooding in this Potentially Vulnerable Area.

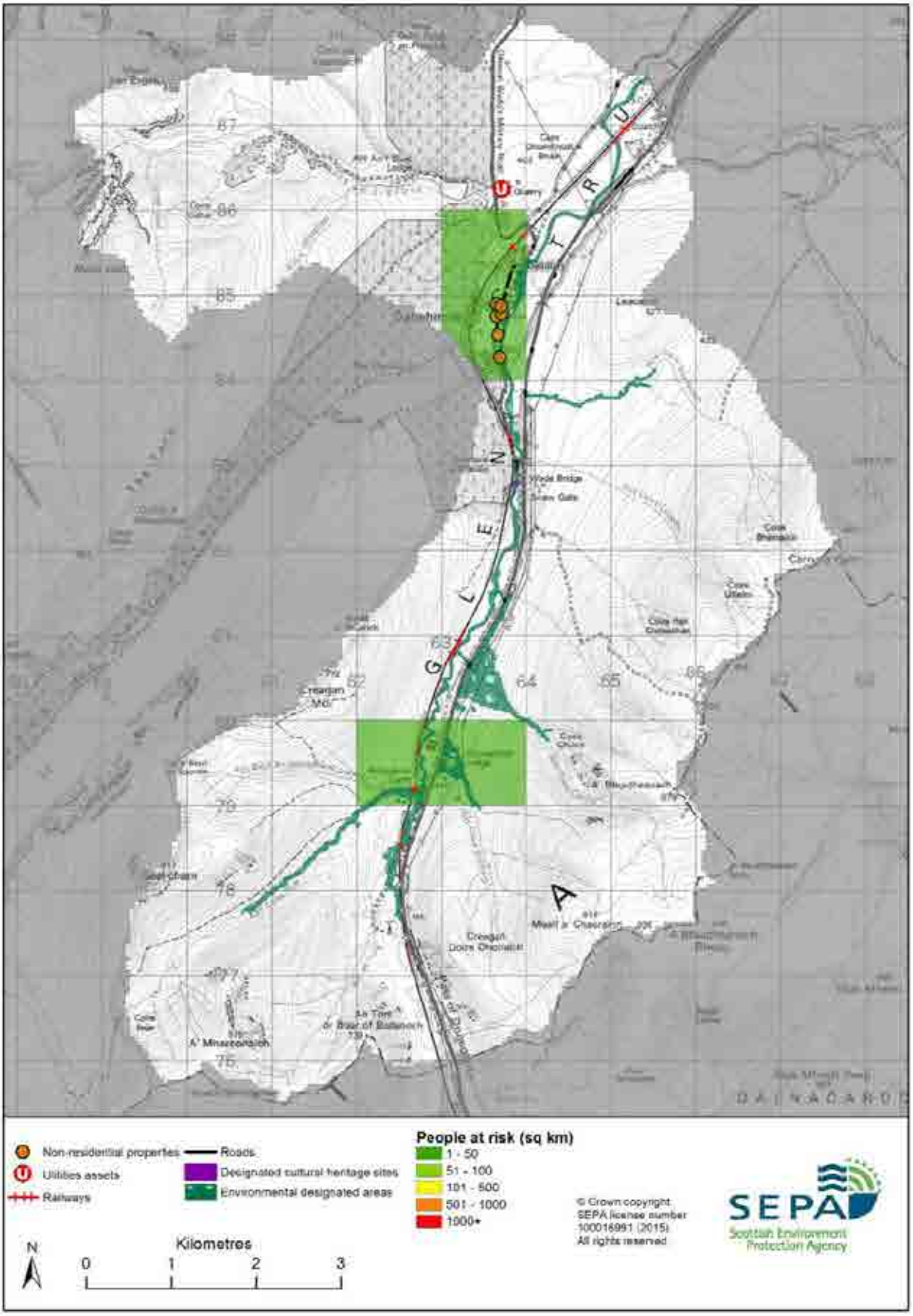


Figure 2: Impacts of flooding

Heugh-head (Potentially Vulnerable Area 06/14)

Local Plan District	Local authority	Main catchment
North East	Aberdeenshire Council	River Don

Background

This Potentially Vulnerable Area includes the villages of Heugh-head, Forbestown, Bellabeg and Waterside. It is approximately 13km^2 and located within the Cairngorms National Park.

The main water course is the River Don.

There are approximately 10 residential and 10 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £95,000 with the majority of these from river flooding.

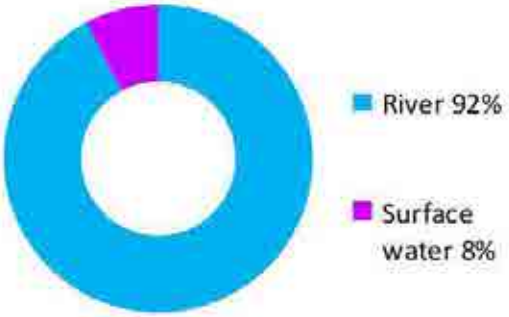


Figure 1: Annual Average Damages by flood source

Summary of flooding impacts

River flood risk is mainly limited to the River Don around Bellabeg and Heugh-head.

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 at risk of flooding include the A944 in several locations. The fire station at Bellabeg is also at risk.

The damages associated with floods of different likelihood are shown in Figure 2. For this Potentially Vulnerable Area the highest damages are to residential properties followed by damages to non-residential properties and roads.

The location of the impacts of flooding is shown in Figure 3.

	1 in 10 High likelihood	1 in 200 Medium likelihood	1 in 1000 Low likelihood
Residential properties (total 80)	<10	10	10
Non-residential properties (total 30)	10	10	10
People	20	30	30
Community facilities	<10 Emergency services	<10 Emergency services	<10 Includes: emergency services and healthcare facilities
Utilities assets	<10	<10	10
Transport links (excluding minor roads)	Roads at 20 locations	Roads at 20 locations	Roads at 20 locations
Environmental designated areas (km^2)	0	0	0
Designated cultural heritage sites	0	0	0
Agricultural land (km^2)	0.5	0.6	0.7

Table 1: Summary of flooding impacts[1]

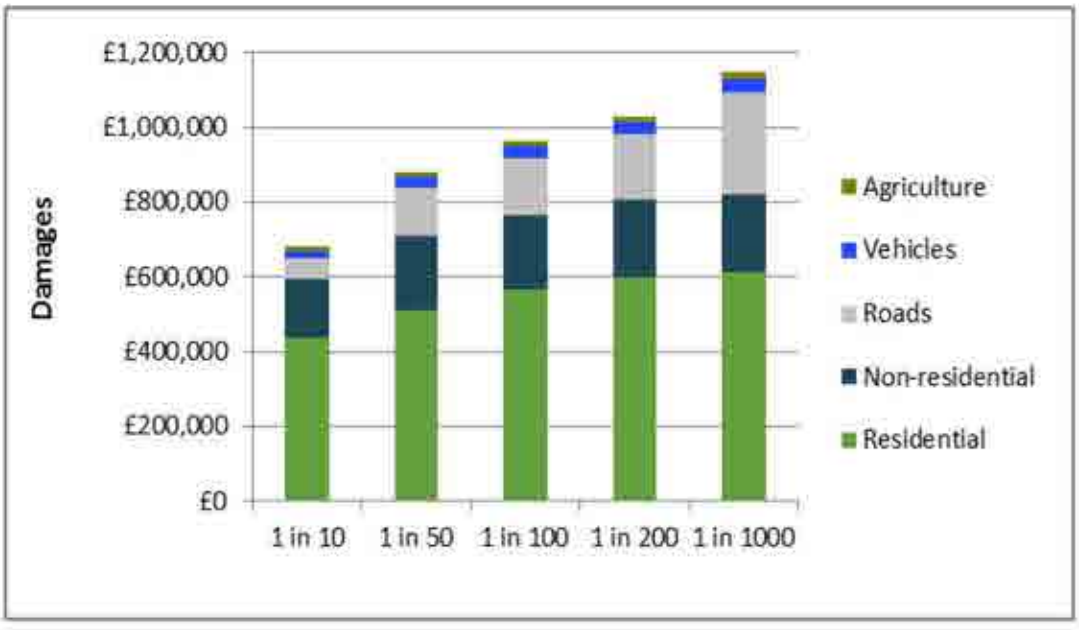


Figure 2: Damages by flood likelihood

History of flooding

There was a surface water flood in August 2006 affecting Strathdon, Waterside and Bellabeg when water ponded in low points of the road. Heavy rainfall falling on steep sloping fields to the south resulted in significant amounts of flood water on the road.

[1] Some receptors are counted more than once if flooded from multiple sources

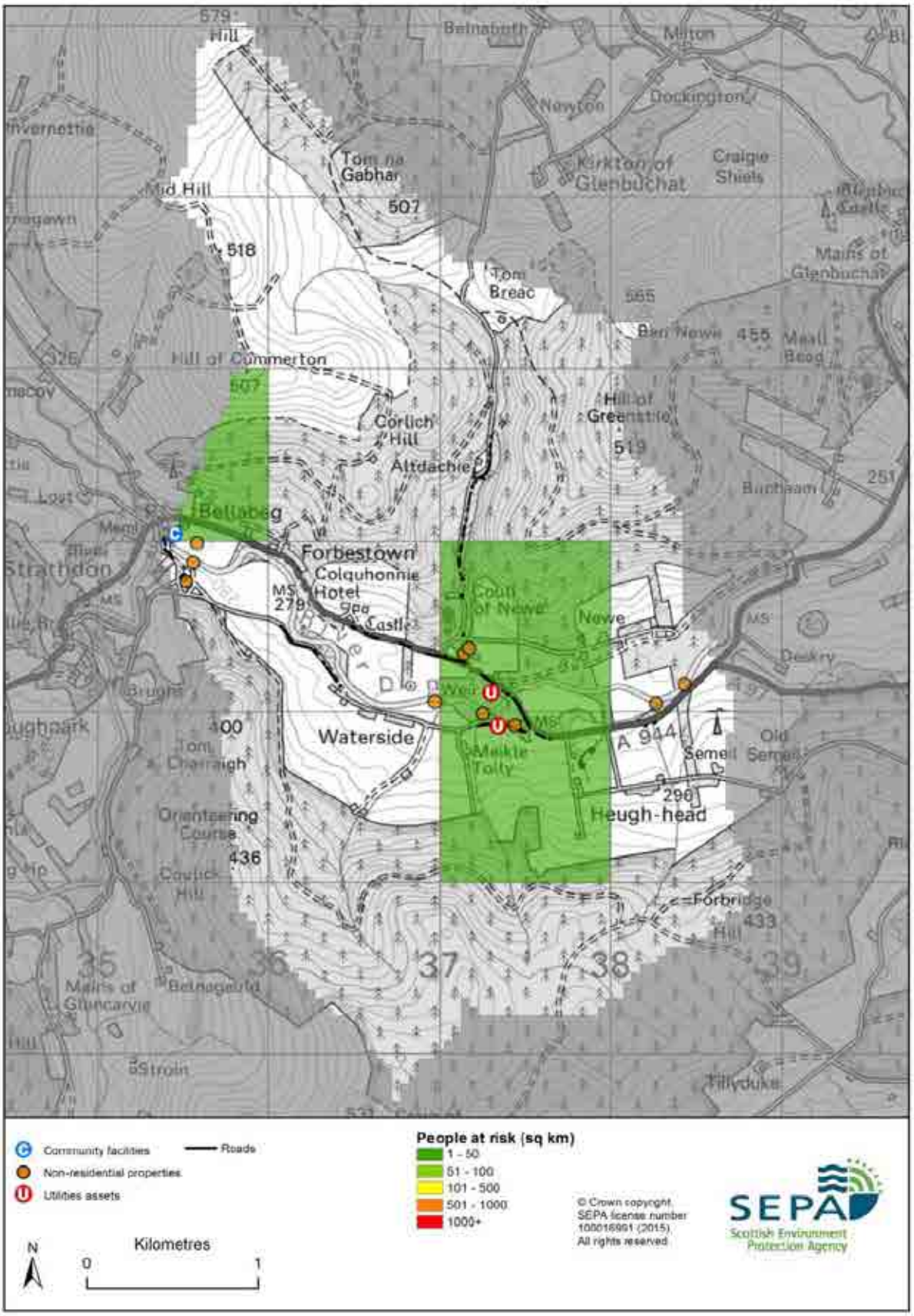


Figure 3: Impacts of flooding

Aboyne (Potentially Vulnerable Area 06/20)

Local Plan District	Local authority	Main catchment
North East	Aberdeenshire Council	River Dee (Grampian)

Background

This Potentially Vulnerable Area includes Tarland and Logie Coldstone, as well as the northern part of the town of Aboyne. It is approximately 125km^2 and located on the eastern edge of the Cairngorms National Park. The A93 and the A97 pass through the area.

The River Dee flows just to the south of the Potentially Vulnerable Area. Several tributaries of the Dee including the Tarland Burn flow through the area.

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

The Annual Average Damages are approximately £240,000 with the majority from river flooding.

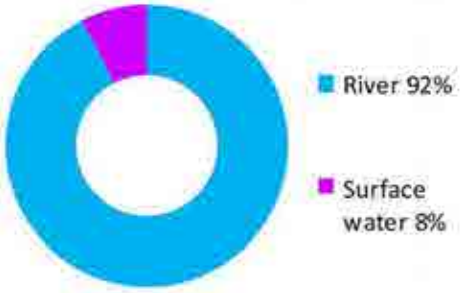


Figure 1: Annual Average Damages by flood source

Summary of flooding impacts

The main areas at risk of river flooding are along the Tarland Burn. This floods mainly agricultural land south east of Tarland village and north east of Coull. Tarland Burn also floods property in eastern Aboyne including Low Road and the A93 close to where it where it joins the River Dee.

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.

Logie Coldstone Primary School, several roads and 10 designated cultural heritage sites are also at risk of flooding.

The damages associated with floods of different likelihood are shown in Figure 2. For this Potentially Vulnerable Area the highest damages are to residential properties followed by damages to non-residential properties.

The location of the impacts of flooding is shown in Figure 3.

	1 in 10 High likelihood	1 in 200 Medium likelihood	1 in 1000 Low likelihood
Residential properties (total 1,400)	40	60	140
Non-residential properties (total 270)	<10	20	30
People	90	140	310
Community facilities	0	<10 Educational buildings	<10 Educational buildings
Utilities assets	<10	<10	10
Transport links (excluding minor roads)	Roads at 60 locations	Roads at 80 locations	Roads at 80 locations
Environmental designated areas (km^2)	0	0	0
Designated cultural heritage sites	9	10	10
Agricultural land (km^2)	4	5	5

Table 1: Summary of flooding impacts[1]

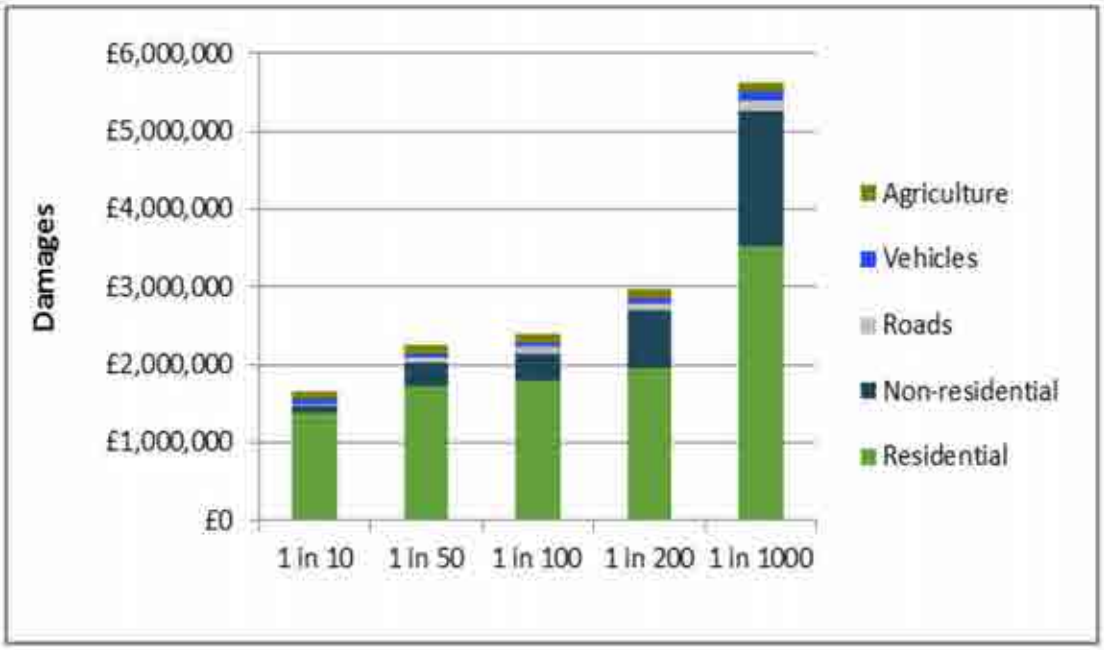


Figure 2: Damages by flood likelihood

[1] Some receptors are counted more than once if flooded from multiple sources

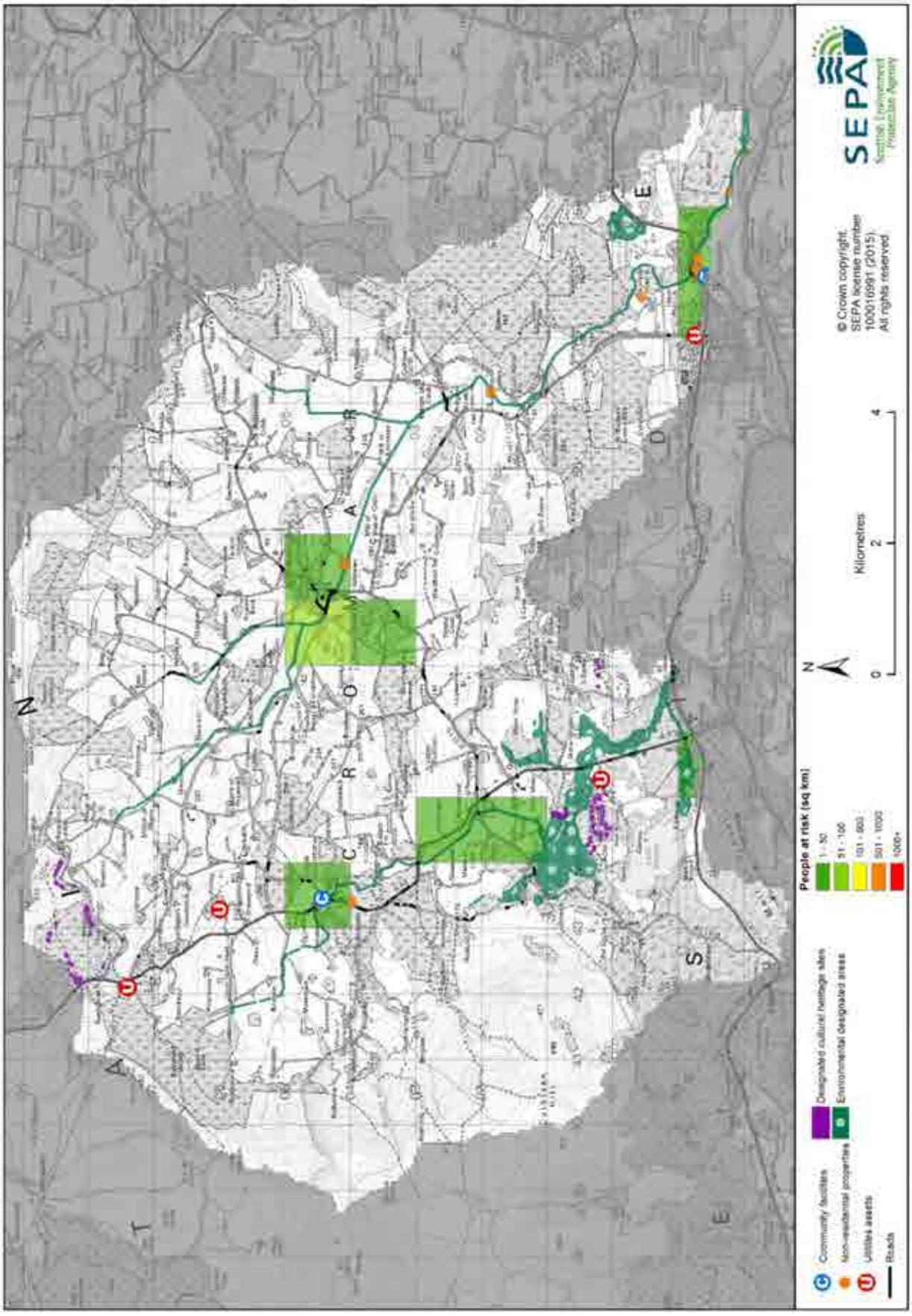


Figure 3: Impacts of flooding

History of flooding

In 2000 and 2002 the Tarland Burn caused flooding in Aboyne and Tarland when it overtopped its banks, flooding properties and roads. Flooding has occurred at Burnside Road, Tarland, due to the Tarland Burn in March 2006 and again in February and November 2009. In December 2005 and July 2009, surface water flooding impacted residential properties in Tarland.

In June 2005 the Logie Burn overtopped its banks causing localised flooding. Surface water flooding has also affected parts of Aboyne, south of the A93 which is just outside the southern boundary of the Potentially Vulnerable Area.

Ballater (Potentially Vulnerable Area 06/22)

Local Plan District	Local authority	Main catchment
North East	Aberdeenshire Council	River Dee (Grampian)

Background

This Potentially Vulnerable Area is based around Ballater and is approximately 7km^2.

The area is located within the Cairngorms National Park and the A93 passes through it.

The main river is the River Dee, which is a Special Area of Conversation for salmon, otters and freshwater pearl mussels.

There are approximately 200 residential and 40 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £230,000. Almost all the damages are caused by river flooding.

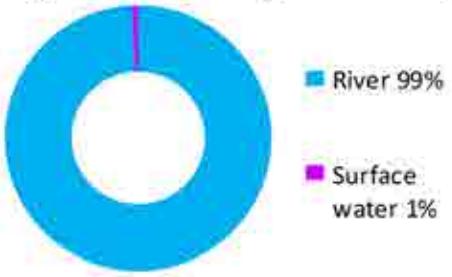


Figure 1: Annual Average Damages by flood source

Summary of flooding impacts

The main areas at risk of river flooding are along the River Dee in south and east Ballater around Salisbury Road, Braichlie Road and Dee Street. Further areas of risk include Tullich Road and Craigview Road.

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.

The caravan site and the fire station are at risk of flooding as are a number of roads, notably the A93, B972 and B976. Small areas of designated environmental sites are also at risk of flooding including the River Dee Special Area of Conservation.

The damages associated with floods of different likelihood are shown in Figure 2. For this Potentially Vulnerable Area the highest damages are to residential properties followed by damages to non-residential properties.

The location of the impacts of flooding is shown in Figure 3.

	1 in 10 High likelihood	1 in 200 Medium likelihood	1 in 1000 Low likelihood
Residential properties (total 960)	<10	200	540
Non-residential properties (total 190)	<10	40	100
People	<10	430	1,200
Community facilities	0	<10 Emergency services	<10 Emergency services
Utilities assets	0	<10	<10
Transport links (excluding minor roads)	Roads at <10 locations	Roads at <10 locations	Roads at 10 locations
Environmental designated areas (km^2)	0.3	0.4	0.4
Designated cultural heritage sites	0	0	0
Agricultural land (km^2)	0.1	0.6	0.8

Table 1: Summary of flooding impacts[1]

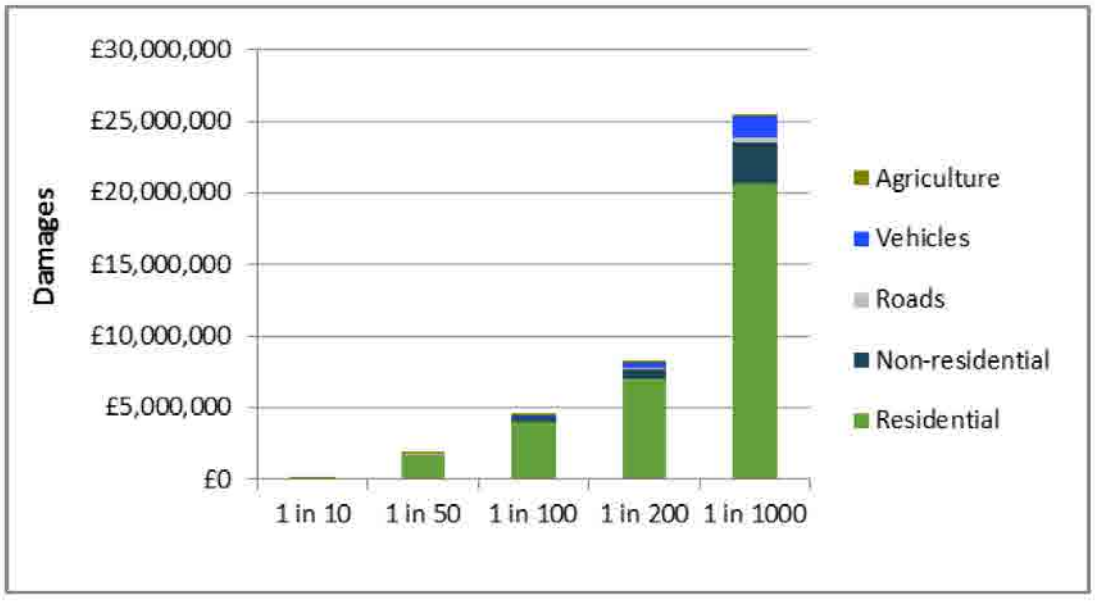


Figure 2: Damages by flood likelihood

[1] Some receptors are counted more than once if flooded from multiple sources

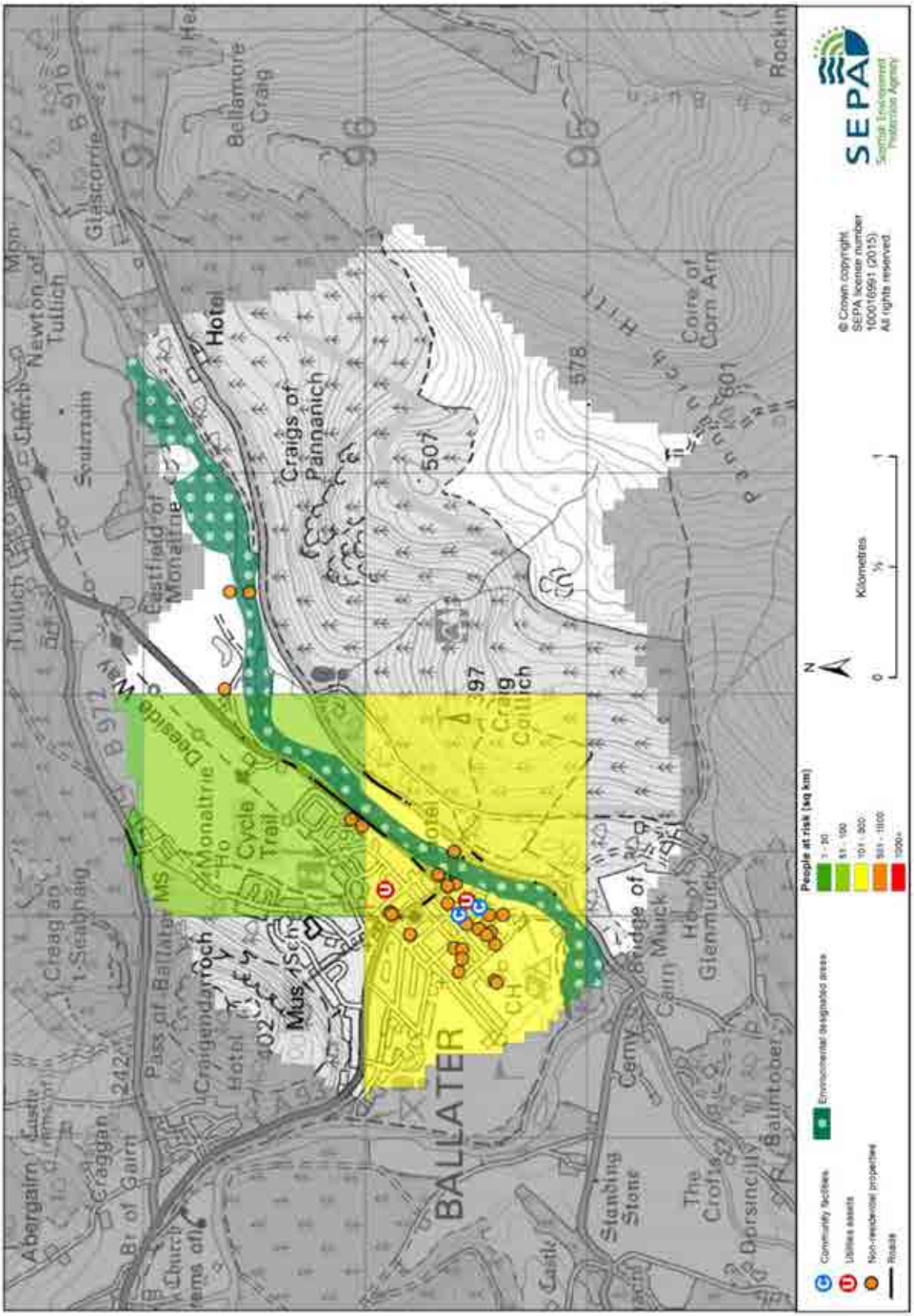


Figure 3: Impacts of flooding

History of flooding

Flooding occurred on the River Dee in 1829, destroying the Ballater Bridge and in 1839, the bridge at Tullich was damaged. In 1877, cellars in the lower part of Ballater were flooded, and in 1920 and 1929 the town and roads were flooded.

Local reports are that in the late 1980s the bottom part of the village was badly flooded with water coming up through the drains. Deebank Road, Bridge Street Richmond Place, Braichlie Road were all affected. In 2008, surface runoff entered the Netherley Guest House at Netherley Place.

In August 2014, the caravan park and a number of roads were closed due to flooding from the River Dee. As a result, 150 people were evacuated from the caravan site.

Blair Atholl (Potentially Vulnerable Area 08/01)

Local Plan District	Local authority	Main catchment
Tay	Perth and Kinross Council	River Garry (River Tay)

Background

This Potentially Vulnerable Area is 6km^2 and is situated in the upper reaches of the River Tay catchment. It includes Blair Atholl and the main watercourse is the River Garry.

The majority of flood damages are caused by river flooding, followed by surface water flooding.

There are fewer than 10 residential and non-residential properties at risk of flooding. The Annual Average Damages from flooding are approximately £14,000.

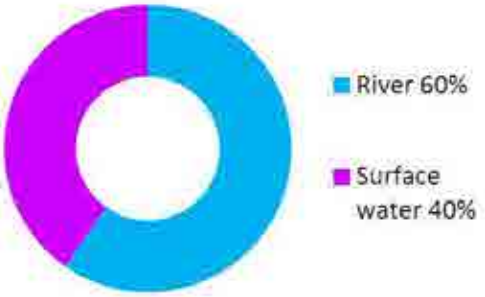


Figure 1: Annual Average Damages by flood source

Summary of flooding impacts

In the Blair Atholl area there is relatively lower confidence in the river flood hazard maps due to limitations arising from the data used and techniques applied in the national modelling. The number of properties at risk of flooding in the Blair Atholl area is likely to be underestimated.

Blair Atholl is at risk of flooding from the Garry Burn and from surface water. The risk of flooding to people, property, as well as to community facilities, utilities, the transport network, designated sites and agricultural land is summarised in Table 1.

The damages associated with floods of different likelihood are shown in Figure 2. Surface water damages may be under-represented in Figure 2 due to limitations in the available modelling output. For this Potentially Vulnerable Area the highest damages are to non-residential properties. The location of the impacts of flooding is shown in Figure 3.

The figures presented for Annual Average Damages include damages to residential properties, non-residential properties, transport and agriculture.

	1 in 10 High likelihood	1 in 200 Medium likelihood	1 in 1000 Low likelihood
Residential properties (total 80)	<10	<10	<10
Non-residential properties (total 30)	<10	<10	<10
People	<10	<10	10
Community facilities	0	0	0
Utilities assets	<10	<10	<10
Transport links (excluding minor roads)	1 A road, 1 B road at 4 locations	1 A road, 1 B road at 6 locations 1 Railway route at 1 location: Perth to Inverness	1 A road, 1 B road at 6 locations 1 Railway route at 1 location: Perth to Inverness
Environmental designated areas (km^2)	0	0	0
Designated cultural heritage sites	1	1	1
Agricultural land (km^2)	< 0.1	0.2	0.2

Table 1: Summary of flooding impacts

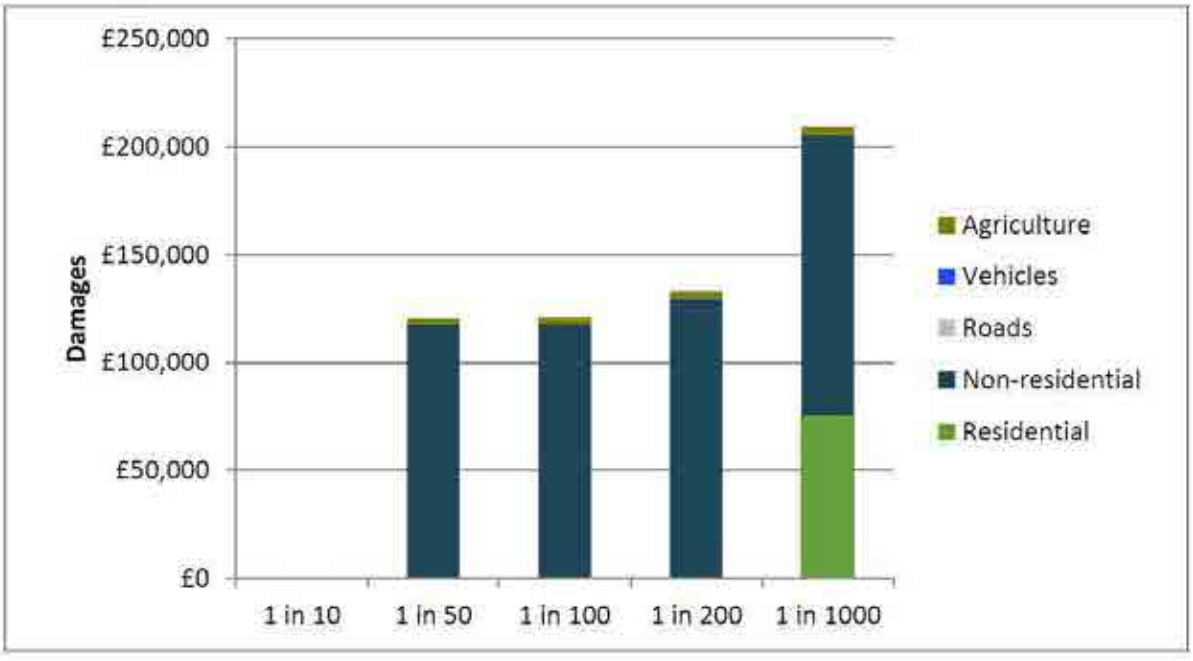


Figure 2: Damages by flood likelihood

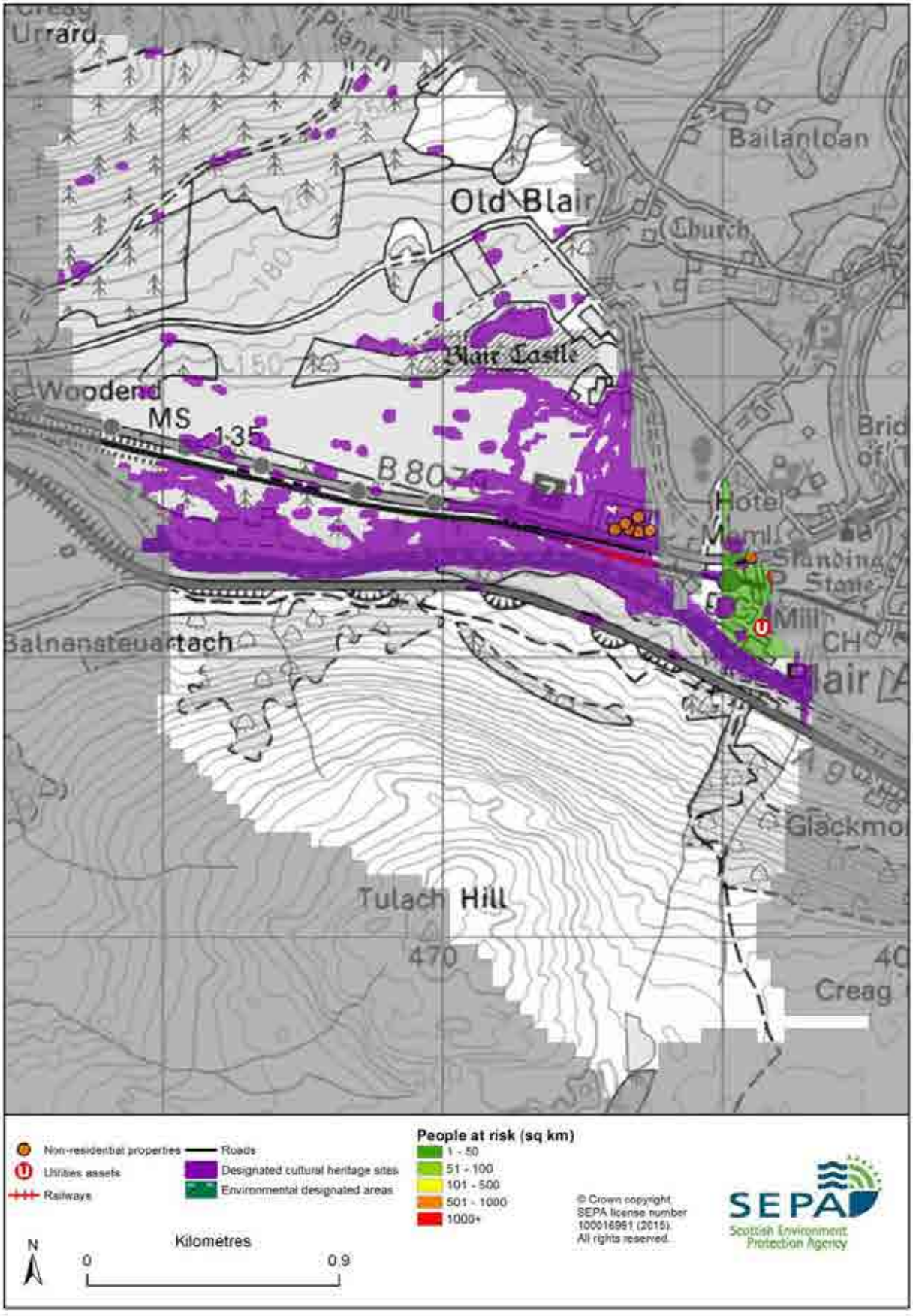


Figure 3: Impacts of flooding

History of flooding

A number of river floods have been recorded in this area. These include:

- 13 June 1931: Evacuation was required as River Garry flooded near Blair Atholl, the railway was also affected.
- July 1916: Evacuation was required as River Garry flooded near Blair Atholl, the railway was also flooded.