Scottish Environment Protection Agency
Buidheann Dìon Àrainneachd na h-Alba

For the future of our environment

National Flood Risk Assessment 2025

Understanding Current and Future Flood Risk in a Changing Climate

December 2025

Contents

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1. Executive Summary

National Flood Risk Assessment 2025 and the flood risk challenge

Flooding is Scotland's most severe climate-related risk[1]. Communities from the Borders to the Highlands and Islands have lived with the impact of flooding for decades, and as our climate changes, those impacts are accelerating. The National Flood Risk Assessment (NFRA) 2025 gives us the clearest picture yet of what lies ahead for Scottish homes and businesses - and why action to improve Scotland's flood resilience matters.

The story in numbers

- **Today:** around **400,000 properties** - homes, businesses, and vital services - are in areas at medium risk of flooding. That's **1 in 8 properties across Scotland**, a sharp rise from 284,000 in our 2018[2] assessment.
- **Tomorrow:** by 2100, climate change could push that number to **634,000 properties**. Coastal communities face the biggest surge: risk from the sea is projected to more than double.
- **The Cost:** flooding already costs Scotland an estimated **£500 million every year** - and that figure could grow.

What's new and improved

NFRA 2025 isn't just an update - it's a transformation. The NFRA is a strategic tool that provides a national picture of the risk of flooding in Scotland. For the first time, we can see where flooding will be deepest[3], not just where it will happen. This means we can prioritise the places where impacts will be most severe - where floodwaters can move cars, destroy homes, and disrupt lives.

Behind these insights are major advances: richer property data, improved climate projections, and enhanced modelling methods. This is why comparisons with 2018 aren't straightforward - the science has moved on and so has our understanding.

[1] Evidence for the third UK Climate Change Risk Assessment (CCRA3) Summary for Scotland CCRA-Evidence-Report-Scotland-Summary-Final-1.pdf
[2] This is based on the medium likelihood of flooding scenario which has an 0.5% annual probability of occurring. All statistics quoted in the body of the report refer to the medium likelihood scenario unless otherwise stated.
[3] Deep flooding is defined as having a depth greater than or equal to 30cm.

The climate challenge

The NFRA confirms what recent storms have shown us: flooding is becoming more frequent, more intense, and more damaging.

- Surface water and small watercourses will drive the biggest increase in absolute numbers - adding over 200,000 properties to the risk map.
- Coastal flooding will see the largest proportional rise, as sea levels rise and storm surges intensify.
- River flooding will also surge, with homes in high-risk zones expected to double by the end of the century.

Why the NFRA matters

NFRA 2025 is the cornerstone for the implementation of Scotland's Flood Resilience Strategy[4] and the next cycle of flood risk management planning. It will shape:

- National Flood Risk Management Plans (2027)
- Local Flood Risk Management Plans (2028)
- Potentially Vulnerable Areas (PVAs) - the communities that need action most.

Next steps

From Spring 2026, NFRA data will be available through SEPA's digital services, providing evidence to inform coordinated action by local authorities, planners and communities. This is not just data - it's a roadmap for resilience. Flooding is Scotland's costliest hazard and it's getting worse. NFRA 2025 gives Scotland the evidence to act decisively.

[4] National Flood Resilience Strategy - gov.scot

2. Introduction

Flooding to people, communities and buildings is Scotland's most severe climate related risk[5]. As our climate changes, flooding is expected to become more frequent, more intense and more damaging. Communities across Scotland are on the frontline of this challenge and many have lived with the impact of flooding for decades.

Flooding can cause serious and long-lasting impacts on:

- People and homes,
- Businesses and services,
- Agriculture and land management,
- Infrastructure including utilities and transport,
- Cultural heritage and the environment.

The National Flood Risk Assessment (NFRA) is a strategic tool that provides a national picture of the risk of flooding in Scotland. It sits within the wider flood risk management planning framework which provides a structured, long-term approach to reducing the likelihood and impact of flooding on people, property, the economy, and the environment.

As Scotland's strategic flood risk management authority, SEPA regularly reviews and publishes the NFRA to provide the most accurate evidence base for managing flood risk. This helps:

- Provide the evidence base for prioritising coordinated action to manage flooding,
- Support decisions on investment and funding for flood risk management,
- Ensure that policy makers, practitioners and communities have access to the most accurate and current information available.

[5] Evidence for the third UK Climate Change Risk Assessment (CCRA3) Summary for Scotland CCRA-Evidence-Report-Scotland-Summary-Final-1.pdf

Figure 1: The total number of residential and non-residential properties in areas at current and future risk of flooding

Figure 1 notes: Values to the nearest 1000. Scenario(s): medium risk and medium risk by 2100 (see section 3.2 for scenario definitions). Properties that are in areas at risk of flooding from multiple flood sources have been counted once.

The 2025 National Flood Risk Assessment has been published now because:

- **Better data** is available on building location and building use (e.g., industry, leisure).
- **Improved flood hazard maps** provide better information on where to expect coastal flooding, surface water flooding and river flooding for smaller watercourses with catchments up to 10km^2.
- **Advances in modelling methods** now allow more accurate estimation of flood likelihood and impact.

- **Updated economic impact methods** account for inflation and health impacts since 2018.

The data within this assessment is strategic in nature, and as such is not appropriate for assessing risk to individual properties or to provide exact financial estimates of potential flood damage.

The findings of the 2025 NFRA provide a detailed national evidence base of the potential impacts of flooding that will inform the next cycle of Flood Risk Management Plans (2027) and Local Flood Risk Management Plans (2028). The NFRA will be fundamental to the implementation of Scotland's Flood Resilience Strategy, focussing efforts to ensure that Scotland is better prepared for the challenges ahead and able to adapt to a changing climate.

3. Understanding flood risk

3.1 Sources of flooding

Flooding can come from several sources, each with distinct characteristics and impacts

- **Rivers:** – Heavy or prolonged rainfall can cause river levels to rise above their banks, leading water to spill out and flood nearby areas.
- **The sea:** – High tides, storm surge and large waves can cause coastal flooding, particularly during severe weather events.
- **Surface water:** – When rainfall is too intense to drain away through normal drainage systems or soak into the ground, it collects or flows over the surface, causing localised flooding. This is most common in urban areas where impermeable surfaces prevent water from soaking into the ground.
- **Small watercourses:** – These behave like rivers but are smaller and often react more quickly to heavy rain. In this assessment, they are included within the surface water flood maps, so impacts from small rivers or watercourses are reported with the surface water category.
- **Groundwater:** – In some locations, water can rise from underground rocks or flows from springs. In Scotland, groundwater flooding usually contributes to other types of flooding rather than being the primary source, and therefore it is not assessed in this assessment.

3.2 Flood likelihood

The NFRA considers both current and future flood likelihoods, expressed in terms of high, medium and low risk for current flood risk, and medium risk for future flood risk.

Current flood risk - Three current day flood risk scenarios are reported:

- **High risk** – areas with more than 10% chance of flooding each year (greater than 1 in 10 likelihood),
- **Medium risk** – areas with more than 0.5% chance of flooding each year (greater than 1 in 200 likelihood),
- **Low risk** – areas with more than 0.1% chance of flooding each year (greater than 1 in 1000 likelihood).

Future flood risk - The NFRA reports one future flood risk scenario

- **Medium risk by 2100** – areas with more than 0.5% chance of flooding by the end of the century due to climate change.

4. National Flood Risk Assessment: Key findings

4.1 Property exposure to flood risk

The 2025 NFRA identifies 400,000 properties (residential and non-residential) in Scotland are in areas at risk of flooding for the medium risk flooding scenario. That is 1 in 8 of all properties. As shown in Table 1, with climate change the total number of properties in areas at risk of flooding could increase to around 634,000 by the end of the century.

All statistics quoted in the body of the report refer to the medium likelihood scenario unless otherwise stated.

Table 1: The total numbers of properties in areas at risk of flooding

Scenario	Residential	Non-residential	Total properties
High Risk	77,000	31,000	108,000
Medium Risk	320,000	80,000	400,000
Low Risk	519,000	112,000	631,000
Medium Risk by 2100	522,000	112,000	634,000

Table 1 notes: Values to the nearest 1000. Properties that are in areas at risk of flooding from multiple flood sources have been counted once

Figure 2 provides a breakdown of the number of properties (residential and non-residential) by source of flooding. Some properties are at risk of flooding from multiple flood sources, so the sum of these source totals does not equal the overall totals in Table 1. Additionally, some properties may be counted as at risk in both the river assessment and the surface water and small watercourses assessment when the risk originates from the same watercourse. When we assess the overall impact of flooding (Table 1), this double counting is removed.

More details on the risk of flooding by source, is provided in section 4.3.

Figure 2: Counts of residential and non-residential properties located in areas at medium risk of flooding for each flood source.

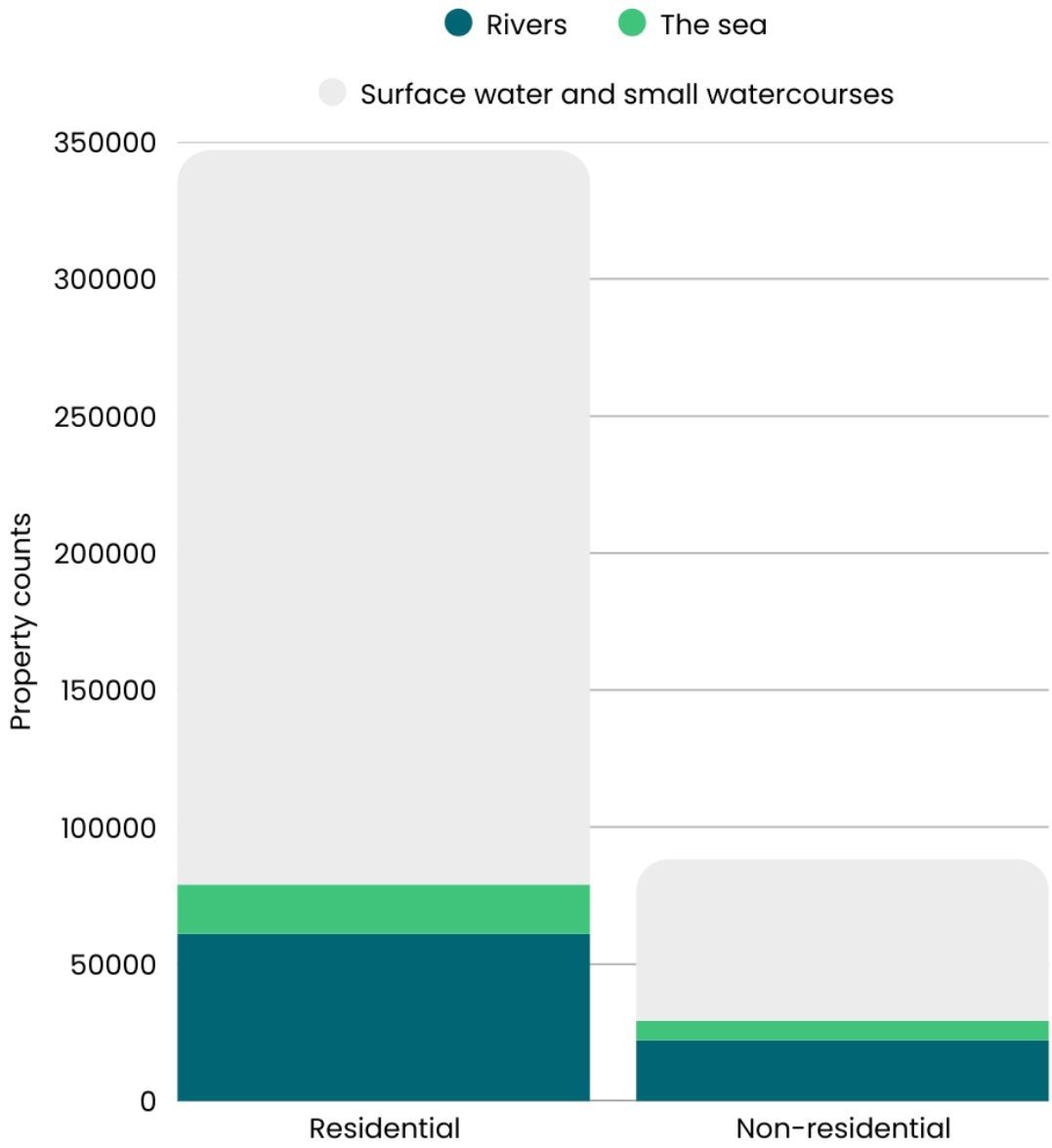

Figure 2 notes: Values to the nearest 1000. Scenario: medium risk. Residential values: rivers 61,000; the sea 18,000; surface water and small watercourses 268,000. Non-residential values: rivers 23,000; the sea 7,000; surface water and small watercourses 59,000. Some properties are at risk of flooding from multiple flood sources, so the sum of these source totals won't equal the overall totals in Table 1. Due to the methodology of the SEPA flood maps, some properties may be counted as at risk in both the river assessment and the surface water and small watercourses assessments, but the risk originates from the same watercourse. When we assess the overall impact of flooding (Table 1), this double counting is removed.

4.1.1 Residential properties

As shown in Table 1, 320,000 residential properties are assessed to be in areas at medium risk of flooding, which is 1 in 9 of all homes in Scotland. By 2100, that number is expected to rise to 522,000, or 1 in 5, because of climate change. Figure 3 provides a visualisation of residential properties exposed to flooding in 2025 and the expected increase by the end of the century due to climate change.

Surface water and small watercourses flooding affects the greatest number of residential properties nationally, while river flooding is expected to impact a greater number of homes at deeper flood depths. Section 4.2 provides more detail on the risk to residential properties from deeper flooding.

Figure 3: Residential properties at risk of flooding in Scotland.

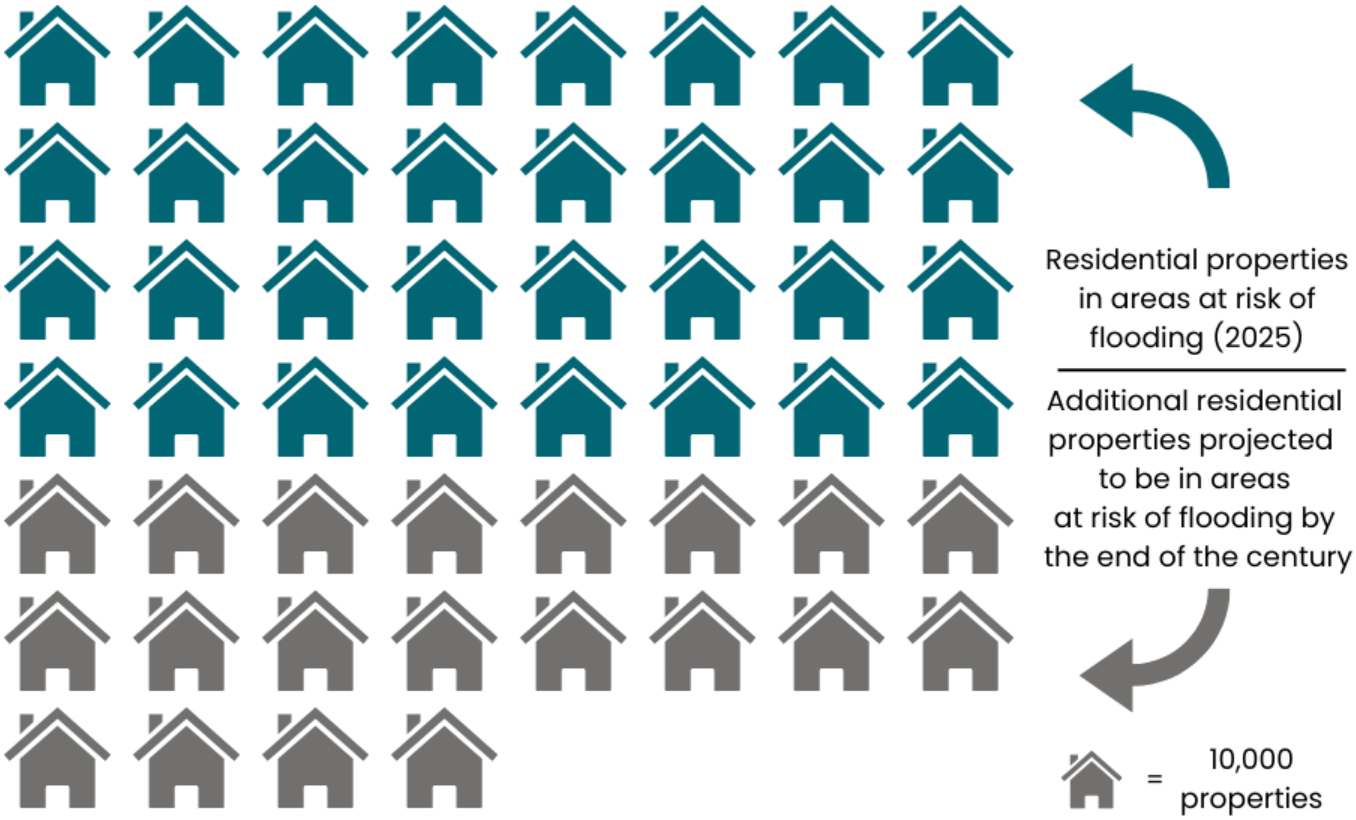

Figure 3 notes: Values to the nearest 10,000. Scenario(s): medium risk and medium risk by 2100 (see Table 1). Properties that are in areas at risk of flooding from multiple flood sources have been counted once.

4.1.2 Non-Residential properties

Our assessment has found that 1 in 5 non-residential buildings are in areas at medium risk of flooding. Figure 4 shows that flood risk to non-residential properties is predominantly driven by surface water and small watercourses, with 83% of at-risk community service properties and 81% of businesses in areas at risk exposed to these sources. Full details of the categories of non-residential properties assessed in the NFRA are provided in Appendix: Table A

With climate change, the number of non-residential properties in areas at medium risk of flooding is projected to increase significantly by 2100. The projected increase ranges from around 37% for agricultural buildings to nearly 49% for community services. As with all properties at risk, long-term planning and mitigation strategies will be essential to protect these assets.

Figure 4: Counts of non-residential properties by category located within areas at risk of flooding.

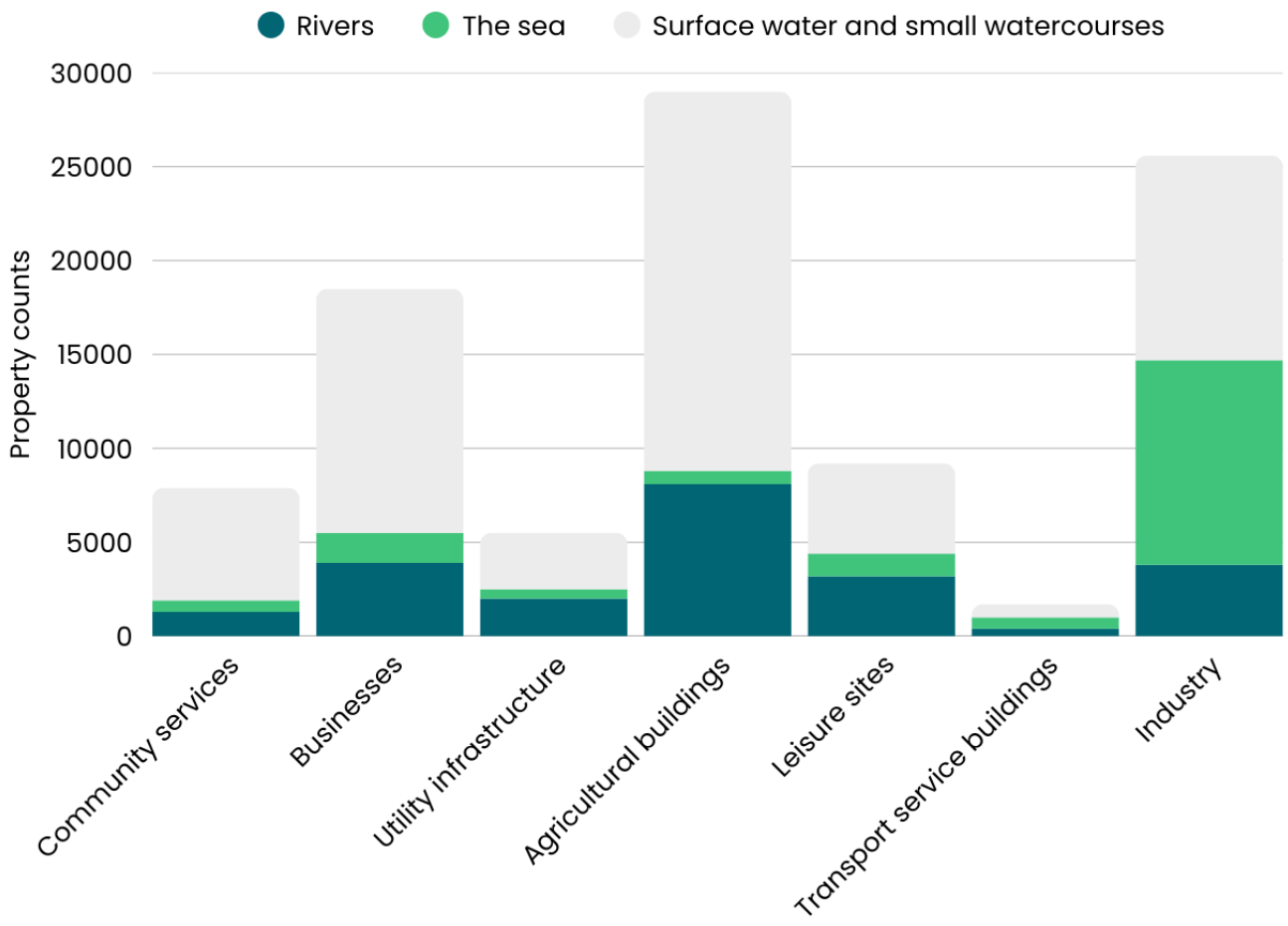

Figure 4 notes: Values to the nearest 100. Scenario: medium risk. Properties that are in areas at risk of flooding from multiple flood sources have been counted once. See Appendix Table A for detailed non-residential property results.

4.2 High risk: frequent and deeper flooding

For the first time, we have reported how many residential properties are in high-risk areas where flooding is more frequent, and where there is the potential to experience deeper flood waters. With so many properties now being identified as being in flood risk areas across all risk levels, it is increasingly important to understand where the most significant impacts are likely to occur in order to prioritise action to reduce risk and build resilience. Shallower, more frequent flooding (less than 30cm deep) can still be hazardous, particularly if fast flowing or if the water is contaminated. In these areas, with good awareness and planning, local action can be taken to prepare and make many properties more resilient, such as via property resilience measures.

Deeper flooding (of at least 30cm) can be dangerous to life and result in damage to property and infrastructure. Flowing water at a depth of 30cm can be enough to move an average family car and can cause internal property where property resilience measures are exceeded. Floods of this depth can lead to greater disruption, take longer for communities to recover from and have a more serious effect on people’s health & wellbeing. The percentage of residential properties affected by deeper flooding, for each flood source is shown in Figure 5.

Managing the impacts of deep flooding requires co-ordinated action across partner agencies – short-term to support community preparedness, emergency response and recovery, and long-term through catchment management, investment in flood protection and climate adaption measures.

Figure 5: Percentage of residential properties in areas at high risk of flooding at shallow and deep flooding per flood source.

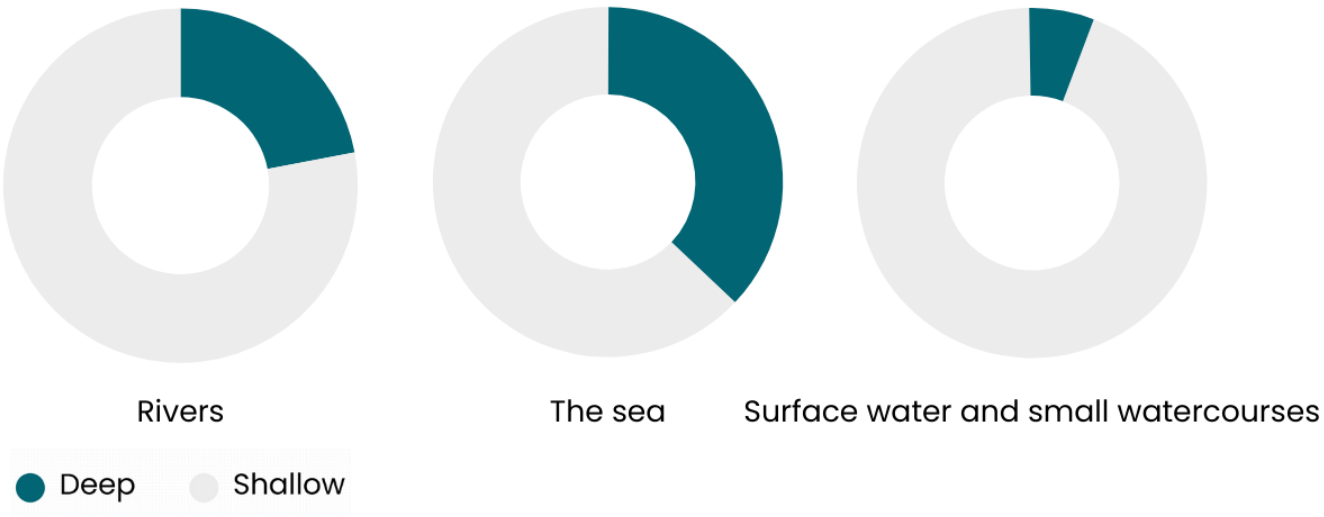

Figure 5 notes: Percentages rounded to the nearest whole percent. Scenario: high risk. Rivers: 78% shallow, 22% deep. The sea: 63% shallow, 37% deep. Surface water and small watercourses: 94% shallow, 6% deep.

4.3 Flood risk by source

4.3.1 Rivers

Table 2 shows the number of residential and non-residential properties in areas at risk of flooding from rivers, now and in the future. At the medium scenario, the total number of properties, residential and non-residential, in areas at risk of flooding from rivers is approximately 84,000. Of the residential properties in these areas, 1 in 3 are in areas of high risk. River flooding affects fewer properties overall but the consequences of flooding for those within this high-risk category can be significant.

Table 2 also shows 5,000 residential properties are in areas of high-risk deep flooding of at least 30cm. More residential properties fall into this highest-risk category for river flooding than the other sources of flooding assessed in the NFRA.

Climate change is expected to increase river flood risk significantly. Table 2 shows the total number of properties, residential and non-residential properties, in areas at medium risk of river

flooding is expected to rise from 84,000 to 129,000 by the end of the century – a 54% increase. The number of residential properties in areas at risk of deeper flooding is also expected to double, from 21,000 to 42,000.

Table 2: Properties (residential and non-residential) in areas at risk of flooding from rivers and total number of residential properties by depth of flooding

Scenario	Residential	Residential in areas of shallow flooding (<30cm)	Residential in areas of deeper flooding (>=30cm)	Non-residential
High risk	23,000	18,000	5,000	13,000
Medium risk	61,000	40,000	21,000	23,000
Low risk	109,000	58,000	51,000	31,000
Medium risk by 2100	99,000	57,000	42,000	30,000

Table 2 note: Values to nearest 1000.

4.3.2 The sea

Table 3 shows the number of residential and non-residential properties in areas at risk of flooding from the sea, now and in the future. At the medium scenario, the total number of properties in areas at risk of flooding from the sea is around 25,000. Of those, more than 1 in 3 homes are in areas at risk of deeper flooding. It should be noted that the effects of waves are not yet included in SEPA's flood maps for most areas of Scotland, so this is likely to be an underestimate.

While the number of homes in areas at risk of coastal flooding may be less than other sources, the impacts are significant. Strong tides, storm surge and large waves can create dangerous conditions that make emergency response and evacuation difficult. Essential services located along the coast are highly exposed to flooding, meaning coastal communities can be quickly cut off and isolated, making both immediate response and long-term recovery extremely challenging. Saltwater has the potential to create more damage than freshwater as it can

corrode the fabric of a building or the material inside it (e.g. electrical wiring) and cleanup costs are more expensive due to the extra steps required to remove salt water from a dwelling[6].

Climate change is expected to have a significant impact on flooding from the sea. The number of residential and non-residential properties in areas at medium risk of flooding from the sea could increase from 25,000 to 52,000 by the end of the century - a 108% increase, representing the largest proportional rise of risk by assessed flood sources. The number of homes in areas at risk of deeper flooding is also expected to almost triple, from 7,000 to 20,000.

Table 3: Properties (residential and non-residential) in areas at risk of flooding from the sea and total number of residential properties by depth of flooding

Scenario	Residential	Residential in areas of shallow flooding (<30cm)	Residential in areas of deeper flooding (>=30cm)	Non-residential
High risk	8,000	5,000	3,000	4,000
Medium risk	18,000	11,000	7,000	7,000
Low risk	28,000	16,000	12,000	10,000
Medium risk by 2100	40,000	20,000	20,000	12,000

Table 3 note: Values to nearest 1000.

4.3.3 Surface water and small watercourses

The 2025 NFRA reports small watercourses alongside surface water. This is due to the underlying methodology of the new national surface water flood hazard maps, which now include flooding from small watercourses. These small watercourses are rivers and watercourses with catchment areas of up to 10km^2. The 2018 NFRA assessment didn't have these data, which means that watercourses with catchments of less than 3km^2 are included in the NFRA for the first time, and for catchments of 3-10km^2, the data are substantially improved on the previous assessment.

[6] Recovering After The Flood - Scottish Flood Forum

Table 4 shows the number of residential and non-residential properties in areas at risk of flooding from surface water and small watercourses, now and in the future. At the medium scenario, the total number of properties in areas at risk of flooding from surface water and small watercourses is approximately 327,000. This is more than double the number in areas affected by flooding from rivers and the sea under the same scenario; most flooding from this source is shallow, with 92% of properties in areas at medium risk affected by less than 30cm of floodwater.

With climate change, the total number of properties in areas at medium risk of flooding from surface water and small watercourses will increase from approximately 330,000 to 530,000 by the end of the century – a 62% increase. The number of homes in areas at risk of deeper flooding from surface water and small watercourses is also expected to double, from 21,000 to 43,000.

Table 4: Properties (residential and non-residential) in areas at risk of flooding from surface water and small watercourses and total number of residential properties by depth of flooding

Scenario	Residential	Residential in areas of shallow flooding (<30cm)	Residential in areas of deeper flooding (>=30cm)	Non-residential
High risk	51,000	48,000	3,000	17,000
Medium risk	268,000	247,000	21,000	59,000
Low risk	439,000	397,000	42,000	89,000
Medium risk by 2100	442,000	399,000	43,000	88,000

Table 4 note: Values to nearest 1000.

4.4 Flood risk across Scotland: Regional distribution

Flood risk affects every part of Scotland, but the nature and severity of risk vary significantly across both local authorities, and the 14-catchment based local plan districts (LPDs).

Details of geographical flood risk distribution are provided in the Appendix. Table B summarises flood risk by local authority, and Table C presents flood risk data by LPD.

4.5 Future flood risk: Climate change

Climate change is expected to significantly increase the risk of flooding in Scotland. Our assessment estimates that by the end of the century, an additional 234,000 properties will be in areas at risk of flooding.

- Flooding from surface water and small watercourses are projected to see the biggest increase – with 203,000 additional properties expected to be in areas at risk. While most of this flooding is expected to be of shallow depth, without taking steps to prepare, impacts could be significant with many properties in affected areas.
- Impacts from flooding from the sea is predicted to increase by the biggest proportion with the number of properties in coastal areas at risk expected to more than double as sea levels rise into the end of the century.
- Residential properties located in areas of flood risk from rivers are expected to increase by over 60%, and homes located in areas at risk of deeper flooding are expected to double by the end of the century.

The assessment for surface water and small watercourses uses the latest UK climate change projections (UK Climate Projections 2018) which means we have greater confidence in our understanding of the impacts of climate change on this flood source than for flooding from rivers and the sea, which mostly use UKCP09 climate change projections. It is therefore likely that the estimated overall figure of 234,000 additional properties in areas at risk from flooding is a conservative estimate, and the true scale of future flood risk could be much greater. SEPA has a rolling programme of hazard map updates that incorporate the latest available data, including the latest climate change projections, and these will feed into future updates of the NFRA.

4.6 The economic impact of flooding

We have calculated the indicative average annual cost of flooding to properties in Scotland to be approaching £500 million per year. This is an increase of £190 million from £310 million in 2018. The estimated average annual cost includes direct costs to communities, property owners and businesses, costs paid by insurance companies and cost to the public purse through preparation for flooding, emergency response and disruption to public services.

Of the estimated £500 million per year, £100 million is attributed to residential property flooding. Actual costs incurred will be influenced by a range of complex factors which are difficult to

monitor given the range of individuals and organisations impacted. Some costs are immediate, while others emerge over time, such as the long-term effect flooding can have on people's mental health.

The increase in estimated average annual cost of flooding to approximately £500 million reflects several factors, most notably, the number of properties identified in areas at medium risk from flooding rising from 284,000 in 2018 to 400,000 in 2025. Additionally, the assessment uses industry standard guidance that has been updated to include an uplift for inflation and incorporates additional cost elements such as health impacts, that were not previously considered.

5. Behind the numbers: Understanding the assessment

The assessment combines multiple national datasets and models to provide a consistent picture of flood risk across Scotland.

There are 3 main components to the National Flood Risk Assessment (Figure 6) which are:

1. Understanding **where** flooding will happen,
2. Understanding **what** will be affected by the flooding, and
3. Calculating the **impact** flooding will have as a result

Figure 6: Component parts to NFRA 2025 methodology

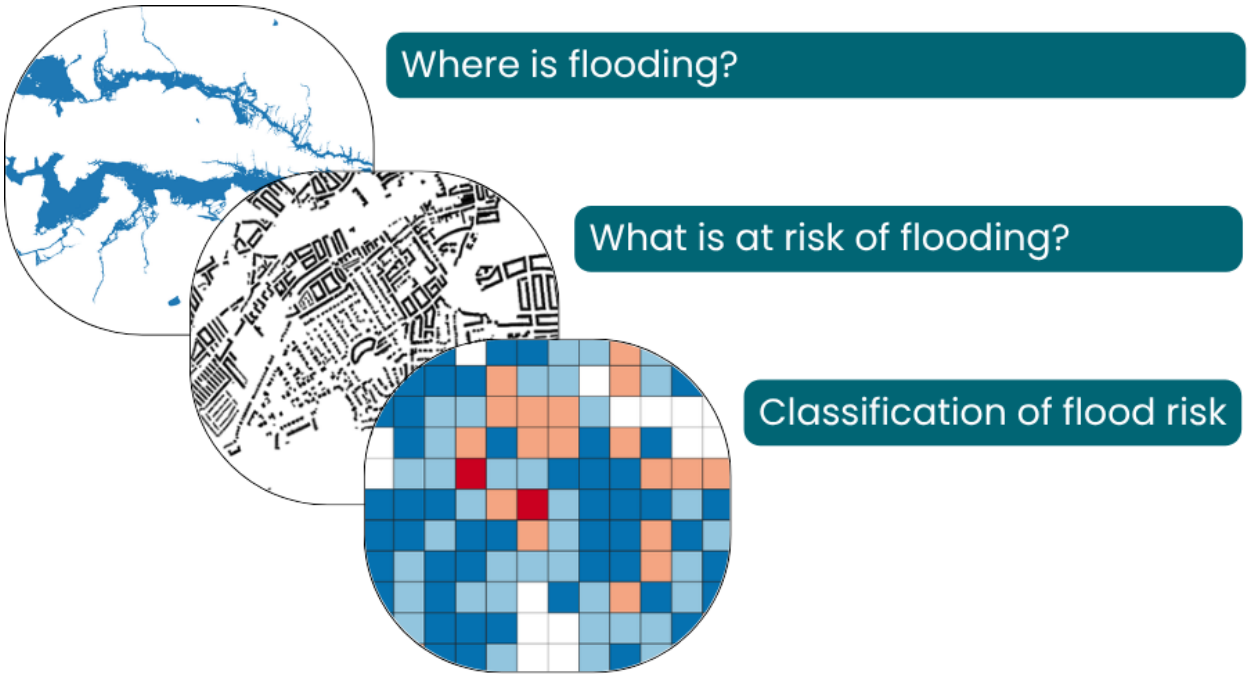

Figure 6 note: Image showing a flood extent to indicate where flooding occurs followed by an image of a map of buildings to indicate what may be at risk of flooding. The third image shows a grid output of different colours indicating where flood risk may be higher.

5.1 Understanding where flooding will happen

SEPA's flood hazard maps provide the foundation for understanding where flooding is expected to occur across Scotland. These maps are used to assess the risk of flooding from rivers, the sea, surface water and small watercourses, and are available to view on SEPA's website[7].

Since the 2018 NFRA, significant updates have been made to SEPA's flood maps, improving the accuracy and understanding of where flooding will happen. The updates are:

- Coastal mapping updates have been completed for areas including the north-east coastline (Montrose to Thurso), for Orkney and for the Outer Hebrides. For the first time, these maps include the effect of waves, and in the Outer Hebrides they include the latest

[7] Flood Maps | SEPA

allowances for sea level rise due to climate change. Earlier updates, completed in 2020, included Dundee, Eyemouth and Grangemouth, as well as Inveraray and Loch Etive.

- River mapping updates have been completed for 49 locations in Scotland following modelling studies undertaken by SEPA and local authorities.
- New national surface water flood maps now include flooding from small watercourses. Small watercourses are rivers and watercourses with catchment areas of up to 10km^2.

5.2 Identifying what will be affected by flooding

To understand what could be affected by flooding, SEPA has used detailed property data from Ordnance Survey. These data have improved significantly on the receptor datasets available to us in 2018.

In the mapping process, SEPA's flood maps are overlaid with the Ordnance Survey property data to determine which buildings are in areas at risk of flooding, how frequent that flooding would be, and what depths of flooding could be expected. As information on property thresholds above ground level or floor levels is not available nationally, the depth of flooding within a property is estimated based on flood depths around the outside of the building.

5.3 Calculating the impact of flooding

For each property found to be impacted by flooding, SEPA used updated methods from The Flood Hazard Research Centre's Multi-Coloured Handbook (2024) to calculate the economic impact of flooding as an average annual cost. The MCM is the industry standard approach to calculate potential economic losses due to flooding to the UK. The economic impact reflects the frequency with which the property is expected to flood, which sources of flooding affect the property and the depth of flood water expected. The size and use of the property is factored into the calculations.

5.4 Assessment of climate change

The potential impact of climate change on flood risk is incorporated into the NFRA through SEPA's future flood maps. The future flood maps have been produced for a single emissions scenario for time periods towards the end of this century, representing one possible outcome.

The actual impact of climate change on flood risk will depend on both global emissions pathways and local catchment characteristics. Given uncertainties in future emissions and climate response, the magnitude of changes in flood risk could be greater or lesser than those mapped.

6. A new understanding

The NFRA 2025 estimates that 400,000 properties in Scotland are in areas at risk of flooding, up from 284,000 in 2018.

The increase in estimated properties currently in areas at risk, and that will be at risk in the future due to climate change, reflects significant improvements in the data and methods used to produce the new assessment. For this reason, the NFRA 2025 results are not directly comparable with those from the 2011 and 2018 assessments. The updated assessment uses more detailed and accurate information on where flooding could occur and which buildings could be affected, providing a better understanding of the impacts of flooding.

Improvements in understanding **where flooding can happen**:

- Improvements to SEPA flood maps and other source data significantly improves our understanding of expected rain and associated flood events, for example data from more rain gauge locations, longer rainfall records, and better information on rainfall intensity and distribution.
- SEPA's surface water and small watercourses flood maps, and some recently updated coastal flood mapping future flood scenarios now incorporate data from UKCP18, providing a more robust understanding of how climate change may alter flood risk.
- The regional updates to the coastal flood maps for northeast Scotland, Orkney and the Outer Hebrides use the latest Coastal Flood Boundary Data 2018, which incorporates improved sea level and surge modelling calibrated with more observed sea level data than was previously available.
- More accurate and detailed information from remote sensing technology (LiDAR) on the shape of the ground and features that influence flooding.

Improvements in understanding **what is affected by flooding** are:

- More data on where buildings are located.

- Better information on the characteristics and uses of each building.

Improvements in understanding **the impact of flooding**:

- Improved methods to assess whether buildings are likely to be impacted by flooding.
- Updates to the methods to assess the economic impact of flooding, including inflation and health.

7. Accessing NFRA 2025 data

Further to this summary report, SEPA will publish the underlying flood risk data in March 2026. This dataset is suitable for use at community and national level and will be made available for download from SEPA's website under Open Government Licence.

Responsible authorities will be provided with the full dataset under licence to support flood risk management planning and decision making.

Flood statistics will also be provided for Potentially Vulnerable Areas (PVAs). PVAs are areas where significant flood risk exists now or is likely to occur in the future, helping Scotland understand and prioritise where work could be of most benefit. These were reviewed and consulted upon in 2024 as part of the 6-year flood risk management cycle. More information on PVAs is available on SEPA's website[8].

8. Continuous improvement to flood risk assessment

The NFRA 2025 has focused on flood risk to residential and non-residential buildings. Future phases of assessment will consider flood risk to specific sectors such as agricultural land, roads, railways and protected environmental areas. Engagement with these stakeholders is planned to determine which additional assessments will add the most value to flood risk management.

SEPA is continuing to develop the national flood hazard maps to utilise the most up to date evidence and research and improve our understanding of where flooding is expected to happen now and in the future. Regional updates to coastal flood maps are in progress and a programme to update the river flood maps is being developed. These will feed into future updates of the NFRA.

[8] Potentially Vulnerable Areas (PVAs) 2028-2034 | Beta | SEPA | Scottish Environment Protection Agency

9. Applying NFRA 2025: Shaping Scotland's flood resilience

The NFRA 2025 will provide the foundation for the next cycle of flood risk management planning, supporting SEPA's flood risk management plans due to be published in 2027 and local flood risk management plans published by lead local authorities in 2028.

The data from the assessment provides a detailed understanding of the risk across Scotland's communities, including those identified as PVAs. This evidence will provide a robust basis for decision-making across Scotland to prioritise investment and actions to reduce the impact of flooding and improve resilience.

By informing these plans and supporting the implementation of the National Flood Resilience Strategy, the NFRA 2025 plays a crucial role in delivering a more climate resilient Scotland.

10. Appendix

Flood risk to non–residential properties

Table A: Flood risk to non–residential properties

Category of non-residential property	Properties in areas at risk of flooding[1]	Percentage of total properties of this type in areas at risk[1]	Rivers[2]	The sea[2]	Surface water & small watercourses[2]	Properties in areas at risk by 2100[3]
Community Services	7,200	19	1,300	600	6,000	10,700
Businesses	16,100	25	3,900	1,600	13,000	23,700
Utility Infrastructure	4,700	17	2,000	500	3,000	6,800
Agricultural buildings	26,400	14	8,100	700	20,200	36,100
Leisure Sites	7,900	21	3,200	1,200	4,800	10,800
Transport service buildings	1,500	31	400	600	700	2,000
Industry	14,700	28	3,800	1,900	10,900	20,900

Table A note: Values to the nearest 100. Scenario: medium risk. [1]Properties that are in areas at risk of flooding from multiple flood sources have been counted once. [2]Some properties are at risk of flooding from multiple flood sources, so the sum of these source totals won't equal the overall totals. Due to the methodology of the SEPA flood maps, some properties may be counted as at risk in both the river assessment and the surface water and small watercourses assessments, but the risk originates from the same watercourse. When we assess the overall impact of flooding[1], this double counting is removed. [3]Scenario: medium risk by 2100.

Local authority distribution of flood risk

Table B: Local authority distribution of flood risk

Local Authority	Total properties in areas at risk[1]	Residential[1]	Non residential[1]	Percentage of total properties that are in areas at risk[1]	Rivers[2]	The sea[2]	Surface water & small watercourses[2]	Properties in areas at risk by 2100[3]
Aberdeen City	20,400	18,200	2,200	15	4,900	100	17,000	31,400
Aberdeenshire	19,800	13,000	6,800	11	4,800	800	16,200	29,100
Angus	6,600	4,300	2,300	9	2,400	300	4,700	11,500
Argyll & Bute	12,200	8,200	4,000	18	3,200	2,500	9,100	17,700
City of Edinburgh	39,100	36,500	2,600	14	6,000	400	34,700	64,500
Clackmannanshire	5,100	4,500	600	18	1,000	100	4,800	7,500
Comhairle nan Eilean Siar	1,700	1,300	500	9	200	400	1,300	3,100
Dumfries & Galloway	19,500	11,600	7,900	17	6,100	1,600	14,400	27,200
Dundee City	8,600	7,400	1,300	10	200	1,700	7,400	13,900
East Ayrshire	8,300	6,400	1,900	12	2,600	0	6,600	12,500

Local Authority	Total properties in areas at risk[1]	Residential[1]	Non residential[1]	Percentage of total properties that are in areas at risk[1]	Rivers[2]	The sea[2]	Surface water & small watercourses[2]	Properties in areas at risk by 2100[3]
East Dunbartonshire	5,700	5,000	700	11	1,300	0	4,800	8,800
East Lothian	7,800	6,200	1,600	12	3,000	800	5,400	12,400
East Renfrewshire	4,600	4,200	400	10	600	0	4,300	6,700
Falkirk	10,000	7,800	2,200	12	1,400	3,300	6,200	18,900
Fife	18,700	14,800	3,900	9	3,000	1,100	15,900	29,500
Glasgow City	52,900	49,100	3,800	15	6,200	1,700	47,800	82,000
Highland	20,600	13,600	7,100	12	4,600	2,000	16,200	37,000
Inverclyde	6,300	5,500	800	15	800	800	5,600	10,200
Midlothian	4,300	3,600	700	9	200	0	4,100	7,200
Moray	7,900	4,800	3,200	13	2,100	400	6,100	13,600
North Ayrshire	8,700	7,100	1,600	10	2,600	700	6,200	14,700
North Lanarkshire	18,900	16,500	2,300	11	900	0	18,400	30,100

Local Authority	Total properties in areas at risk[1]	Residential[1]	Non residential[1]	Percentage of total properties that are in areas at risk[1]	Rivers[2]	The sea[2]	Surface water & small watercourses[2]	Properties in areas at risk by 2100[3]
Orkney	2,200	1,500	800	13	100	400	1,800	3,500
Perth & Kinross	12,700	8,400	4,300	13	5,400	300	8,400	20,800
Renfrewshire	11,600	10,400	1,200	12	3,000	1,500	9,100	19,100
Scottish Borders	14,700	9,500	5,200	17	7,200	300	10,000	20,200
Shetland	1,100	600	500	7	100	200	900	1,700
South Ayrshire	7,000	5,200	1,900	10	1,800	1,100	4,800	12,300
South Lanarkshire	18,600	15,400	3,200	10	2,500	0	17,000	29,100
Stirling	7,500	5,600	1,900	14	3,000	200	5,200	12,900
West Dunbartonshire	8,400	7,300	1,100	17	2,600	2,600	5,800	11,900
West Lothian	7,800	6,500	1,300	8	800	0	7,300	13,400

Table B note: Values to the nearest 100. Scenario: medium risk. Residential and non-residential properties at risk value may not add up to total properties at risk value due to rounding. [1]Properties that are in areas at risk of flooding from multiple flood sources have been counted once. [2]Some properties are at risk of flooding from multiple flood sources, so the sum of these source totals won't equal the overall totals. Due to the methodology of the SEPA flood maps, some properties may be counted as at risk in both the river assessment and the surface water and small watercourses assessments, but the risk originates from the same watercourse. When we assess the overall impact of flooding[1], this double counting is removed. [3]Scenario: medium risk by 2100.

Figure A: Percentage of properties in areas at flood risk by local authority

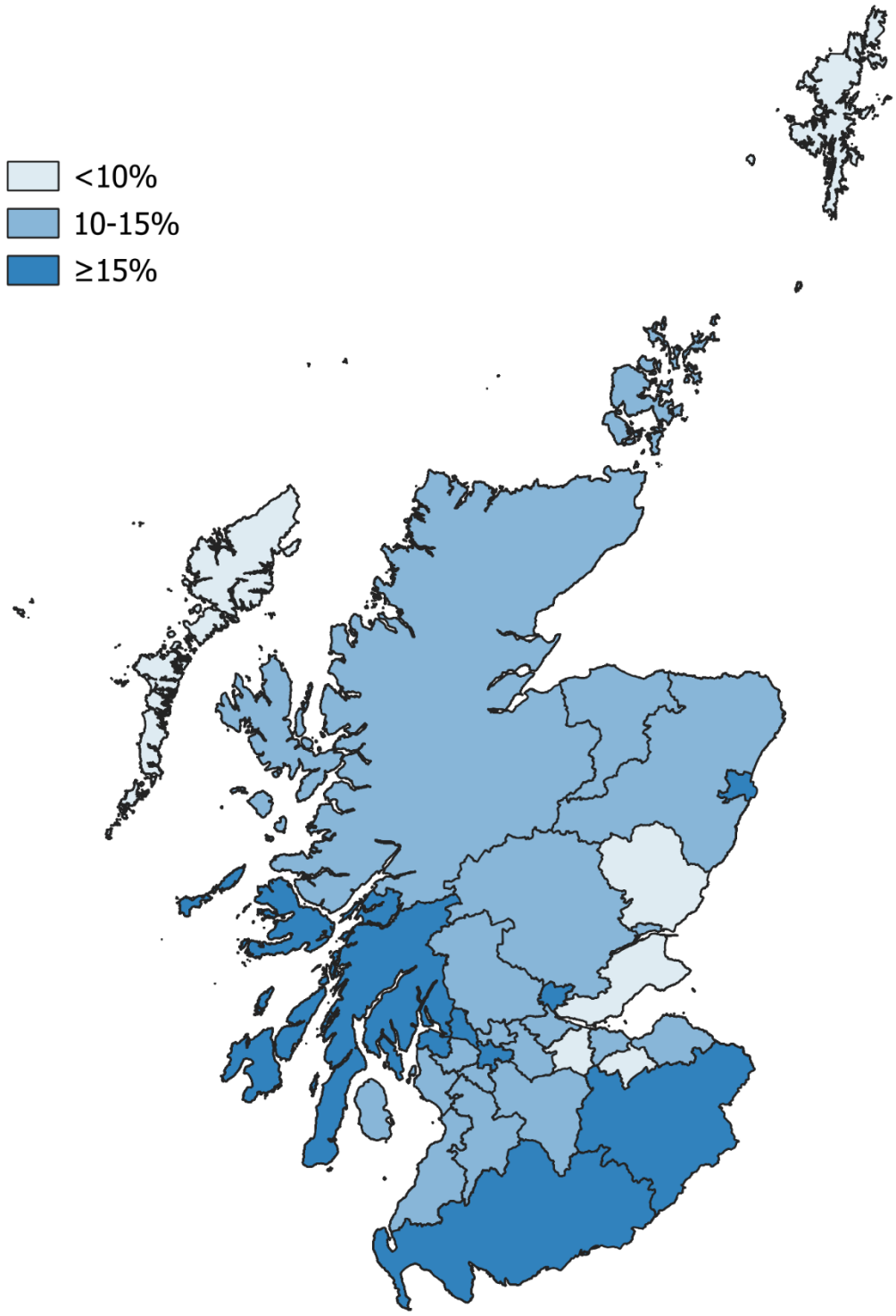

Figure A note: Scenario: medium risk. Properties that are in areas at risk of flooding from multiple flood sources have been counted once.

Figure B: Percentage increase of properties in areas at flood risk due to climate change by local authority

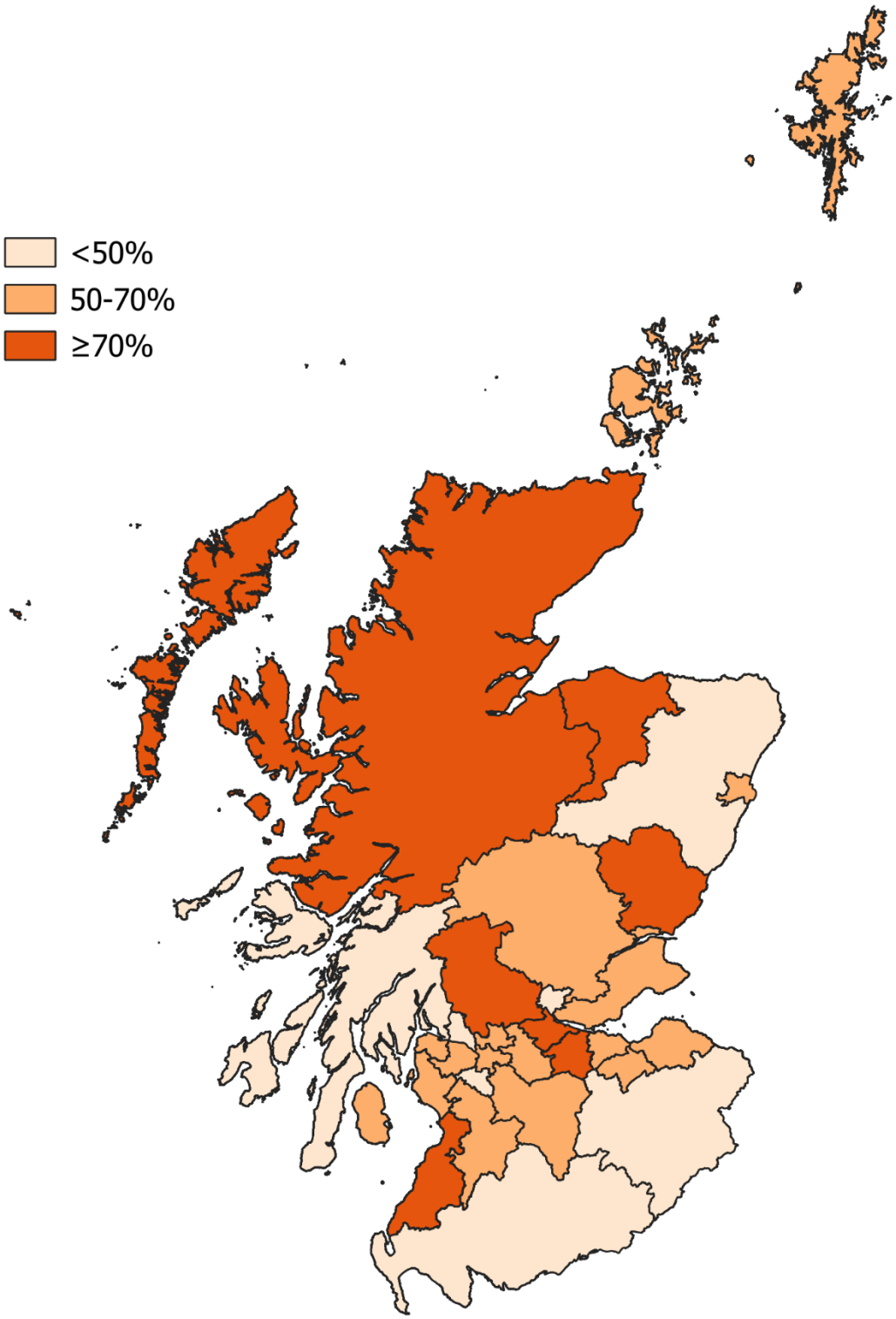

Figure B note: Scenario(s): medium risk and medium risk by 2100. Properties that are in areas at risk of flooding from multiple flood sources have been counted once.

Local plan district distribution of flood risk

Table C: Local plan district distribution of flood risk

Local plan district	Total properties in areas at risk[1]	Residential[1]	Non residential[1]	Percentage of total properties that are in areas at risk[1]	Rivers[2]	The sea[2]	Surface water & small watercourses[2]	Properties in areas at risk by 2100[3]
Ayrshire	23,300	18,100	5,200	11	6,700	1,800	1,700	38,500
Clyde and Loch Lomond	130,200	115,700	14,600	13	18,900	7,600	115,000	203,200
Findhorn, Nairn and Speyside	8,200	5,000	3,200	12	3,000	300	5,700	13,900
Forth	12,100	10,000	2,100	16	3,800	300	9,600	19,600
Forth Estuary	87,300	75,200	12,100	11	13,700	5,400	74,000	145,400
Highland and Argyll	25,200	16,300	8,900	14	5,700	3,300	19,700	43,300
North East	41,700	32,200	9,500	13	9,700	1,000	34,500	62,800
Orkney	2,200	1,400	800	13	100	400	1,800	3,400

Local plan district	Total properties in areas at risk[1]	Residential[1]	Non residential[1]	Percentage of total properties that are in areas at risk[1]	Rivers[2]	The sea[2]	Surface water & small watercourses[2]	Properties in areas at risk by 2100[3]
Outer Hebrides	1,700	1,300	500	9	200	400	1,300	3,100
Shetland	1,100	600	500	7	100	200	900	1,700
Solway	20,300	12,100	8,200	17	6,600	1,600	14,900	28,500
Tay	12,900	8,400	4,500	12	5,200	300	8,800	21,200
Tay Estuary and Montrose	19,300	14,600	4,700	10	4,000	2,500	14,900	31,000
Tweed	13,800	8,900	5,000	17	6,900	0	9,400	18,800

Table C note: Values to the nearest 100. Scenario: medium risk. Residential and non-residential properties at risk value may not add up to total properties at risk value due to rounding. [1]Properties that are in areas at risk of flooding from multiple flood sources have been counted once. [2]Some properties are at risk of flooding from multiple flood sources, so the sum of these source totals won't equal the overall totals. Due to the methodology of the SEPA flood maps, some properties may be counted as at risk in both the river assessment and the surface water and small watercourses assessments, but the risk originates from the same watercourse. When we assess the overall impact of flooding[1], this double counting is removed. [3]Scenario: medium risk by 2100.

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Figure C: Percentage of properties in areas at risk of flooding by local plan district

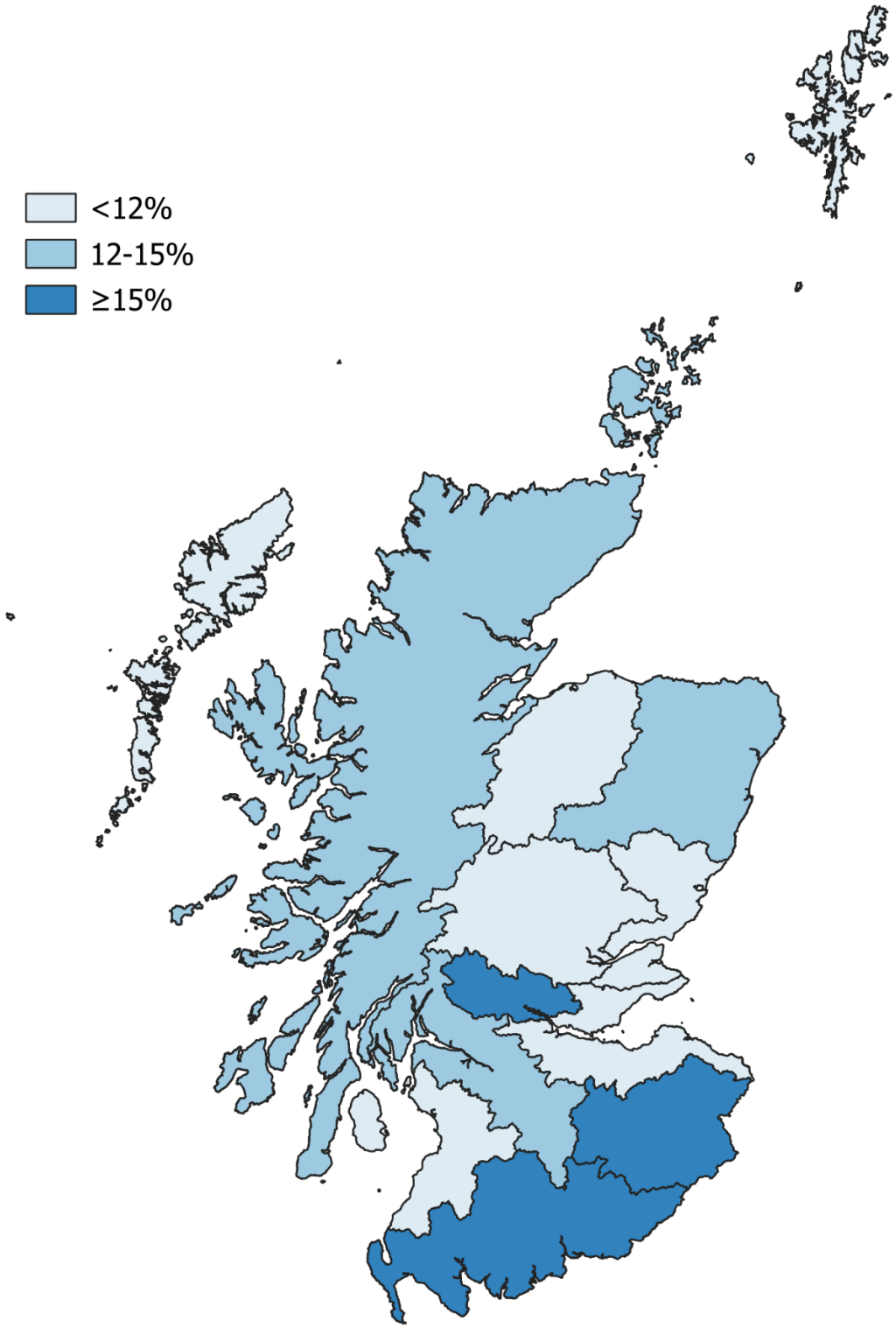

Figure C note: Scenario: medium risk. Properties that are in areas at risk of flooding from multiple flood sources have been counted once.

Figure D: Percentage increase of properties in areas at risk of flooding due to climate change by local plan district

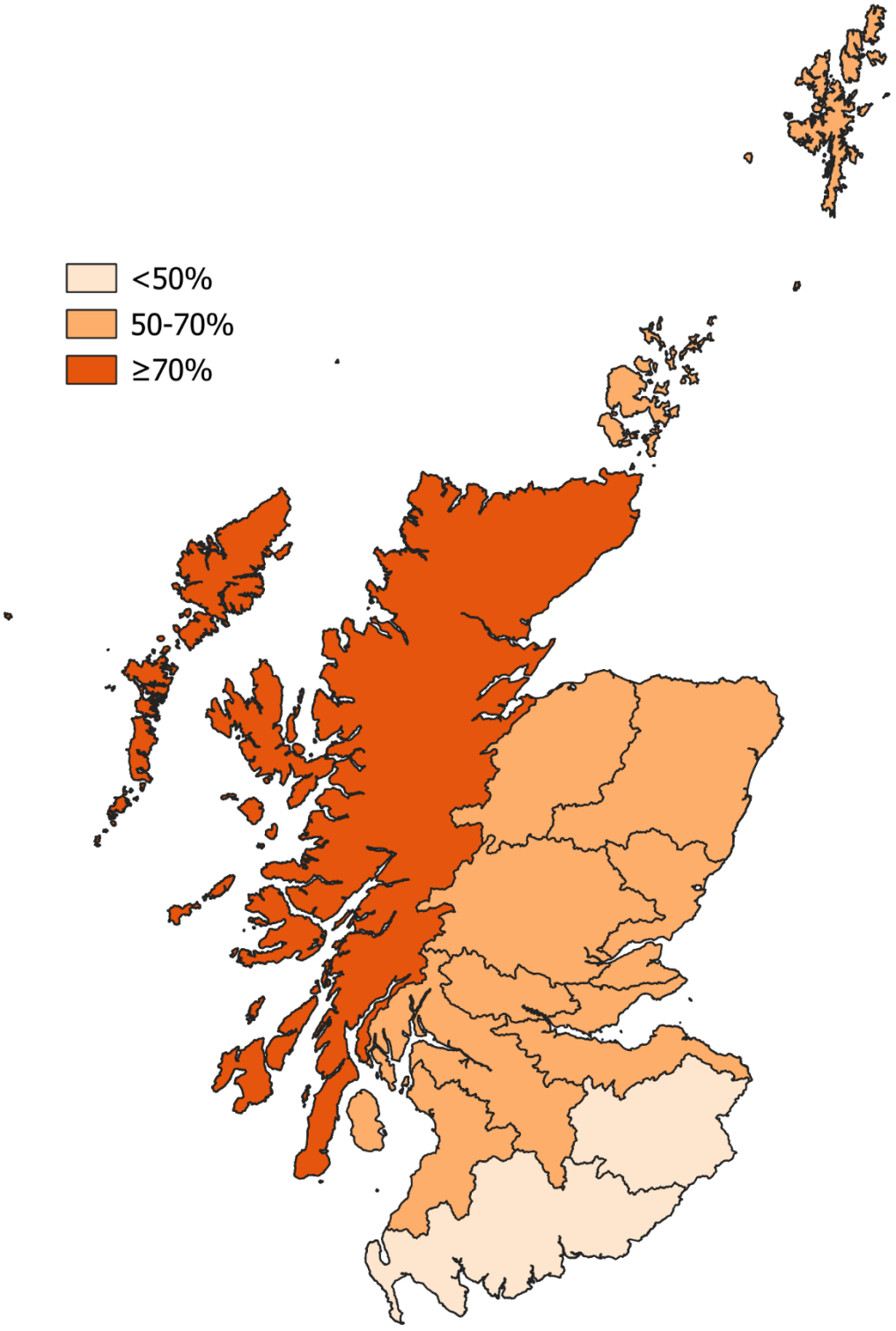

Figure D note: Scenario(s): medium risk and medium risk by 2100. Properties that are in areas at risk of flooding from multiple flood sources have been counted once.