

F Appendix F1 - Monmouthshire Flood Risk Review

1.1 Historical Flooding

Monmouthshire has a history of recorded flood events caused by multiple sources of flooding. Significant flood events within the Monmouthshire County Council authority area (which have been taken from NRW's recorded flood outlines dataset and Monmouthshire County Council records and reports on historic flood incidents) are recorded below in Table 5-11.

No records of groundwater flooding or flooding from artificial sources were made available at the time of writing. A summary of the spatial distribution of historic sewer flooding incidents by electoral ward is summarised in Table 5-12.

Table 5-11 Flooding Incidents by year

Year of Flood Event	Flood Incident
April 1947	NRW's historic flood dataset indicates flooding in Monmouth and villages upstream on the River Trothy and the River Monnow. The source of flooding is believed to be from these watercourses.
December 1979	NRW's historic flood dataset indicates flooding in Abergavenny, Usk and smaller settlements on the banks of the River Usk.
December 1981	The LFRMS details this event as the largest tidal event on record for the Wye and Usk estuaries. No further details are given on the extent of flooding or number of properties affected.
1993, 2001, 2002, 2003	The PFRA details that 16 properties were flooded on the A466 and Raglan Road areas during these time periods. The source of the flooding was from culverts upstream of these areas where the capacity was constrained.
October 2008	The PFRA highlights that heavy storms in 2008 caused flooding of 12 properties in the Buckholt area.
October 2019	Flooding in Skenfrith where 18 properties were recorded to have experienced significant flooding. The source of the flooding was from overtopping of the Norton Brook and River Monnow. Significant flooding also occurred at Forge Road, Monmouth.
February 2020	Flooding in Monmouth, Caldicot, Usk, Llanwenarth and Llanbadoc as a result of Storm Dennis and Storm Jorge. 31 properties were recorded to have experienced internal flooding in the county, but the actual figure is likely to be higher. The source of the flooding was from the

	River Wye, River Usk and several smaller watercourses in the county. It is understood that approximately 180 properties are known to have suffered internal flooding across Monmouthshire during Storm Dennis.
Unknown	The PFRA details that Blake Street, Wyesham and Monmouth were affected by flooding, the source of flooding was not indicated. Surface water flooding was also experienced in Kymin.
The PFRA contains additional information on flood extents across Monmouthshire, however the exact nature and details of these flood events are not available. It is understood that there were at least 50 reports of residential property flooding in December 2020 alone. Section 19 flood investigations can be found on Monmouthshire Council's website, these investigations cover areas affected by Storm Dennis including: • Caldicot • Woodside Usk • Llanwenarth • Llanbadoc Usk	

Table 5-12 Sewer Flooding Incidents by Electoral Ward

Electoral Ward	Number of sewer flooding incidents
Caerwent	27
Cantref	25
Castle	9
Croesonen	1
Crucorney	4
Dewstow	1
Dixton with Osbaston	4
Drybridge	1
Goetre Fawr	3
Green Lane	8
Langstone	1
Lansdown	3
Llanelly Hill	6
Llanfoist Fawr	3
Llangybi Fawr	1
Llanwenarth Ultra	2
Mardy	3
Overmonnow	1
Priory	26
Raglan	4
Shirenewton	10
St. Arvans	2

St. Christopher's	3
The Elms	4
Thornwell	1
Tidenham	4
Trellech United	1
Usk	6
West End	2
Wyesham	1

1.2 Fluvial

The River Usk, River Wye, Olway Brook and Pill Brook are the main watercourses in Monmouthshire. Other important watercourses in Monmouthshire include the River Monnow and Neddern Brook, Caldicot and Mill Reen and Magor. These watercourses are all classified as NRW Main Rivers. Maps showing the extent of the flood outlines from the NRW FMfP- Rivers in Monmouthshire are provided in Appendix F.

The River Usk rises in the Brecon Beacons before entering the county of Monmouthshire to the north-west of Abergavenny prior to flowing in a southerly direction. The Olway Brook rises to the south of Raglan and flows in a southerly direction where it is joined from the east by the Pill Brook. The Olway Brook converges with the River Usk just south of the town of Usk. The River Usk then continues to flow south towards the Newport local authority area and the Severn Estuary.

The River Wye rises in the Cambrian Mountains in mid Wales before flowing in a south easterly direction towards Monmouthshire. The river enters the county at its northern most extent in Llanthony before flowing through Monmouth and Chepstow, forming the eastern boundary of the county. The River Wye discharges into the Severn Estuary at Chepstow.

Due to the nature of the topography in the county, floodplains are wide and flat allowing water to cover large areas. The key settlements of Abergavenny, Monmouth, Usk and Magor are largely located in Flood Zone 3 with several smaller villages along these main watercourses also falling into Flood Zone 3.

NRW flood defences, with a standard of protection of 1 in 100 years, are present alongside the River Usk through the town of Usk. NRW defences are also located alongside the River Wye in Monmouth. The River Wye defences have a standard of protection of 1 in 100 years. The areas behind both flood defences are classified as NRW TAN-15 Defended Zones.

There are three Monmouthshire County Council managed flood defences in the county, these are:

- Blake Street, Wyesham, Monmouth
- Station Road, Abergavenny
- Wonastow Road Pumping Station

It is unclear as to the form of these flood defences, their standard of protection, or the areas benefitting from them. They do not contribute to the TAN-15 Defended Zones.

Schemes involving localised drainage improvements and Property Flood Resilience (PFR) measures have not been included.

Fluvial Flood Risk & TAN-15

Flood defences found in the town of Monmouth and Usk are maintained by NRW. As a result of these flood defences, parts of the fluvial floodplain in Monmouth and Usk is categorised as a TAN-15 Defended Zone. Therefore, all forms of development are possible subject to satisfying the requirements of the Justification Tests.

There are extensive areas of Flood Zone 3 without defences in many existing settlements such as Monmouth, Abergavenny, as well as small parts of Usk, Caldicot and Magor. New highly vulnerable development within these areas is unlikely to be possible, as Flood Zone 3 is not suitable for highly vulnerable development. Less vulnerable development shall only be possible subject to the stringent Justification Tests outlined in TAN-15. Development in these areas shall be subject to site specific assessment and detailed flood modelling shall be required. Due to the lack of protection from NRW flood defences, any proposed development is likely to require flood mitigation considerations and may be more challenging to meet TAN-15 requirements.

1.3 Tidal

The Severn Estuary is a potential source of tidal flooding to the southern parts of Monmouthshire. The River Usk also causes a tidal flood risk to rural areas in the west of the county. Tidal flooding is most likely to occur during storm surge conditions that is characterised by wind-driven waves and low atmospheric pressure and high spring tides. In areas protected from flooding by sea defences, tidal flooding can occur as a result of a breach in the defences, failure of a mechanical barrier or overtopping of defences.

The NRW FMfP - Sea, shown in Appendix F, identifies that Caldicot, Magor and Portskewett are the main areas at risk of flooding from the sea in Monmouthshire due to their location in Flood Zone 3. NRW flood defences are present along the Caldicot levels which have a standard of protection of 1 in 200 years in the majority of areas.

Tidal Flood Risk & TAN-15

Flood defences found along the tidal rivers in Monmouthshire and around its coastline are maintained by NRW. As a result of these flood defences, part of the tidal floodplain to the south of Undy is categorised as a TAN-15 Defended Zone. Therefore, all forms of development are possible if the requirements of the Justification Test can be satisfied.

No tidal TAN-15 defended zones are present in Caldicot, making highly vulnerable development in these areas challenging. In these tidal areas it is known that the application of climate change results in a large tidal flood extent with significant depths of flooding. This increase in flood risk may make it difficult to meet the requirements of the acceptability criteria of TAN-15.

Less vulnerable development should only be considered in Flood Zone 3 subject to application of the Justification Test and acceptability of consequences. It is likely that flood mitigation measures will be required for developments in these areas. Development in these areas shall be subject to site specific assessment and detailed modelling shall be required. Opportunities for highly vulnerable development should be located in areas outside Flood Zone 3.

A small part of Chepstow is located in Flood Zones 2 and 3 from the tidally influenced River Wye. Developments should be located outside of Zone 2 and 3 where possible with highly vulnerable development located in areas outside Flood Zone 3.

1.4 Surface water and smaller watercourses

The NRW FMfP- Surface Water and Small Watercourses in Appendix F shows surface water flooding is predicted to predominantly follow topographical flow paths of existing watercourses or dry valleys in rural parts of the county.

The town of Usk has the greatest risk of surface water and small watercourse flooding, with many areas located within Flood Zone 3. However, flooding in Usk is mostly limited to the rural outskirts of the town, rather than the town centre. Parts of the urban areas within Abergavenny, Monmouth and Caldicot are located within Flood Zones 2 and 3 and are at the greatest risk of surface water flooding.

Surface Water Flood Risk & TAN-15

All development types are permissible in Flood Zone 2 and 3 provided that acceptability criteria in TAN-15 can be met. Development in these areas shall be subject to site specific assessment which should consider flow pathways, potential ground levelling for topographic depressions and how SuDS can be used to manage surface water flow across a development site. Developers should consult the LLFA for any specific knowledge related to surface water and small watercourse flooding at a proposed development site. Due

to the localised surface water flooding in the main settlements of Abergavenny, Monmouth, Usk and Caldicot, developments should be located outside of Zone 2 and 3 where possible.

1.5 Groundwater

The bedrock geology across the Monmouthshire County is varied but predominantly comprised of Mudstone, Siltstone and Sandstone. Mudstone tends to have low porosity and permeability whilst sandstone is regarded as more permeable and allows for the storage and movement of groundwater. As a result, upward percolation of groundwater and subsequent flooding should be considered in these areas. In the southern part of the county, the bedrock is predominantly comprised of limestone and sandstone. These rocks are more permeable and allow for the storage and movement of groundwater.

Areas of superficial deposits in Monmouthshire are limited and are predominantly present around the rivers in the county. The superficial deposits overlaying the bedrock in the Monmouthshire County authority area are comprised in some areas of clay which is predominantly impermeable, and in others of Till which is generally permeable. The variation of superficial deposits throughout the Monmouthshire County suggests that groundwater flooding could present a localised risk to some areas. Maps showing the indicative Groundwater flood depth in Monmouthshire are provided in Appendix F.

The majority of the county has groundwater that is at least 5m below the ground surface or lower. In the southern part of the county around Magor, Caldicot and Portskewett groundwater levels are within 0.5 and 0.025m of the ground surface; this indicates that there is a greater risk of groundwater flooding in these areas.

Towns and villages along the River Usk from Abergavenny to Usk are also identified as areas where groundwater levels are within 0.5 and 0.025m of the ground surface. These areas are mainly found within close proximity to the River Usk and indicate that groundwater flooding in these areas is more likely.

Groundwater Flood Risk & TAN-15

TAN-15 does not specify any requirements for groundwater flood risk, other than the risk of groundwater flooding should be considered as part of an FCA. However, it would be advisable to locate developments away from areas where groundwater is less than 0.025m below the ground surface without further groundwater monitoring and detailed assessment being undertaken.

1.6 Sewer flooding

DCWW is responsible for sewer infrastructure across the study area and recording sewer flooding incidents.

DCWW have provided detail of historic incidents and active risk areas. Historical flooding incidents are recorded relating to public foul, combined or surface water sewers. These records display the number of properties that experienced internal and/or external flooding. A summary of the spatial distribution of historic sewer flooding incidents by electoral ward is summarised in Table 5-12 in Section 5.6.1. This data shows that the wards with the highest number of flood incidents are the Caerwent, Priory and Cantref wards with 27, 26 and 25 sewer flood incidents recorded, respectively. The remaining wards have all experienced less than 10 incidents of sewer flooding since this record began. DCWW are working to reduce the number of sewer flood incidents by investing in maintenance and improvements to the sewer network.

DCWW has not provided any information regarding the predicted flood risk from the sewerage network.

Flood Risk from Sewers & TAN-15

TAN-15 does not specify any requirements for sewer flood risk, other than that it should be considered as part of a FCA. The LLFA and DCWW should be consulted to provide specific advice on any known history of sewer flooding and any remedial action taken.

1.7 Artificial flooding

Artificial sources of flooding include numerous reservoirs upstream of the county which pose a flood risk to Monmouthshire. Maps showing the potential flood risk from reservoirs are provided in Appendix F. The reservoirs which pose a flood risk to the county are:

- Cray Reservoir
- Llyn Y Fan Fawr Reservoir
- Usk Reservoir
- Llandegfedd reservoir
- Talybont reservoir

The NRW FRAW Flood Risk from Reservoirs mapping indicates that Abergavenny, Usk and Caerleon where the floodplains are flat and wide are identified as the areas most affected due to a reservoir breach or overtopping.

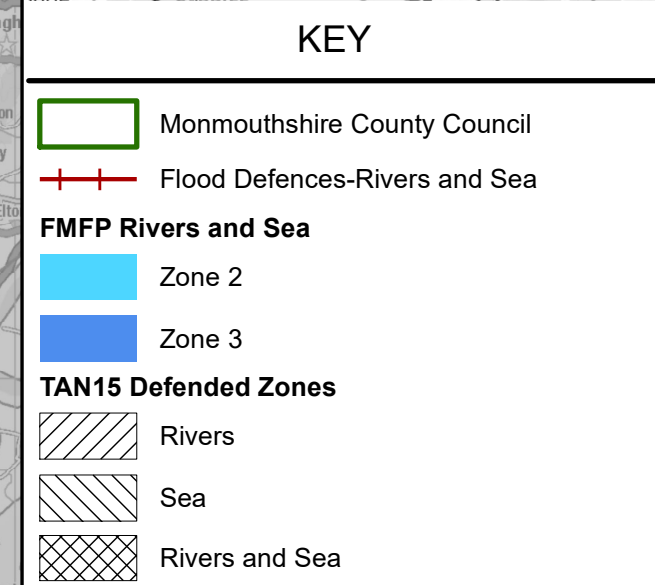
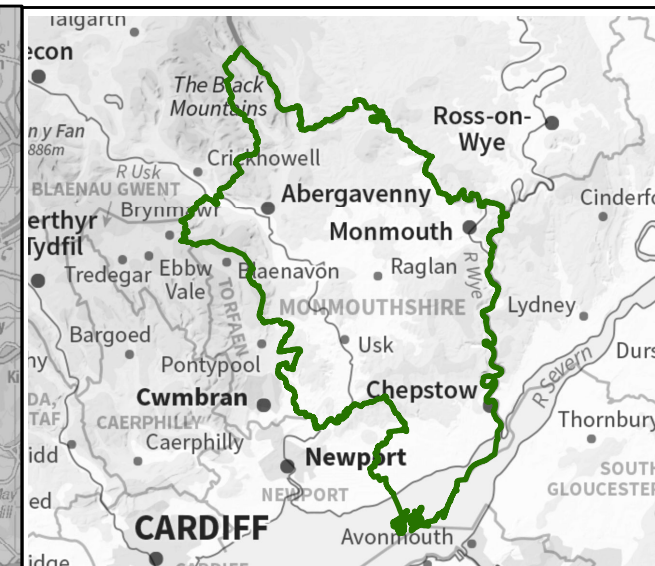
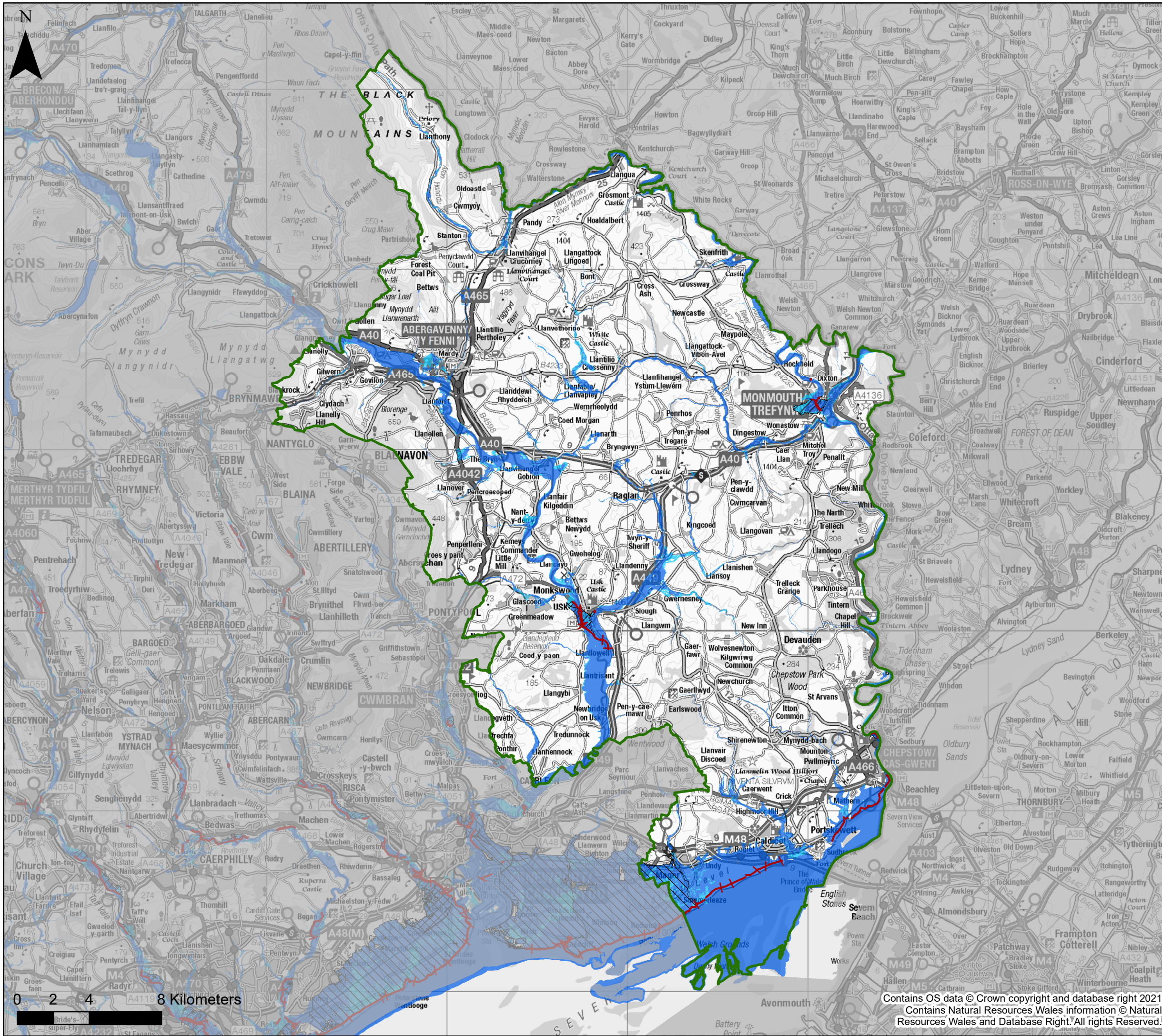
The failure of a reservoir can cause catastrophic damage due to the sudden release of large volumes of water. Reservoirs in the UK have an excellent safety record, and NRW is the enforcement authority for the Reservoirs Act 1975 in England and Wales. All large reservoirs must be inspected and supervised by reservoir panel engineers. It is assumed that these reservoirs are regularly inspected, and essential safety work is carried out. These reservoirs, therefore, present minimal risk.

1.8 Changes in understanding of flood risk

Future FMfP improvements

The locations listed below are covered by existing detailed NRW flood models which are expected to be incorporated into the Flood Map for Planning through future routine updates. Where NRW have provided an indication of timescales for these updates, this is provided in brackets.

- Llanfoist (River Usk) (December 2020)
- Usk Town (unknown)
- Olway Brook (unknown)
- Cibi Brook (unknown)
- Tidal Flood Mapping (unknown)
- Caldicot and Wentlooge (unknown)
- Monmouth (unknown)
- River Ebbw Lower (unknown)
- Liswerry (unknown)



Notes
The TAN15 Defended Zones have been created for the areas behind flood defences managed and maintained by Risk Management Authorities that have a minimum, Present Day Standard of Protection of 1% (1 in 100) annual event probability (AEP) for rivers, or 0.5% (1 in 200) annual event probability (AEP) for the sea plus climate change and freeboard.



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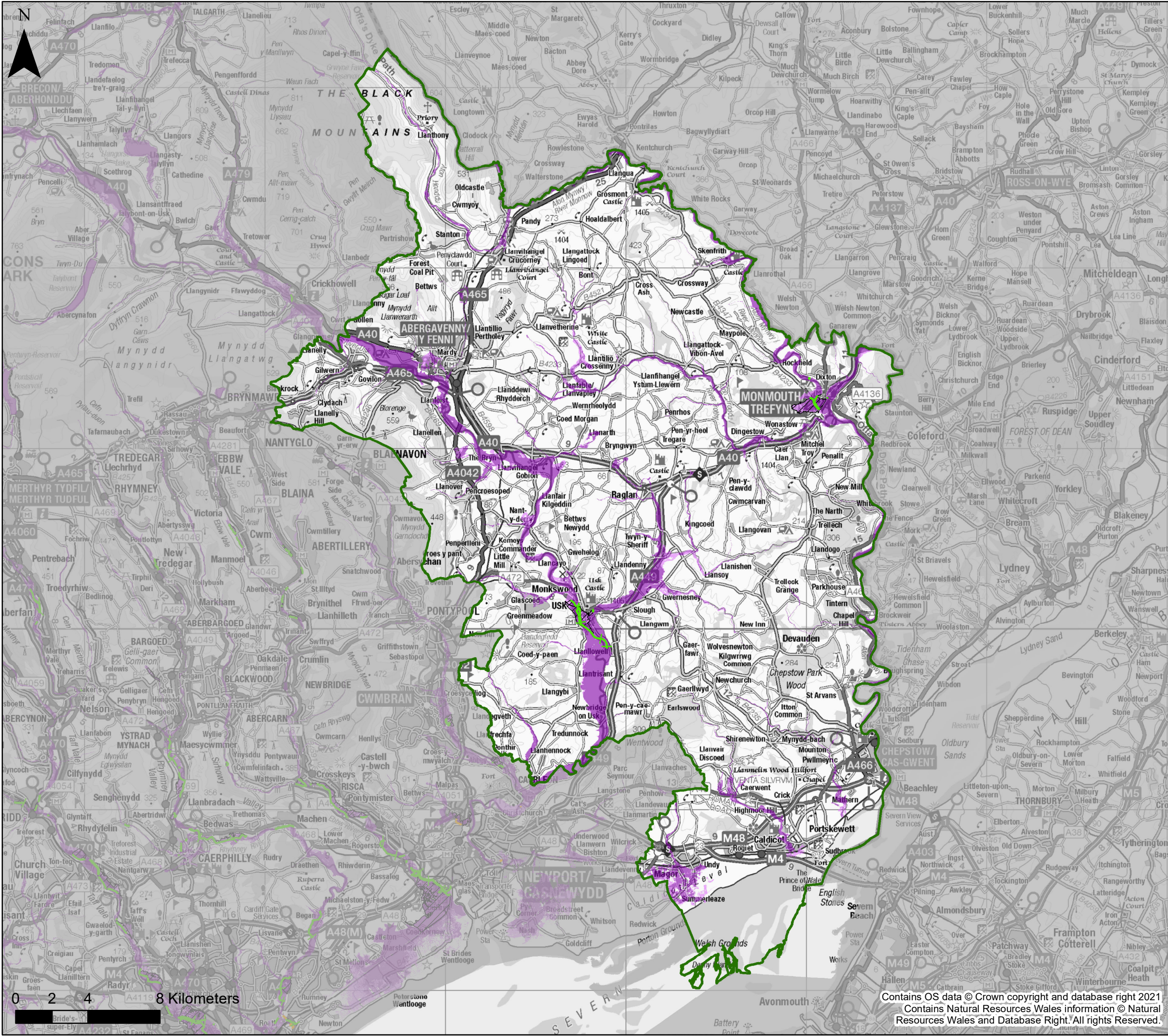
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Flood Map for Planning – Rivers and Sea

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KEY

Monmouthshire County Council

Rivers

Zone 2

Zone 3

TAN15 Defended Zones

Rivers

Flood Defences

Fluvial

Fluvial and Tidal

Notes

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monmouthshire
sir fynwy



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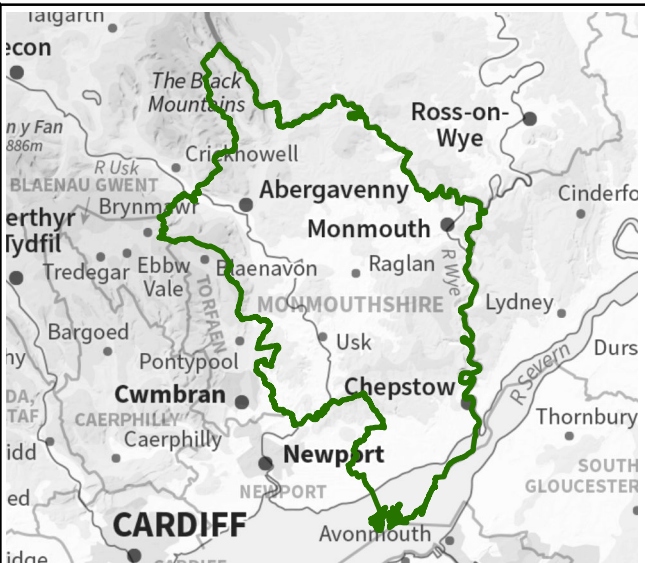
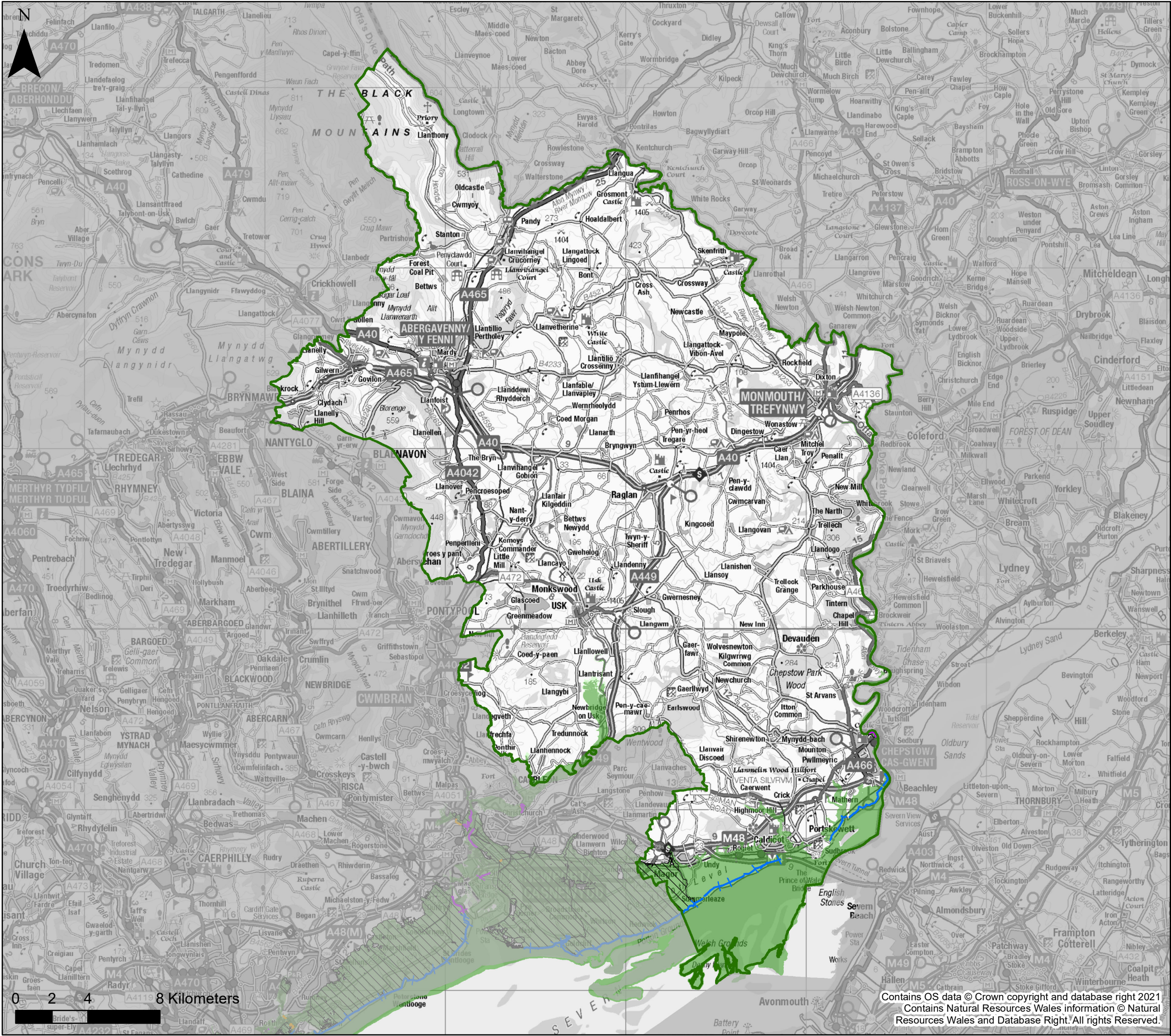
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Flood Map for Planning- Rivers

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KEY

Monmouthshire County Council

Sea

Flood Zone 2

Flood Zone 3

TAN15 Defended Zones

Sea

Flood Defences

Coastal

Tidal

Fluvial and Tidal

Notes

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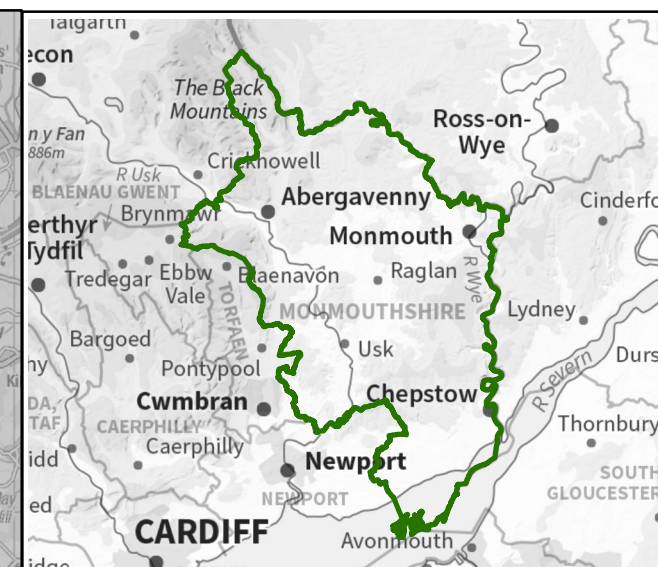
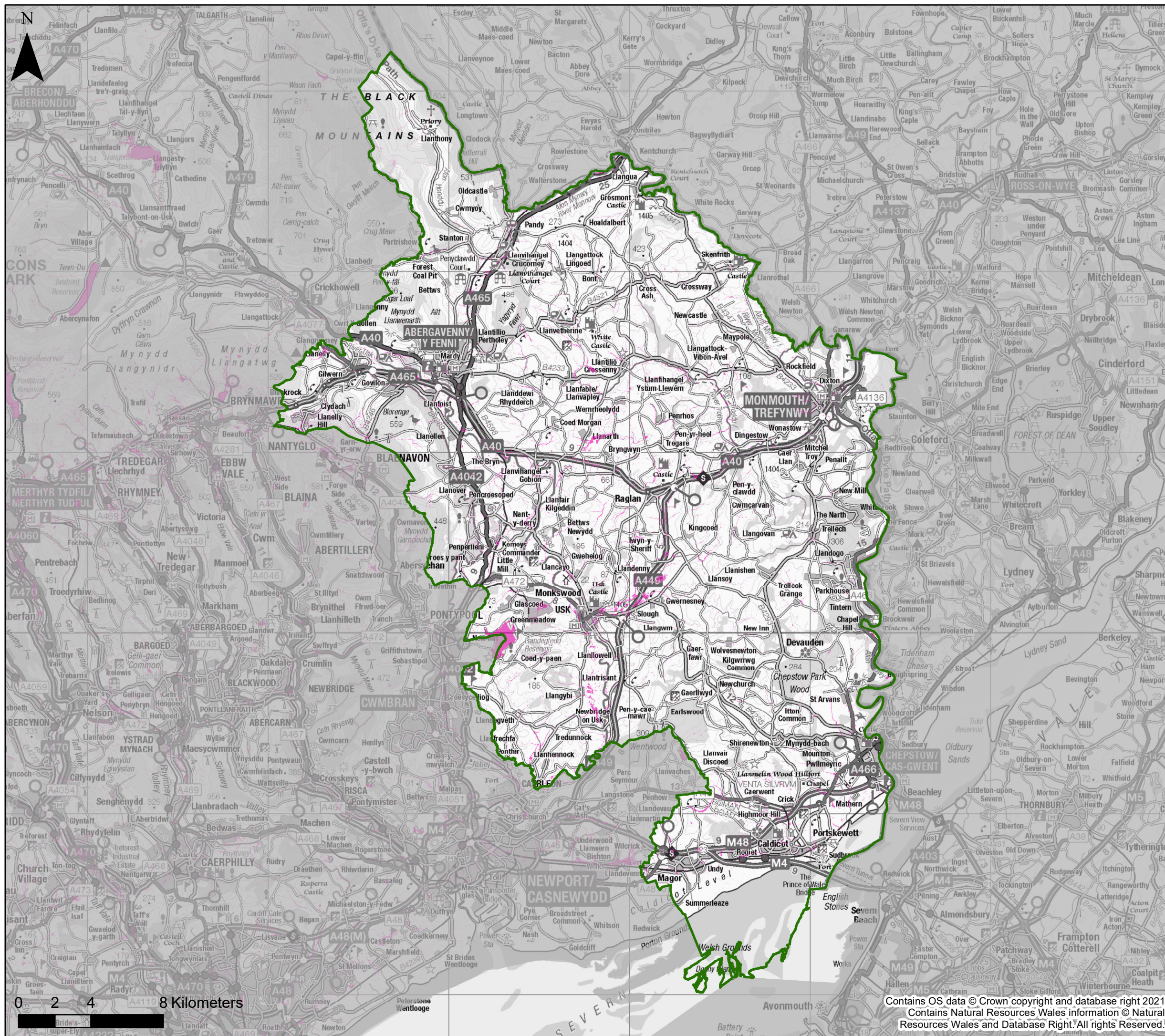
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Flood Map for Planning- Sea

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KEY

-  Monmouthshire County Council
- Surface Water and Small Watercourses**
-  Zone 2
-  Zone 3



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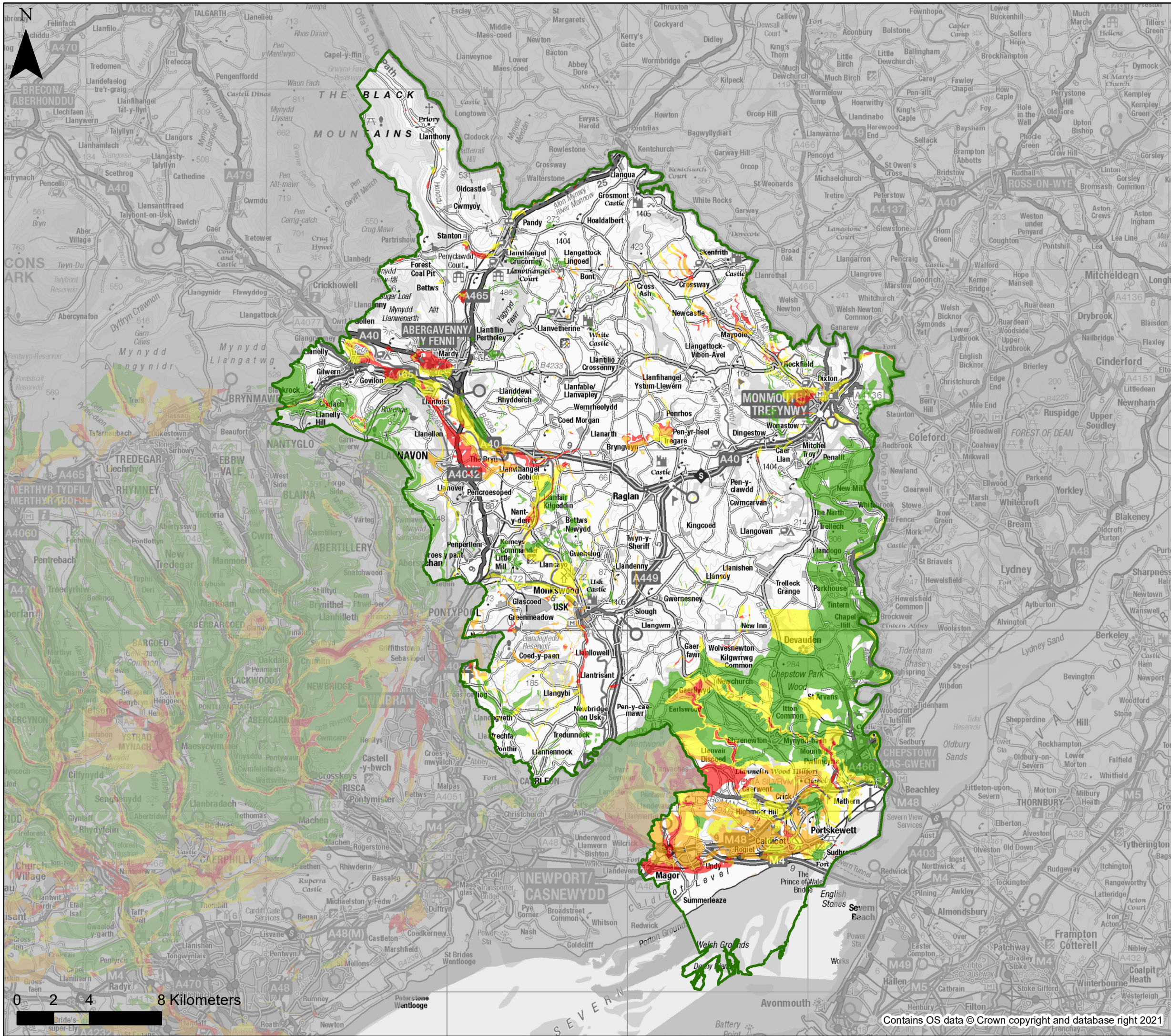
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Flood Map for Planning- Surface Water and Small Watercourses

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KEY

- Monmouthshire County Council
- Groundwater Flood Depth**
- Indicative Groundwater flood depth**
- Groundwater levels are at least 5m below the ground surface.
- Groundwater levels are between 0.5m and 5m below the ground surface.
- Groundwater levels are between 0.025m and 0.5m below the ground surface.
- Groundwater levels are either at or very near (within 0.025m of) the ground surface.
- Low risk.

Notes
The map provides an indicative assessment of groundwater flood depth on a 5m grid. Please refer to Section 4 of the SFCA Report for further detail of the dataset used to define the potential for groundwater emergence.



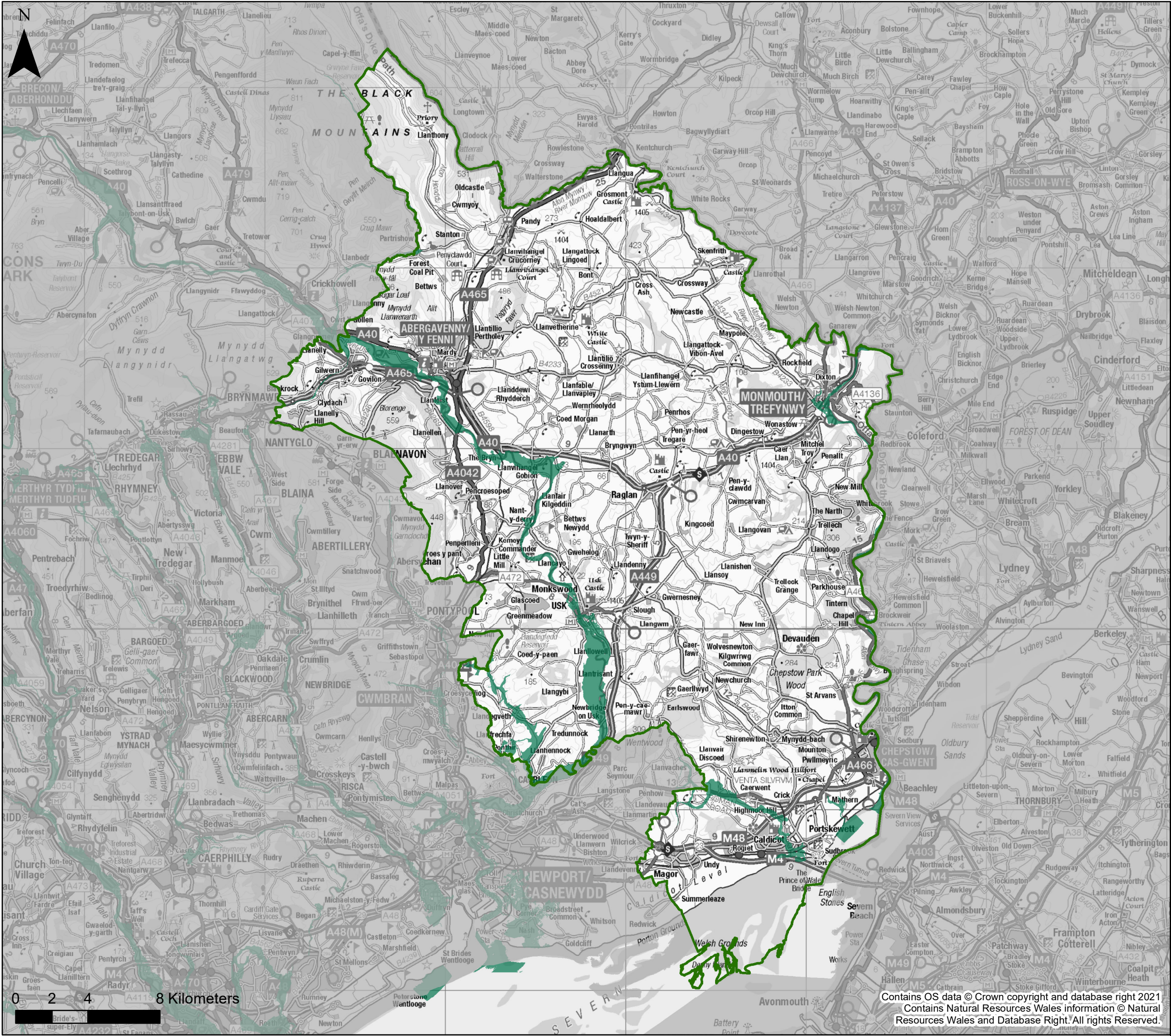
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Stage 1 Strategic Flood Consequences Assessment

Flood Risk from Groundwater

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KEY

-  Monmouthshire County Council
-  Flood Risk from Reservoirs



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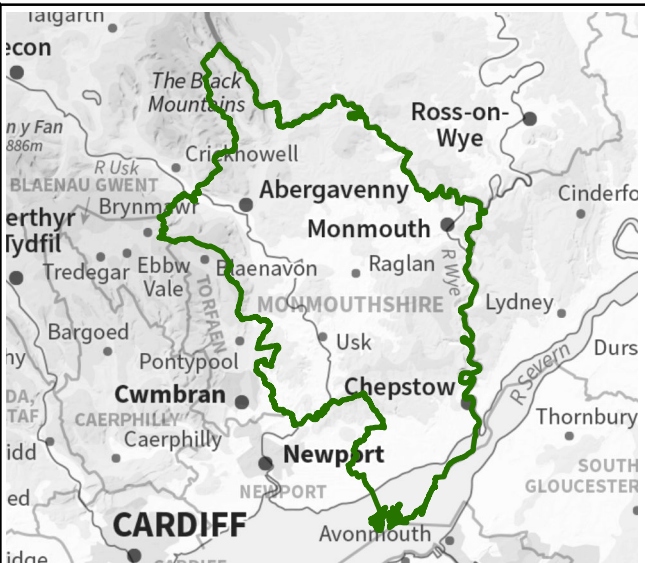
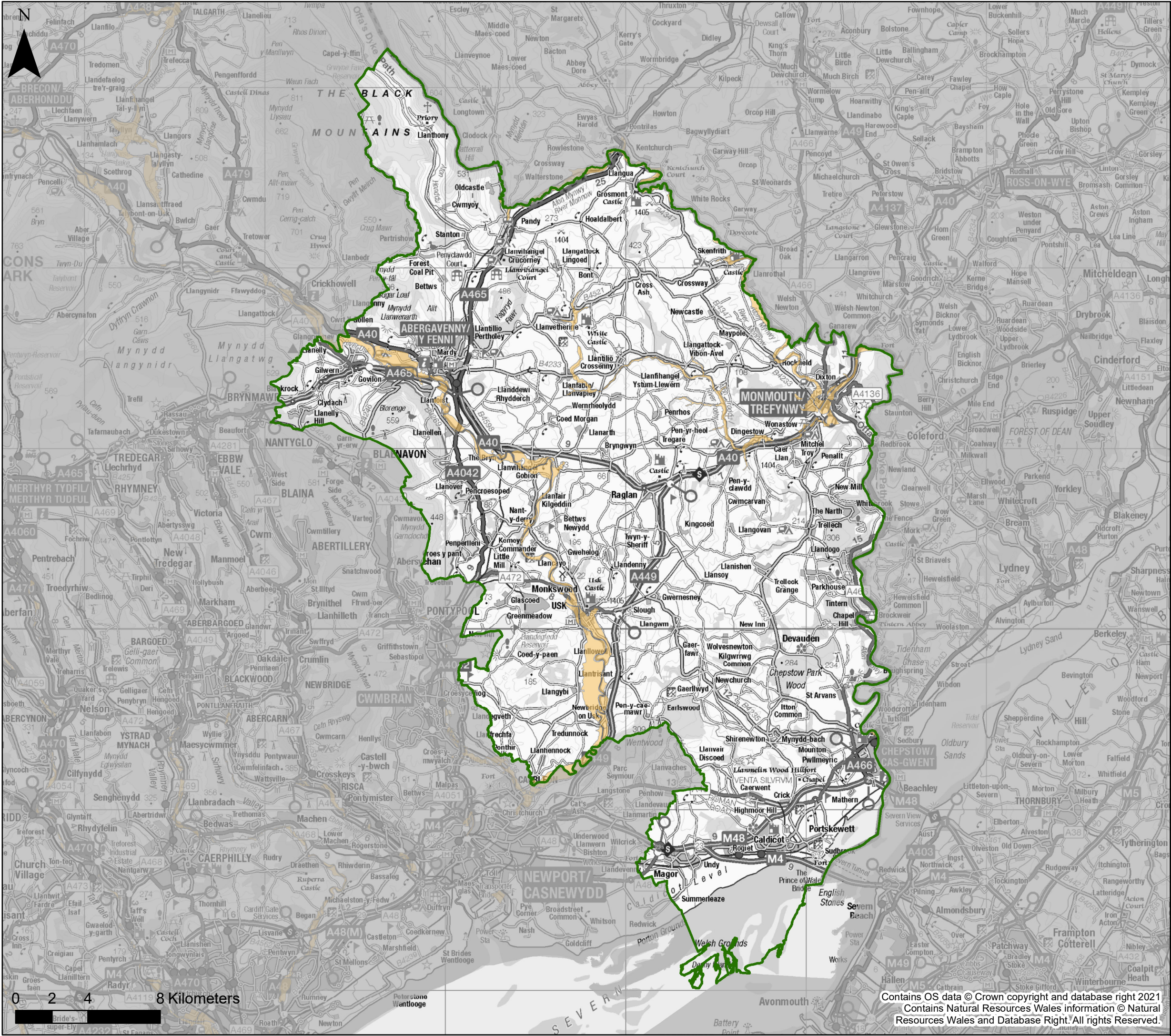
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Stage 1 Strategic Flood
Consequences Assessment
Flood Risk from Reservoirs

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KEY

- Monmouthshire County Council
- NRW Recorded Flood Extents



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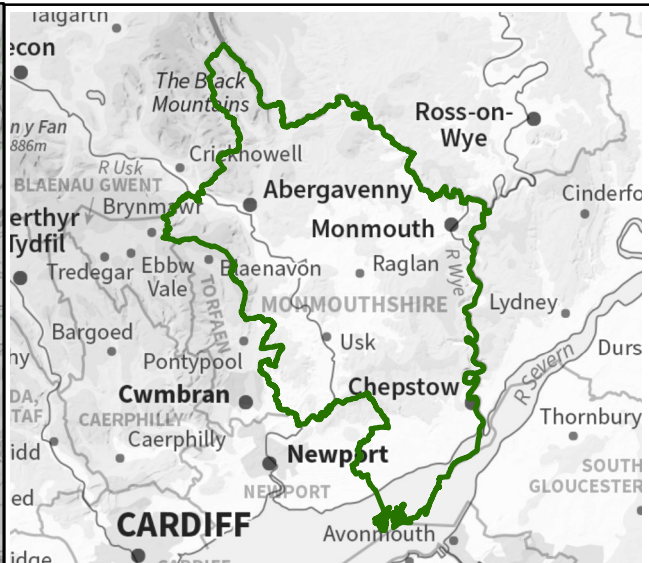
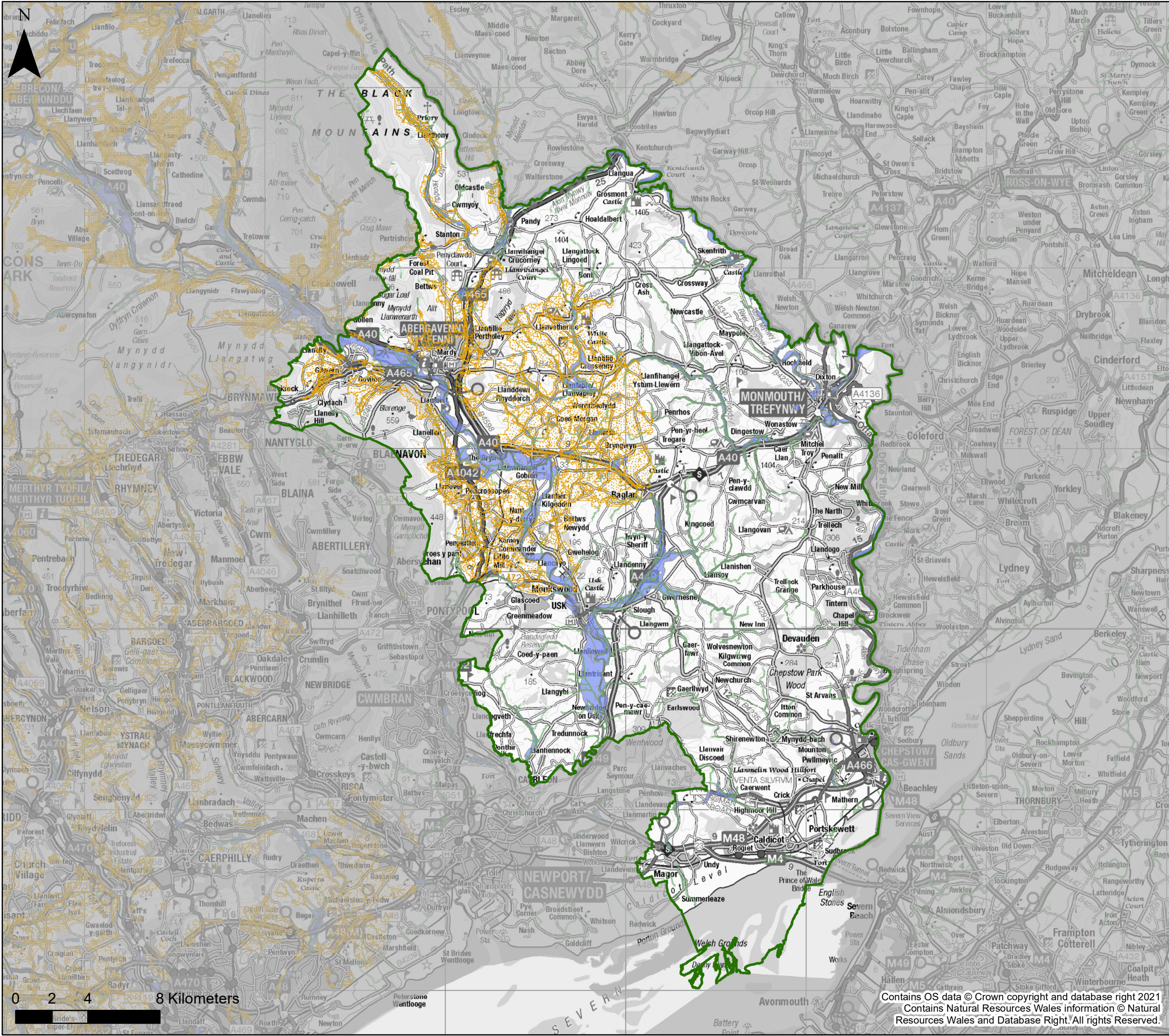
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Consequences Assessment

Historic Flooding

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KEY

- Monmouthshire County Council
- Wider Catchment Woodland Potential
- Riparian Woodland Planting Potential
- Floodplain Woodland Planting Potential

Notes
This map shows areas for woodland planting potential. Further data relating to areas for potential attenuation features is provided as part of the Natural Resources Wales Working with Natural Processes dataset, but these potential attenuation features aren't visible on this scale of mapping. The attenuation features are shown on the local maps.

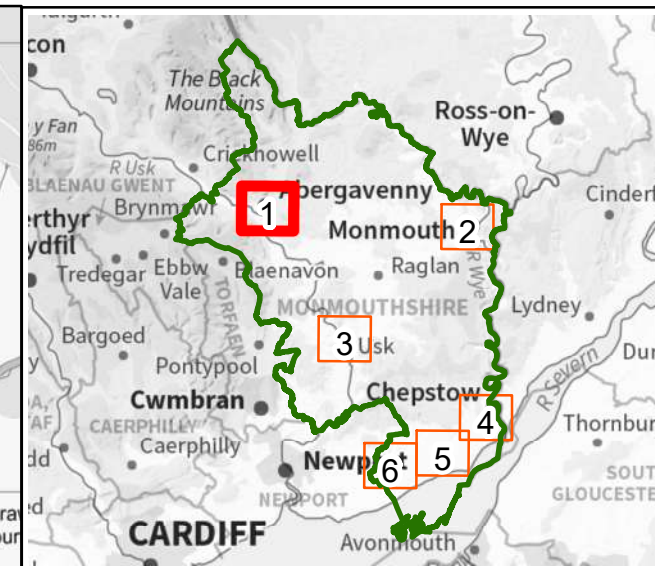
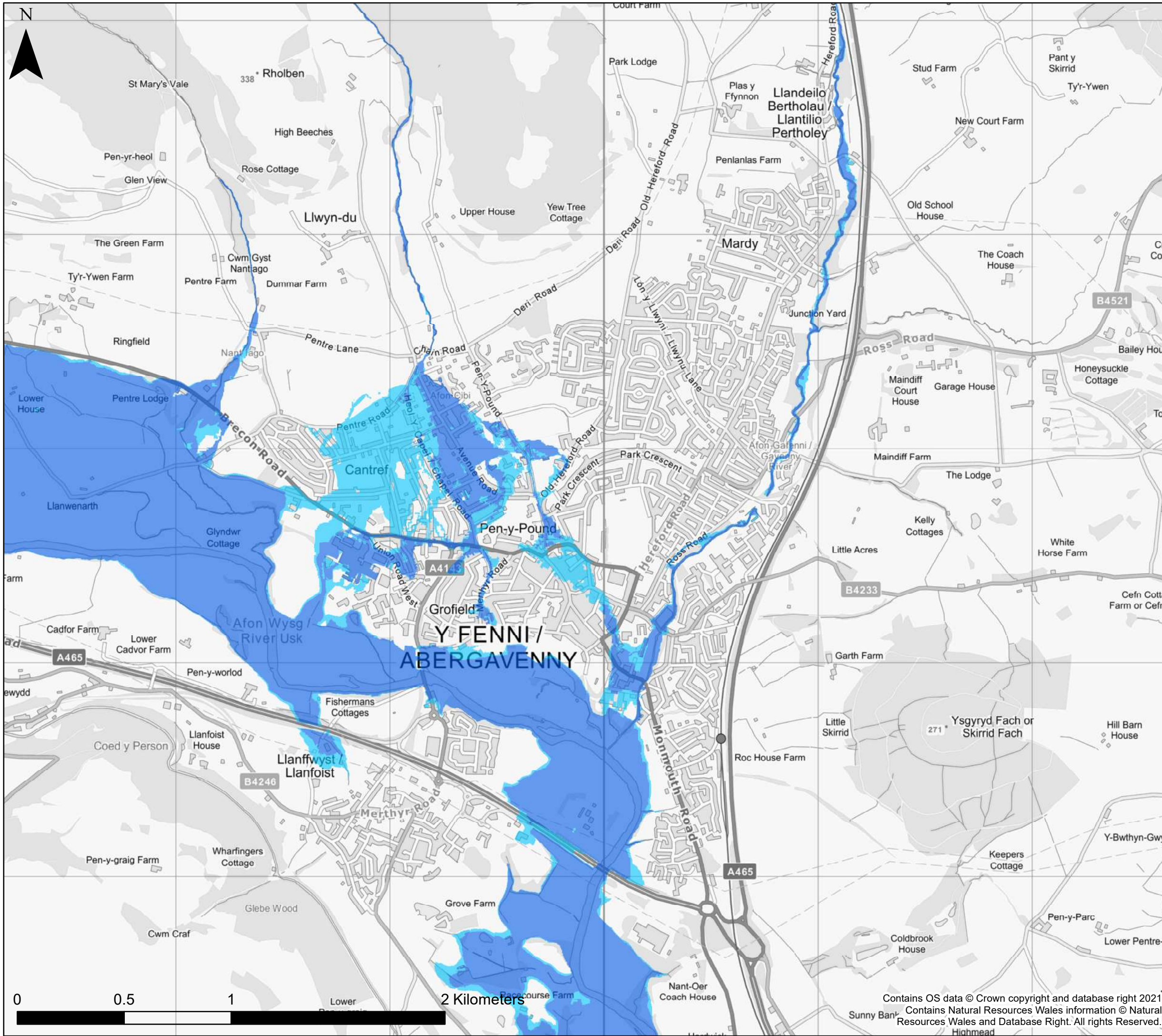


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Stage 1 Strategic Flood Consequences Assessment
Working with Natural Processes - Potential Mapping

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KEY

- Monmouthshire County Council
- Flood Defences-Rivers and Sea
- FMFP Rivers and Sea**
 - Zone 2
 - Zone 3
- TAN15 Defended Zones**
 - Rivers
 - Sea
 - Rivers and Sea

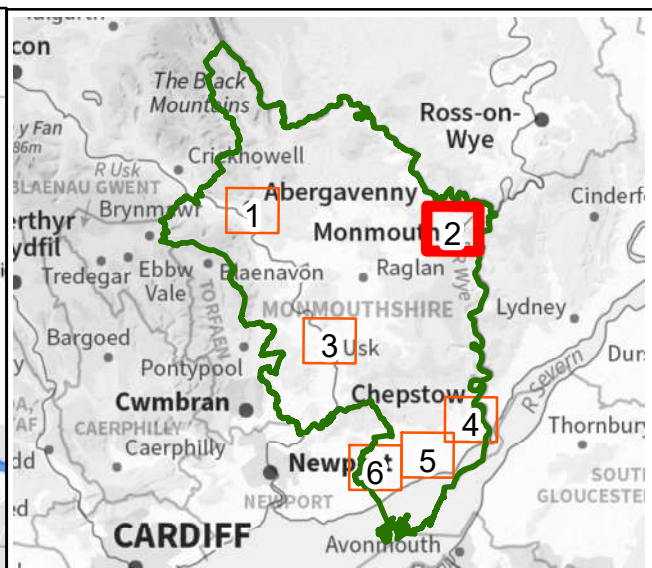
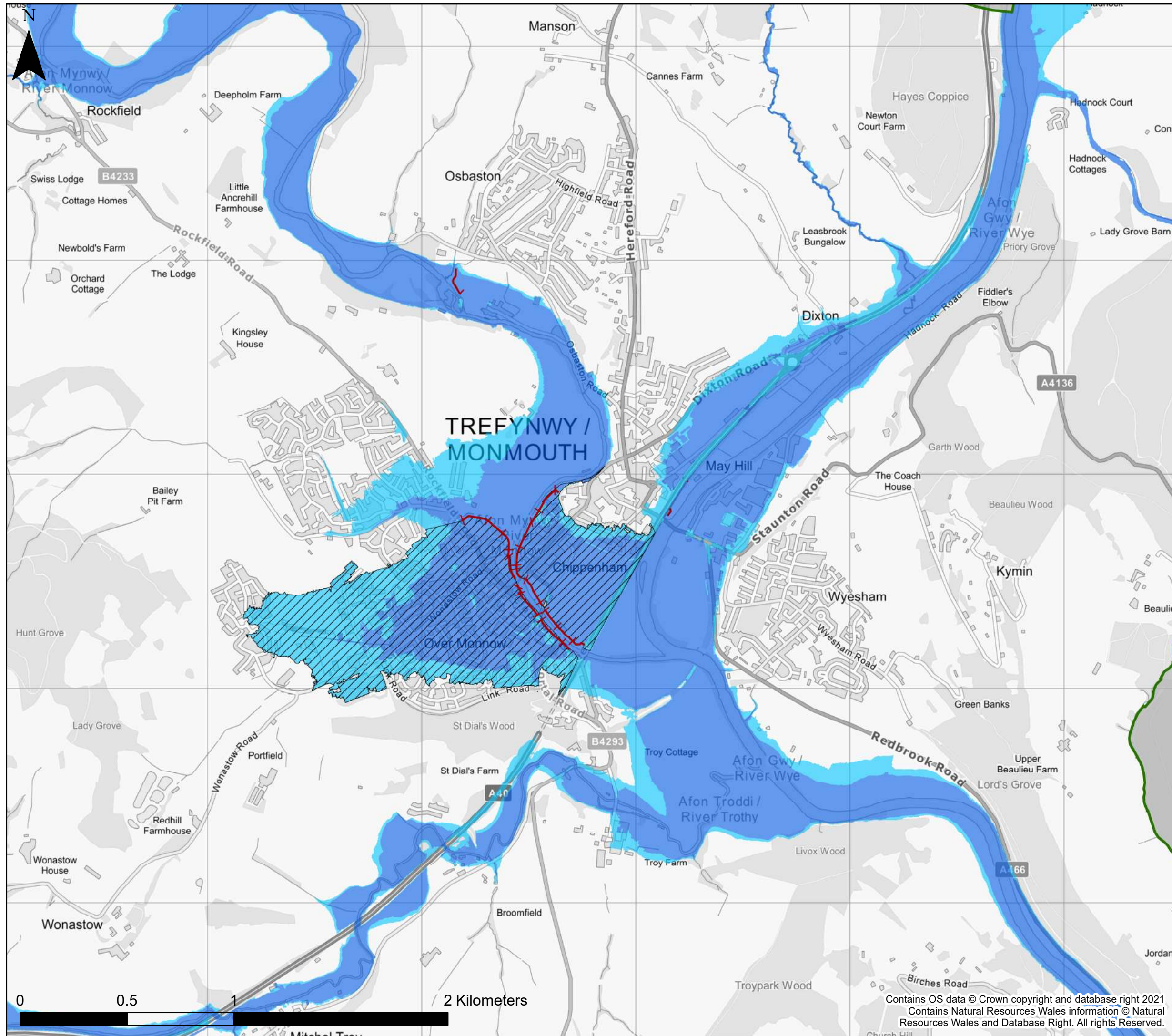
Notes
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Monmouthshire County Council Stage 1 Strategic Flood Consequences Assessment

Flood Map for Planning – Rivers and Sea

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	Approved	GB	17/12/2021



KEY

- Monmouthshire County Council
- Flood Defences-Rivers and Sea
- FMFP Rivers and Sea**
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 - Zone 3
- TAN15 Defended Zones**
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 - Sea
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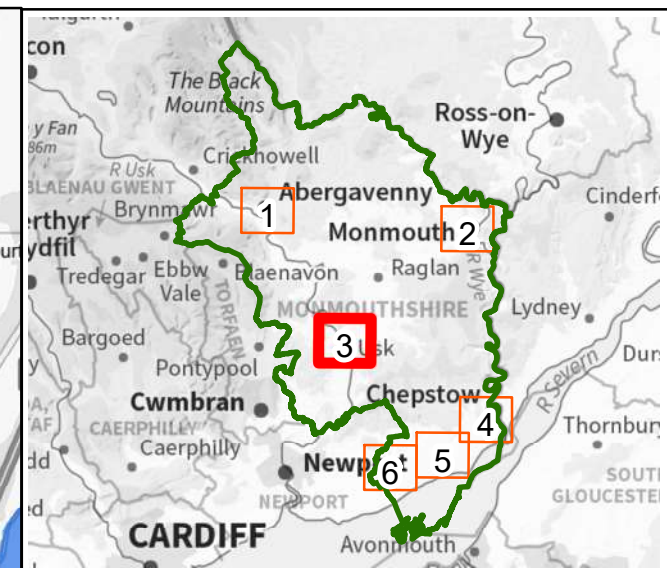
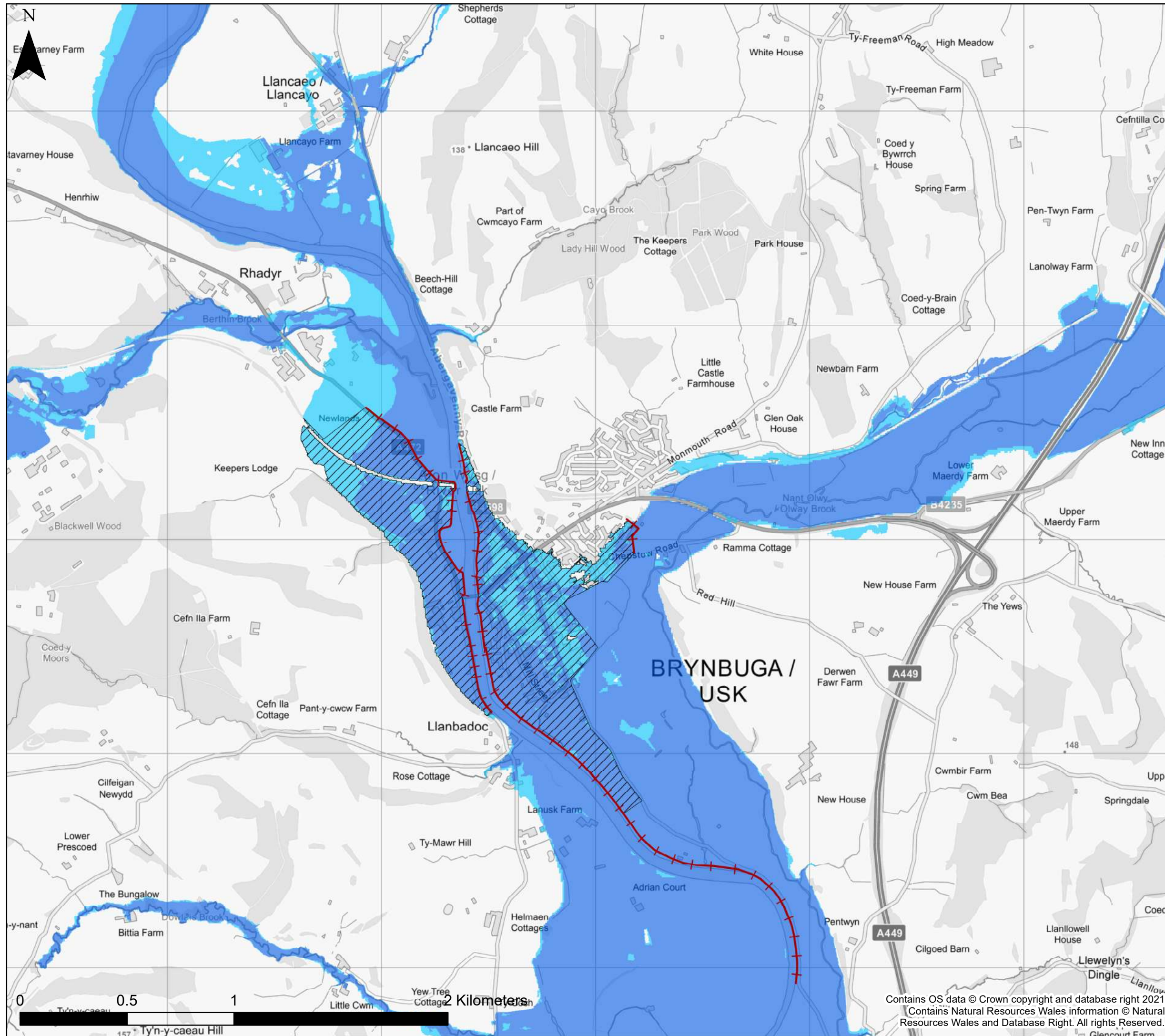


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*Flood Map for Planning – Rivers
and Sea*

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KEY

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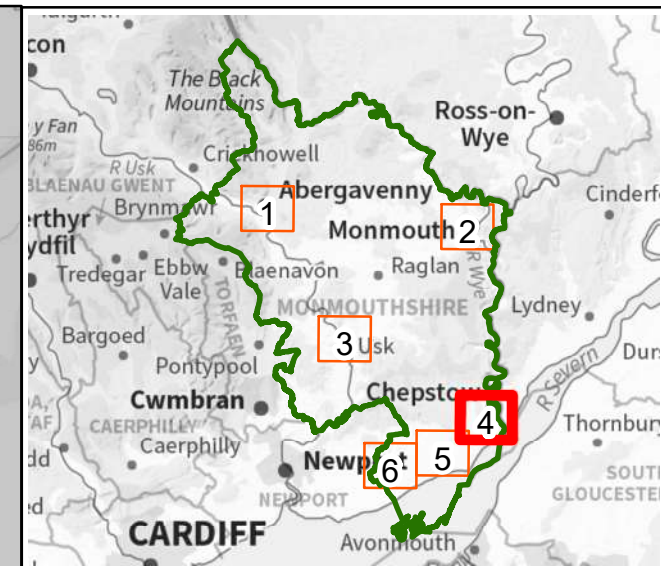
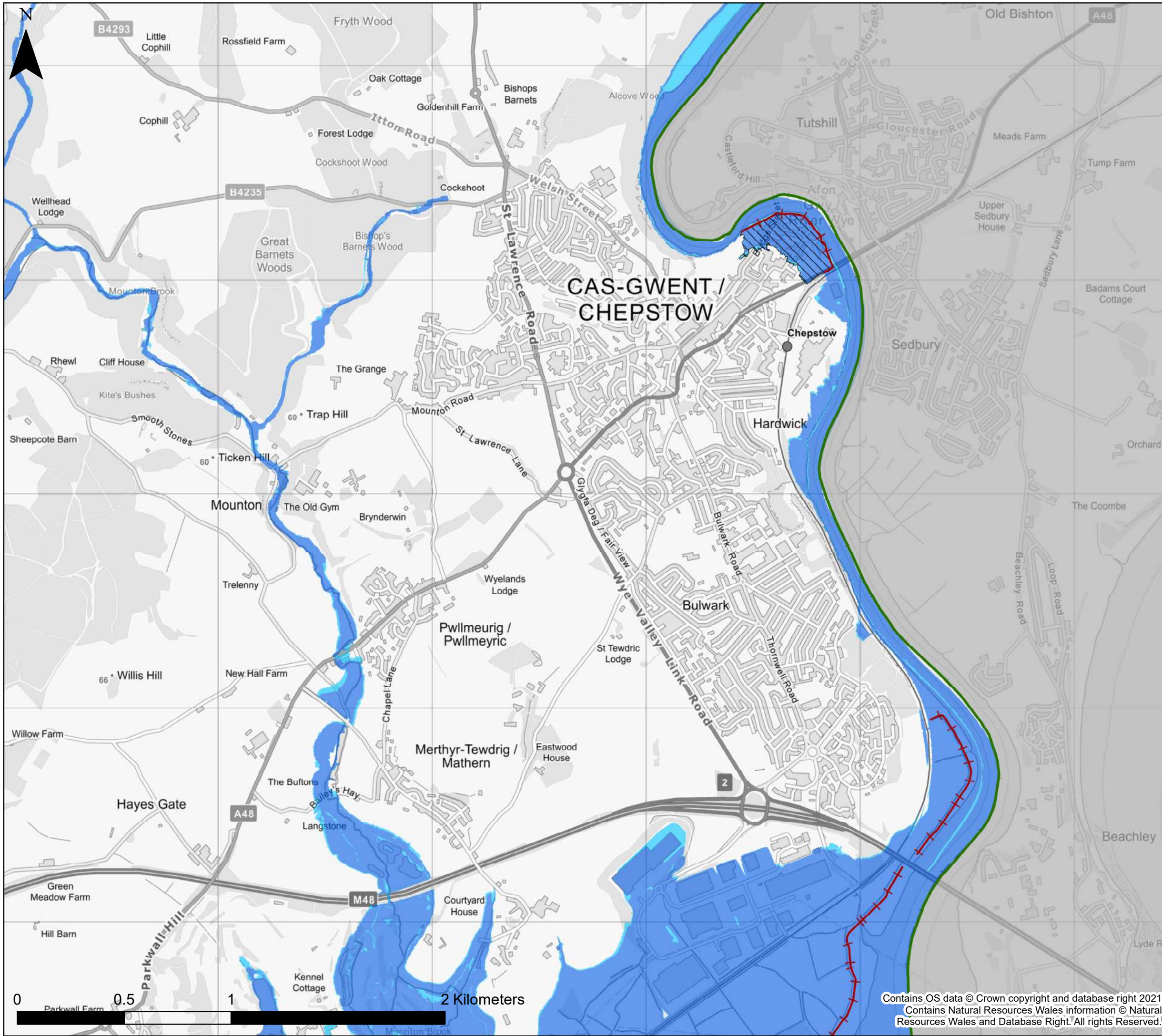
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 Stage 1 Strategic Flood
 Consequences Assessment

*Flood Map for Planning – Rivers
 and Sea*

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KEY

- Monmouthshire County Council
- Flood Defences-Rivers and Sea
- FMFP Rivers and Sea**
- Zone 2
- Zone 3
- TAN15 Defended Zones**
- Rivers
- Sea
- Rivers and Sea

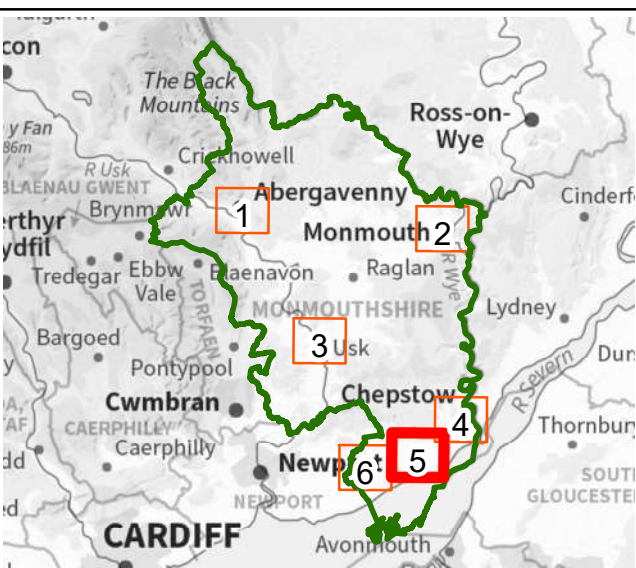
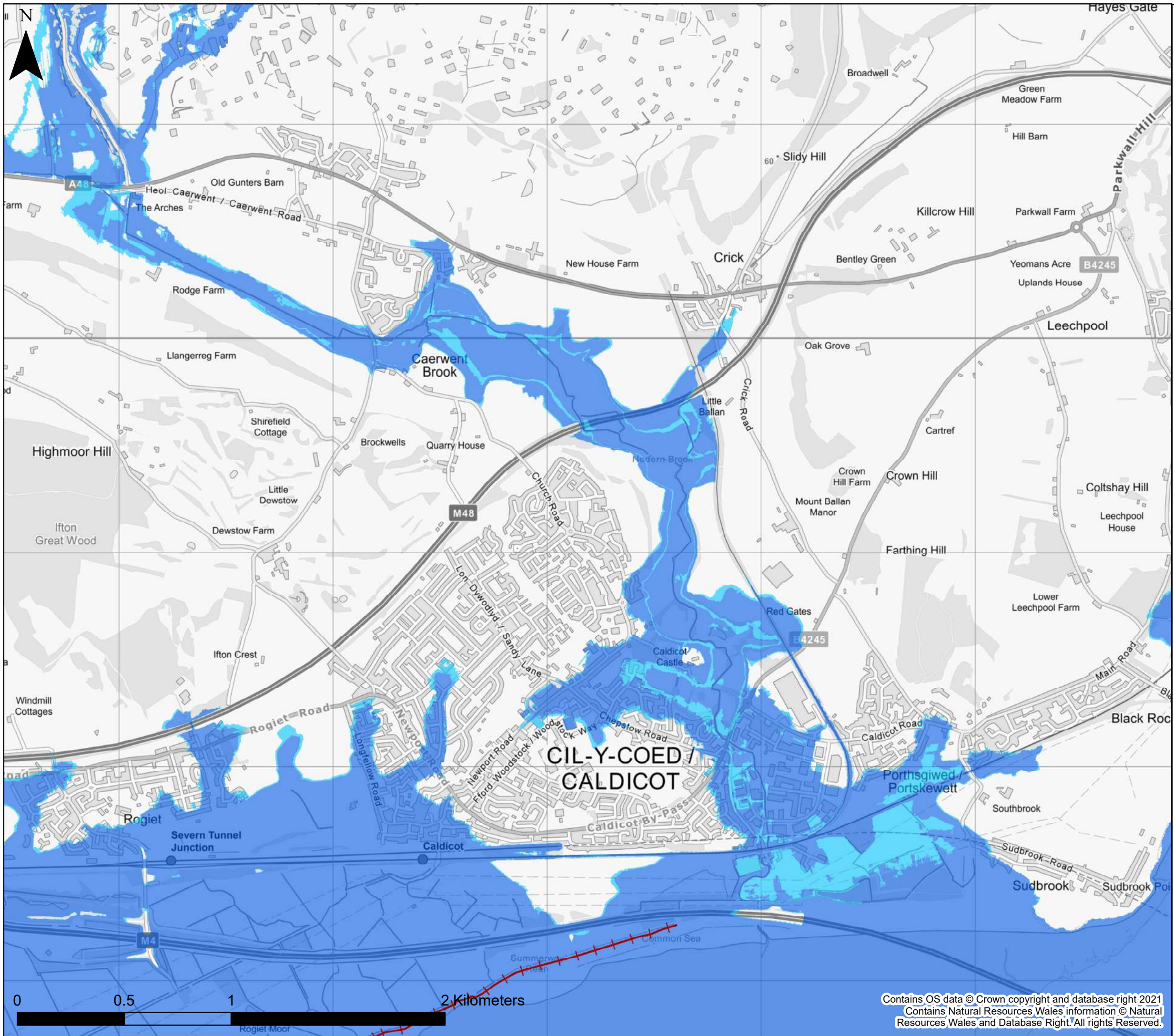
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Monmouthshire County Council
Stage 1 Strategic Flood
Consequences Assessment
*Flood Map for Planning – Rivers
and Sea*

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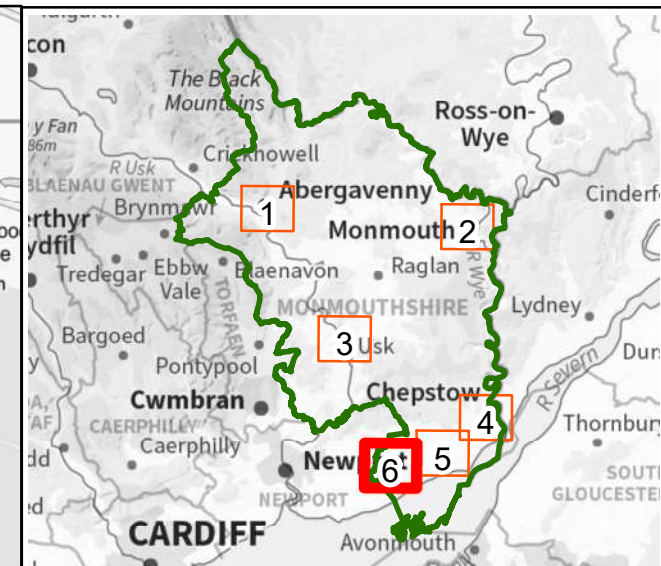
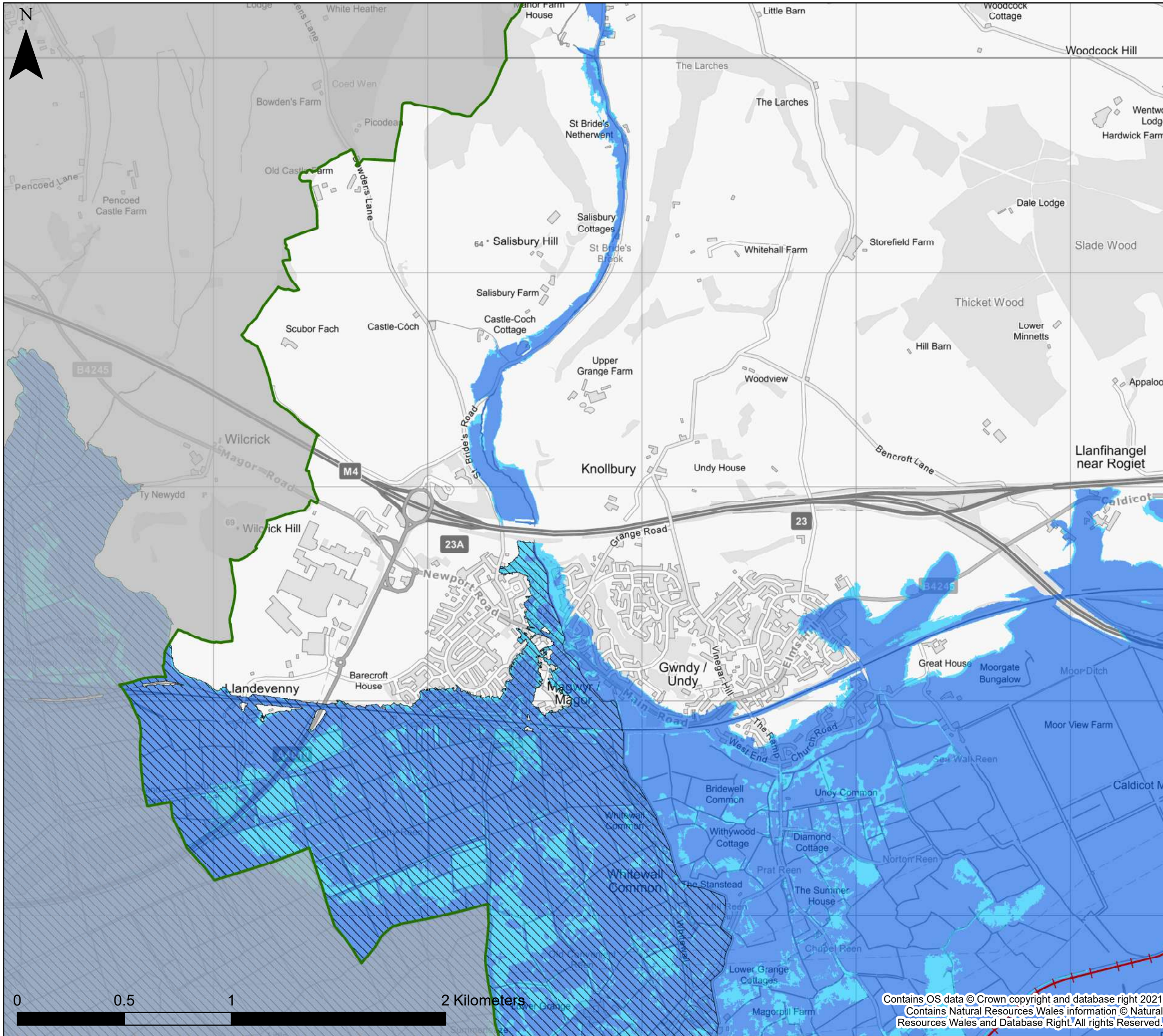


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Stage 1 Strategic Flood
Consequences Assessment

Flood Map for Planning – Rivers
and Sea

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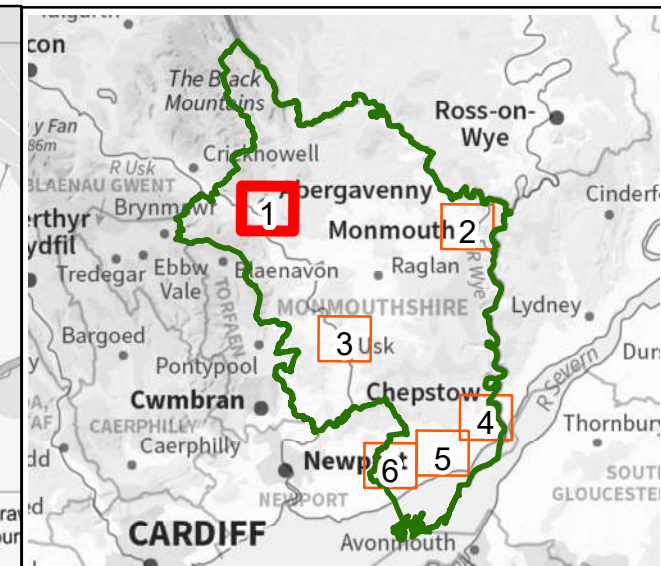
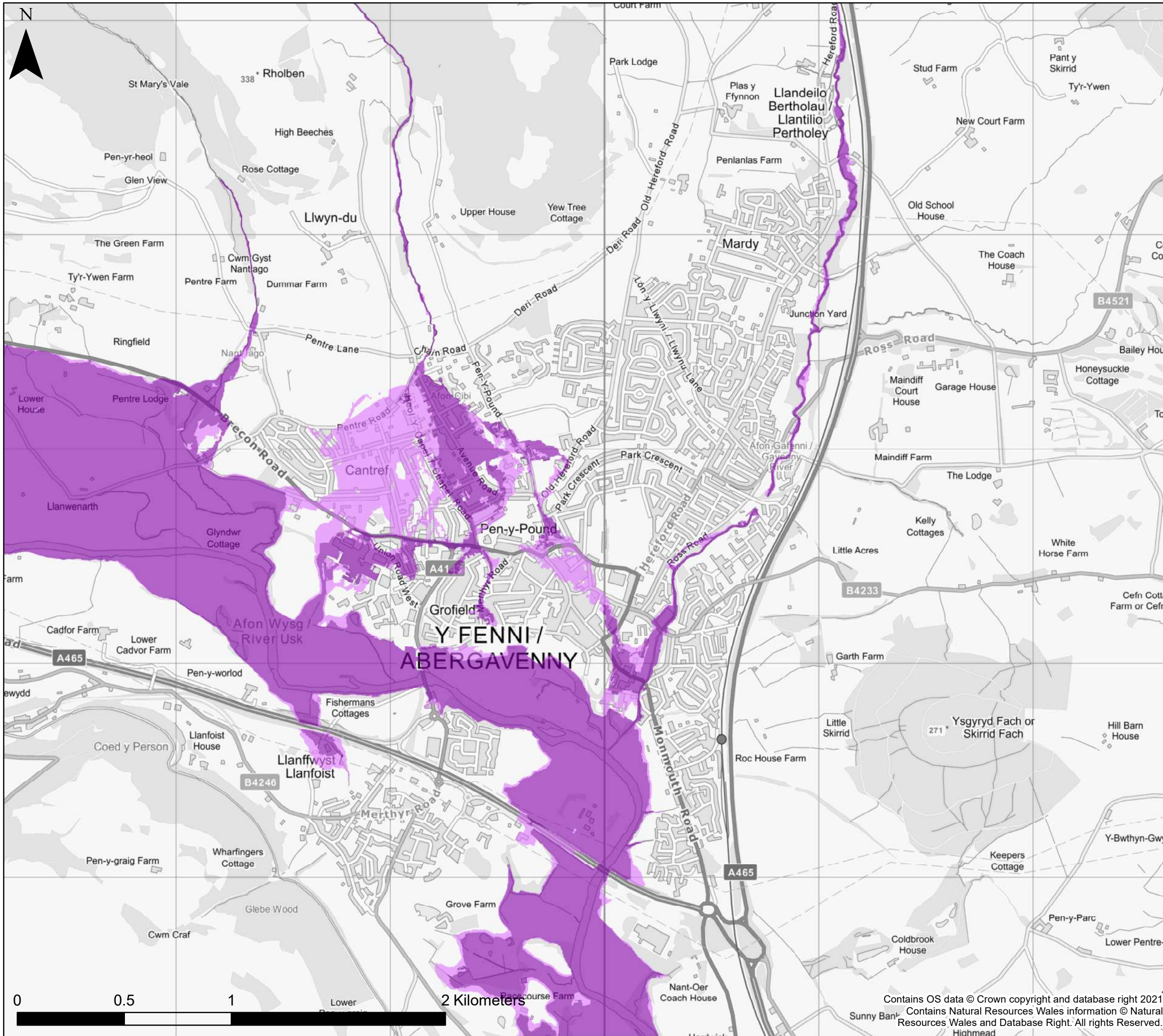
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Flood Map for Planning – Rivers and Sea

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KEY

- Monmouthshire County Council
- River
- Zone 2
- Zone 3
- TAN15 Defended Zones
- Rivers
- Flood Defences
- Fluvial
- Fluvial and Tidal

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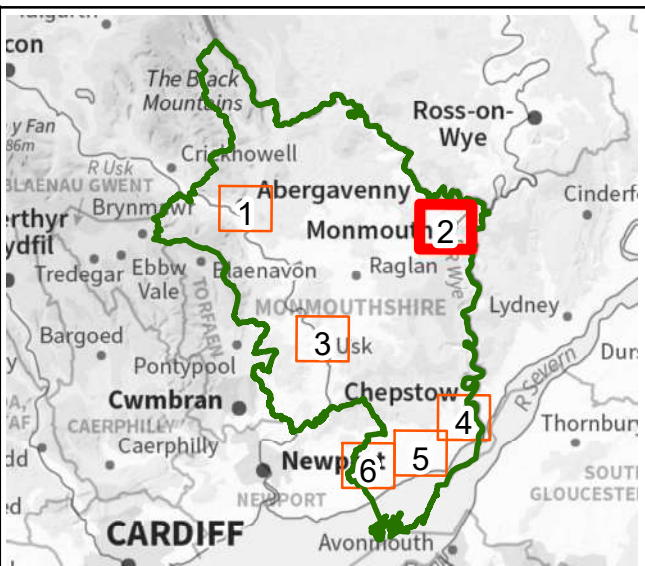
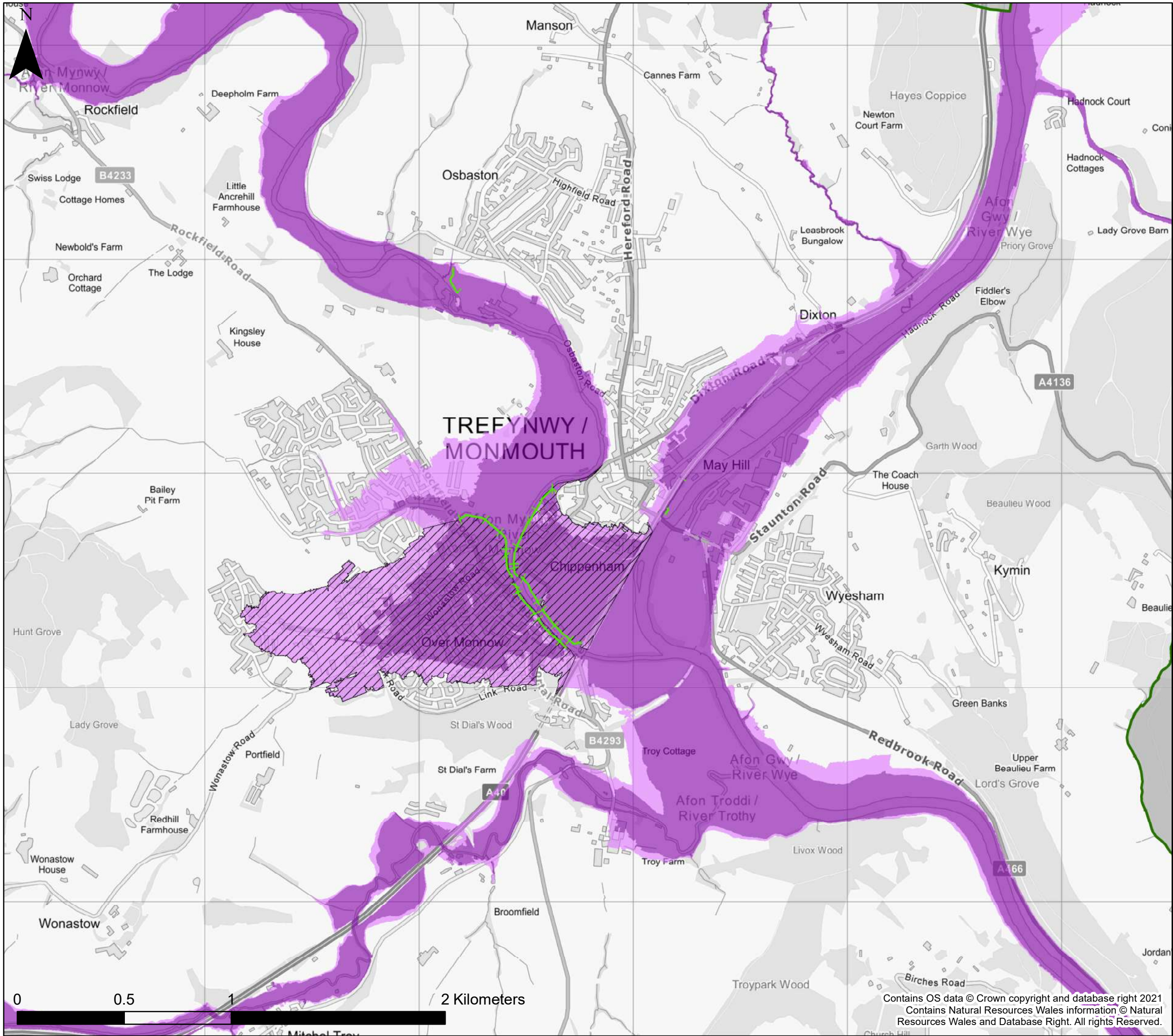


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Stage 1 Strategic Flood Consequences Assessment

Flood Map for Planning- Rivers

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KEY

 Monmouthshire County Council

River

 Zone 2

 Zone 3

TAN15 Defended Zones

 Rivers

Flood Defences

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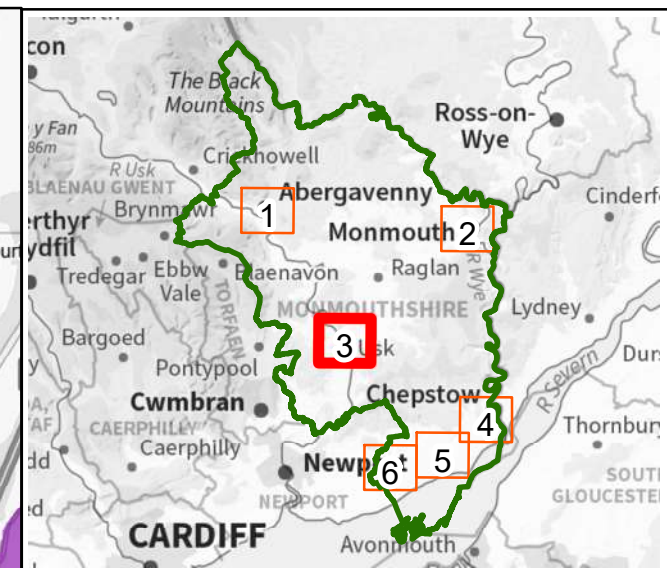
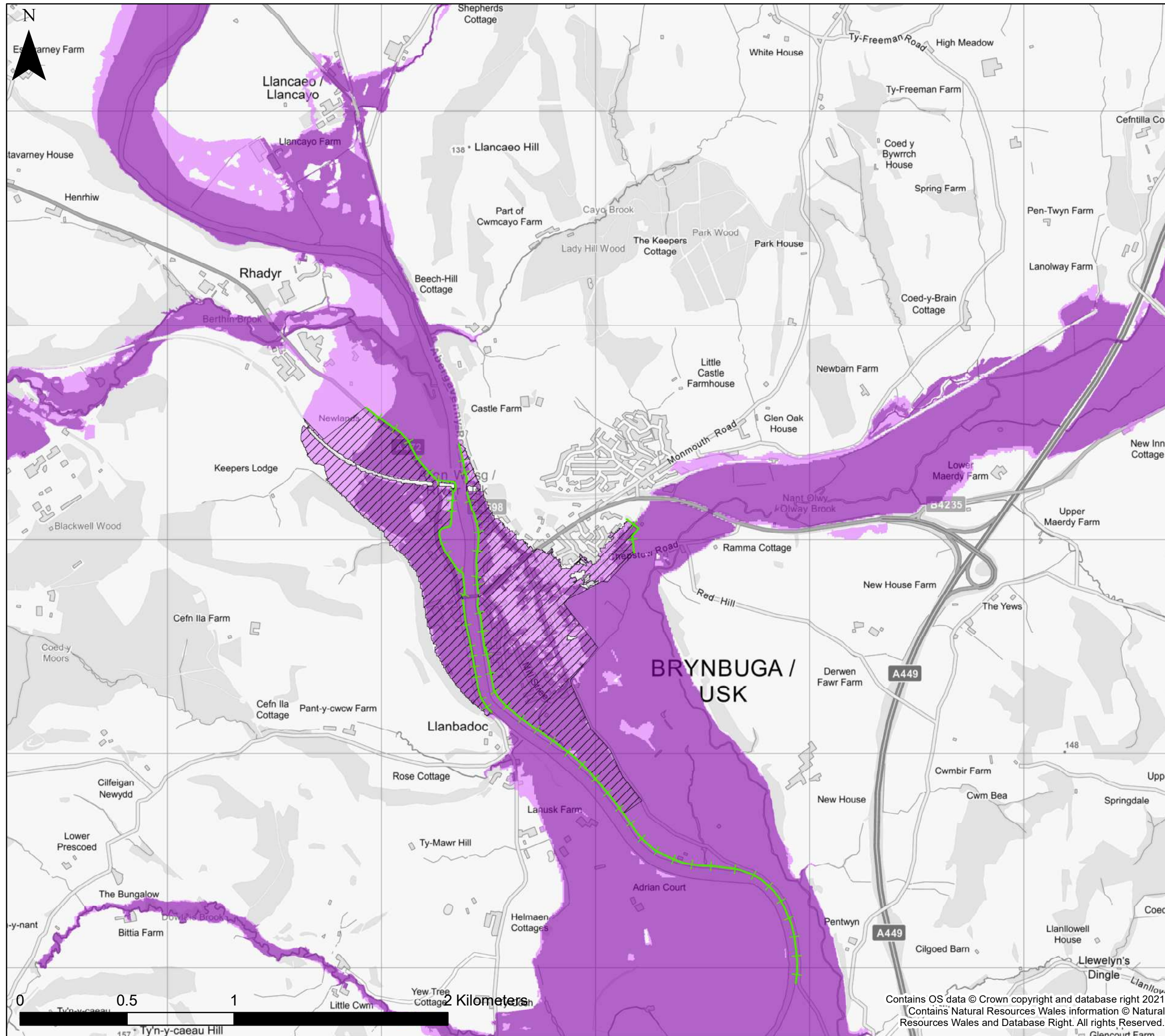
Stage 1 Strategic Flood
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Flood Map for Planning- Rivers

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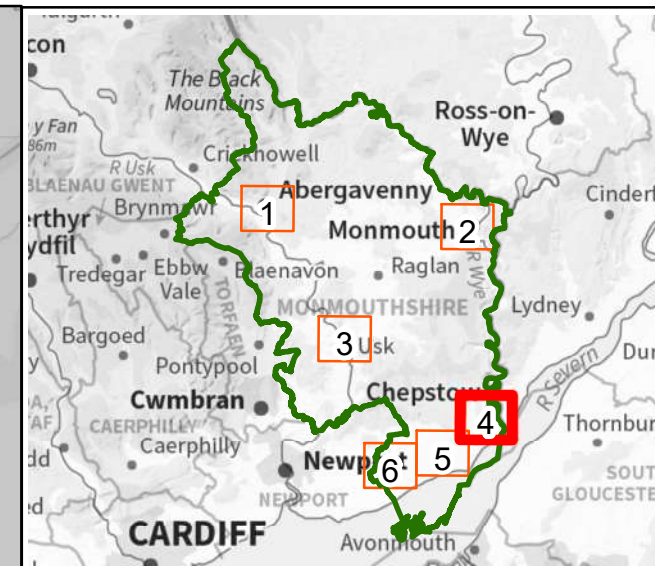
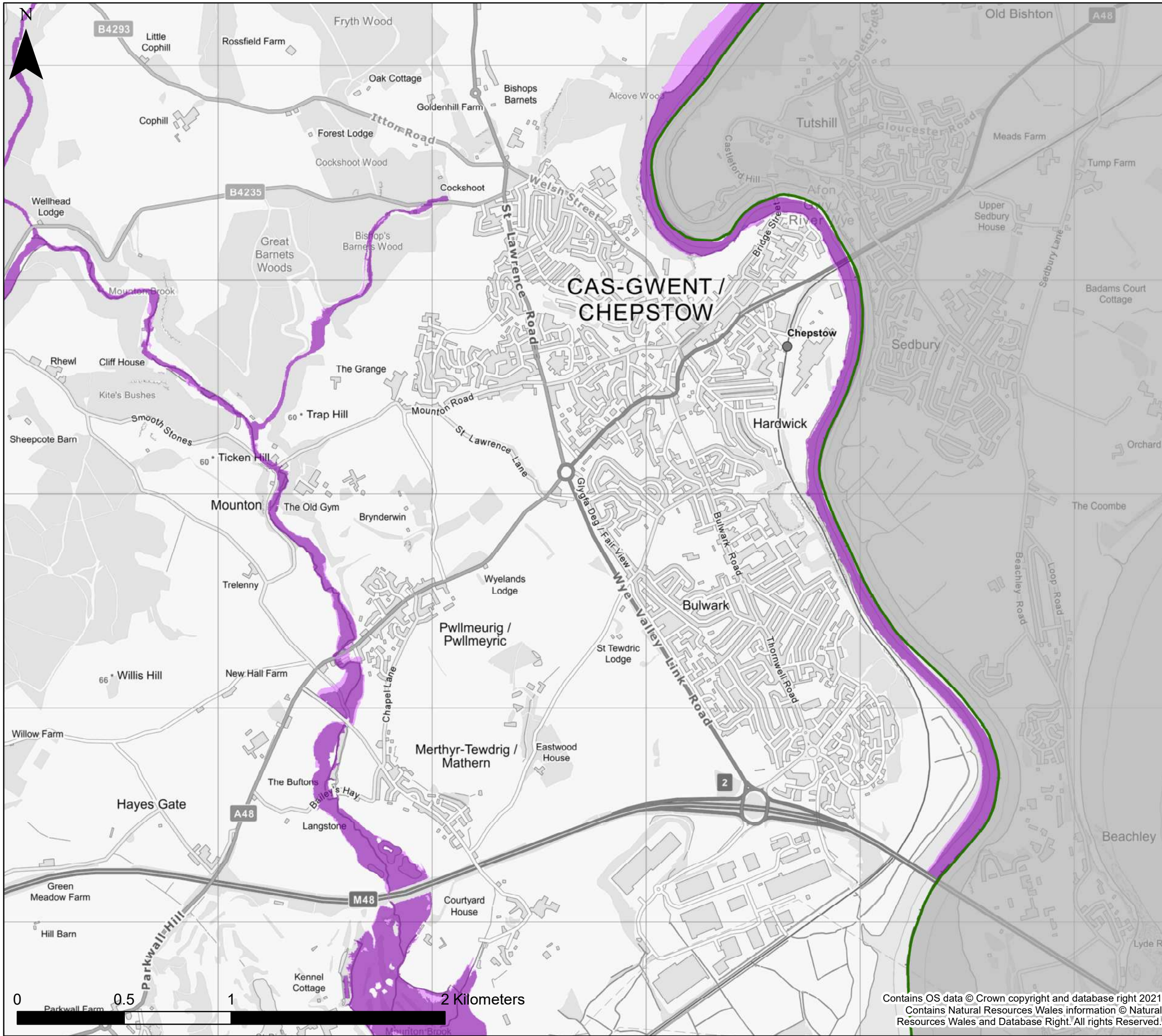
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Stage 1 Strategic Flood Consequences Assessment

Flood Map for Planning- Rivers

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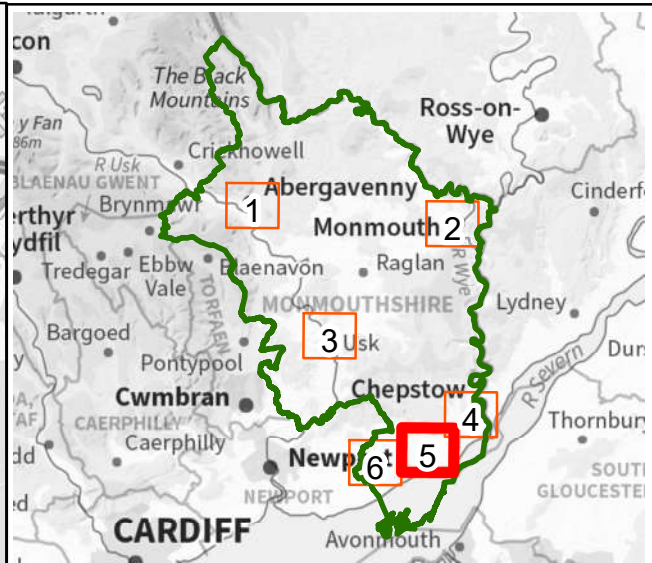
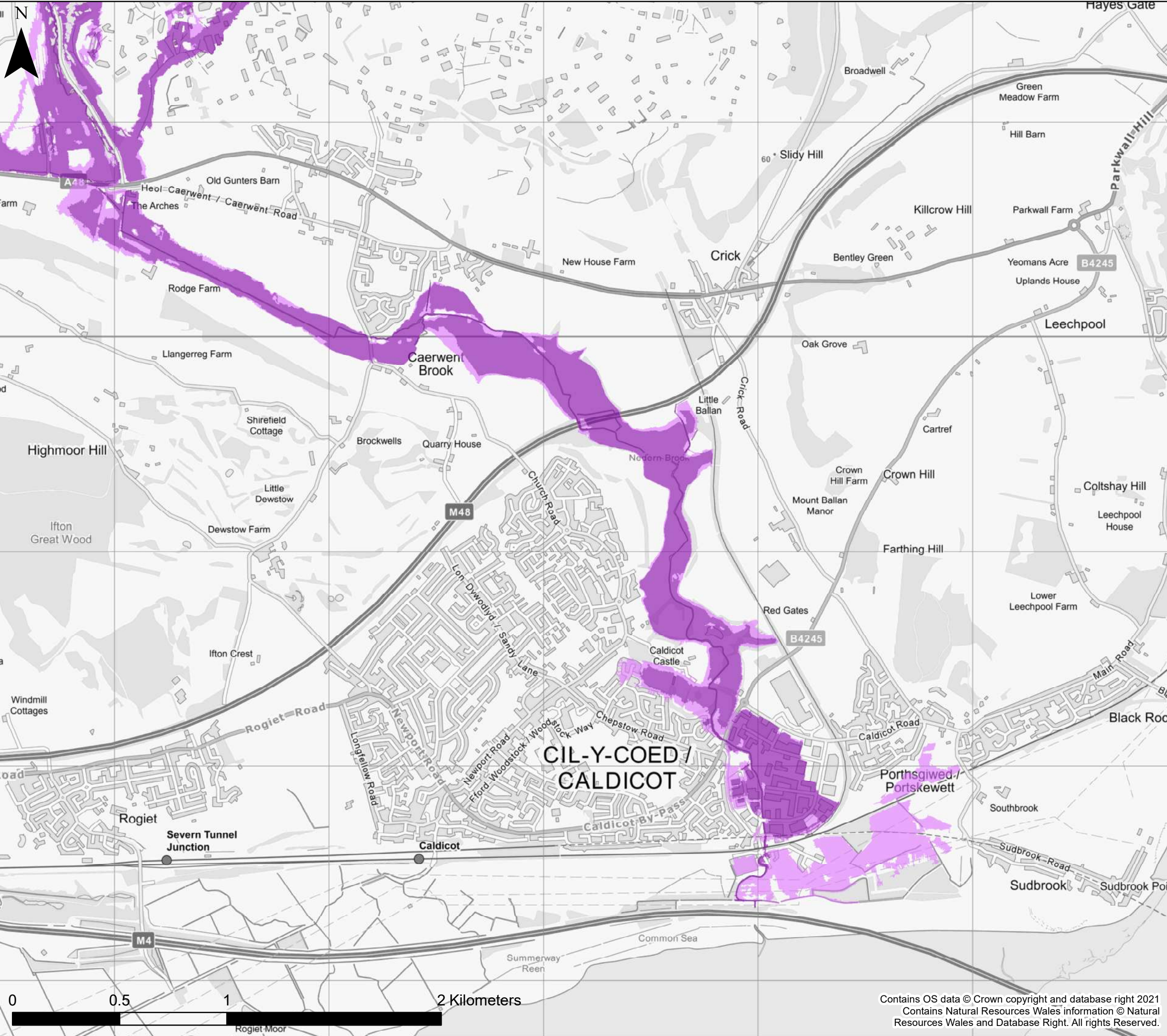
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Stage 1 Strategic Flood Consequences Assessment

Flood Map for Planning- Rivers

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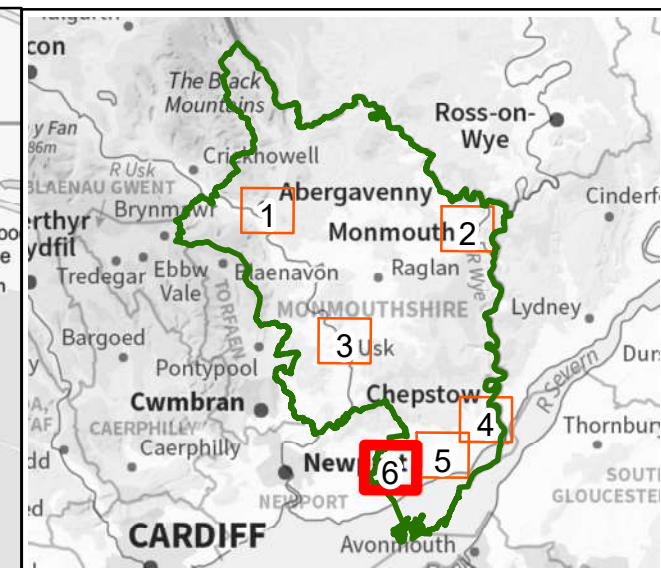
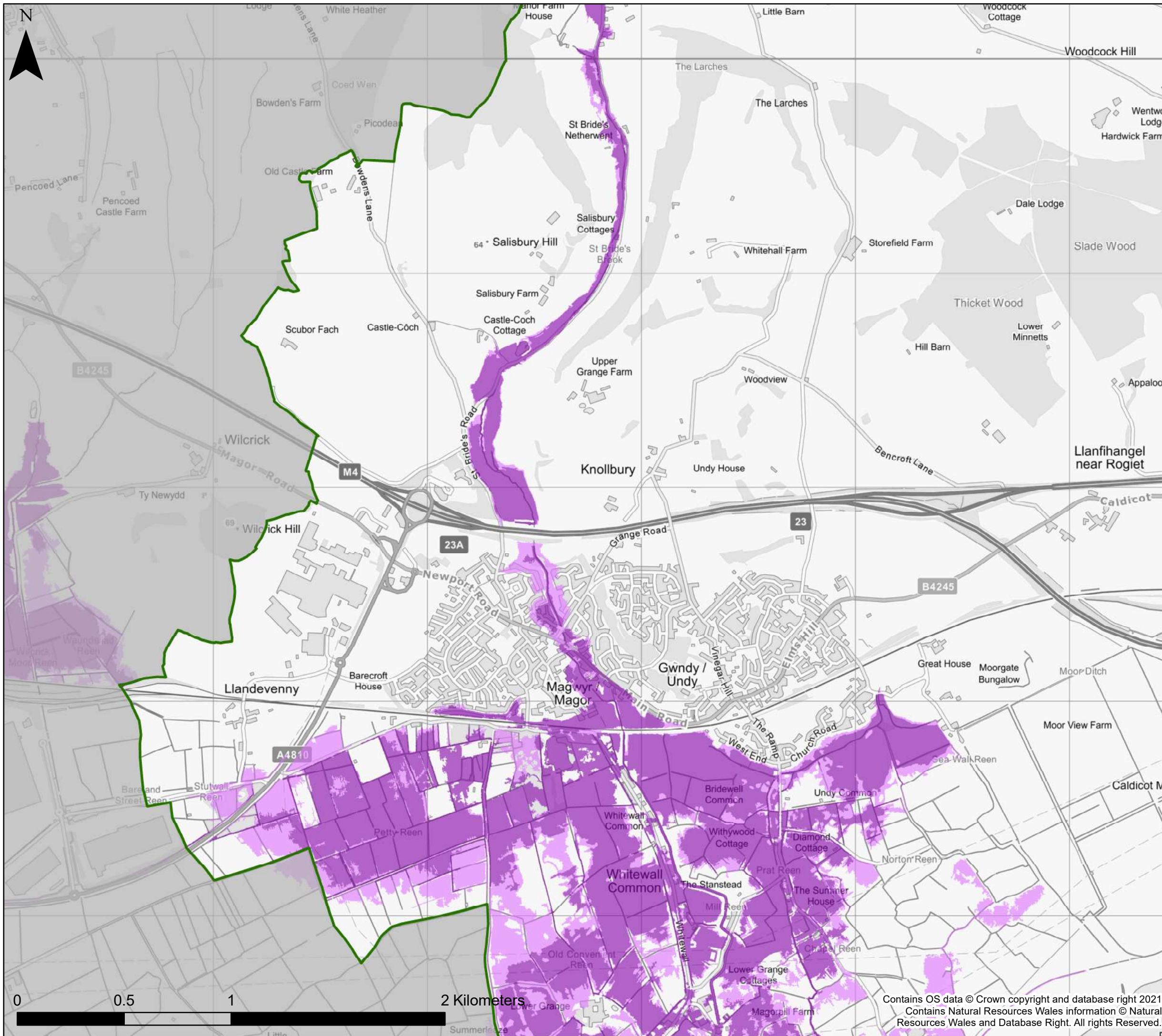
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Stage 1 Strategic Flood Consequences Assessment
Flood Map for Planning- Rivers

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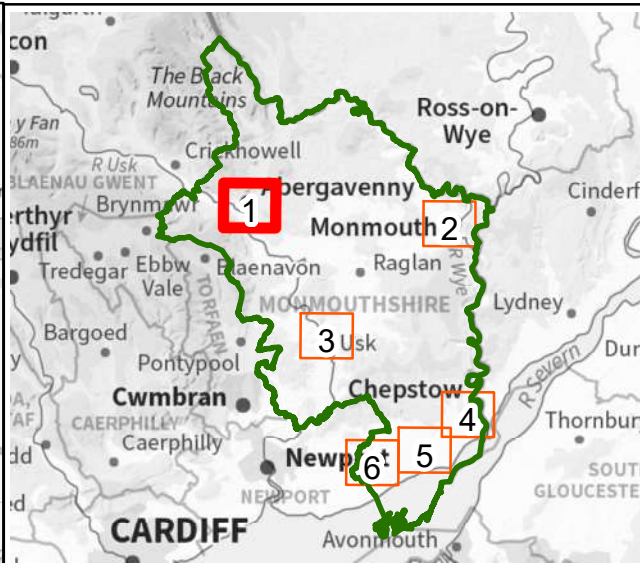
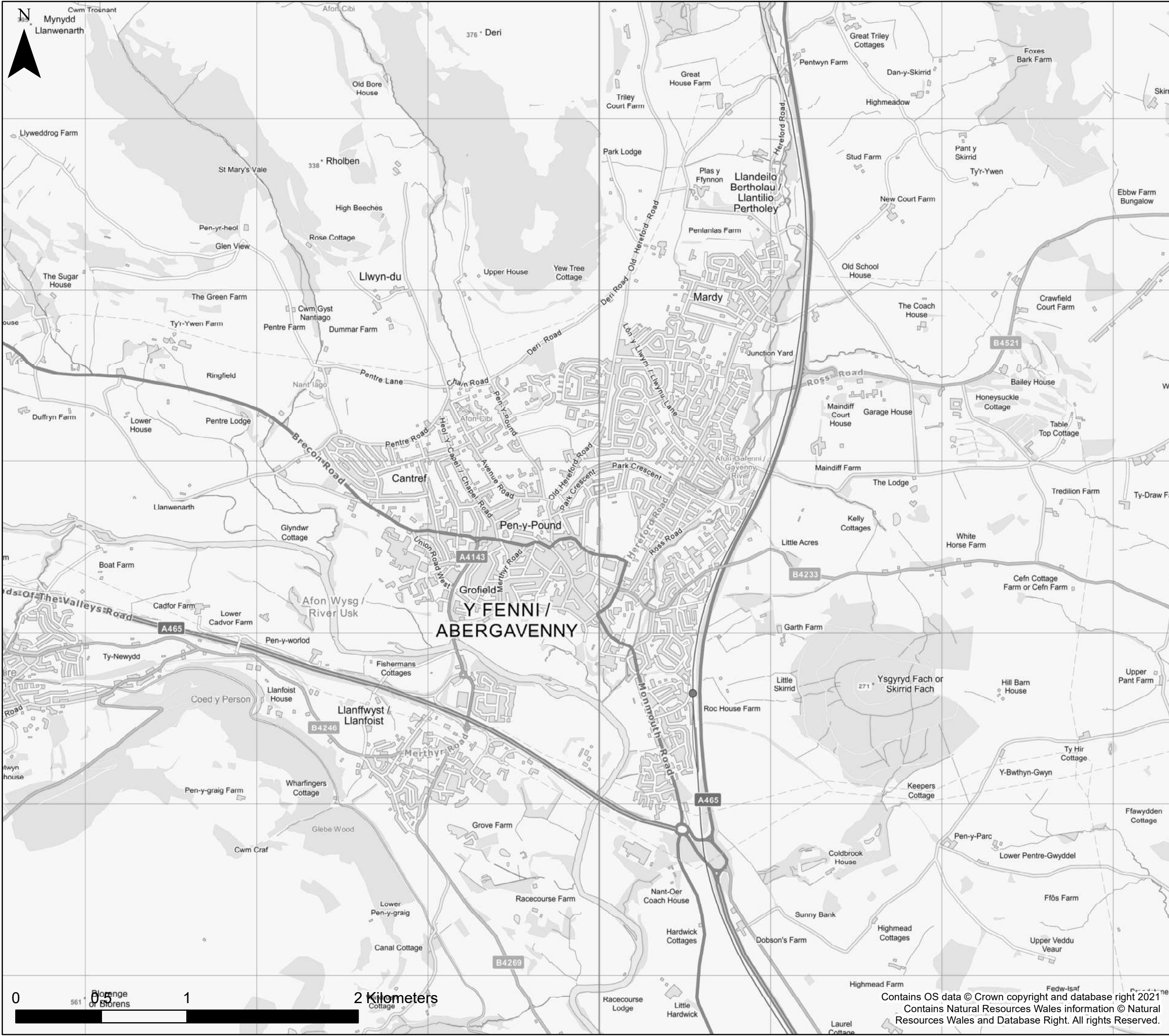


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Stage 1 Strategic Flood Consequences Assessment

Flood Map for Planning- Rivers

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KEY

- Monmouthshire County Council
- Flood Zone 2
- Flood Zone 3
- TAN15 Defended Zones**
- Sea
- Flood Defences**
- Coastal
- Tidal
- Fluvial and Tidal

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Monmouthshire County Council

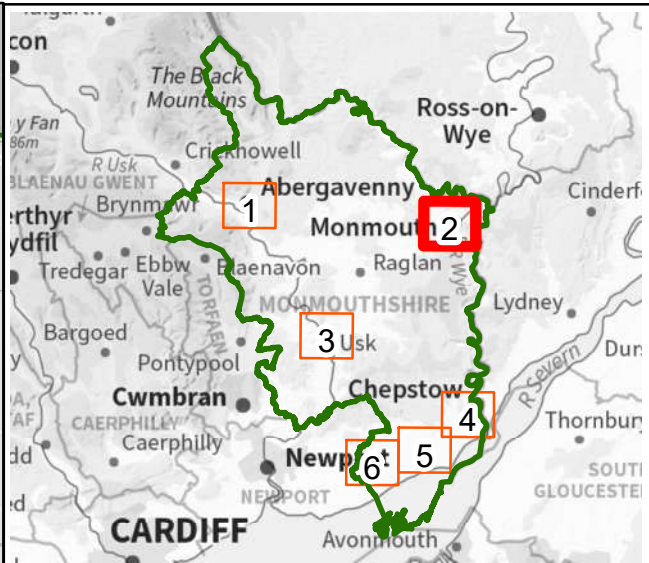
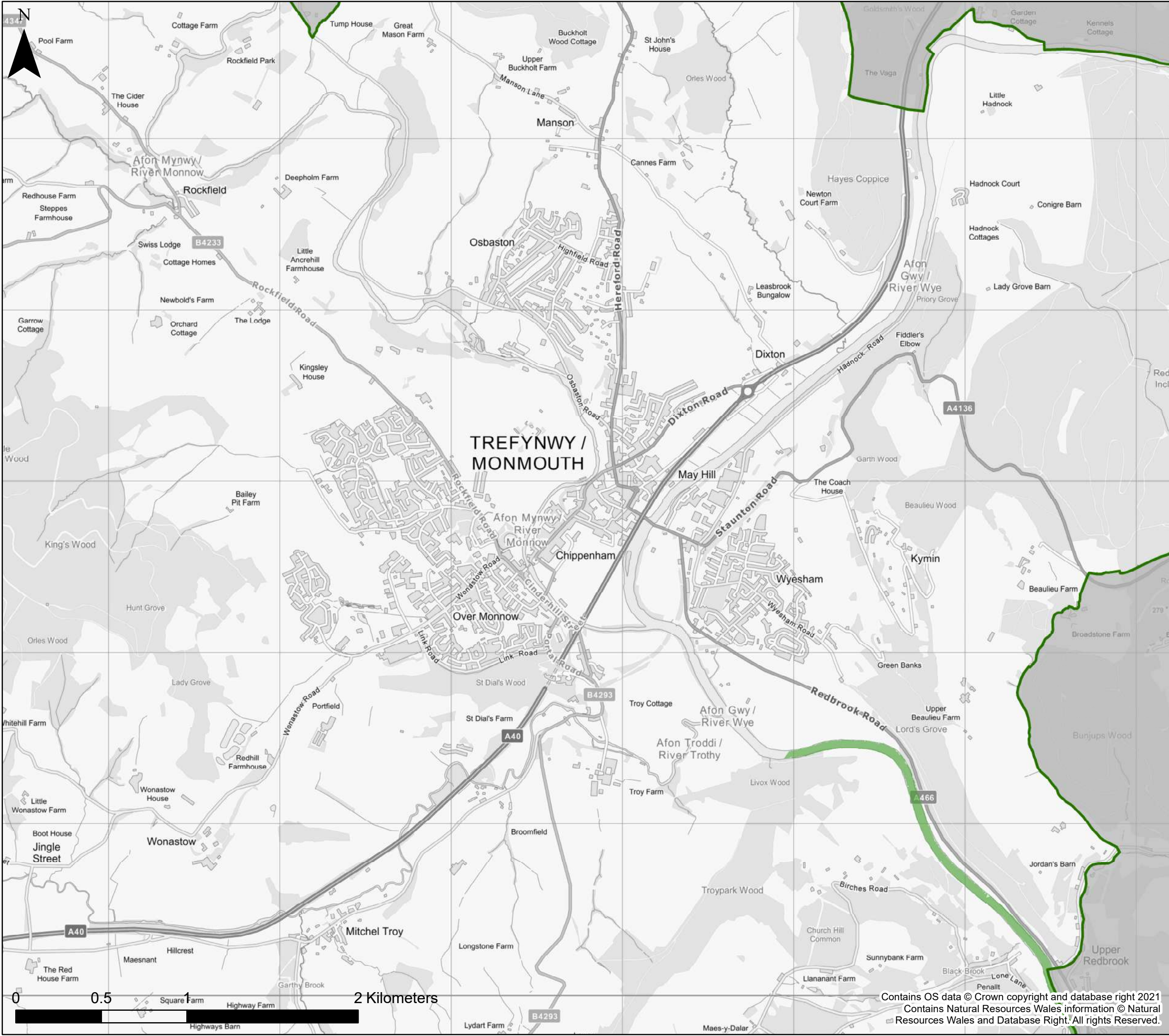
Stage 1 Strategic Flood Consequences Assessment

Flood Map for Planning- Sea

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KEY

Monmouthshire County Council

Sea

Flood Zone 2

Flood Zone 3

TAN15 Defended Zones

Sea

Flood Defences

Coastal

Tidal

Fluvial and Tidal

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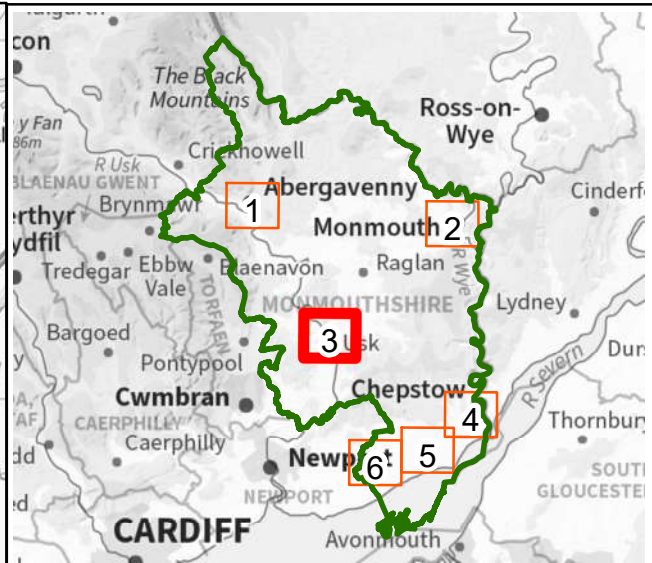
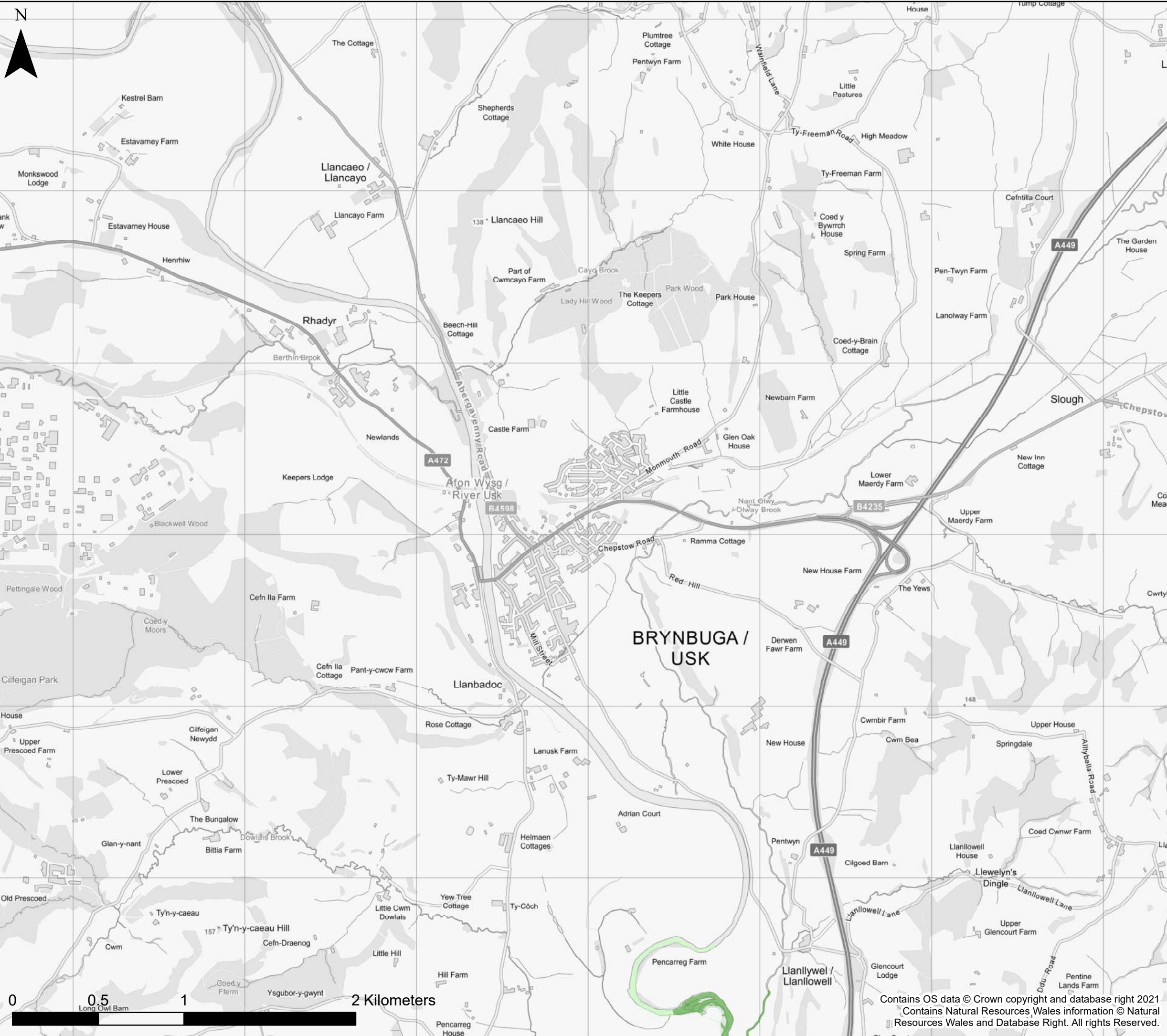
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Stage 1 Strategic Flood Consequences Assessment

Flood Map for Planning- Sea

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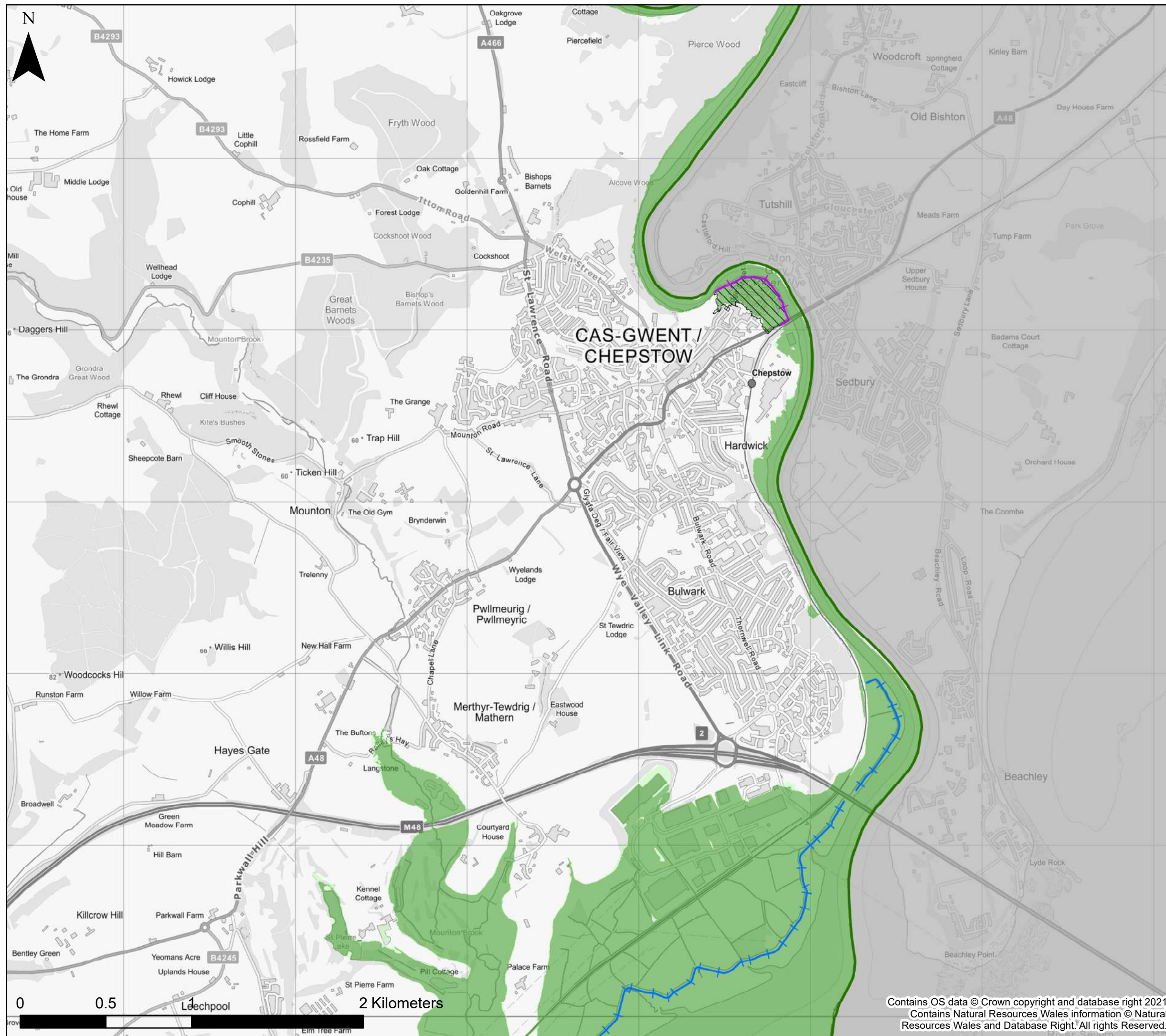
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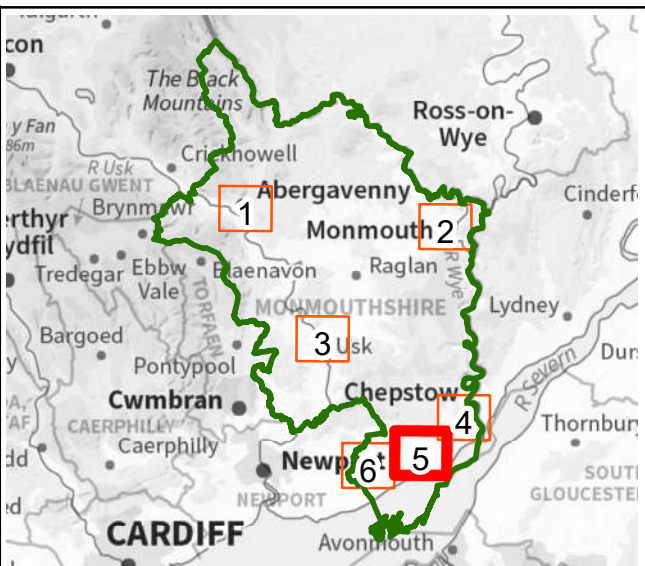
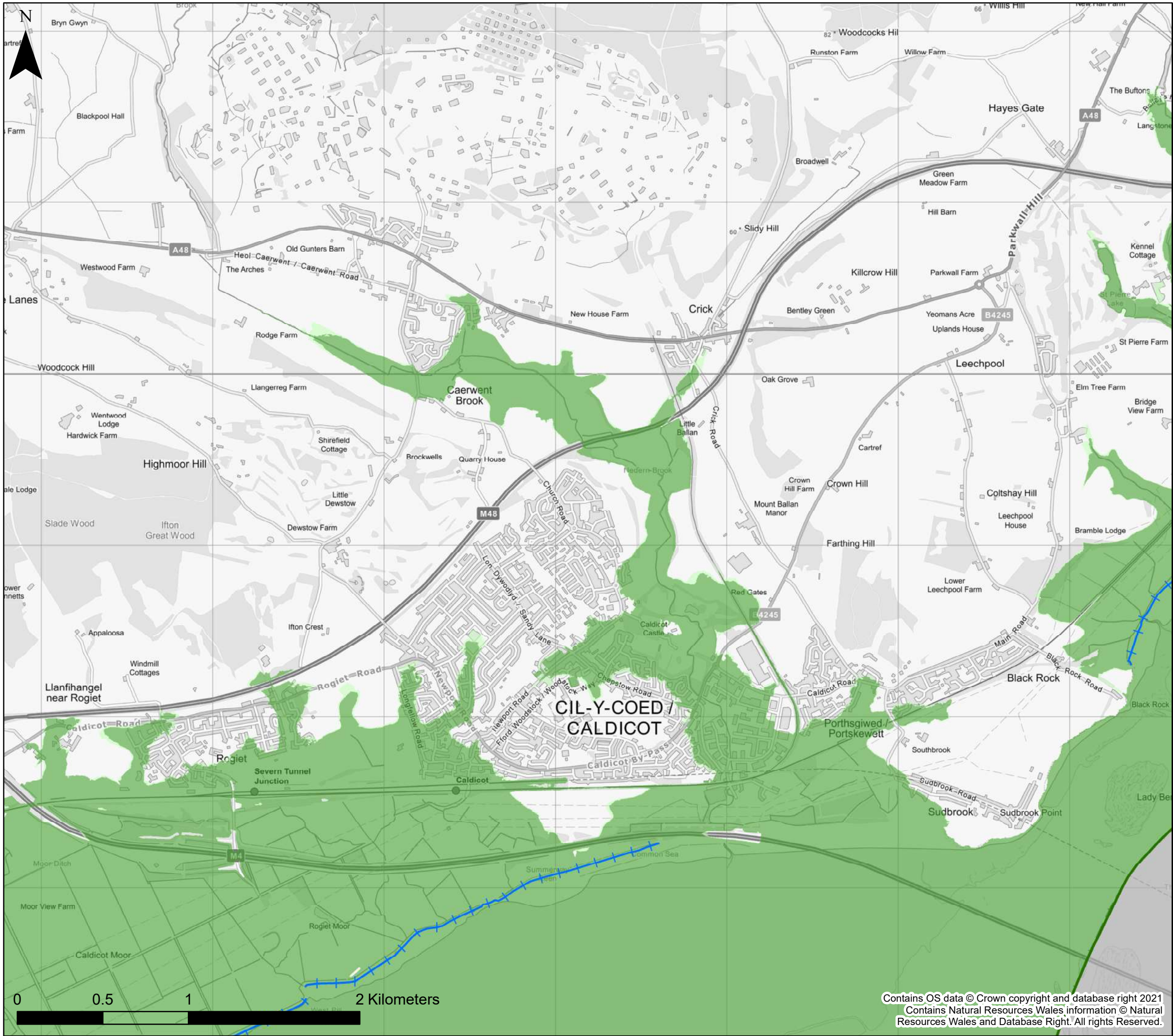
Flood Map for Planning- Sea

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KEY

 Monmouthshire County Council

Sea

 Flood Zone 2

 Flood Zone 3

TAN15 Defended Zones

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Flood Defences

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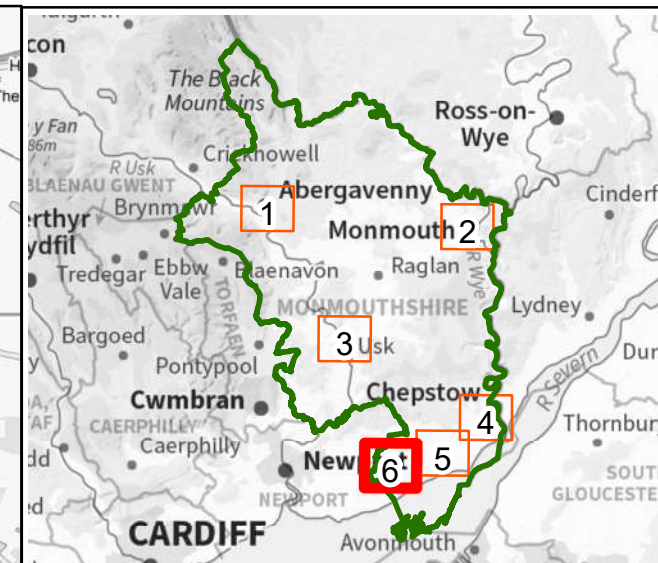
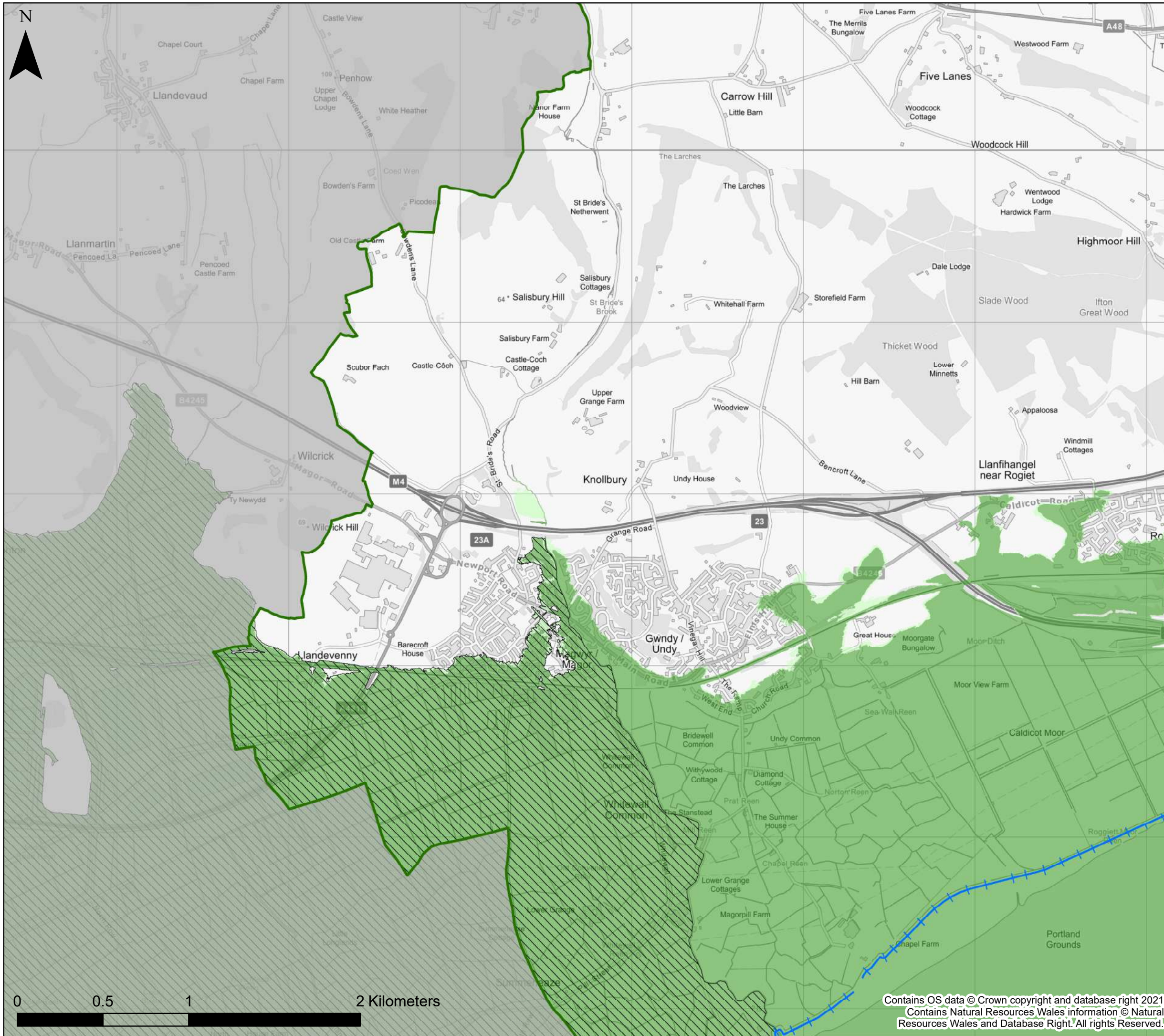
Stage 1 Strategic Flood
Consequences Assessment

Flood Map for Planning- Sea

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Monmouthshire County Council

Sea

Flood Zone 2

Flood Zone 3

TAN15 Defended Zones

Sea

Flood Defences

Coastal

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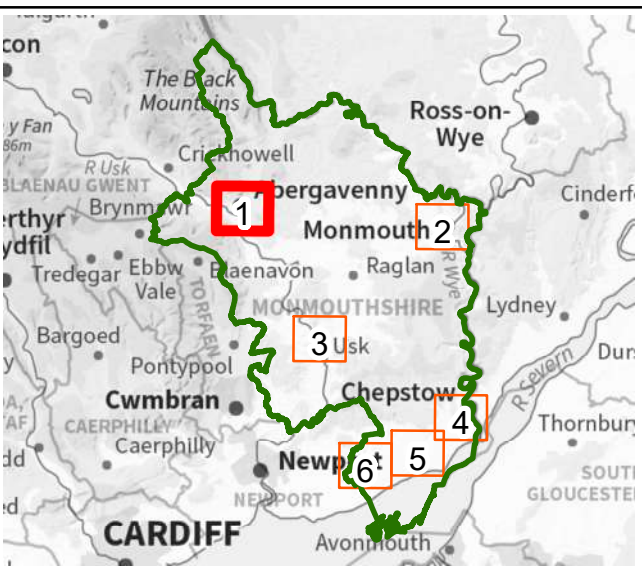
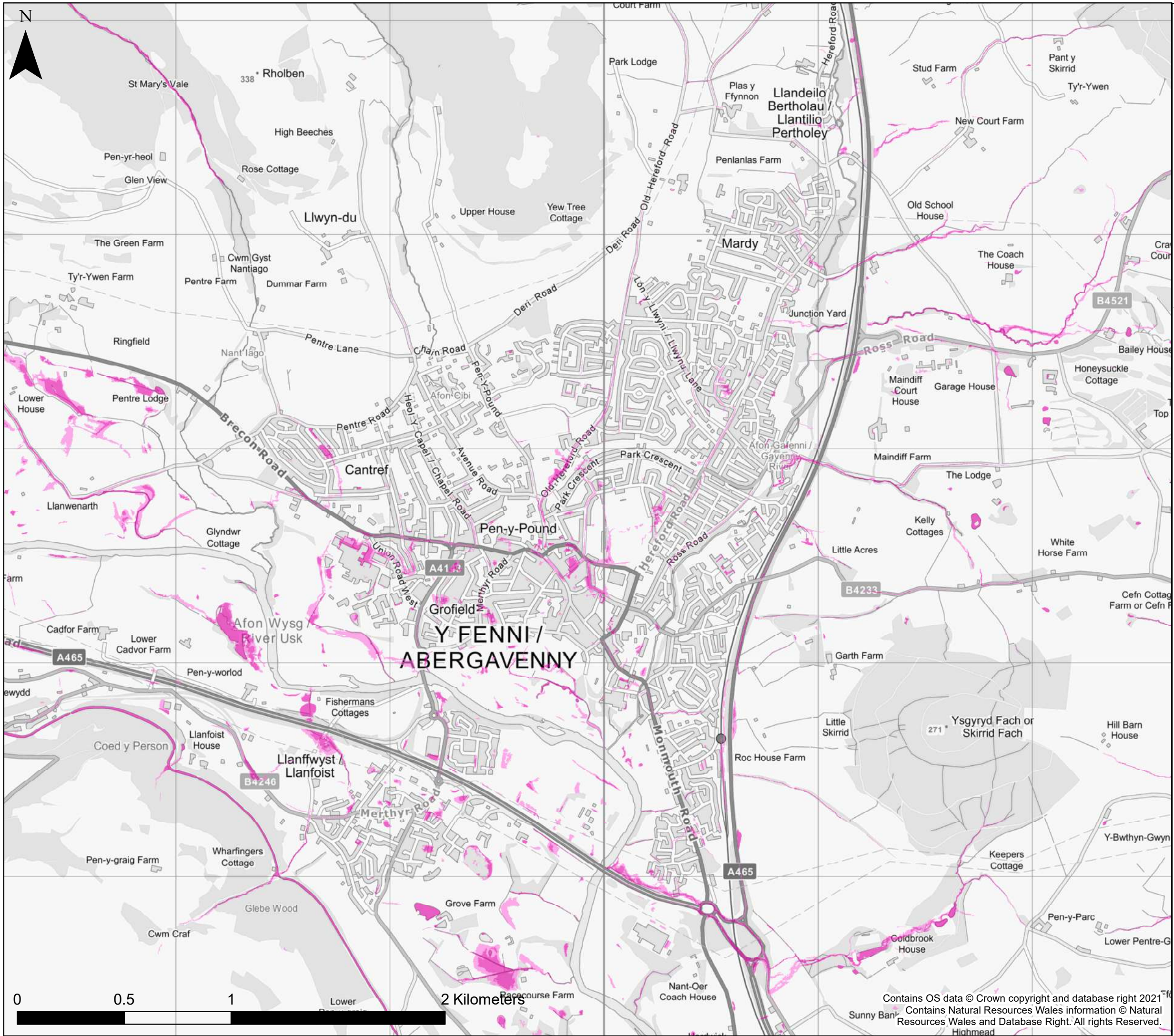
Stage 1 Strategic Flood
Consequences Assessment

Flood Map for Planning- Sea

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KEY

Monmouthshire County Council

Surface Water and Small Watercourses

- Zone 2
- Zone 3

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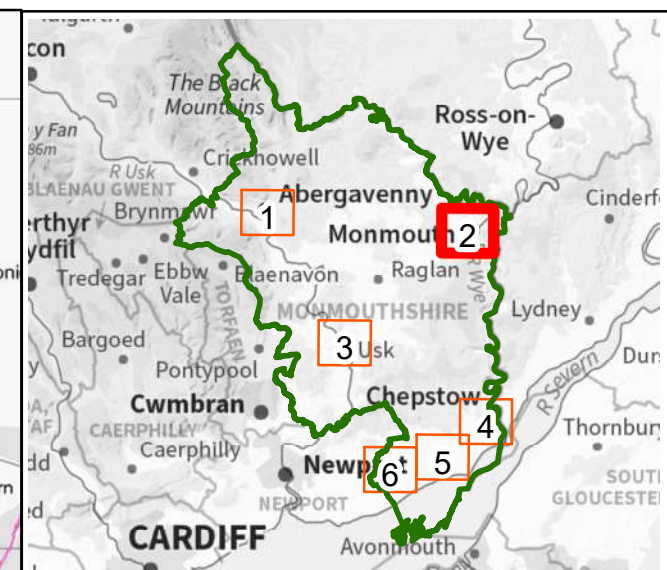
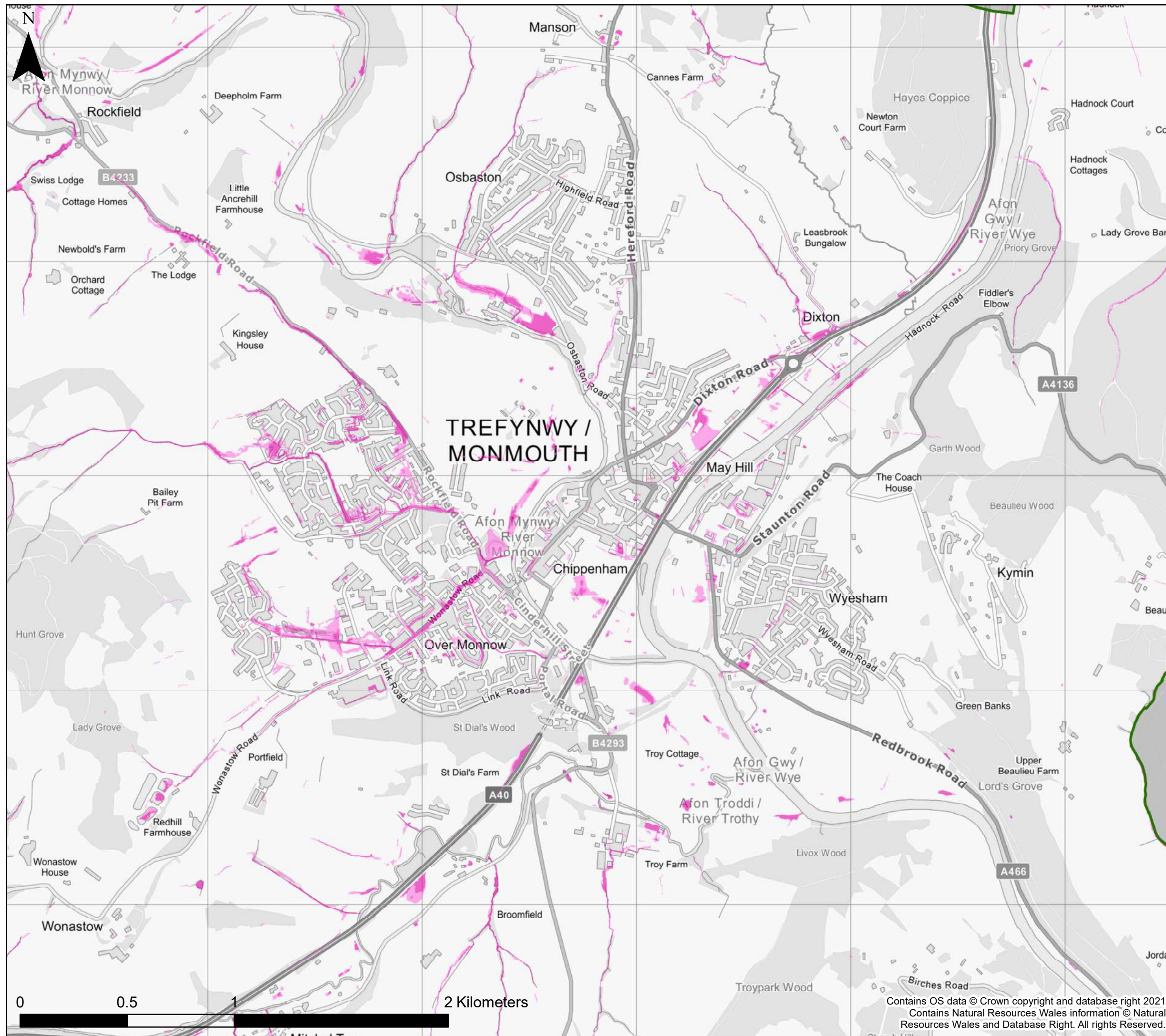
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Flood Map for Planning- Surface Water and Small Watercourses

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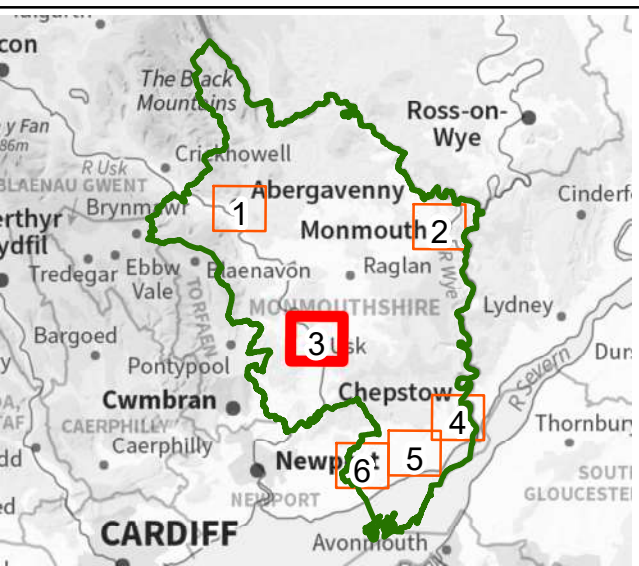
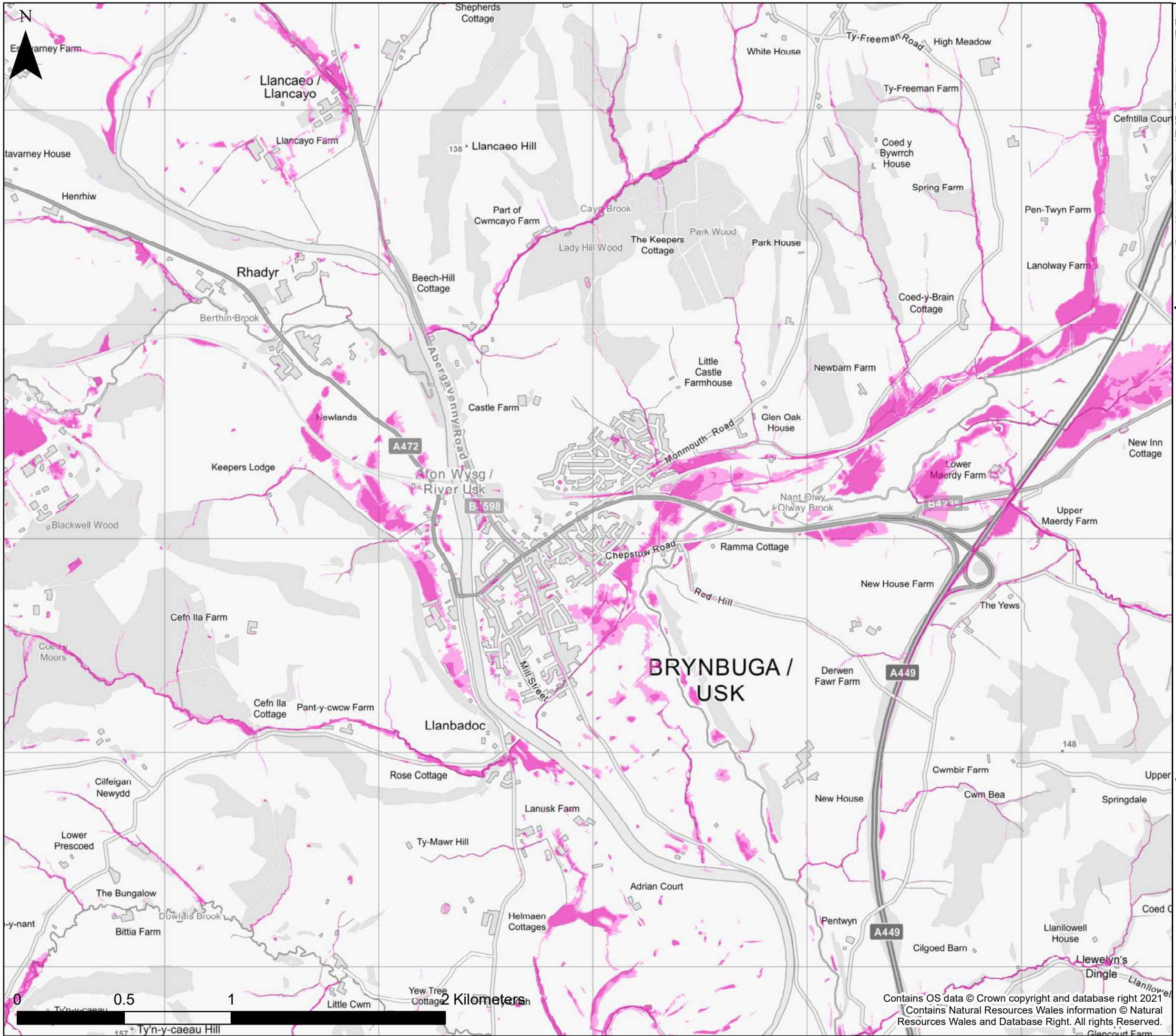
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Stage 1 Strategic Flood Consequences Assessment
Flood Map for Planning- Surface Water and Small Watercourses

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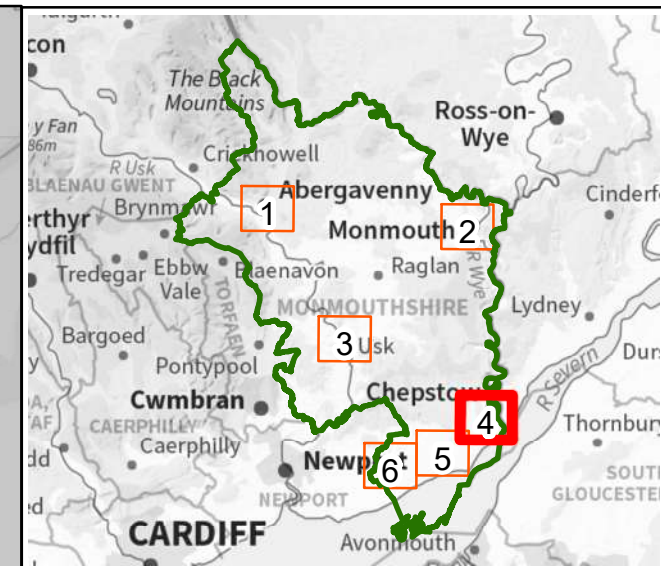
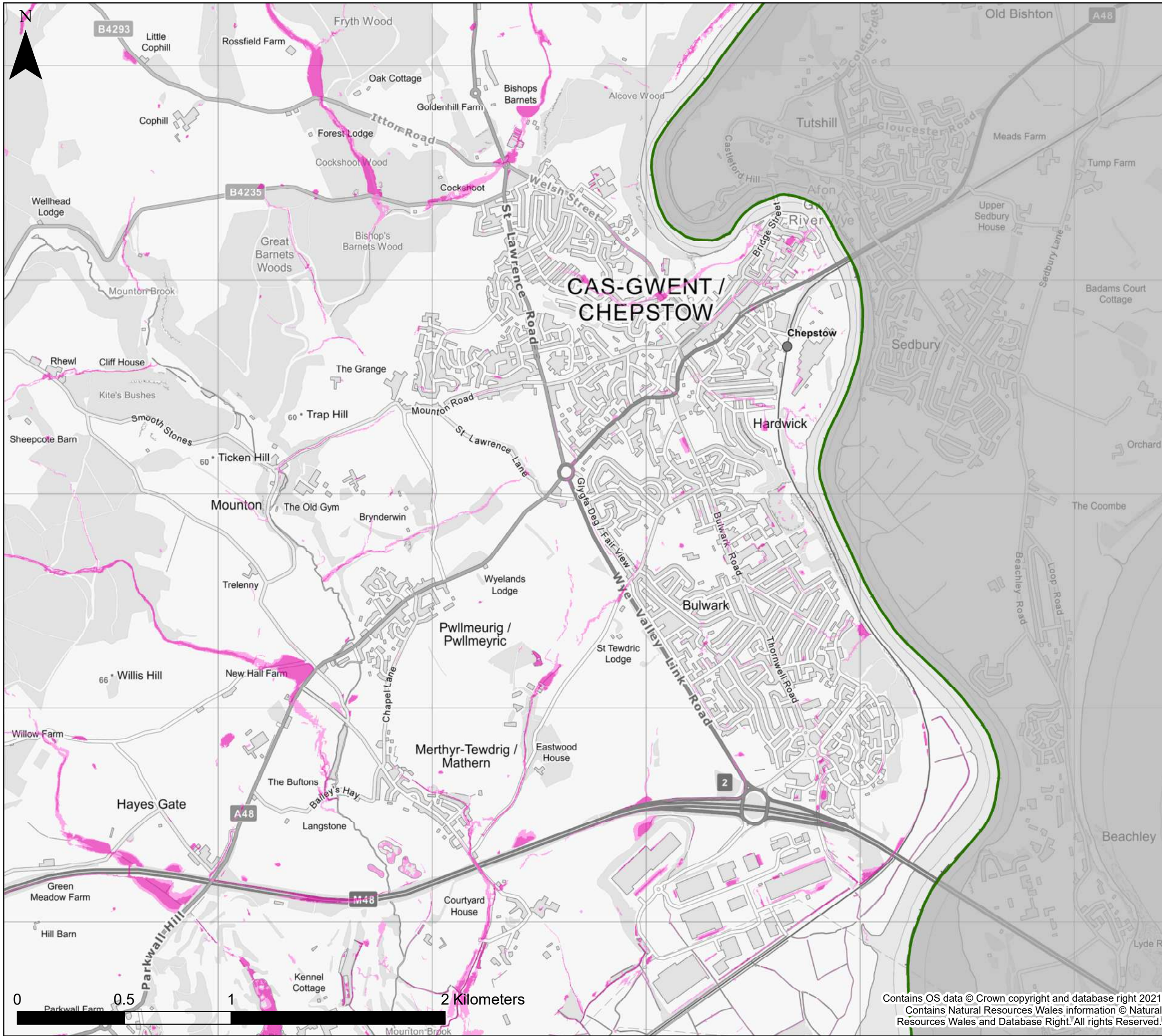
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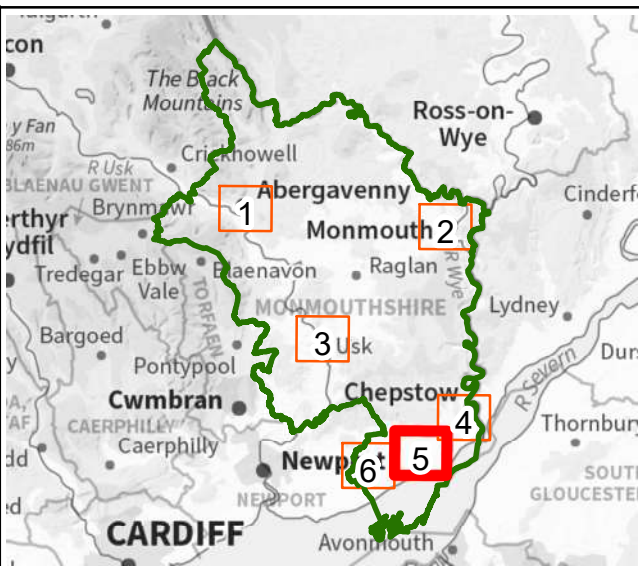
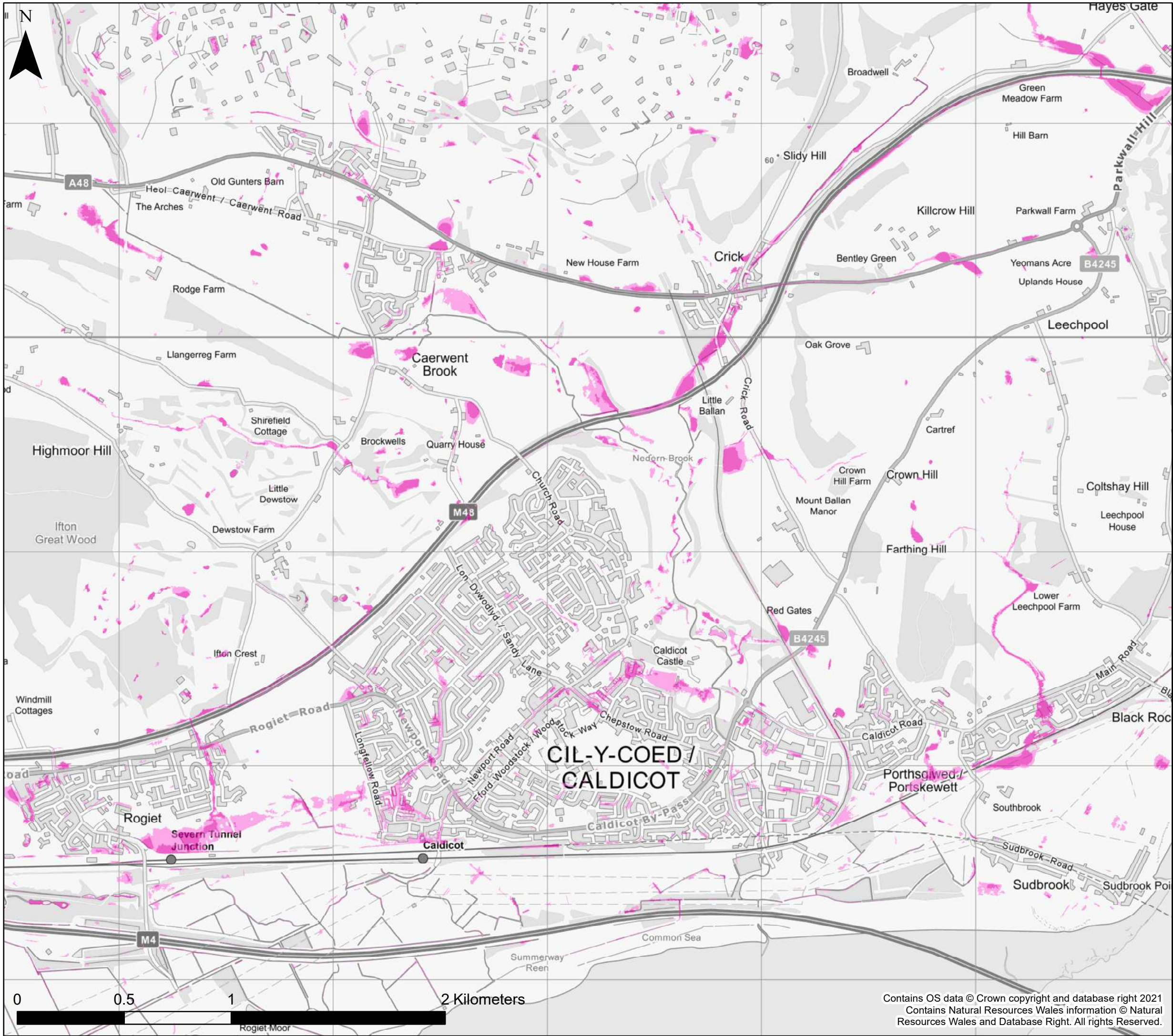
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Flood Map for Planning- Surface Water and Small Watercourses

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KEY

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Surface Water and Small Watercourses

 Zone 2

 Zone 3

Notes

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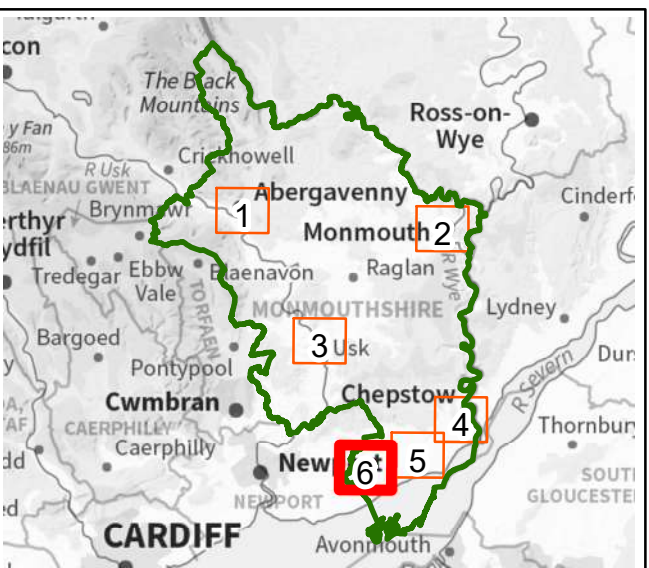
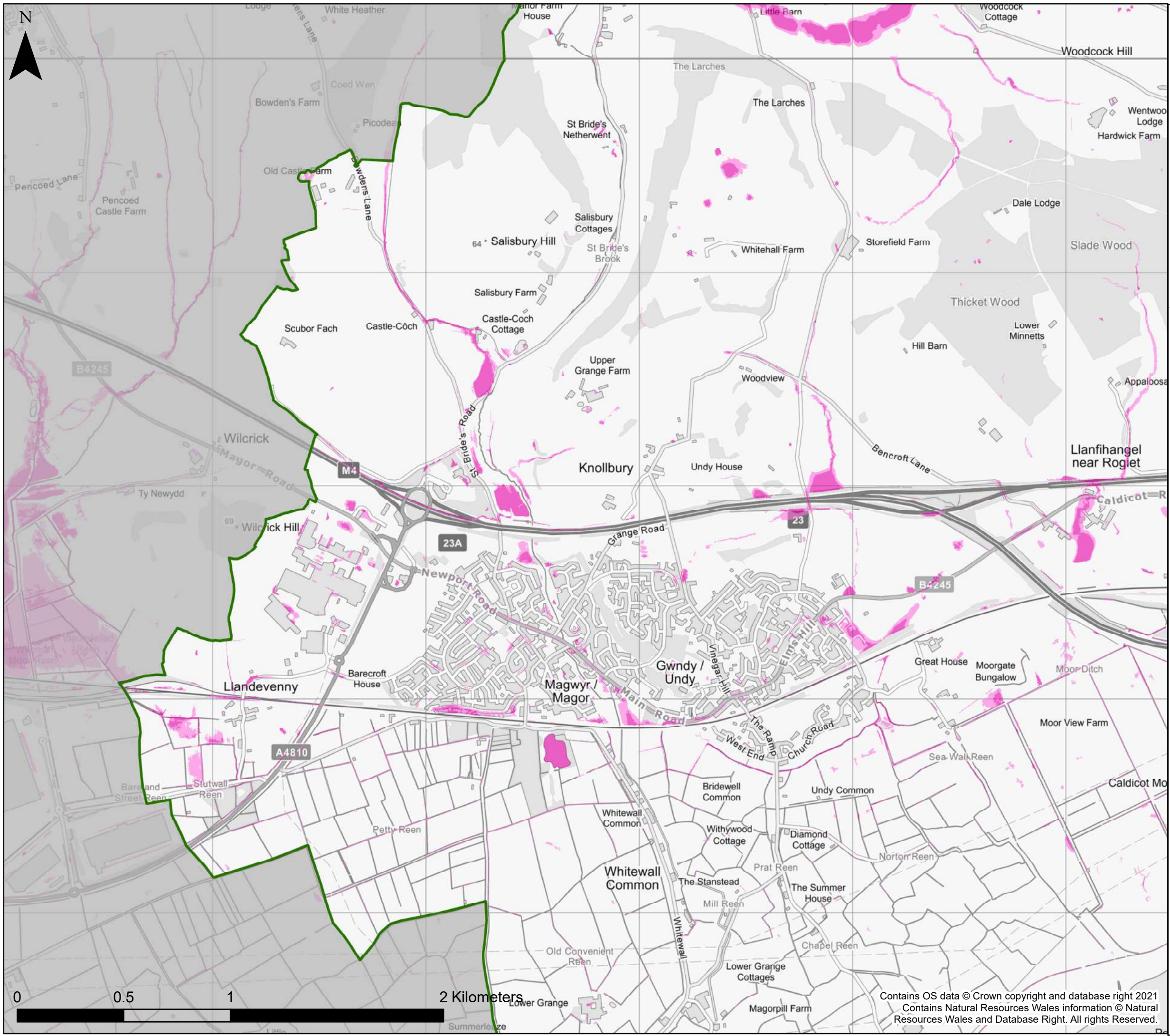
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Consequences Assessment

*Flood Map for Planning- Surface
Water and Small Watercourses*

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KEY

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Surface Water and Small Watercourses

- Zone 2
- Zone 3

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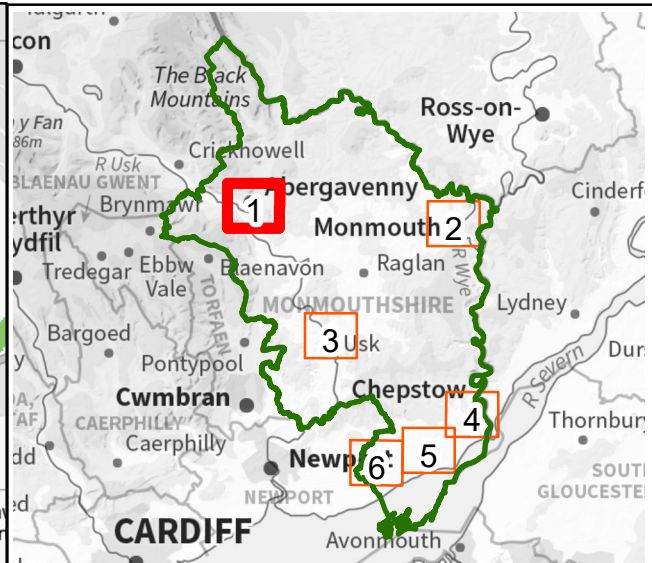
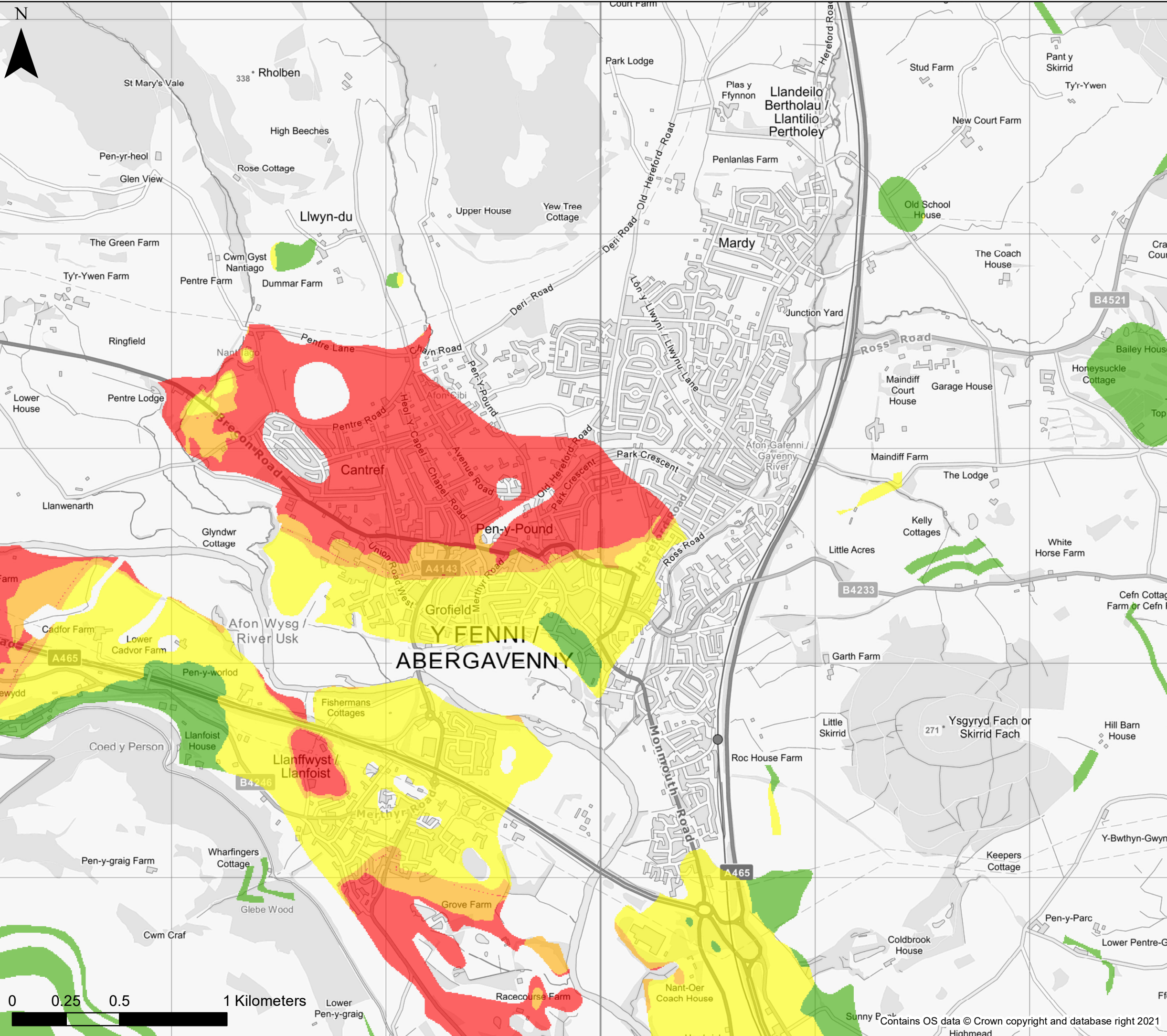
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KEY

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Groundwater Flood Depth

Indicative Groundwater flood depth

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- Groundwater levels are between 0.5m and 5m below the ground surface.
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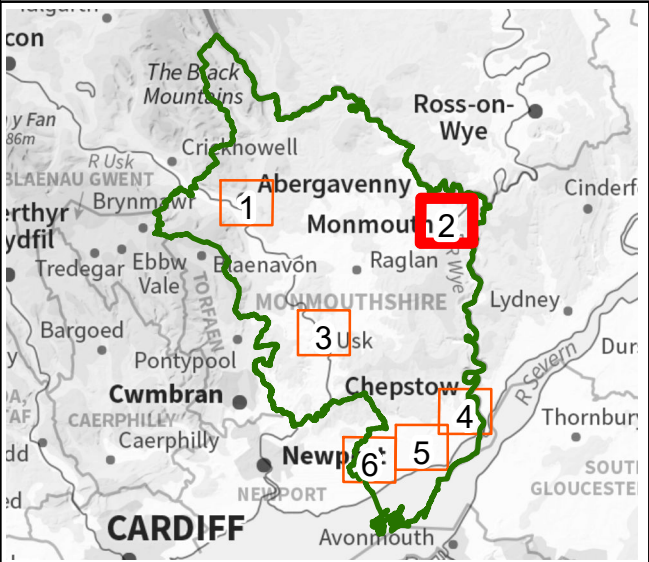
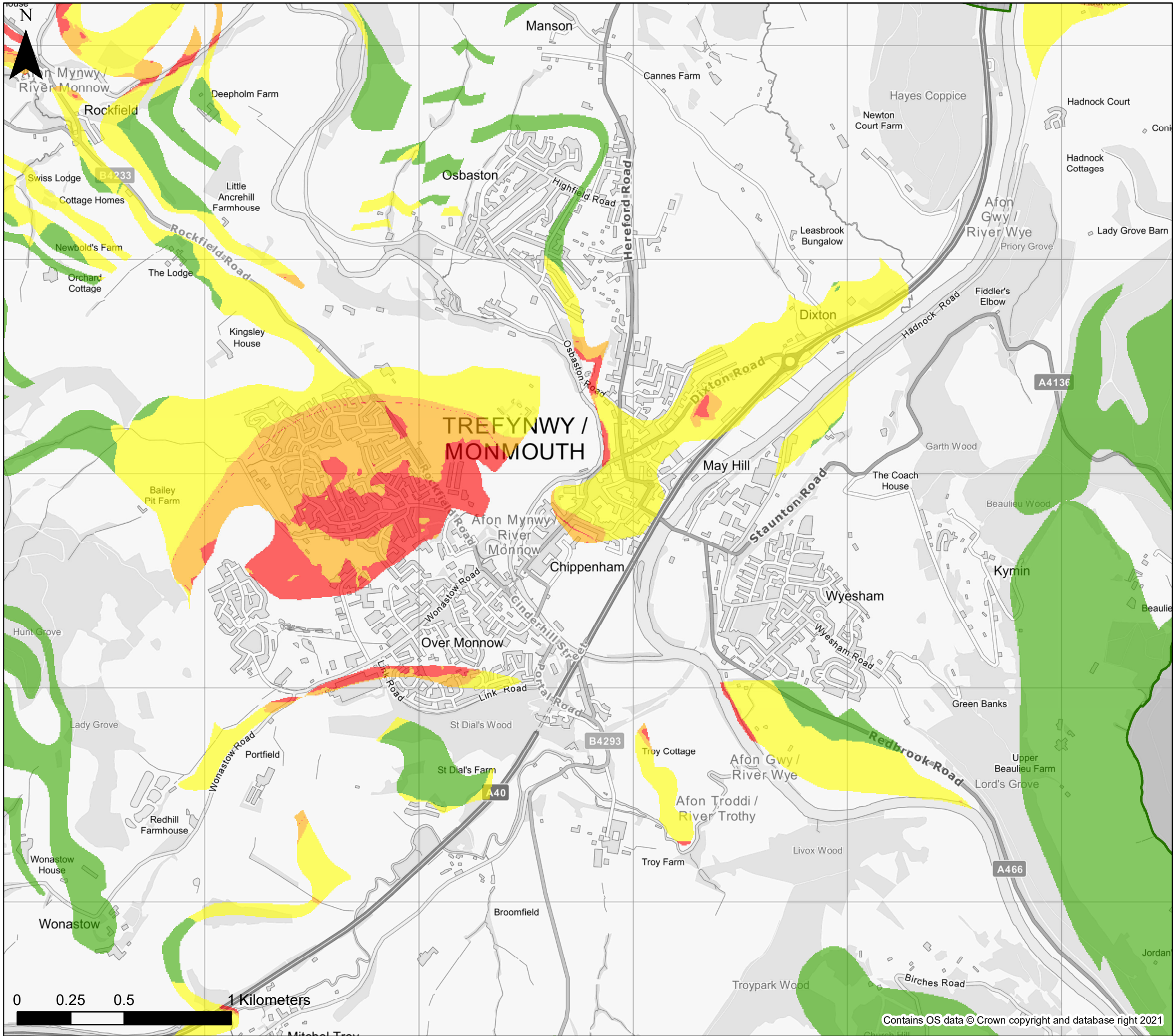
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Flood Risk from Groundwater

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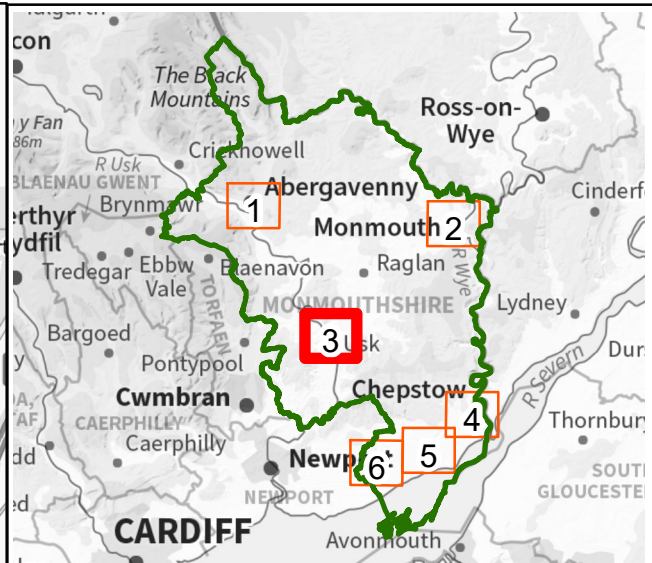
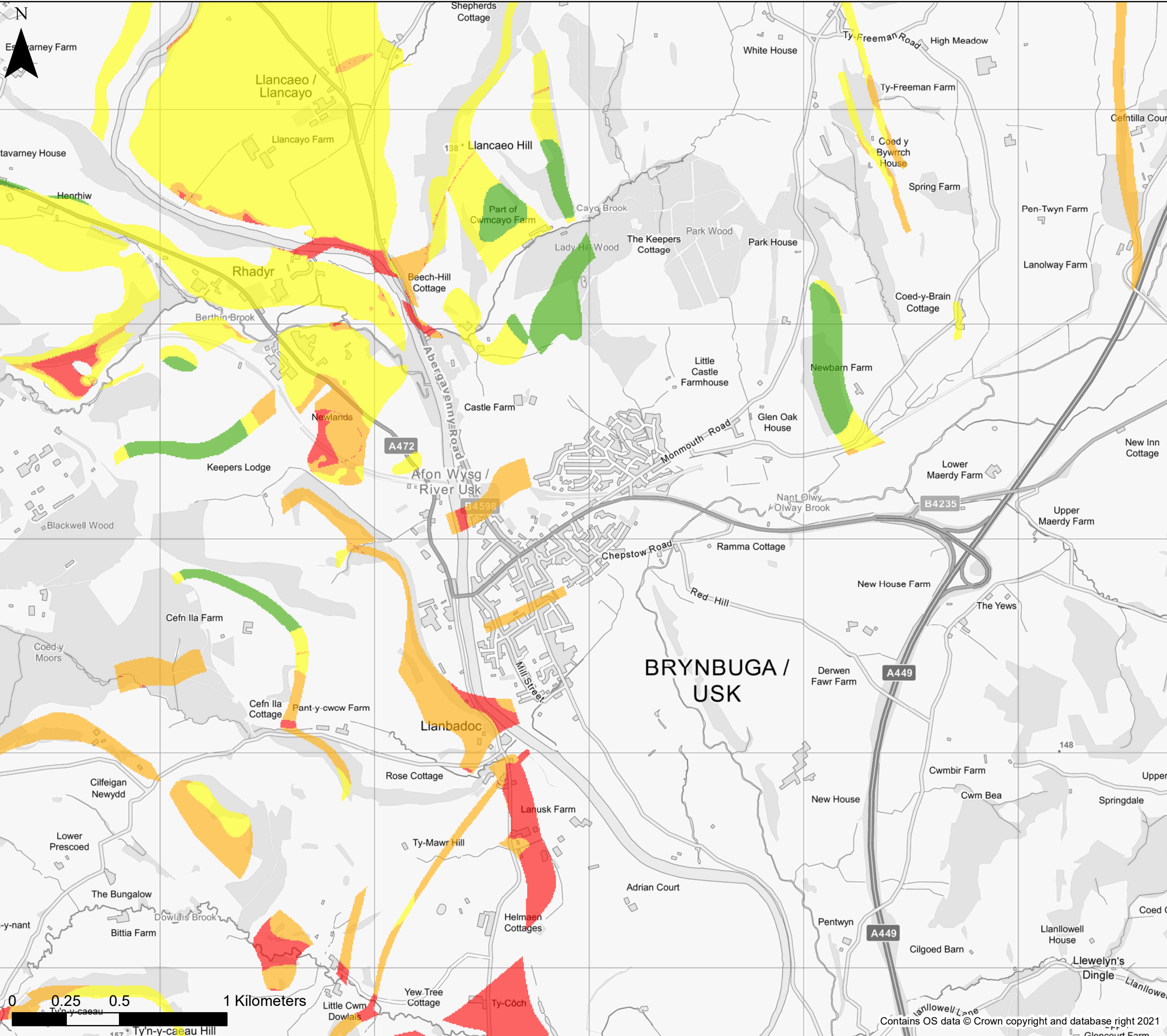
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Flood Risk from Groundwater

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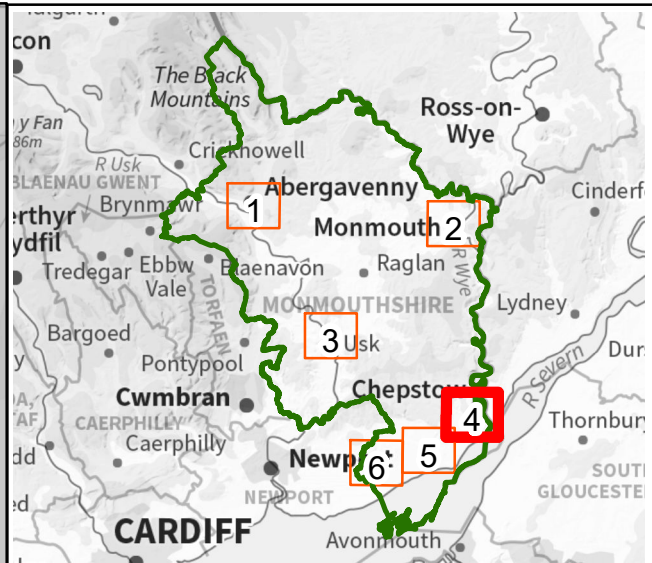
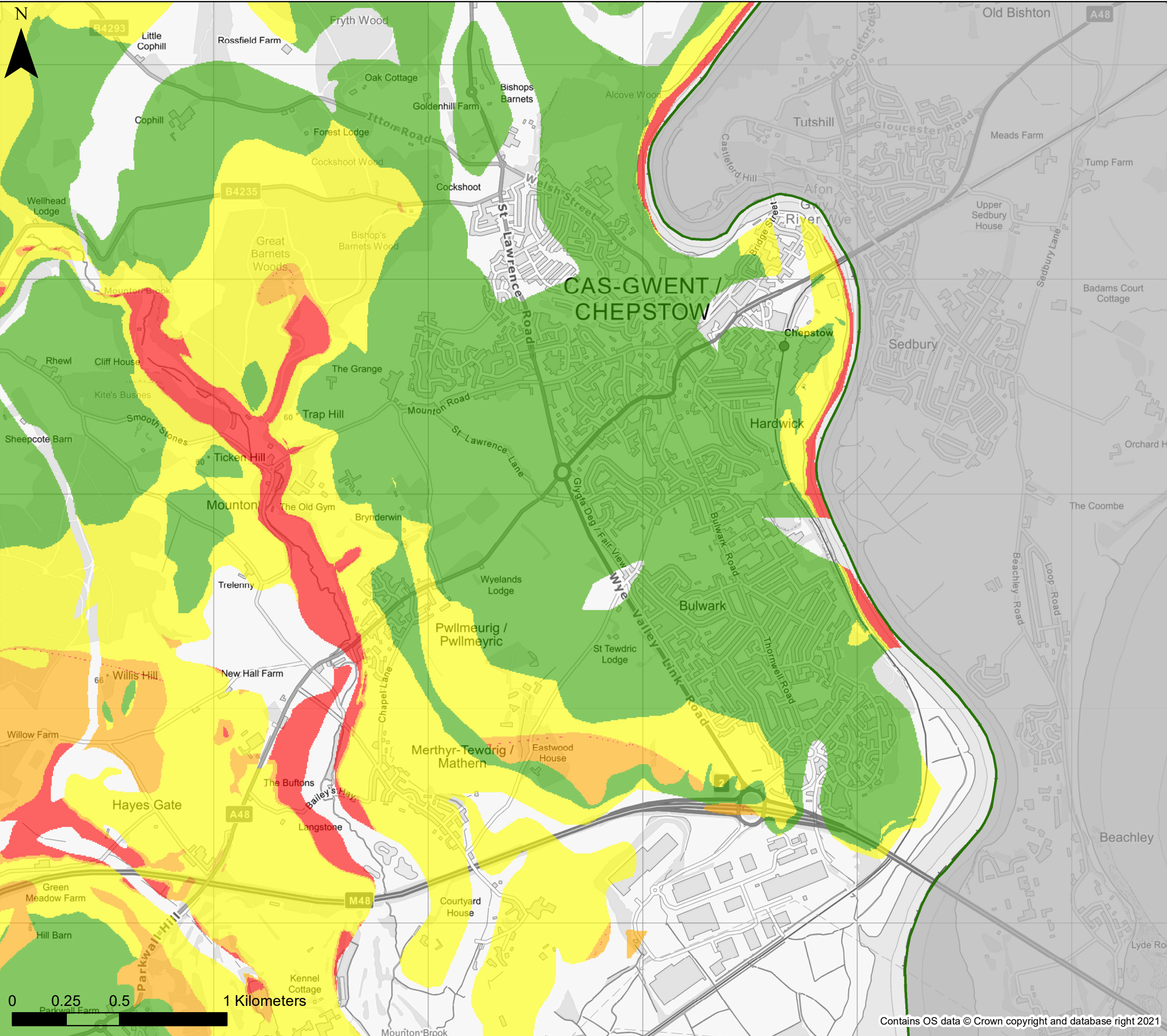
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Flood Risk from Groundwater

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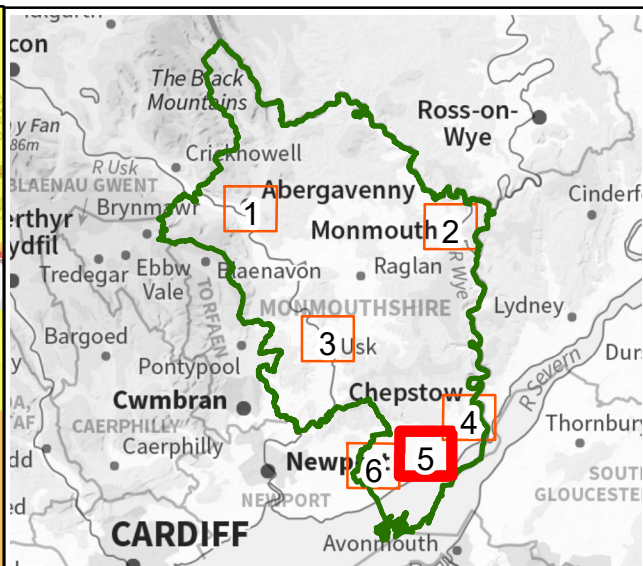
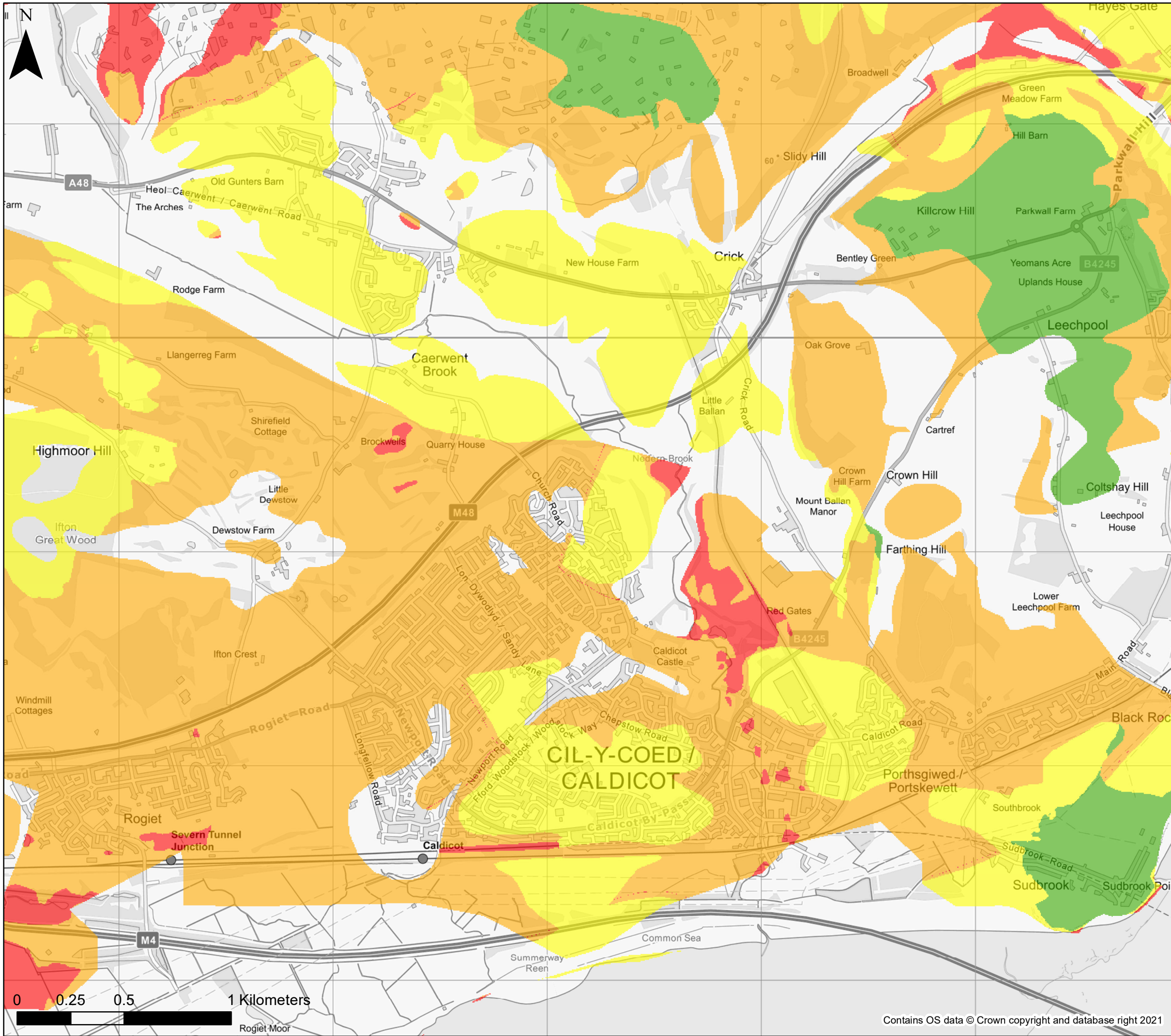
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Flood Risk from Groundwater

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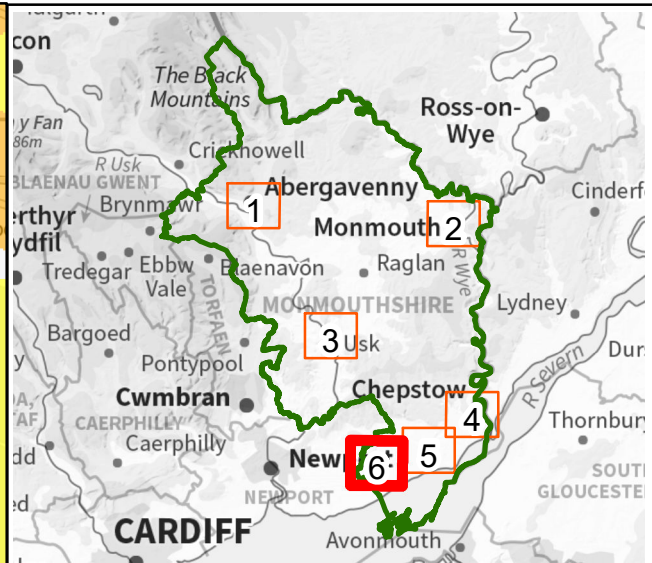
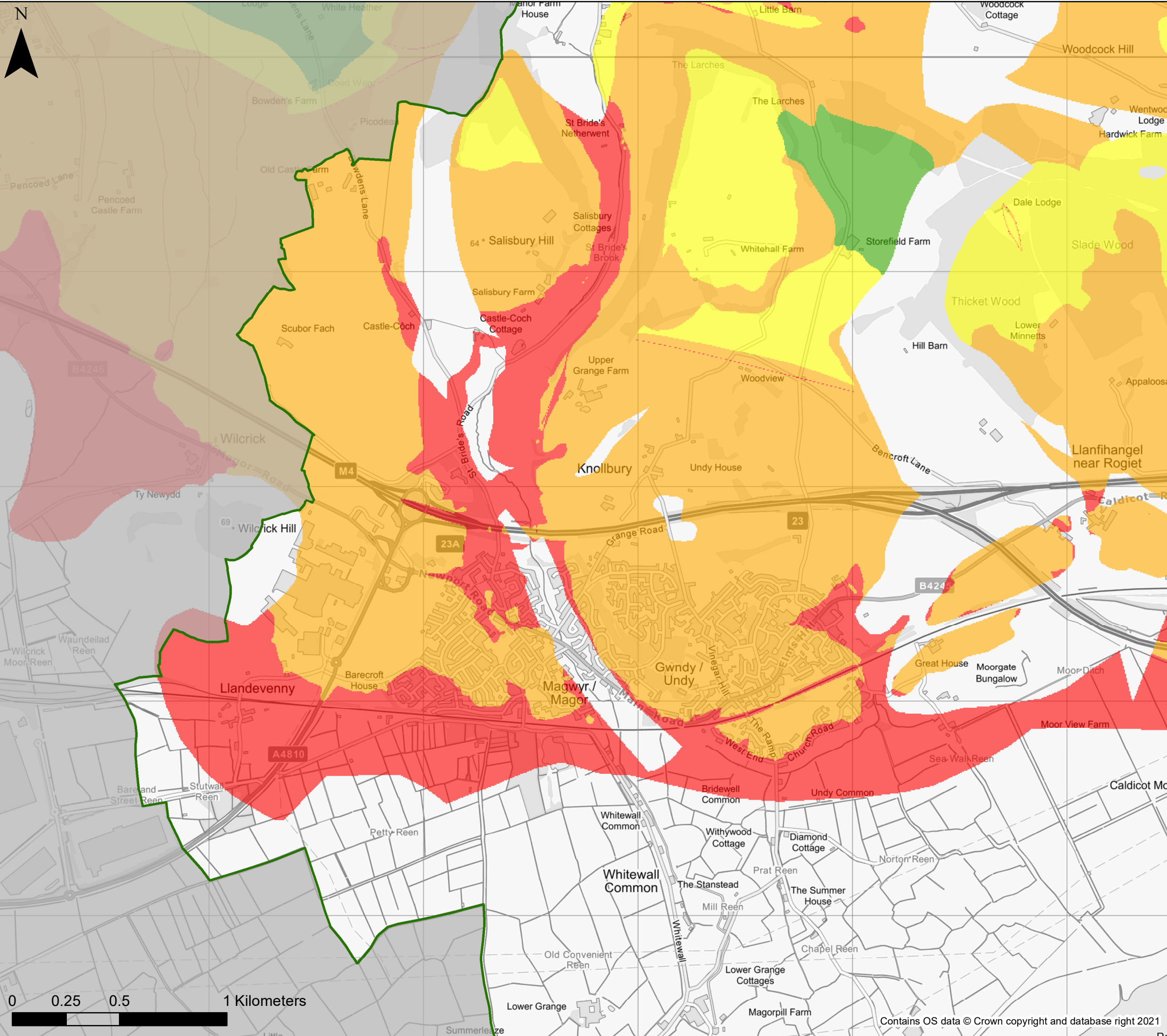
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Flood Risk from Groundwater

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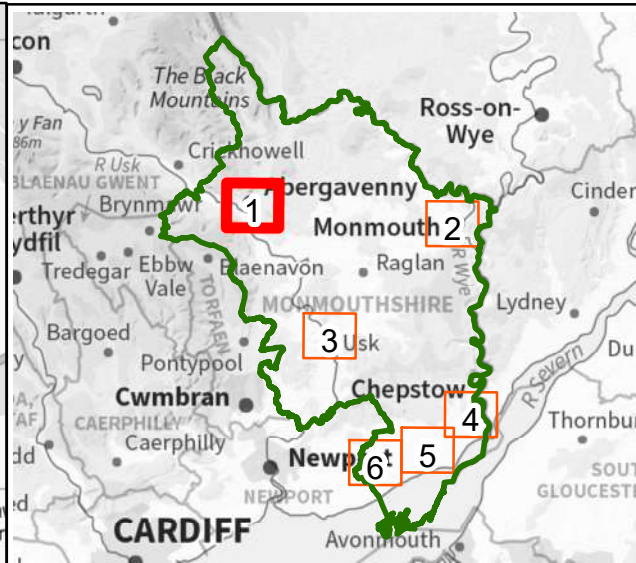
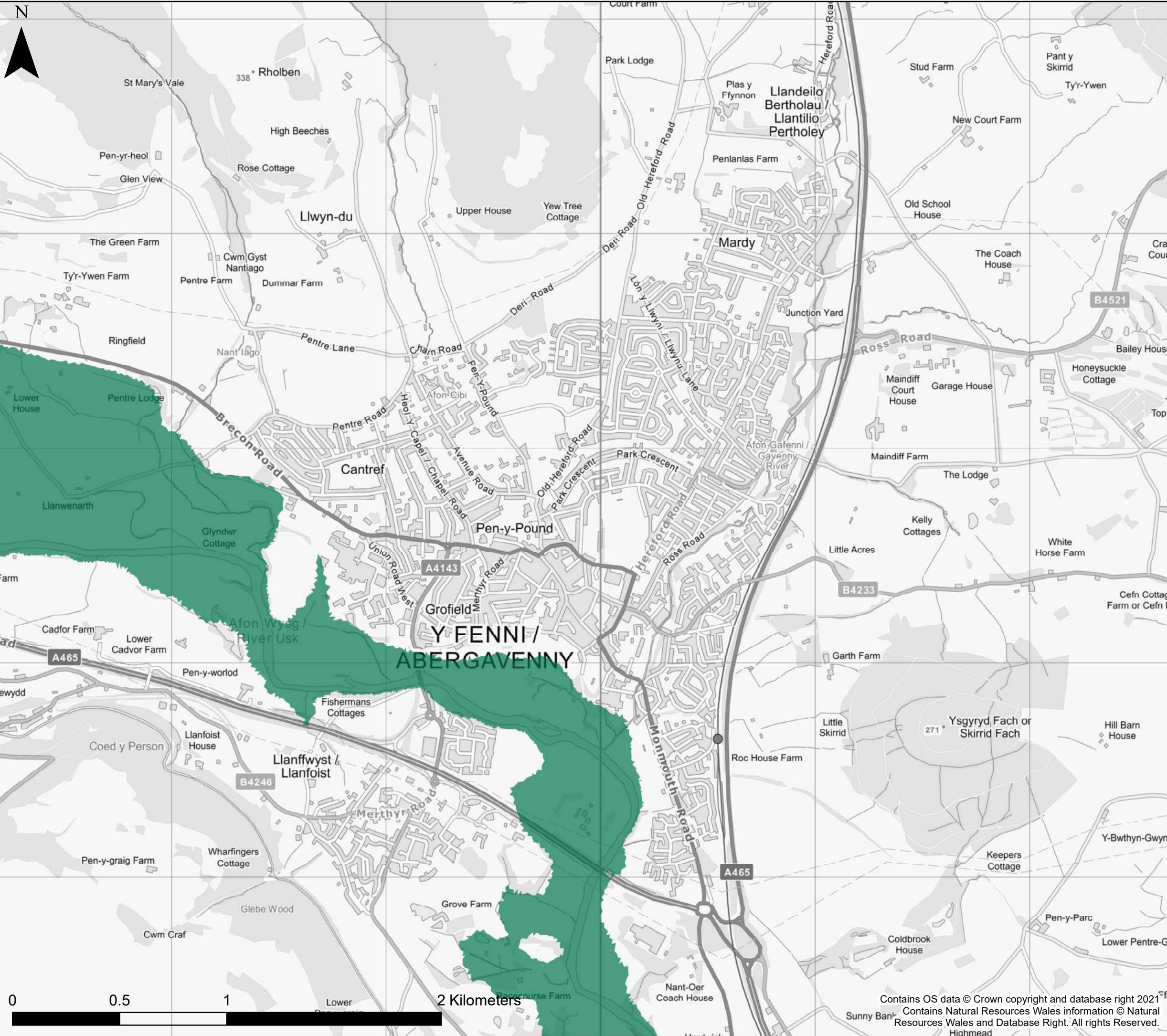


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Flood Risk from Groundwater

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KEY

-  Monmouthshire County Council
-  Flood Risk from Reservoirs

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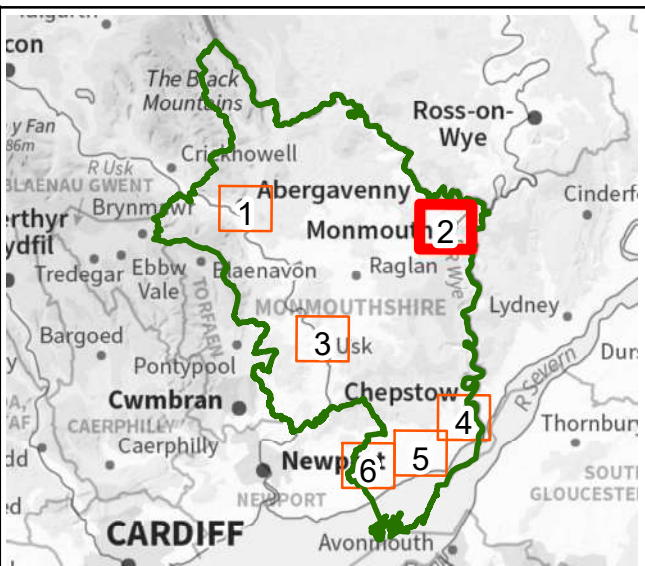
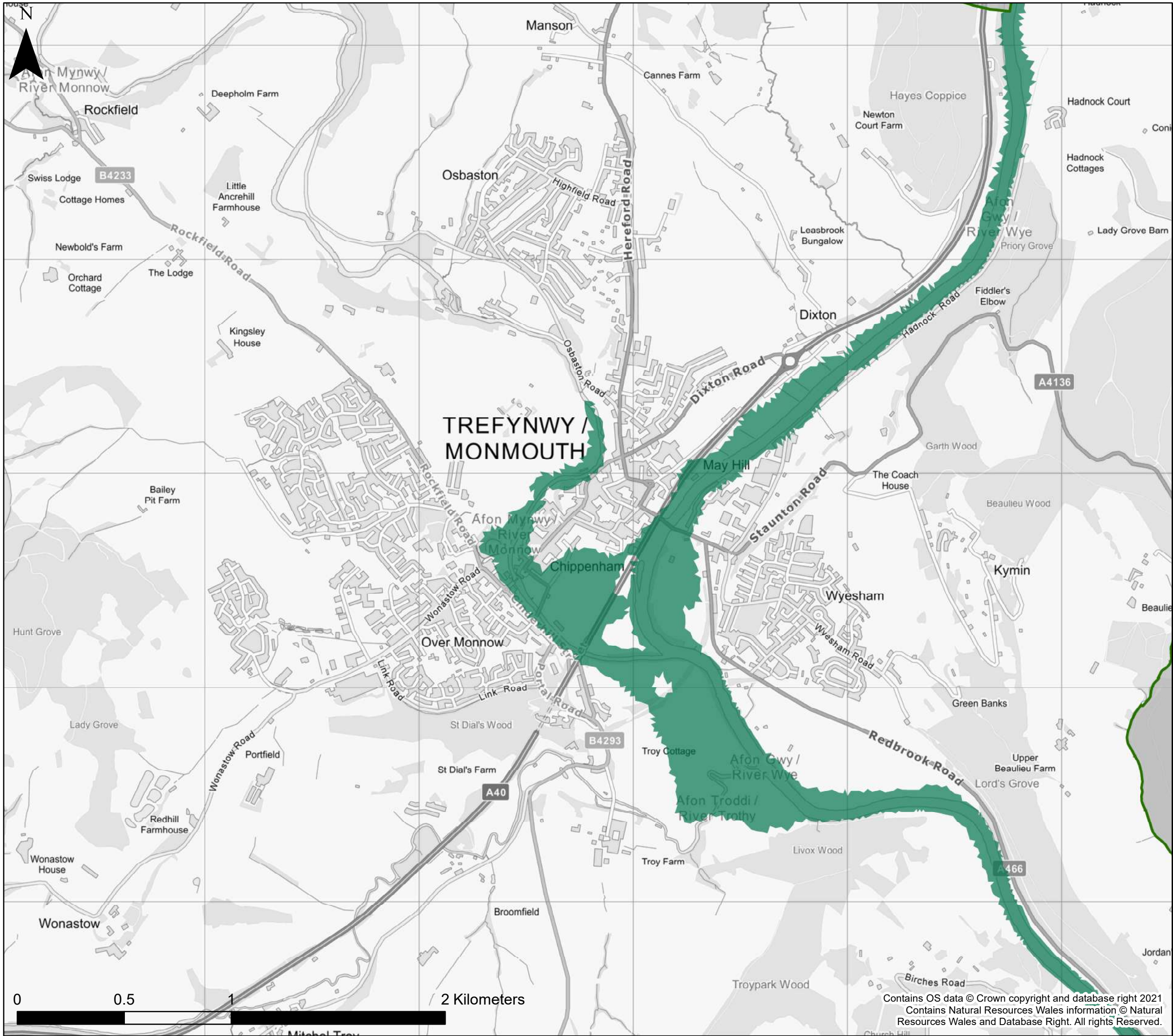
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Flood Risk from Reservoirs

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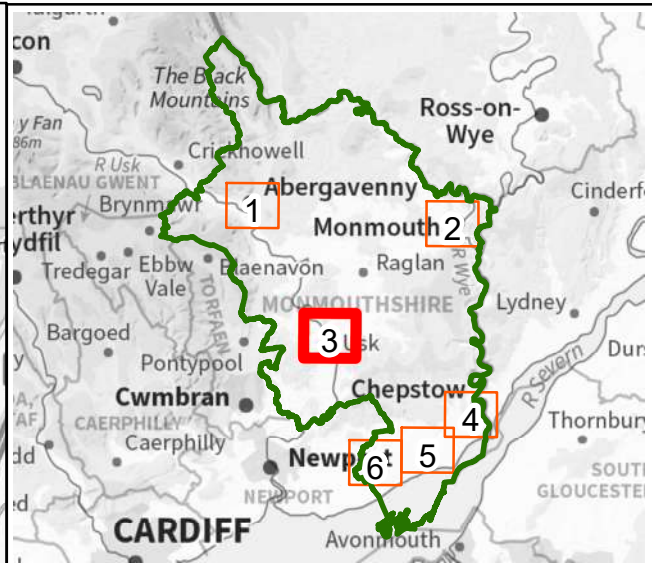
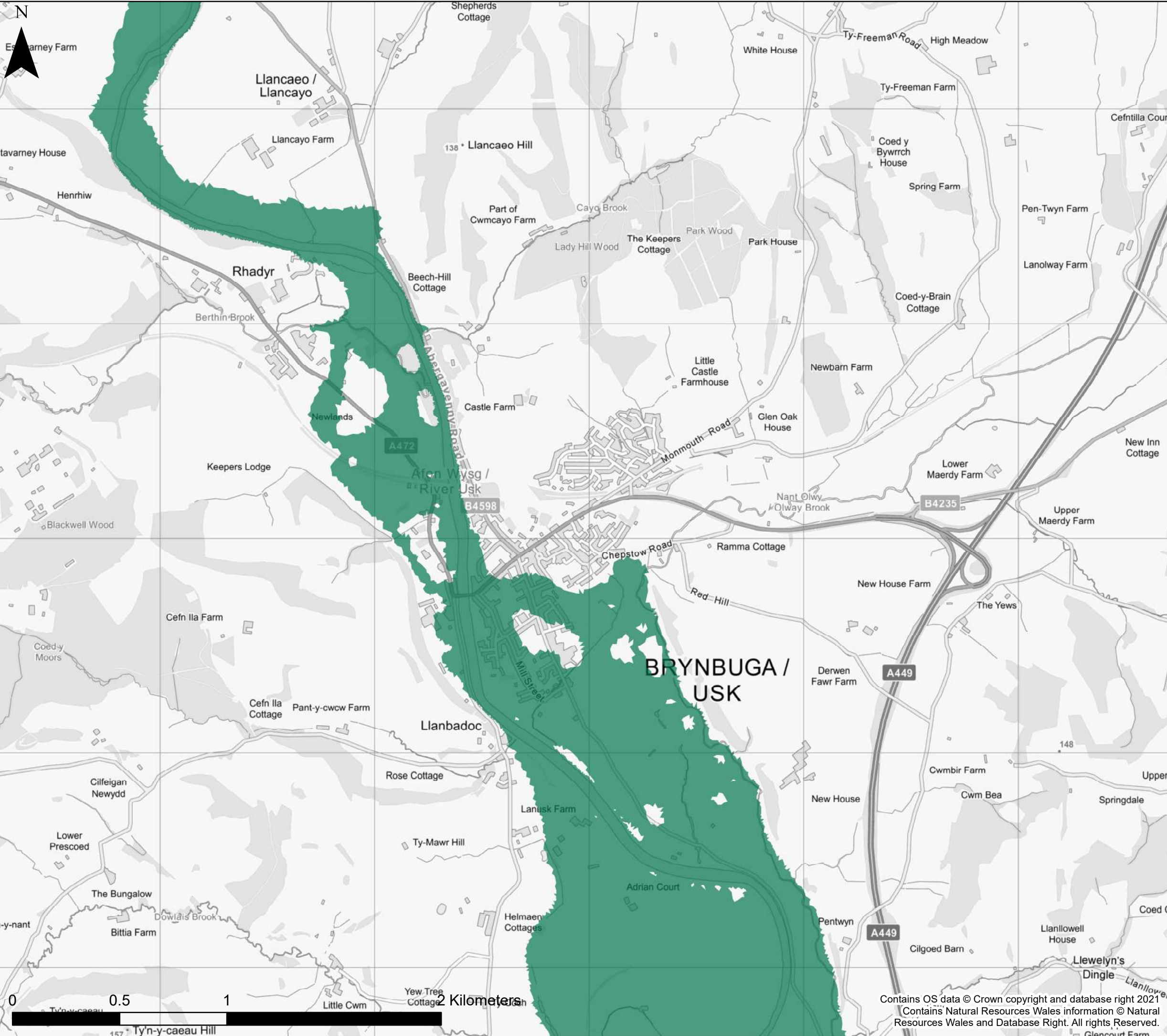


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Consequences Assessment
Flood Risk from Reservoirs

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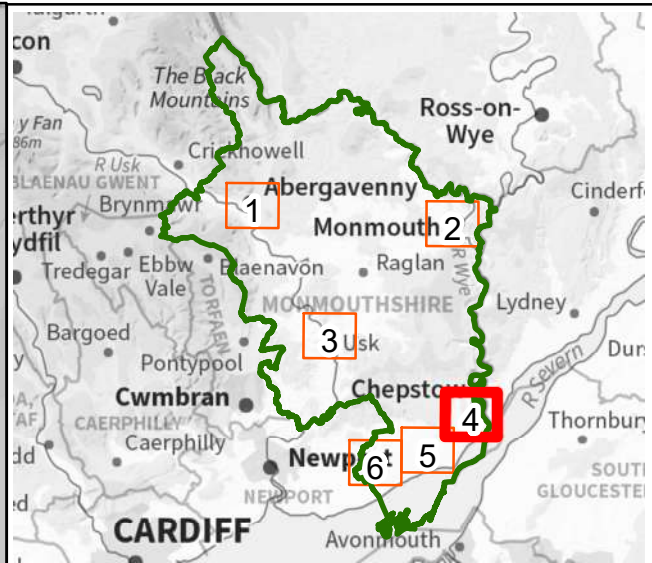
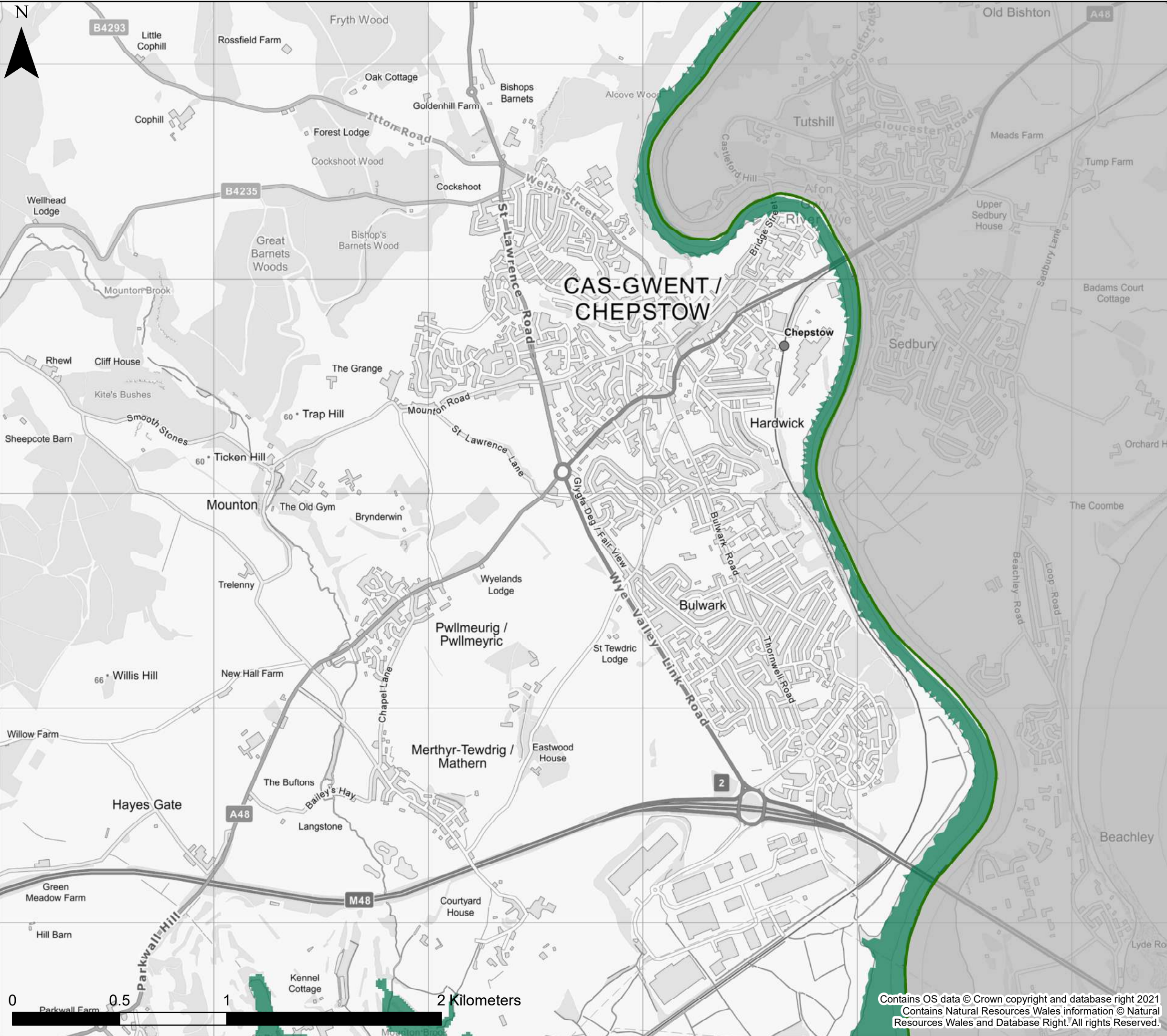


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Stage 1 Strategic Flood
Consequences Assessment
Flood Risk from Reservoirs

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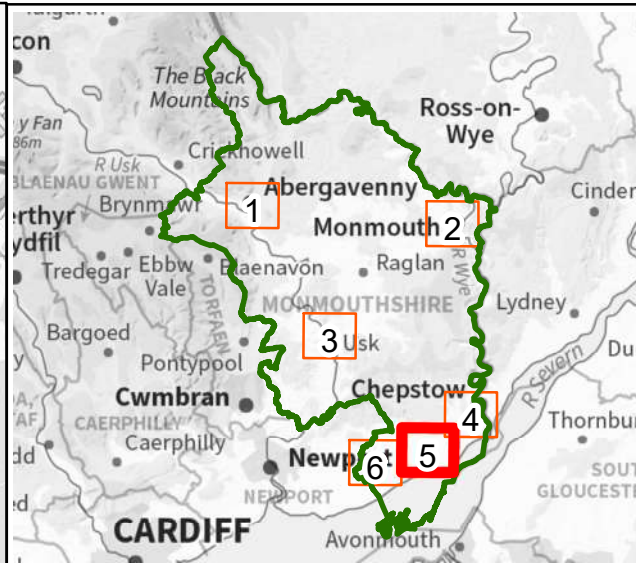
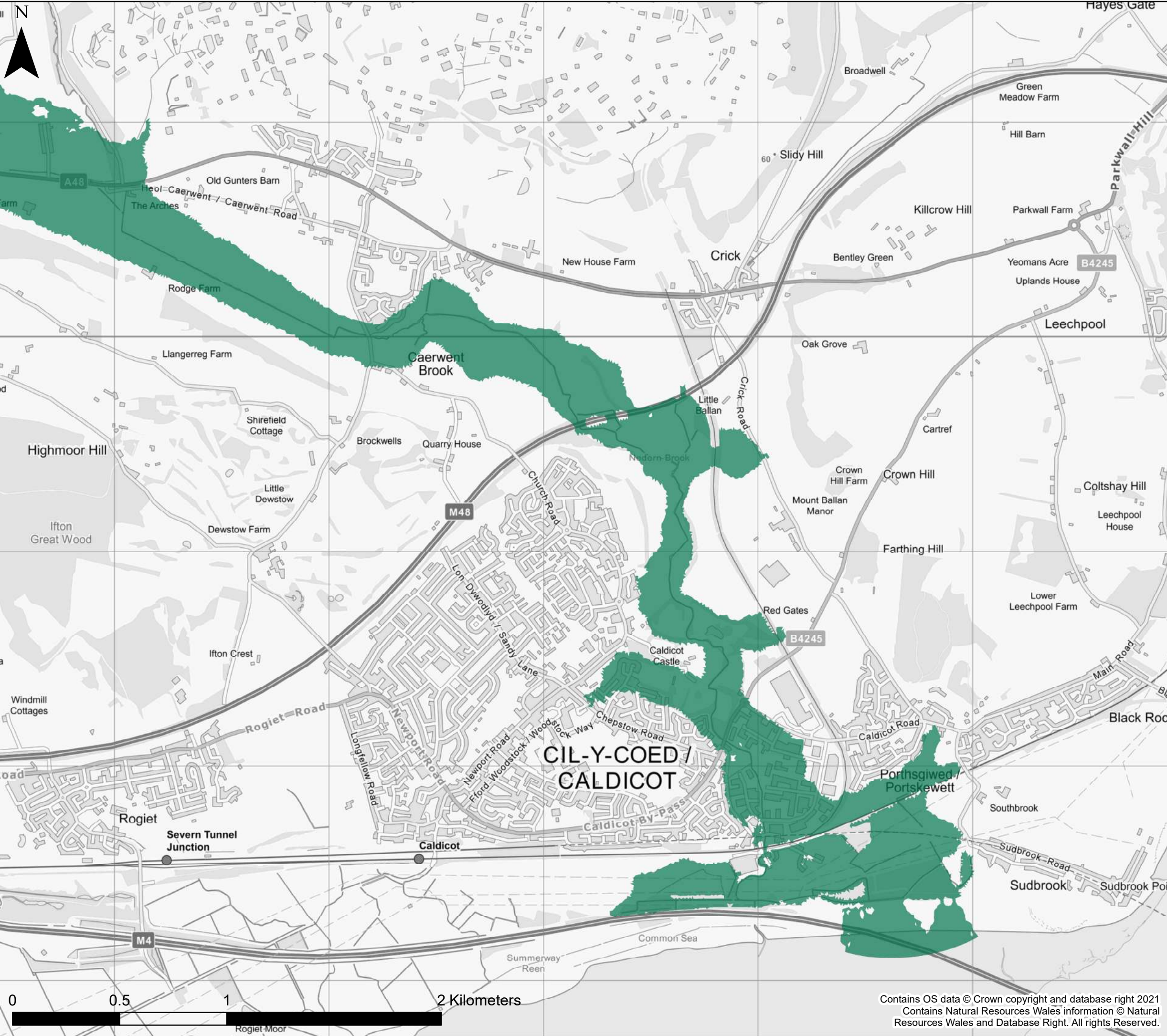
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Flood Risk from Reservoirs

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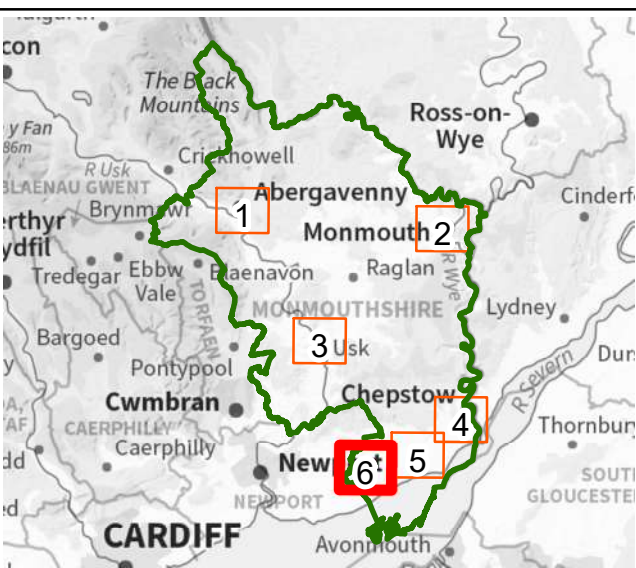
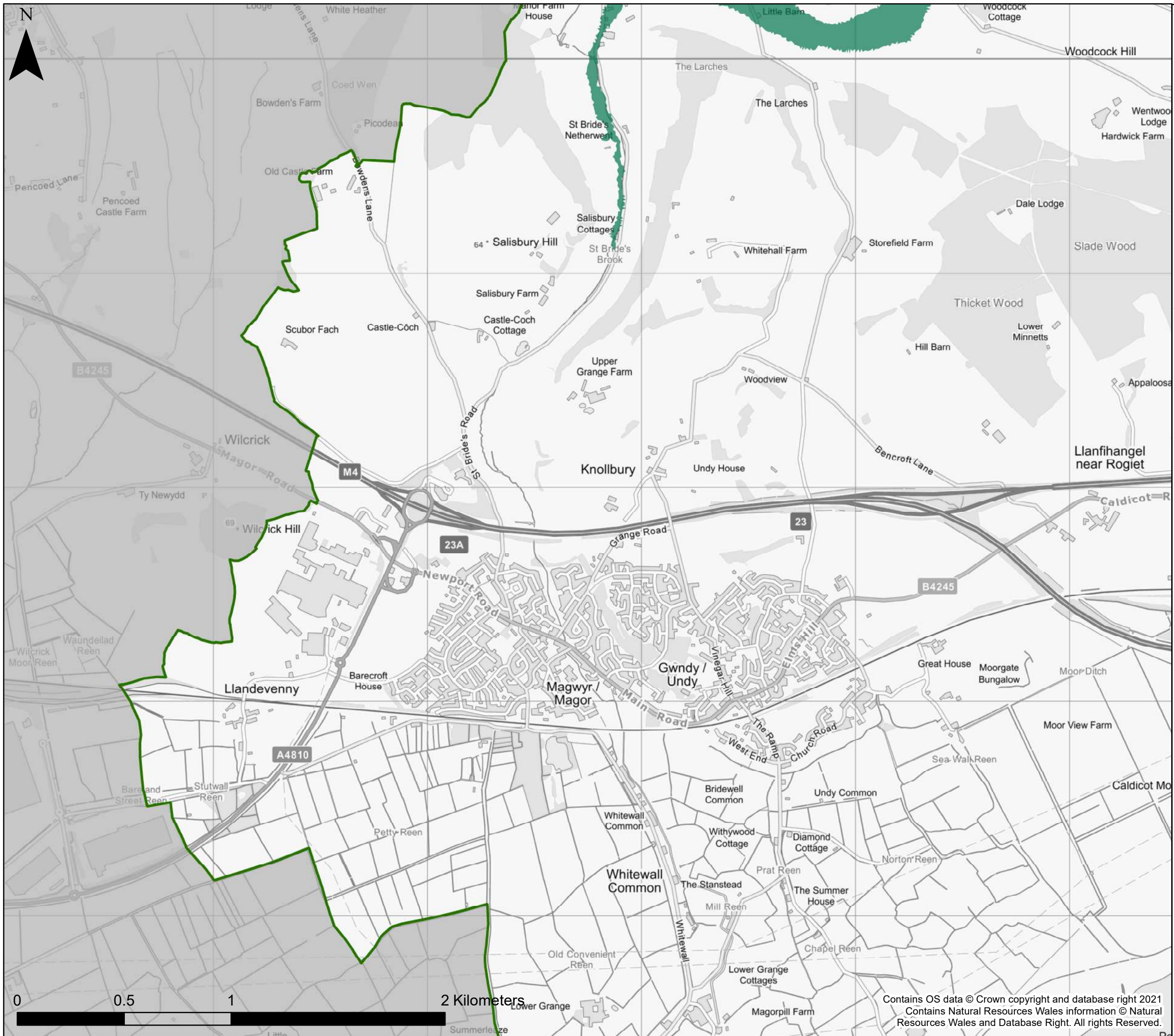
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Flood Risk from Reservoirs

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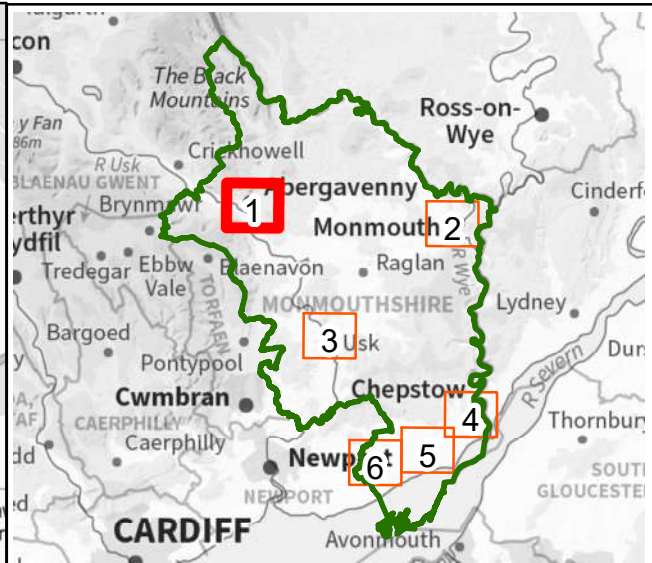
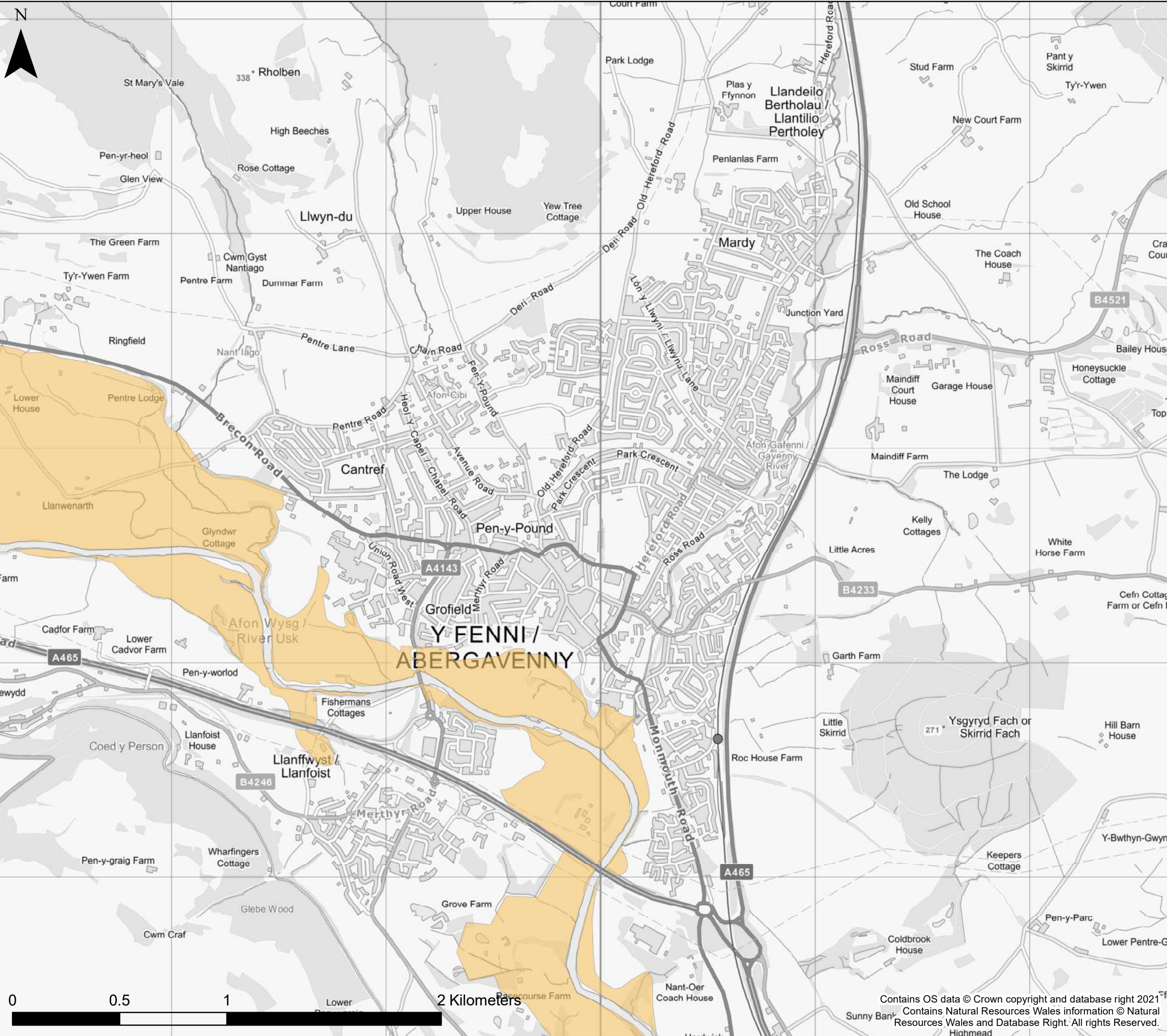
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KEY

-  Monmouthshire County Council
-  NRW Recorded Flood Extents

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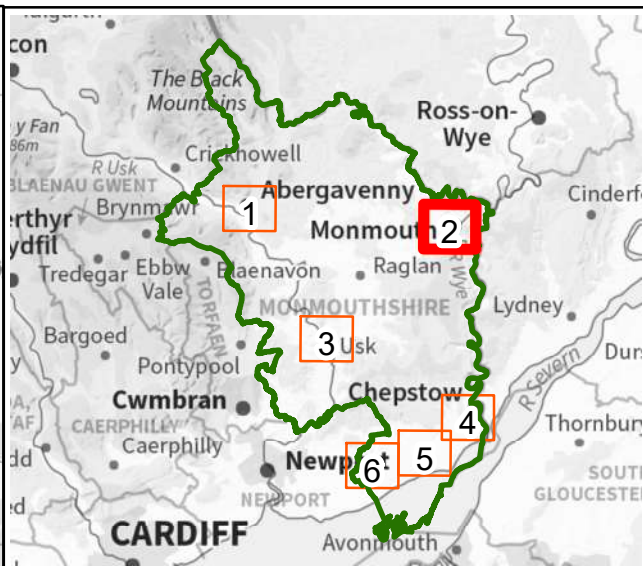
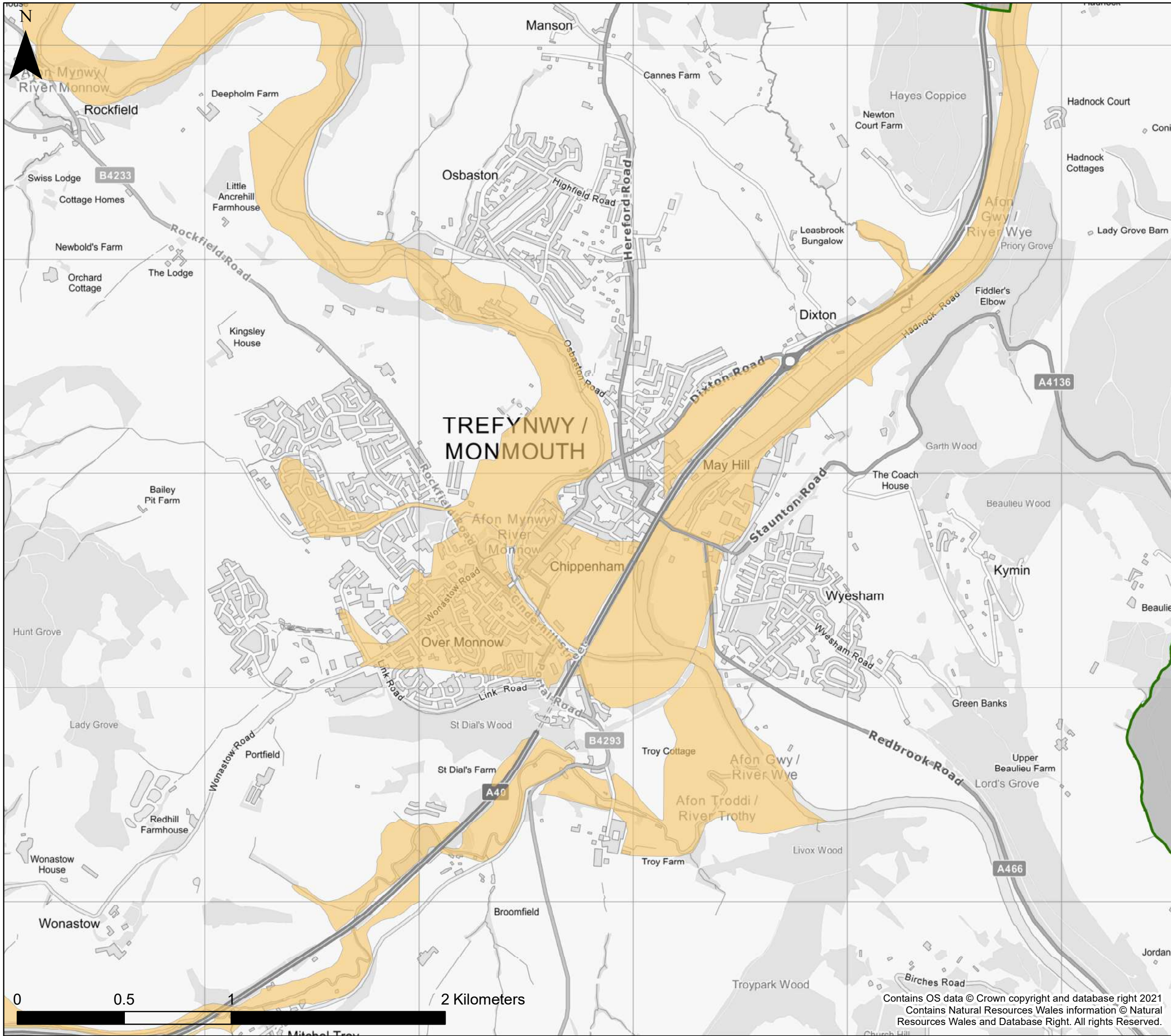
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Historic Flooding

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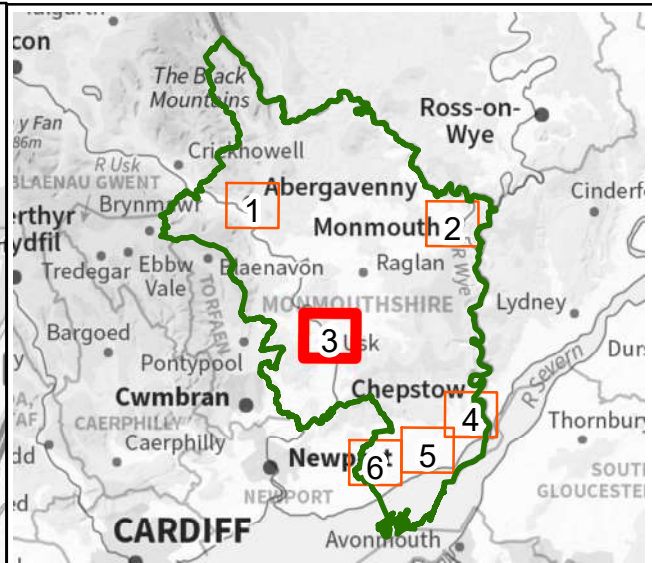
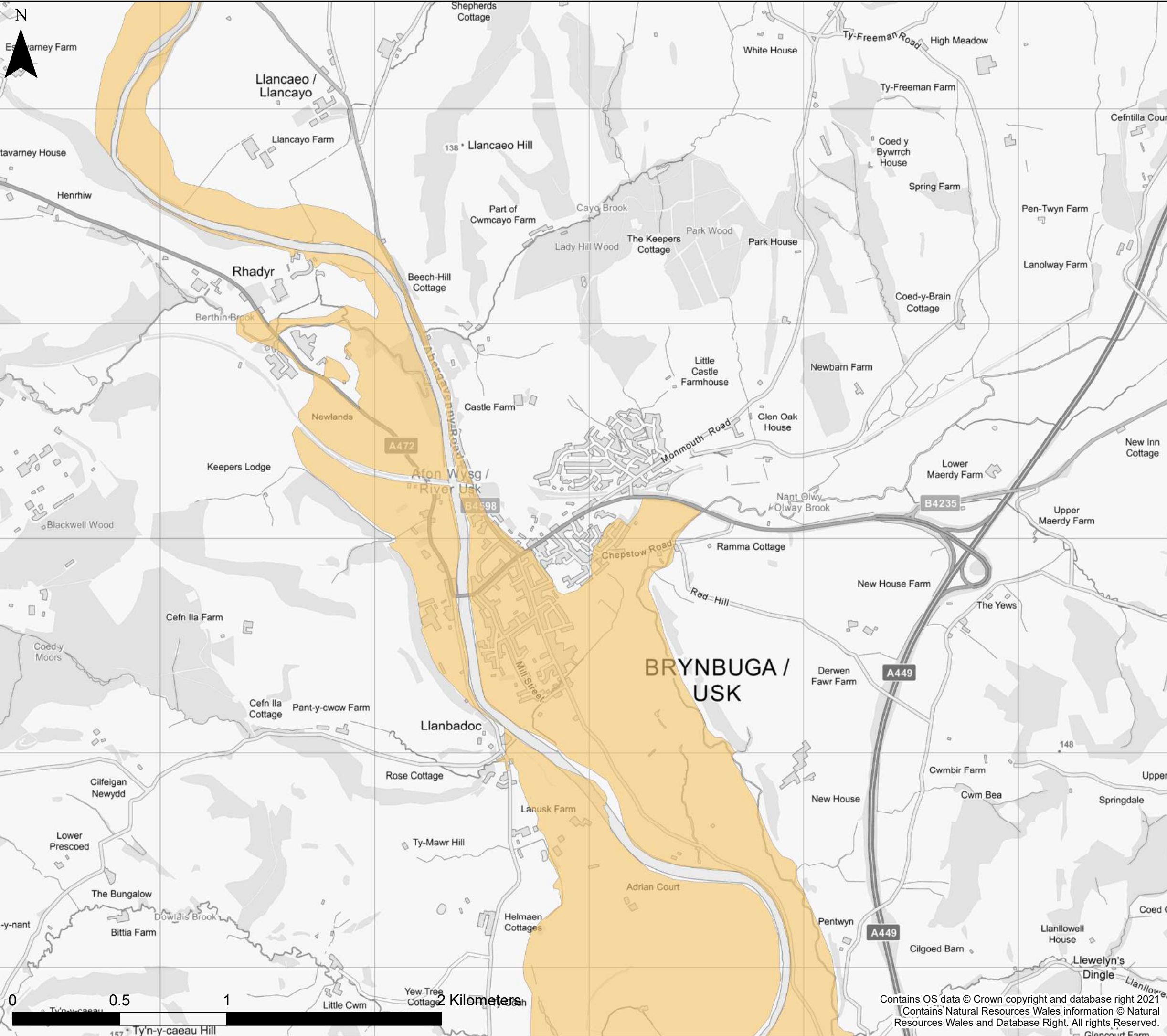
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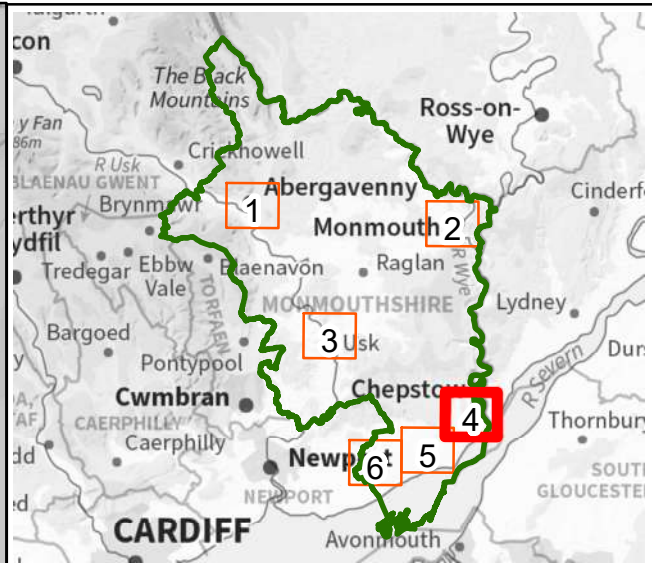
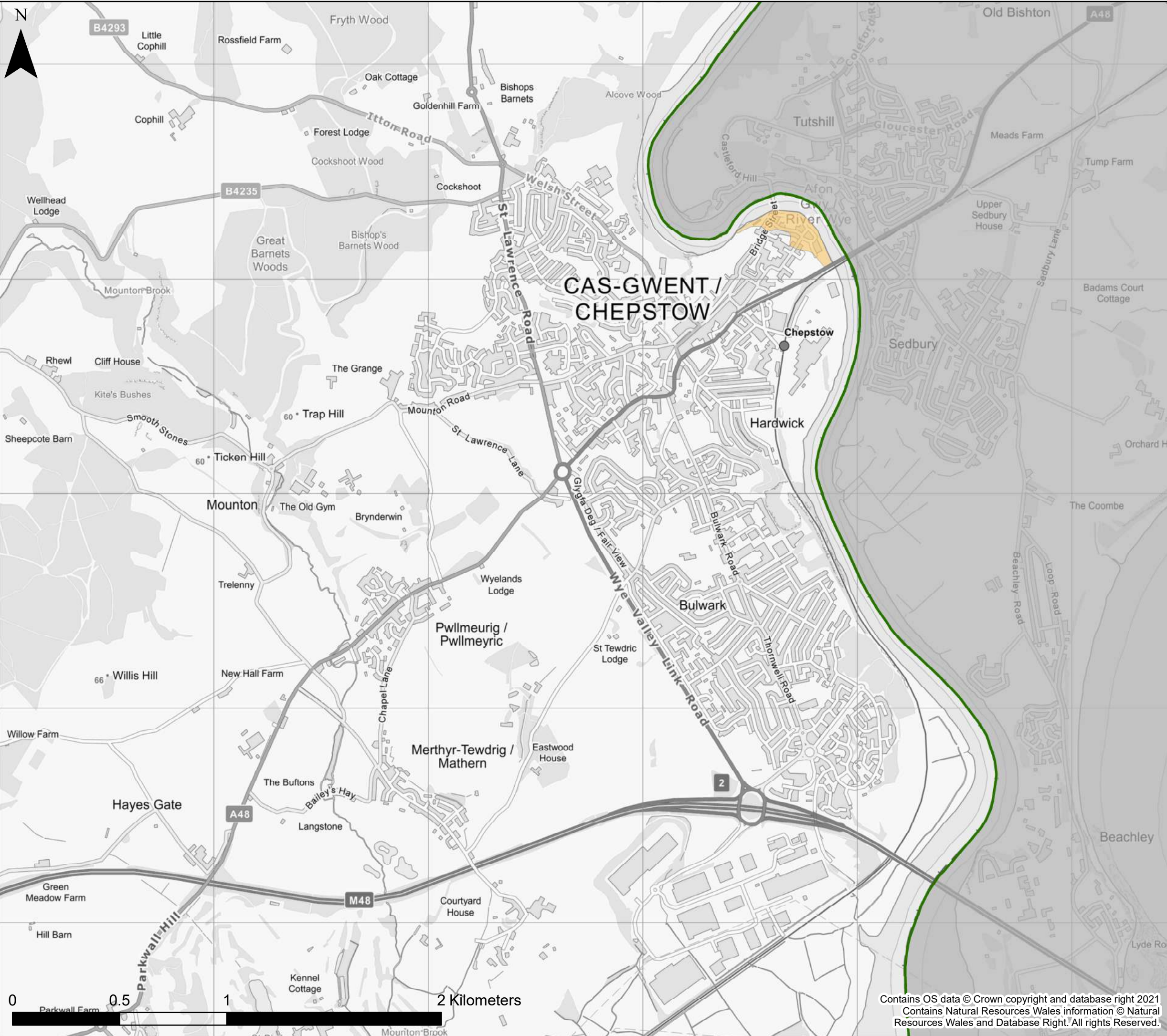


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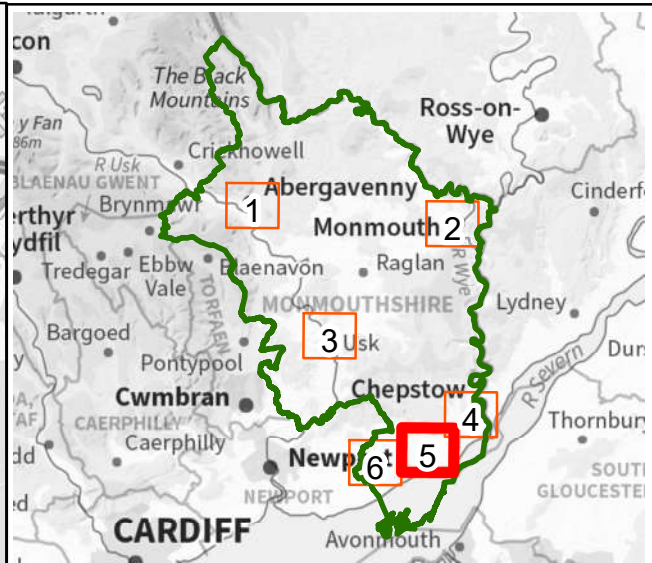
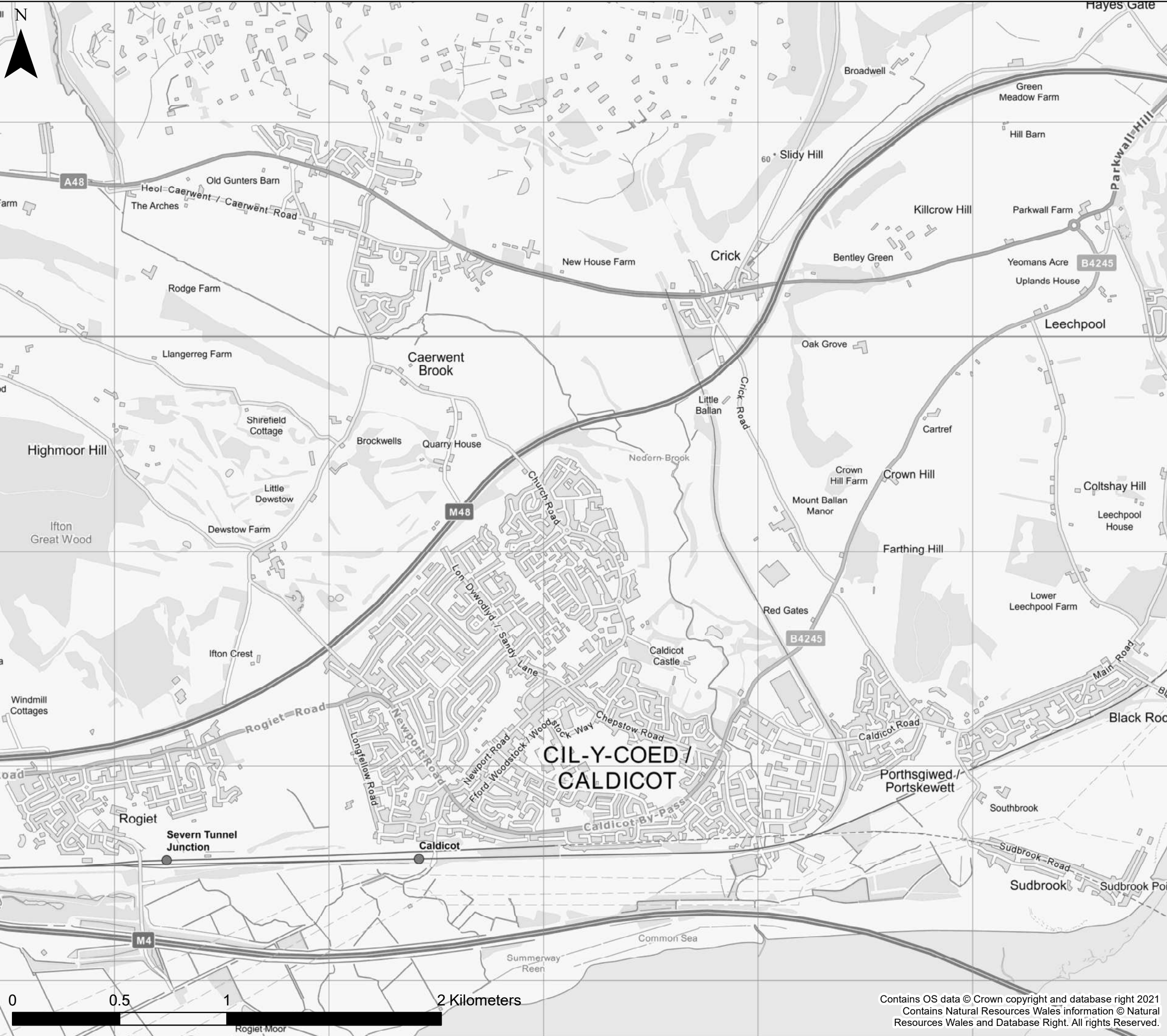
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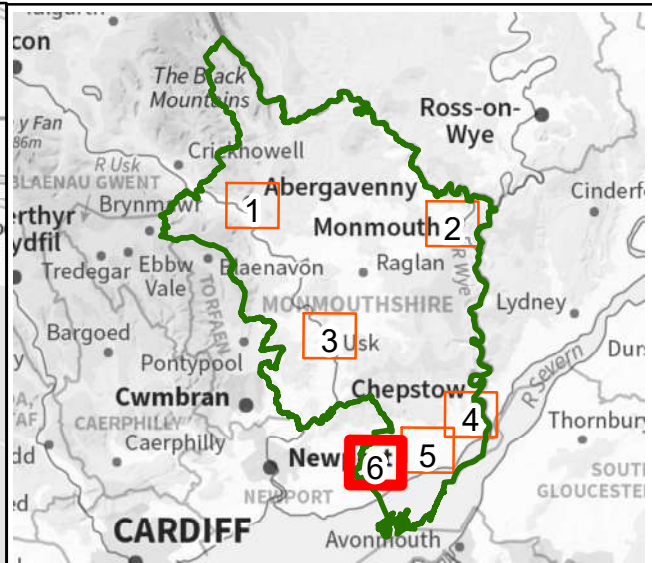
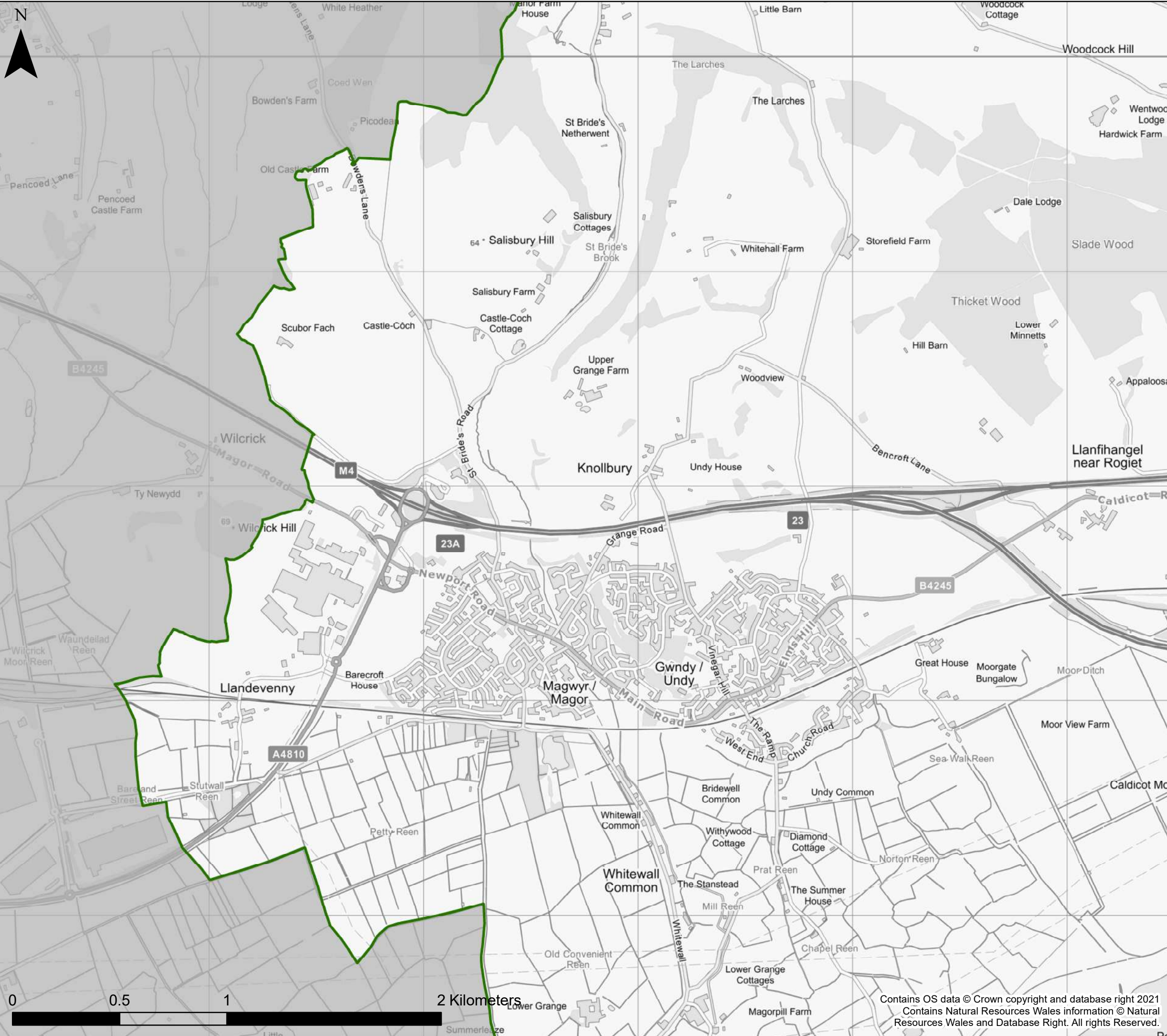
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KEY

-  Monmouthshire County Council
-  NRW Recorded Flood Extents

Notes
The map shows the flood risk data and information based on the map title and legend. If no data is displayed on the map, or not all features are present, this indicates that the respective flood source or features are not present within this area'



Monmouthshire County Council

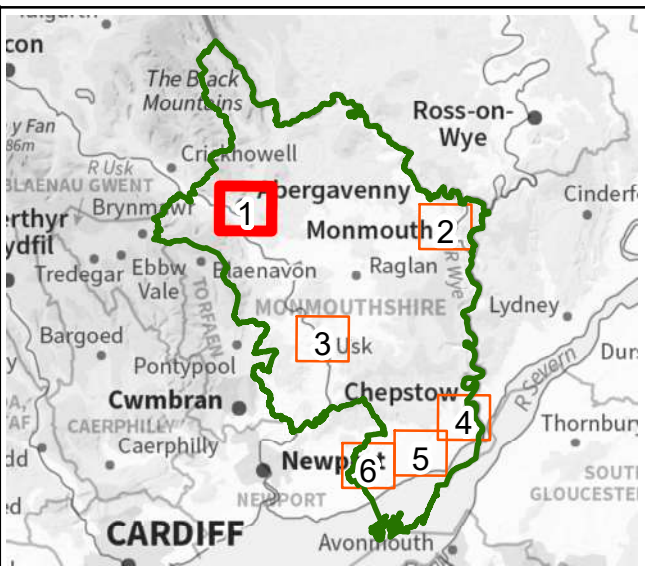
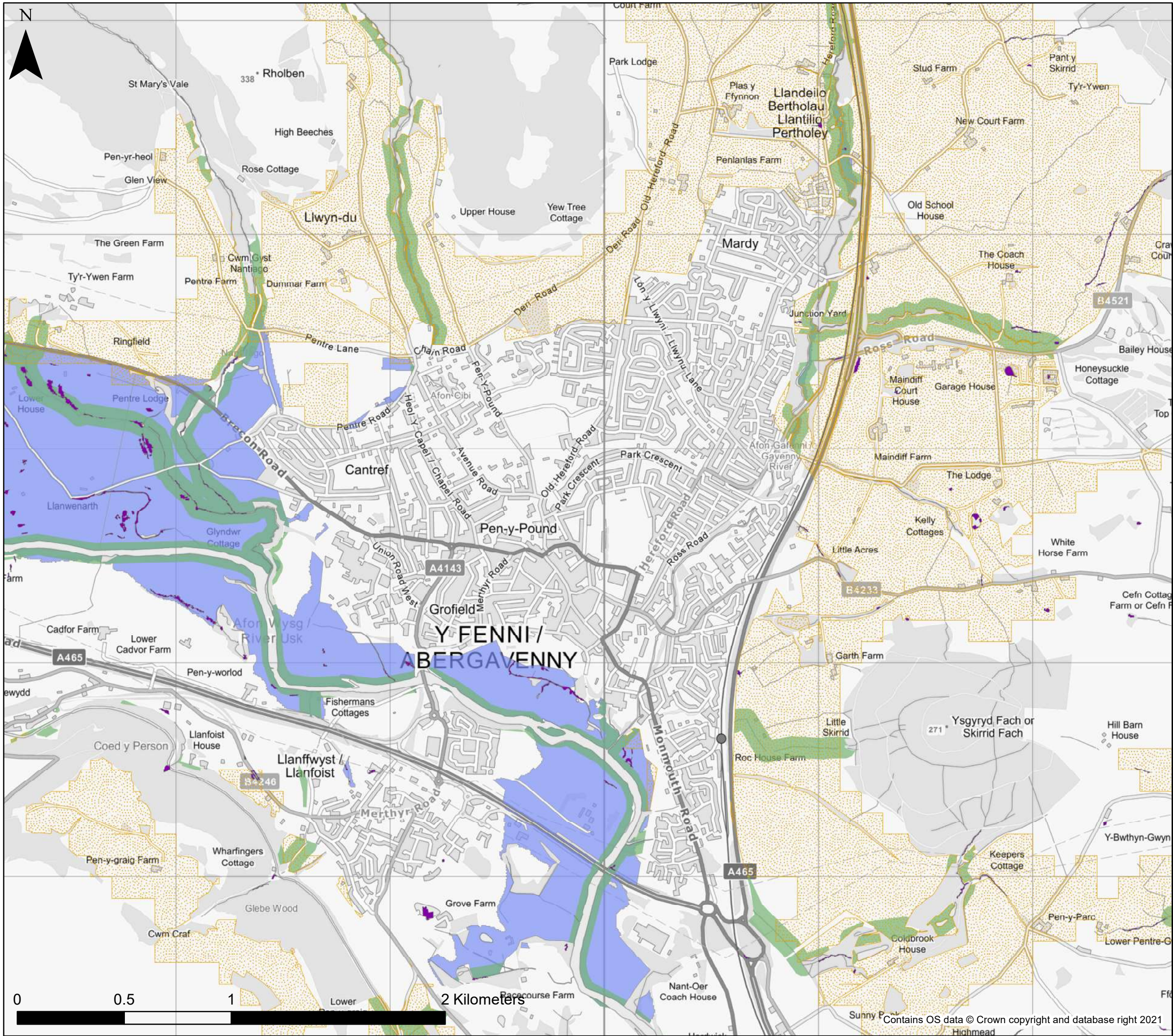
Stage 1 Strategic Flood Consequences Assessment

Historic Flooding

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KEY

- Monmouthshire County Council
- Runoff Attenuation Features 1%
- Wider Catchment Woodland Potential
- Riparian Woodland Planting Potential
- Floodplain Woodland Planting Potential

Notes
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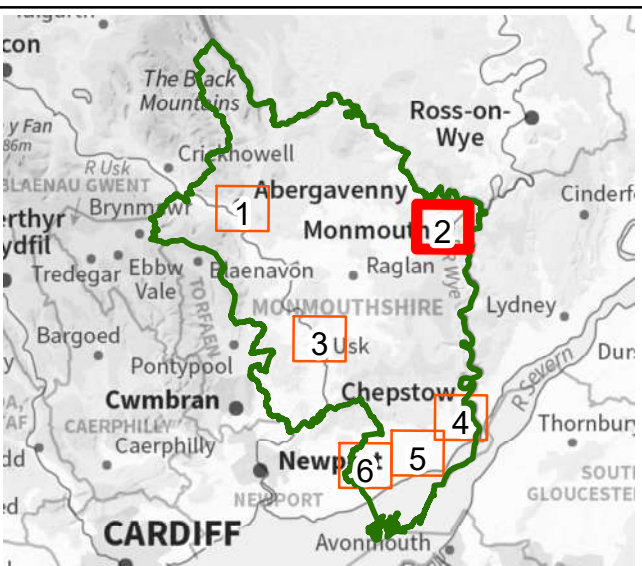
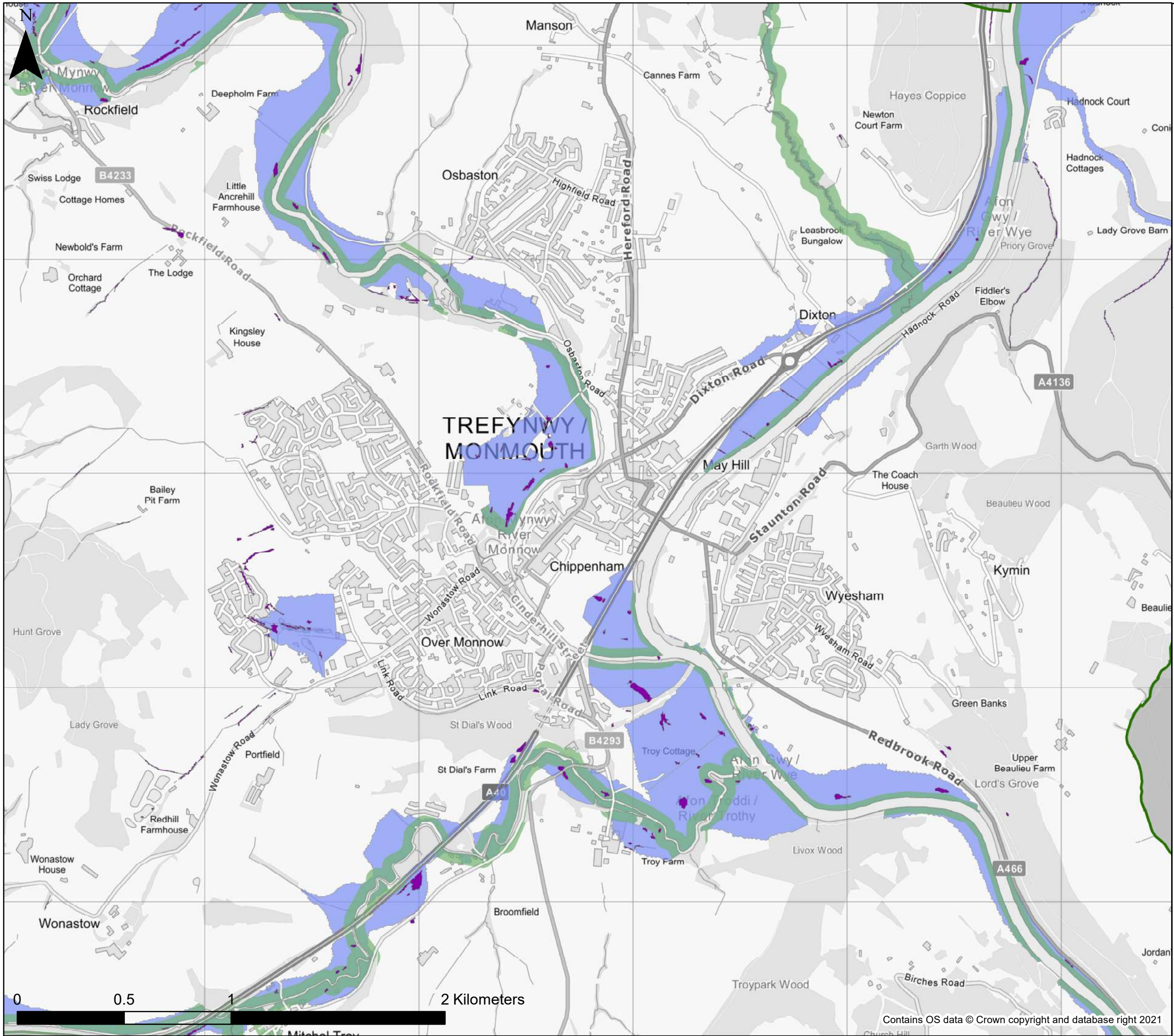
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Stage 1 Strategic Flood
Consequences Assessment

*Working with Natural Processes -
Potential Mapping*

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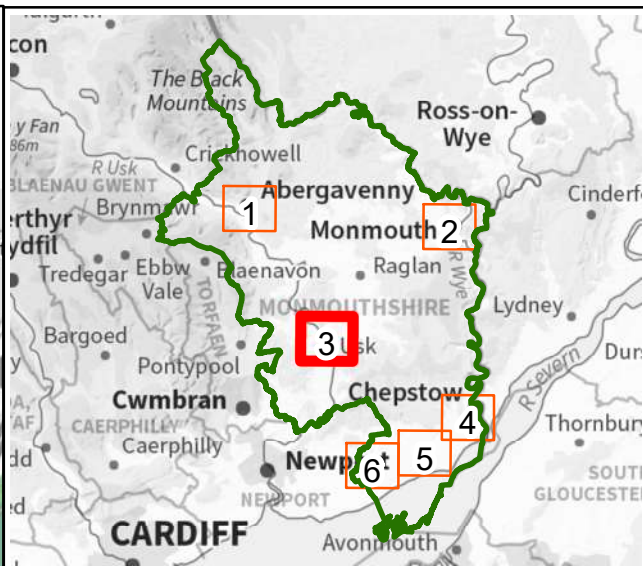
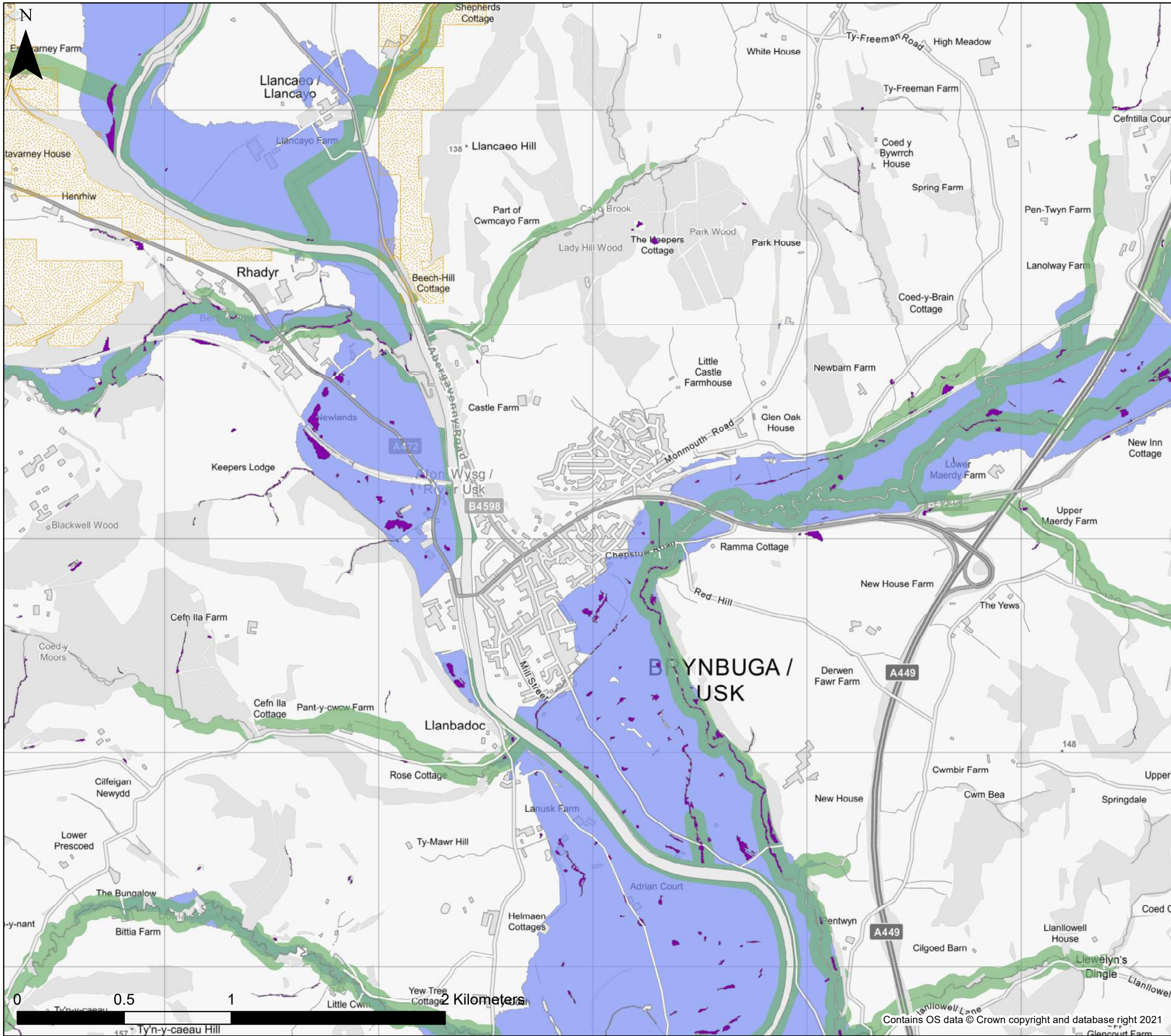
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Monmouthshire County Council
Stage 1 Strategic Flood Consequences Assessment
Working with Natural Processes - Potential Mapping

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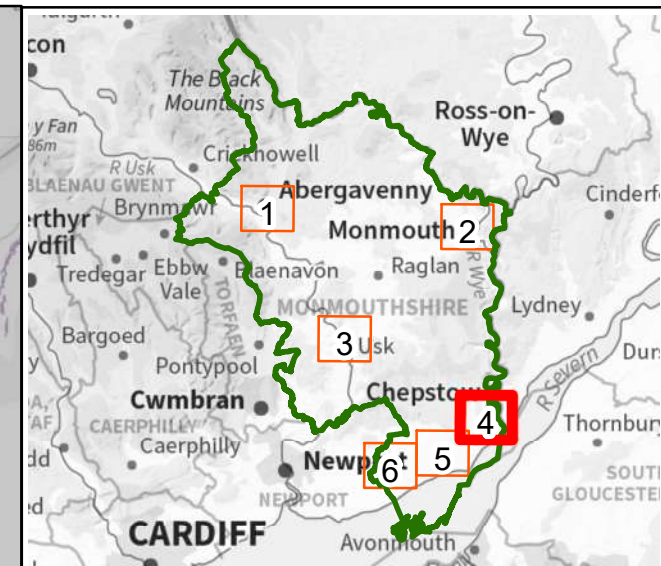
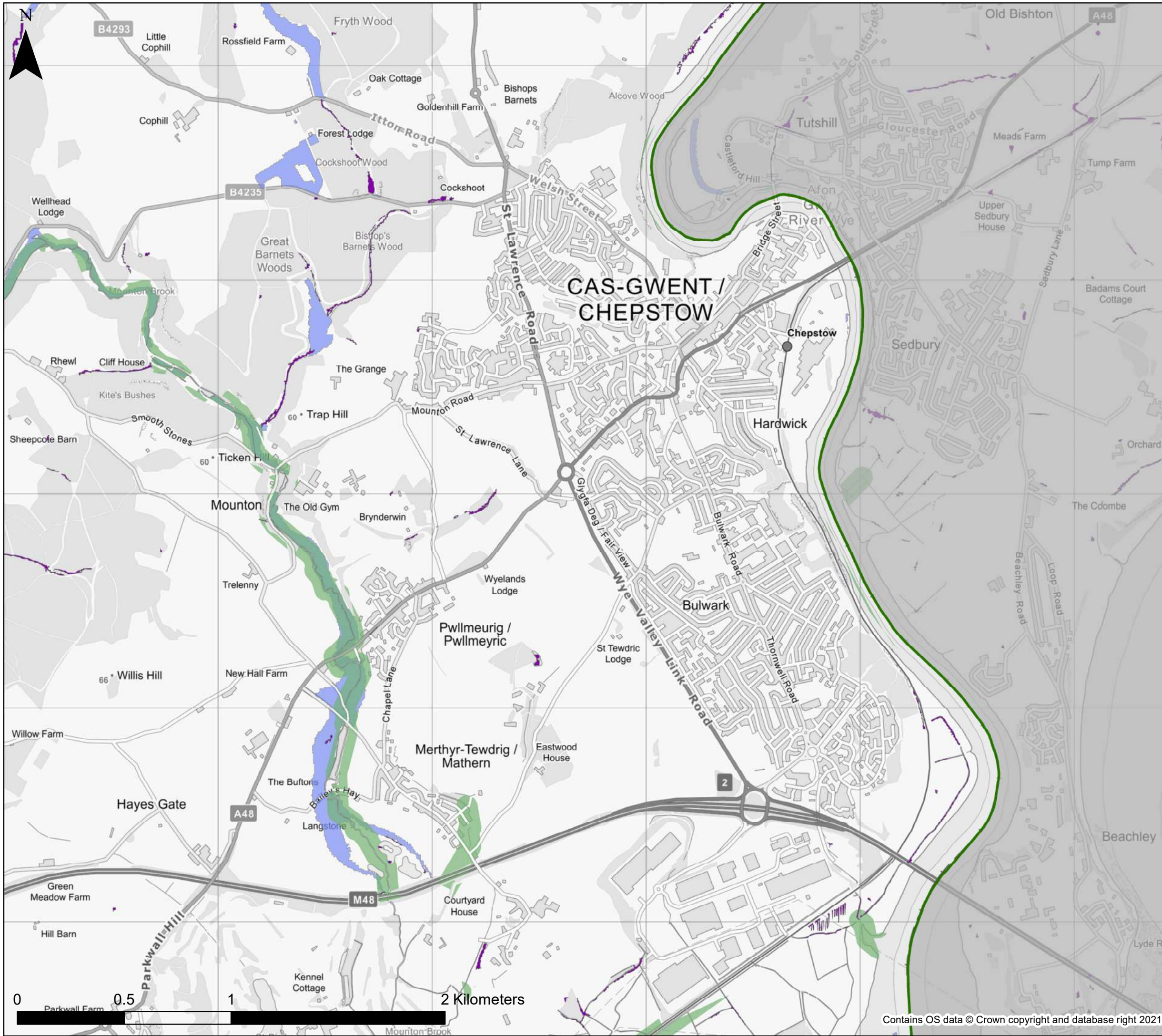
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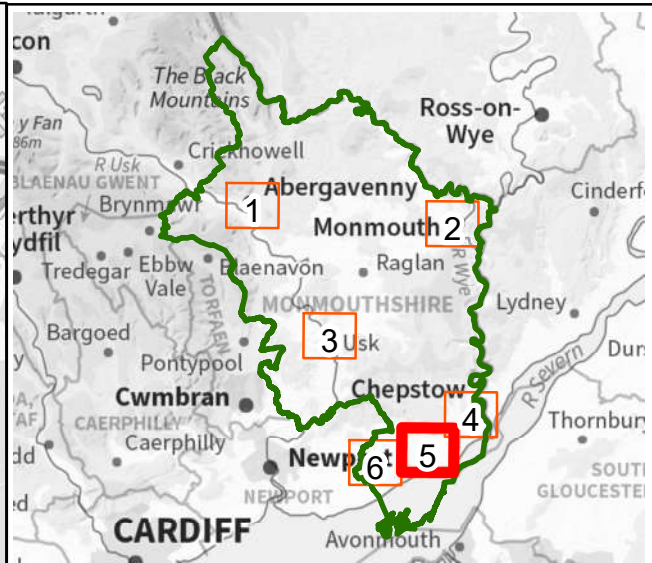
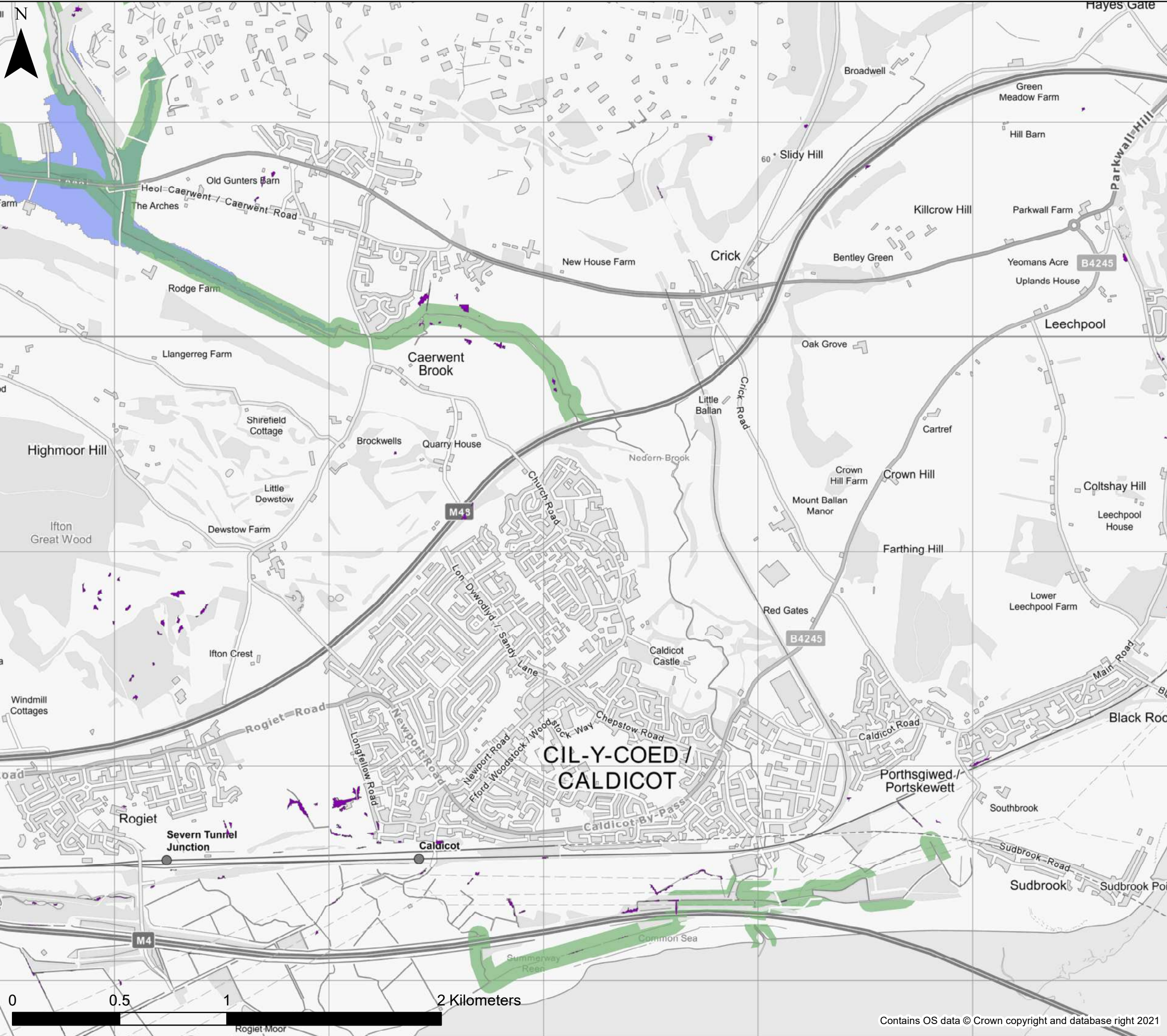
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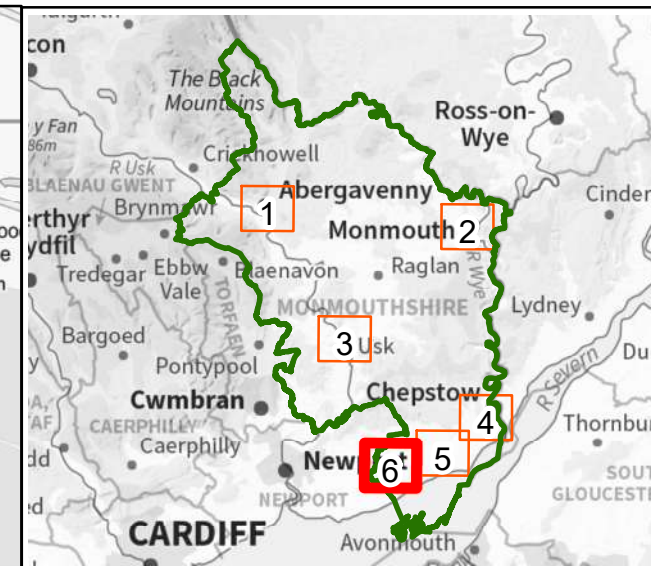
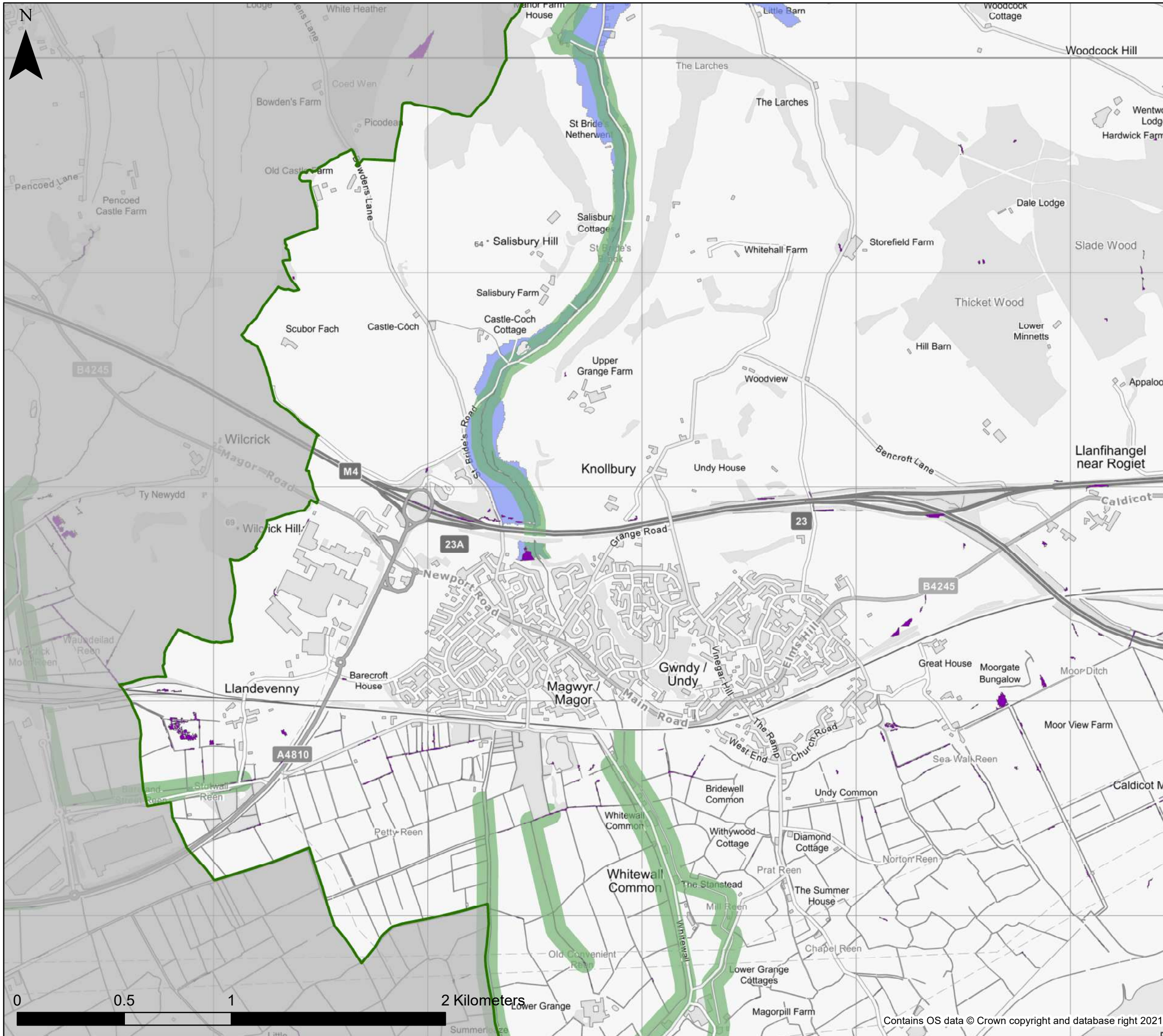


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