Flood risk assessment data
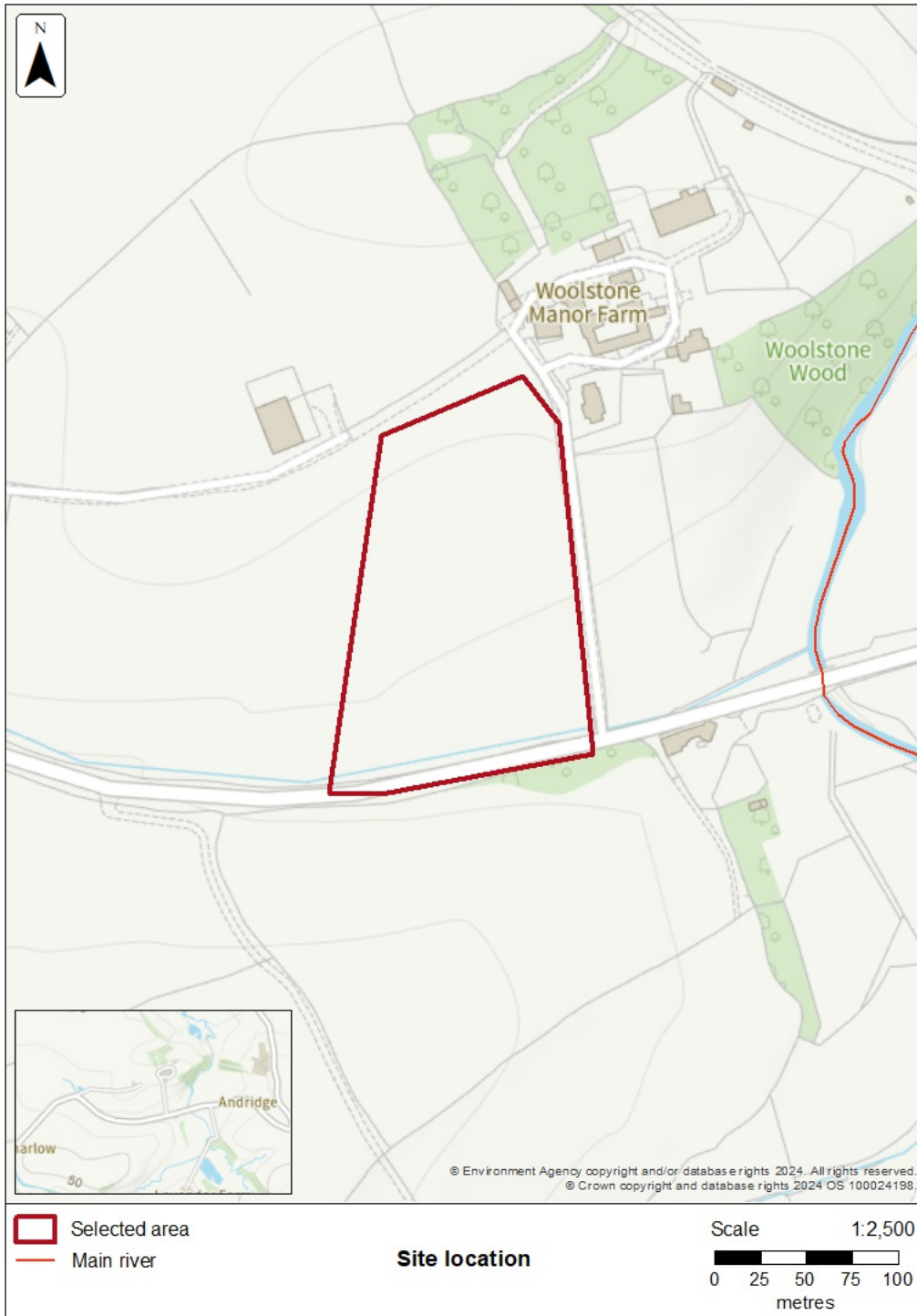

Location of site: 222502 / 101893 (shown as easting and northing coordinates)
Document created on: 24 February 2024
This information was previously known as a product 4.
Customer reference number: 377PHX49PFUU

Map showing the location that flood risk assessment data has been requested for.

	Selected area
	Main river

Site location

Scale 1:2,500

0   25   50   75   100
metres

Flood map for planning (rivers and the sea)

Your selected location is in flood zone 3.

Flood zone 3 shows the area at risk of flooding for an undefended flood event with a:

- 0.5% or greater probability of occurring in any year for flooding from the sea
- 1% or greater probability of occurring in any year for fluvial (river) flooding

Flood zone 2 shows the area at risk of flooding for an undefended flood event with:

- between a 0.1% and 0.5% probability of occurring in any year for flooding from the sea
- between a 0.1% and 1% probability of occurring in any year for fluvial (river) flooding

It's important to remember that the flood zones on this map:

- refer to the land at risk of flooding and do not refer to individual properties
- refer to the probability of river and sea flooding, ignoring the presence of defences
- do not take into account potential impacts of climate change

This data is updated on a quarterly basis as better data becomes available.

Selected area

Main river

Flood zone 3

Flood zone 2
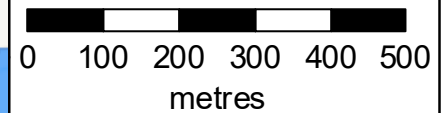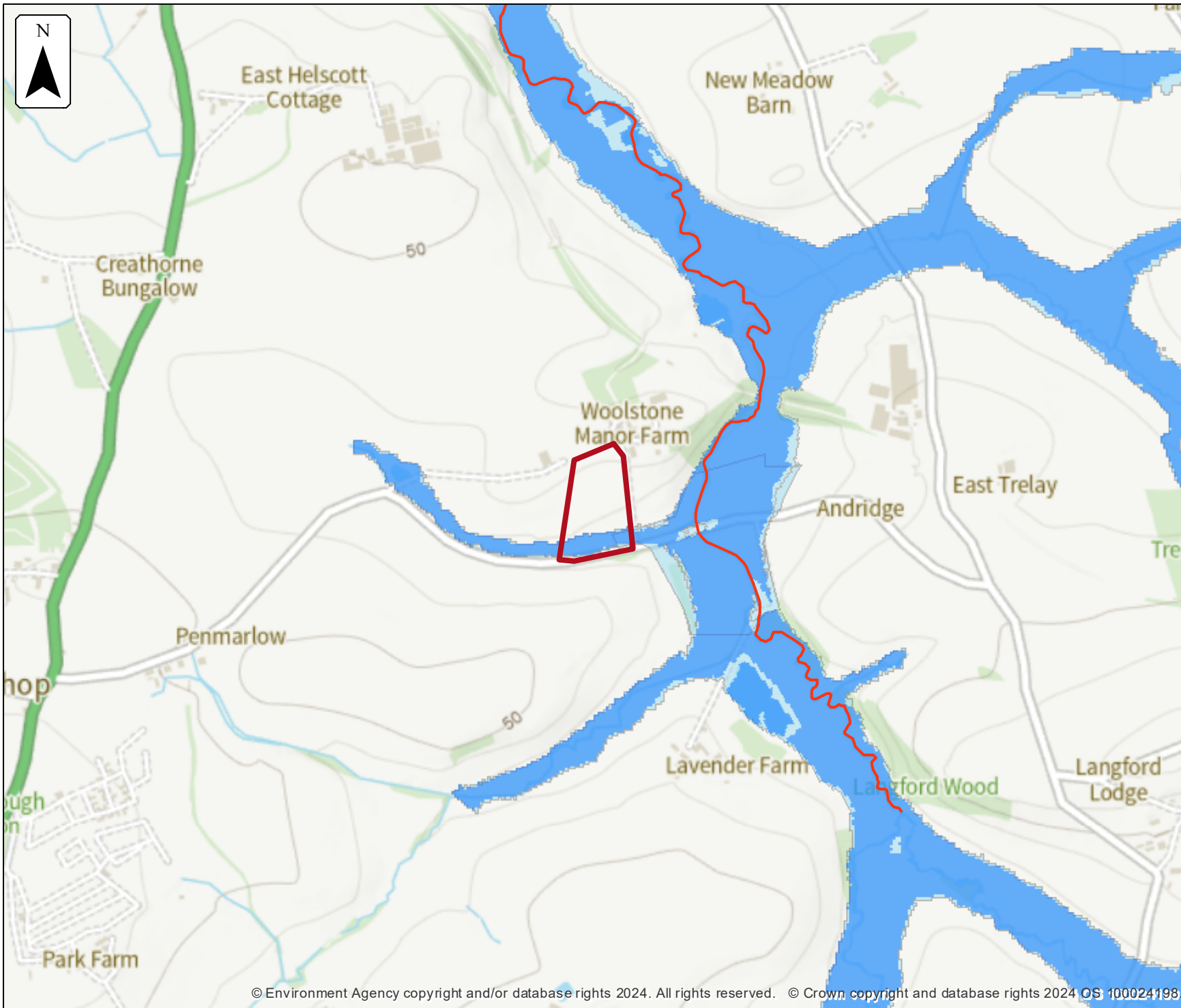
Historic Information

The map below is an indicative outline of areas that have previously flooded.

Historic outlines may not be visible where they overlap. You can download the outlines separately via the link below.

[Download recorded flood outlines in GIS format](#)

Our historic flood event outlines:

- are an indication of the geographical extent of an observed flood event. We map flooding to land, not individual properties.
- not give any indication of flood levels for individual properties. They also do not imply that any property within the outline has flooded internally.
- are based on a combination of anecdotal evidence, Environment Agency staff observations and survey.
- do not provide a definitive record of flooding.

It is possible that there will be an absence of data in places where we have not been able to record the extent of flooding. It is also possible for errors to occur in the digitisation of historic records of flooding.

Remember that: other flooding may have occurred that we do not have records for

Please note that our records are not comprehensive. We would therefore advise that you make further enquiries locally with specific reference to flooding at this location. You should consider contacting the relevant Local Planning Authority and/or water/sewerage undertaker for the area.

Selected area

—— Main river

Date of flood event

August, 2004

October, 1998

0   100   200   300   400   500
metres
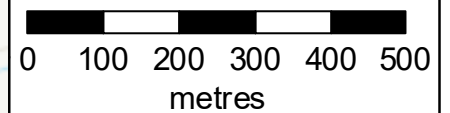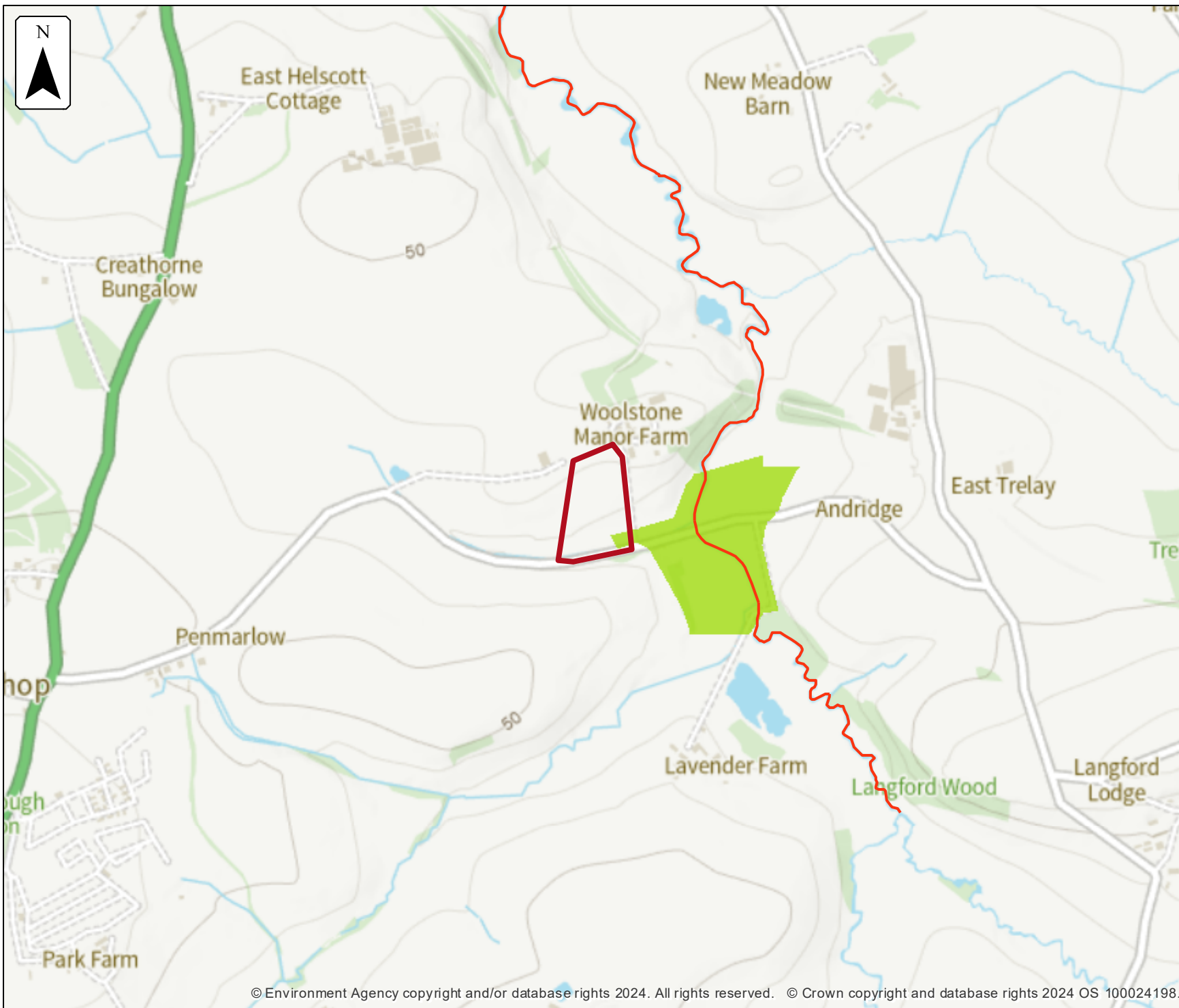
Historic flood event data

Start date	End date	Source of flood	Cause of flood	Affects location
16 August 2004	16 August 2004	main river	channel capacity exceeded (no raised defences)	Yes
31 October 1998	31 October 1998	main river	other	No

Records of flooding in the Woolstone Mill area.

Date	Location	Detail	Cause	Estimated Number of Properties Flooded	Flood Source
16/08/2004	Woolstone Mill	Woolstone Mill. Severe flooding affecting Woolstone Mill, with significant out of bank flows experienced both upstream and downstream of Woolstone Bridge. With significant erosion occurring on meanders in the river with banks receding by up to 2m.	Extreme intense rainfall causing extensive flooding in N Cornwall	1	Fluvial
14/11/2002	Woolstone Mill	Woolstone Mill. Reports of Highway flooding in the Woolstone Mill area. No further details.	Unknown, assumed heavy rainfall		Unknown
31/10/1998	Woolstone Mill	Woolstone Mill. Flooding to land and Highway from the River Neet.	Unknown.		Fluvial

Date	Location	Detail	Cause	Estimated Number of Properties Flooded	Flood Source
19/08/1958	Stratton (Bude)	Stratton. Large scale flooding event affecting a number of properties when the rivers overtopped there banks following heavy rain fall, at least three commercial and 12 residential properties were affected with flood waters.	Heavy rainfall caused overtopping of the river banks.	15	Fluvial

This list contains all the records of flooding we hold, in a 1km radius of the specified location. Although this information is compiled to the best of our knowledge, the absence of flooding does not mean that an area has not flooded in the past, nor guarantee it will not flood in the future. Our records are updated as more information comes to light, and as flood incidents occur.

Correct as of 27 / 02 / 2024

Modelled data

About the models used

Model name: Bude SFRM

Date: 2011

This model contains the most relevant data for your area of interest.

You will need to consider the [latest flood risk assessment climate change allowances](#) and factor in the new allowances to demonstrate the development will be safe from flooding.

Terminology used

Annual exceedance probability (AEP)

This refers to the probability of a flood event occurring in any year. The probability is expressed as a percentage. For example, a large flood which is calculated to have a 1%chance of occuring in any one year, is described as 1% AEP.

Metres above ordnance datum (mAOD)

All flood levels are given in metres above ordnance datum which is defined as the mean sea level at Newlyn, Cornwall.

You asked us to provide you with depth / flow / water level data from the Bude ISIS-TuFLOW Model, 2011.

You should be aware of the following points, when considering modelled water levels:

- The maps produced as part of this commission do not show localised flooding resulting from intense rainfall and where surface flow might exceed the capacity of the drainage system. Likewise, the flood maps produced for this study do not show areas where overland sheet flow or runoff might cause flooding.

- The latest National guidance provided by the Environment Agency has been followed when identifying and including flood defences in the hydraulic model. This guidance states that flood defences should be assumed to be in perfect condition. This may not reflect reality and thus the condition of flood defences should be considered when undertaking site specific flood risk assessments.

- The undefended model scenario is based on a situation where defences are removed. The reality of such a scenario should be given adequate consideration

- The maps and digital data supplied should be considered only a summary of the conclusions of the study. It will be necessary to collect more detailed topographic information for particular sites where development is proposed and undertake a more detailed site-specific hydrological and hydraulic analysis for the location under study using guidance from the National Planning Policy Framework (NPPF).

- In this commission the focus has been on flooding from fluvial sources rather than tidal inundation. The impact of combined fluvial and tidal events should be examined to understand the impact that this has upon flood depth extent and duration of inundation

- The equations generally used to model hydraulic systems are approximations of the physical processes involved; however with decades of use and of continual improvement, the limitations and implications of the approximations are well understood. Uncertainty can be introduced by the modeller who decides on the structure of the model e.g. which parts to model as storage or how structures are bypassed. It is important that all decisions that may introduce model uncertainty are well documented.

- Structure types and coefficients can have a significant impact on model results. Best practice guidance has been adopted when modelling structures throughout this study and has been based on original survey data where available. However, if detailed studies are undertaken along the watercourse, sensitivity testing regarding structure coefficients is recommended.

- The representation of any complex system by a model requires a number of assumptions to be made. The study watercourses are relatively complex watercourses with some detailed structures. A number of assumptions were required, in particular with the schematisation of the Flexbury model. Technical details regarding assumptions made and limitations in the modelling for this study are documented in the hydraulic model operation manuals.

- The data provided is not calibrated or verified

- Any assessment of Flood Risk undertaken must be appropriate for the decisions that need to be based upon it, consider the risks and also take into account any limitations of the data used.

- Please be aware that the Environment Agency does not guarantee that this data is suitable for your purposes.

Selected area
Main river

Modelled flood extent

5% AEP
2% AEP
1.33% AEP
1% AEP
0.5% AEP
0.1% AEP

Flood extents may not be visible where they overlap other return periods
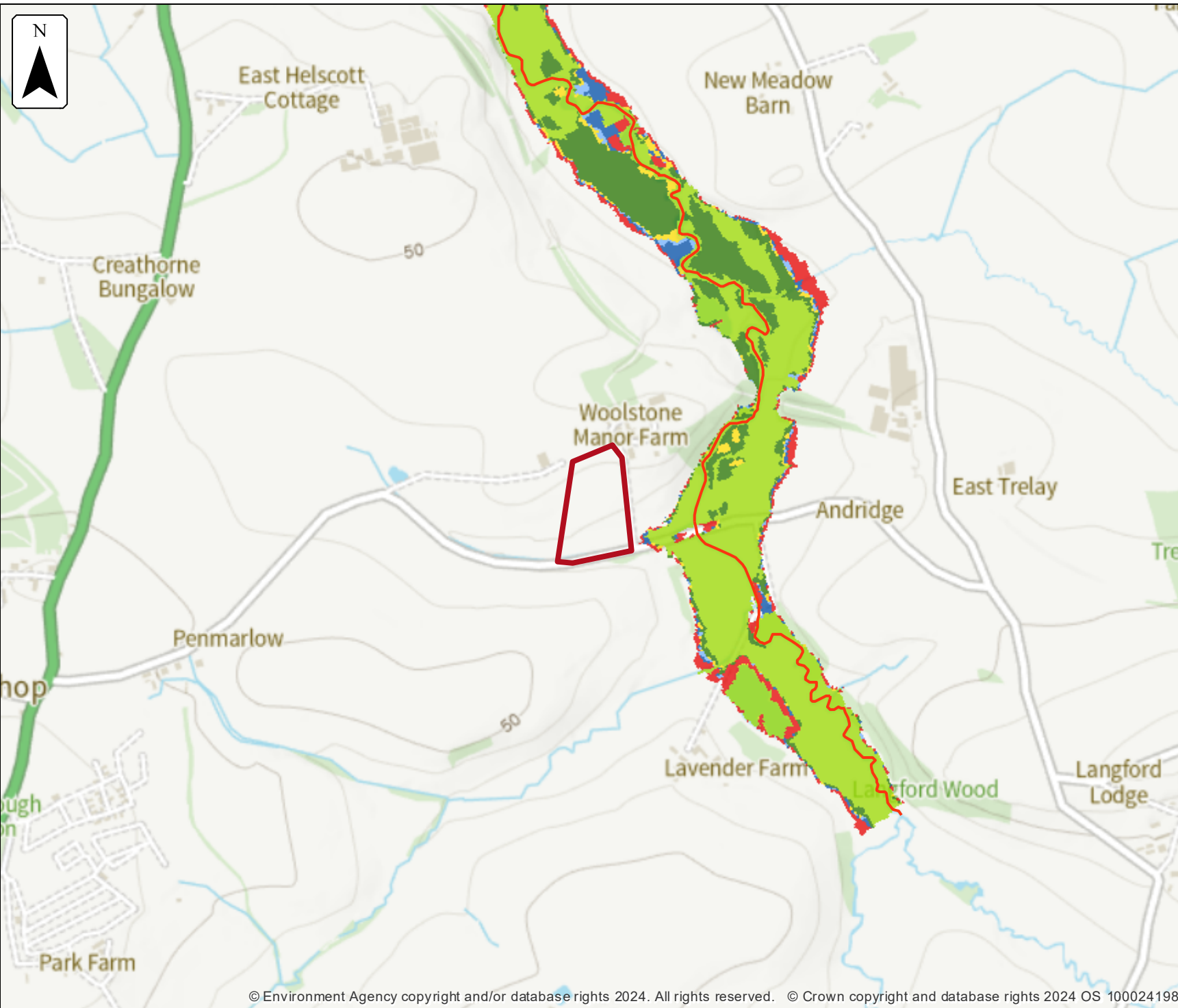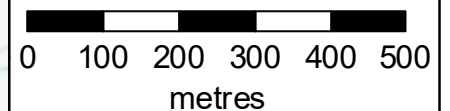
0 100 200 300 400 500
metres

N

Environment Agency

**Defences removed modelled fluvial extent**

Location (easting/northing)
222502/101893

Scale
1:10,000

Created
24 Feb 2024

Model name
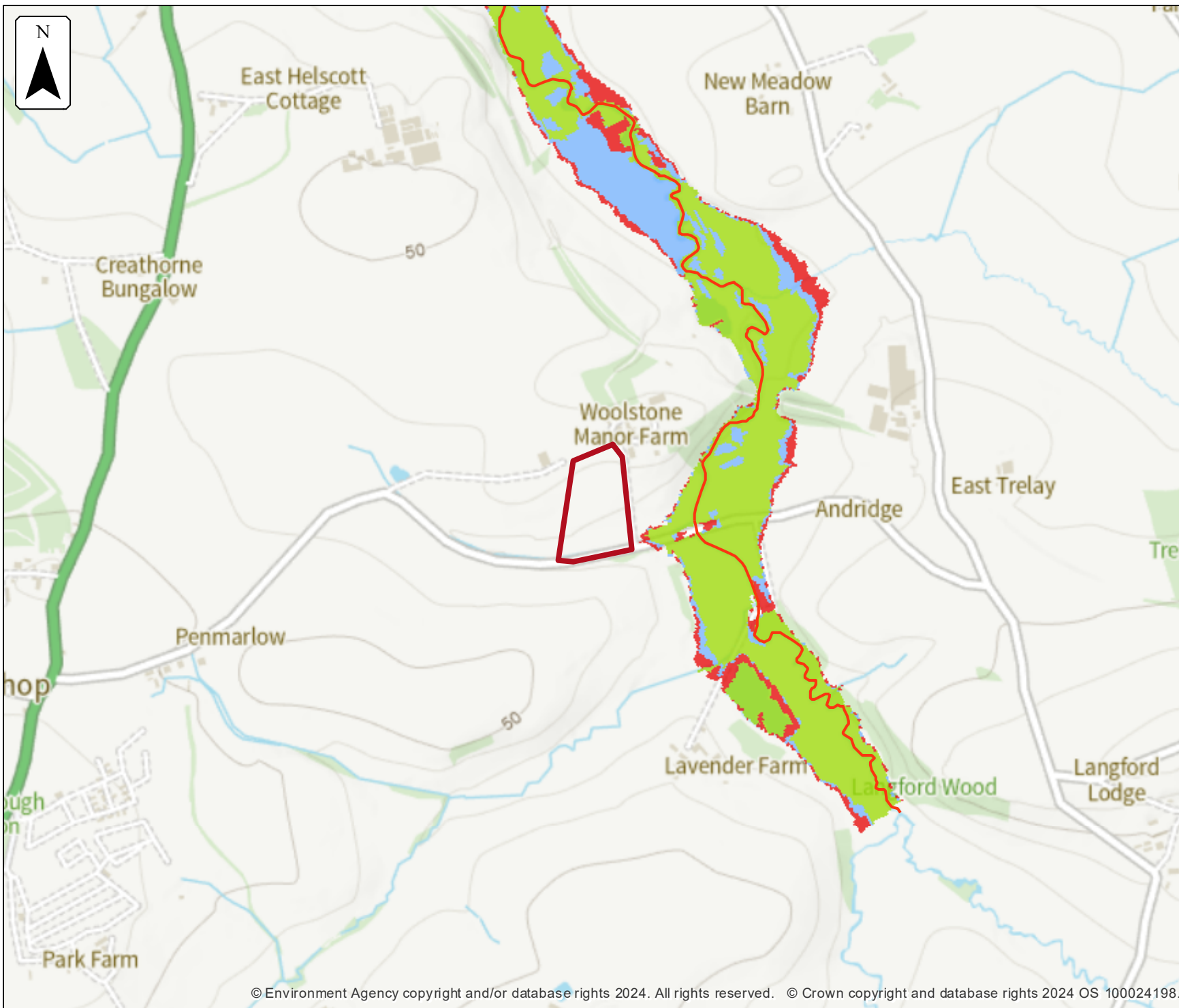**Bude SFRM Model 2011**
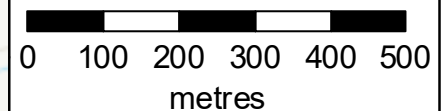
Selected area

Main river

Modelled flood extent

5% AEP

1% AEP

0.1% AEP

Flood extents may not be visible where they overlap other return periods

0   100   200   300   400   500
metres

© Environment Agency copyright and/or database rights 2024. All rights reserved.   © Crown copyright and database rights 2024 OS 100024198.

**Defended
climate change
modelled fluvial extent**

Location (easting/northing)
222502/101893

Scale
1:10,000

Created
24 Feb 2024

Model name
Bude SFRM Model 2011

Selected area

Main river

Modelled flood extent

5.0% AEP (+20%)

2.0% AEP (+20%)

1.33% AEP (+20%)

1.0% AEP (+20%)

1.0% AEP (+40%)

1.0% AEP (+85%)

0.5% AEP (+20%)

0.1% AEP (+20%)

0.1% AEP (+40%)

Flood extents may not be
visible where they overlap
other return periods
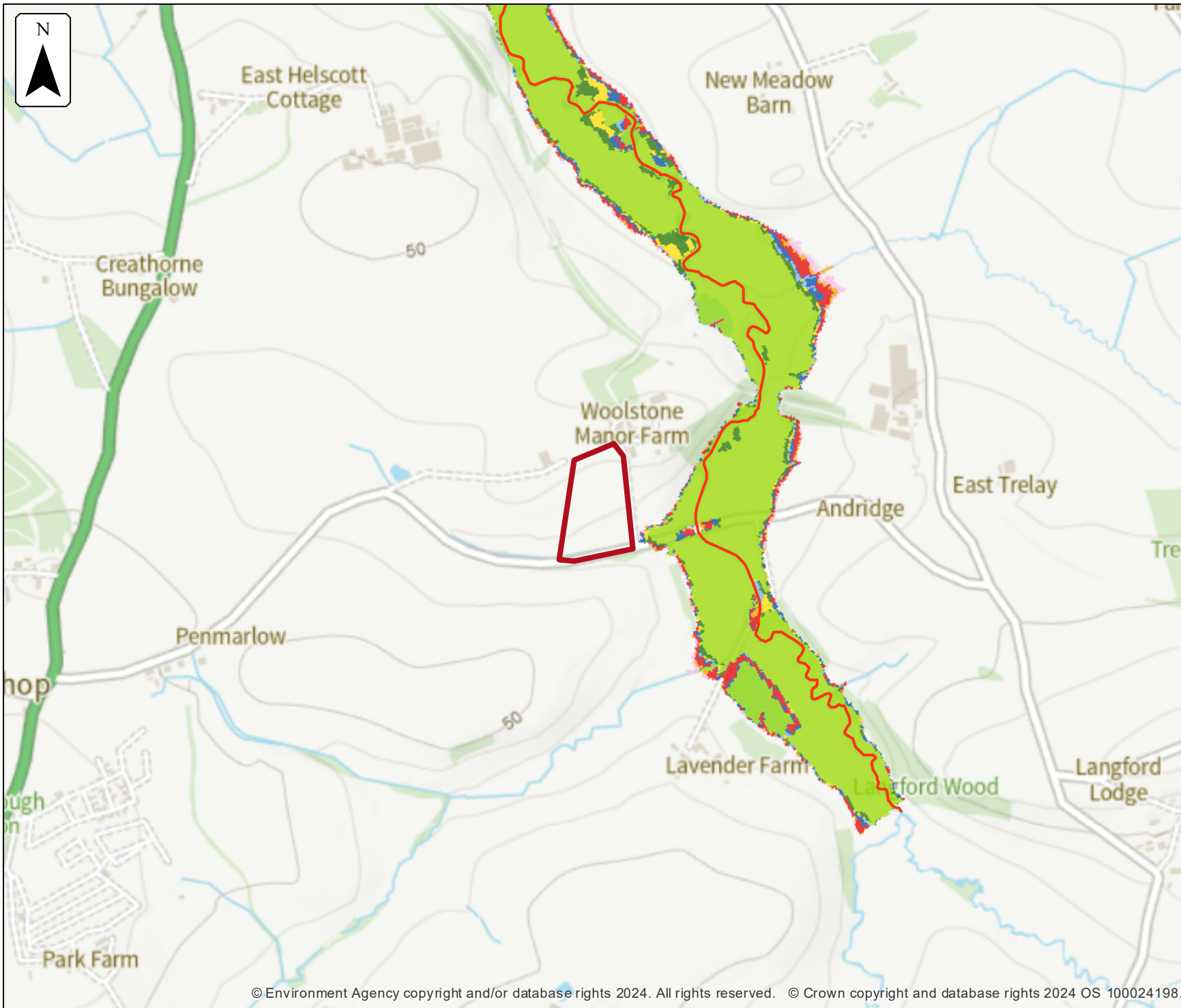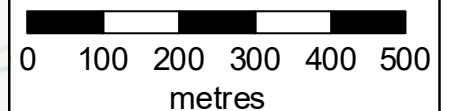
0   100   200   300   400   500
metres

Environment Agency

Defences removed climate change modelled fluvial extent

Location (easting/northing)
222502/101893

Scale
1:10,000

Created
24 Feb 2024

Model name
Bude SFRM Model 2011

Selected area
Main river
Modelled flood extent
5.0% AEP (+20%)
1.0% AEP (+20%)
1.0% AEP (+40%)
1.0% AEP (+85%)
0.1% AEP (+20%)
0.1% AEP (+40%)

Flood extents may not be visible where they overlap other return periods
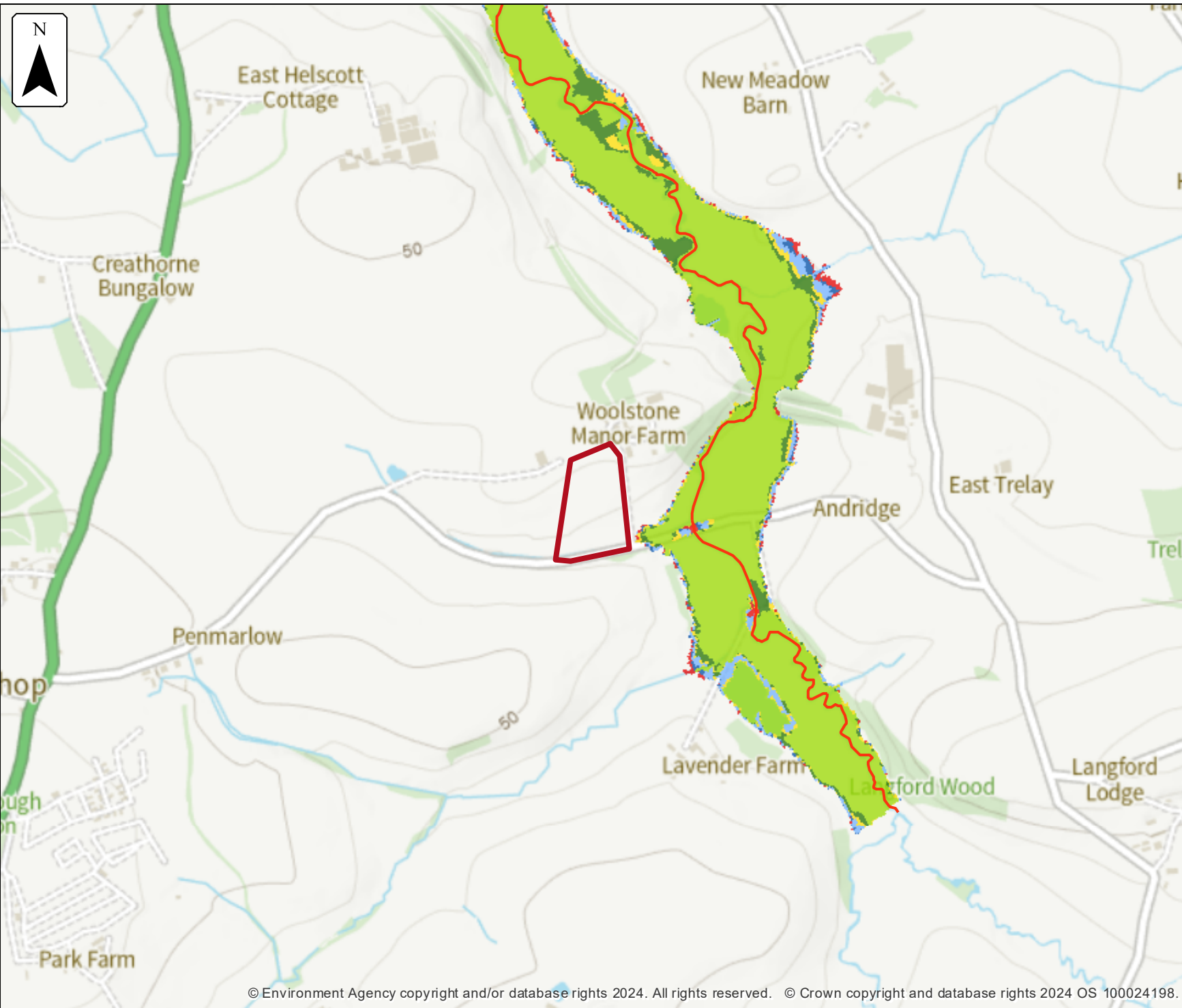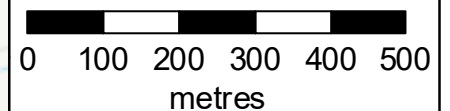
0   100   200   300   400   500
metres

Selected area

● Modelled location

— Main river

Woolstone Manor Farm

Woolstone Wood

Andridge

0 50 100 150 200 250

metres
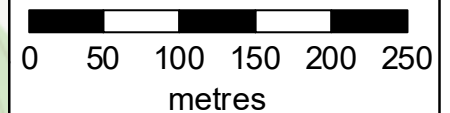
Modelled node locations data

Defended

Label	Modelled location ID	Easting	Northing	5% AEP		2% AEP		1.33% AEP		1% AEP		0.5% AEP		0.1% AEP	
				Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow
1	1417210	222672	102376	18.83	45.33	18.98	50.66	19.03	51.83	19.06	52.46	19.15	53.24	19.40	55.52
2	1417340	222690	101861	21.69	34.87	21.75	36.29	21.78	37.0	21.79	37.53	21.83	38.91	21.98	42.90
3	1417196	222695	101845	22.09	34.87	22.20	36.29	22.25	37.0	22.28	37.53	22.37	38.91	22.75	42.89
4	1417338	222729	102012	20.94	36.56	21.09	37.91	21.14	38.26	20.94	36.58	20.94	36.58	21.71	39.10
5	1417151	222746	101814	22.26	32.36	22.38	32.58	22.43	32.71	22.46	32.77	22.53	32.92	22.85	37.14
6	1417232	222793	101777	22.29	34.45	22.37	36.54	22.41	37.83	22.43	38.81	22.50	41.39	22.81	51.72
7	1417390	222803	102285	19.67	42.54	19.83	46.28	19.86	47.51	19.67	42.55	19.93	50.53	20.04	60.41
8	1417318	222814	102108	20.36	40.55	20.48	46.77	20.51	49.54	20.36	40.55	20.36	40.56	20.92	71.49
9	1417141	222818	101697	22.64	32.10	22.74	33.96	22.78	34.99	22.82	35.75	22.90	37.79	23.27	44.24
10	1417240	222907	101564	23.78	34.26	23.84	37.32	23.88	38.55	23.91	39.29	23.78	34.29	24.32	49.65

Data in this table comes from the Bude SFRM Model 2011 model.

Level values are shown in mAOD, and flow values are shown in cubic metres per second.

Any blank cells show where a particular scenario has not been modelled for this location.

N

Environment Agency

Defences removed modelled fluvial node locations

Location (easting/northing)
222502/101893

Scale
1:5,000

Created
24 Feb 2024

Model name
Bude SFRM Model 2011

Selected area
Modelled location
Main river

Woolstone Manor Farm

Woolstone Wood

Andridge

50

metres
0   50   100   150   200   250

© Environment Agency copyright and/or database rights 2024. All rights reserved.   © Crown copyright and database rights 2024 OS 100024198.
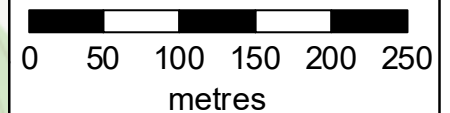
Modelled node locations data

Defences removed

Label	Modelled location ID	Easting	Northing	5% AEP		2% AEP		1.33% AEP		1% AEP		0.5% AEP		0.1% AEP	
				Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow
1	1417210	222672	102376	18.90	44.60					19.12	48.53			19.43	50.80
2	1417340	222690	101861	21.73	33.93					21.81	36.94			22.0	42.14
3	1417196	222695	101845	22.11	33.93					22.29	36.94			22.76	42.14
4	1417338	222729	102012	21.05	35.16					21.22	36.41			21.74	36.90
5	1417151	222746	101814	22.28	31.41					22.47	31.82			22.85	36.91
6	1417232	222793	101777	22.29	34.41					22.44	38.82			22.80	51.50
7	1417390	222803	102285	19.75	40.43					19.90	44.86			20.05	55.57
8	1417318	222814	102108	20.46	39.62					20.61	49.79			20.95	71.04
9	1417141	222818	101697	22.65	32.08					22.82	35.75			23.25	43.47
10	1417240	222907	101564	23.78	34.29					23.91	39.28			24.26	48.15

Data in this table comes from the Bude SFRM Model 2011 model.

Level values are shown in mAOD, and flow values are shown in cubic metres per second.

Any blank cells show where a particular scenario has not been modelled for this location.
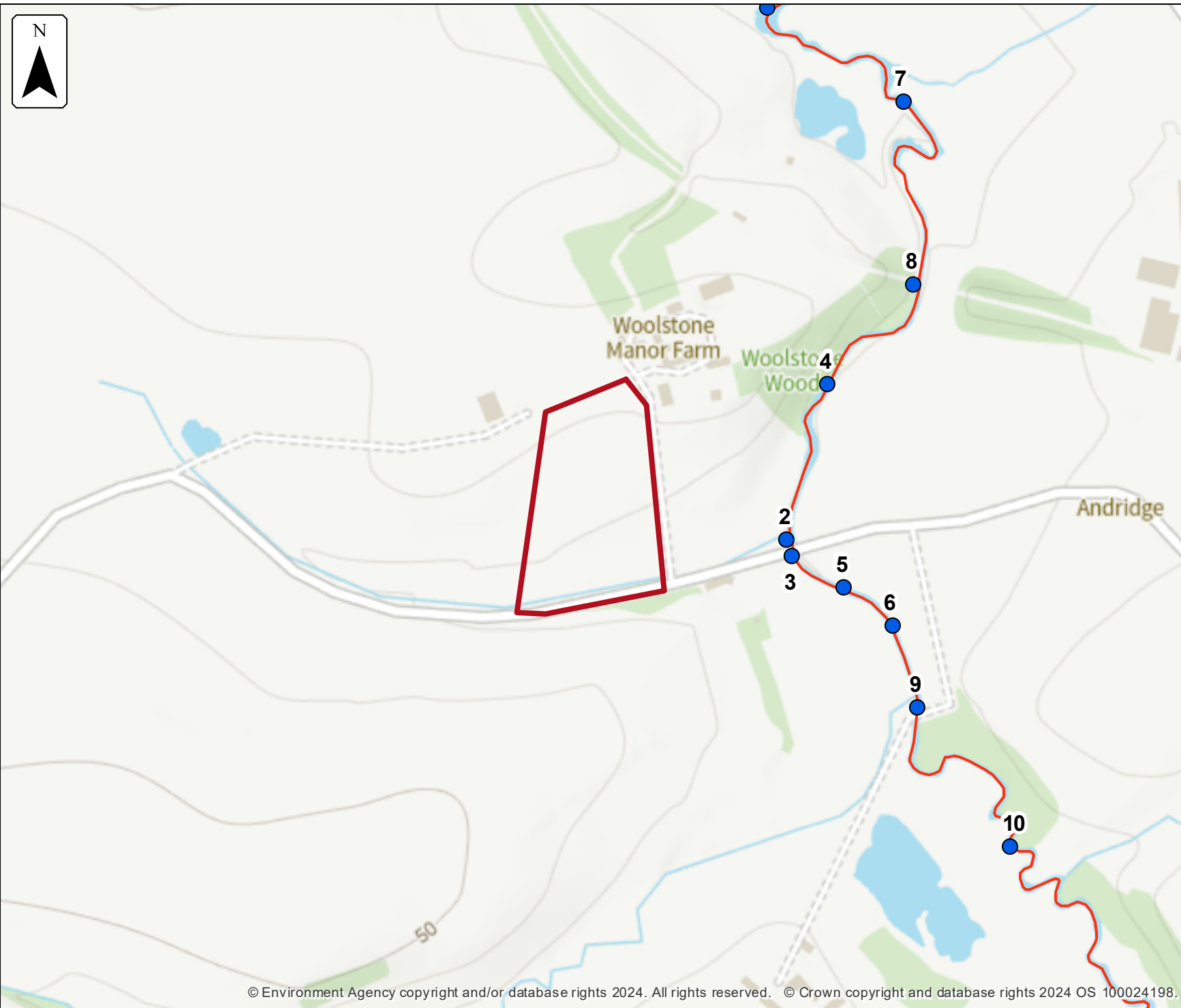
Selected area
Modelled location
Main river

Woolstone Manor Farm

Woolstone Wood

Andridge

2
3
4
5
6
7
8
9
10

50

0   50   100   150   200   250
metres

Modelled node locations data

Defended climate change

Label	Modelled location ID	Easting	Northing	50.0% AEP (+20%)		10.0% AEP (+20%)		5.0% AEP (+20%)		2.0% AEP (+20%)		1.33333333333% AEP (+20%)		1.0% AEP (+20%)		1.0% AEP (+40%)		1.0% AEP (+85%)		0.5% AEP (+20%)		0.1% AEP (+20%)		0.1% AEP (+40%)	
				Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow
1	1417210	222672	102376	18.46	31.0	18.88	47.23	18.99	50.87	19.11	52.87	19.16	53.34	19.19	53.73	19.28	54.44	19.44	55.96	19.26	54.25	19.50	56.47	19.59	58.07
2	1417340	222690	101861	21.43	30.17	21.71	35.20	21.75	36.39	21.81	38.17	21.83	38.99	21.84	39.65	21.89	41.13	22.03	42.98	21.88	40.98	22.11	43.25	22.26	43.66
3	1417196	222695	101845	21.70	30.17	22.12	35.20	22.20	36.39	22.32	38.17	22.37	38.99	22.41	39.65	22.53	41.13	22.82	42.98	22.51	40.98	22.95	43.25	23.14	43.66
4	1417338	222729	102012	20.60	30.17	20.98	37.10	21.09	37.95	21.21	38.58	21.26	38.66	21.30	38.79	21.45	38.90	21.80	39.11	21.41	38.92	21.97	39.26	22.26	39.31
5	1417151	222746	101814	21.85	29.99	22.29	32.38	22.38	32.64	22.49	32.83	22.54	32.90	22.58	33.01	22.68	33.33	22.90	39.08	22.66	33.10	22.99	40.41	23.14	43.99
6	1417232	222793	101777	22.01	30.19	22.31	34.84	22.37	36.76	22.46	40.03	22.50	41.62	22.54	42.88	22.63	46.65	22.88	53.78	22.62	45.99	22.98	55.13	23.18	57.97
7	1417390	222803	102285	19.18	30.27	19.72	43.69	19.83	46.46	19.90	49.39	19.93	50.76	19.94	51.79	19.98	55.27	20.06	62.33	19.98	54.33	20.10	65.33	20.16	70.59
8	1417318	222814	102108	19.97	30.22	20.40	42.04	20.48	47.16	20.57	53.21	20.62	55.56	20.65	57.40	20.76	62.67	20.98	74.35	20.74	61.51	21.06	80.47	21.14	96.67
9	1417141	222818	101697	22.40	28.52	22.66	32.54	22.74	34.09	22.85	36.78	22.91	37.97	22.95	38.90	23.07	41.20	23.33	45.23	23.04	41.01	23.43	45.84	23.55	48.69
10	1417240	222907	101564	23.58	28.18	23.79	34.96	23.84	37.50	23.94	40.15	23.99	41.23	24.03	41.95	24.15	44.57	24.39	51.57	24.12	44.39	24.48	54.98	24.63	59.95

Data in this table comes from the Bude SFRM Model 2011 model.
Level values are shown in mAOD, and flow values are shown in cubic metres per second.
Any blank cells show where a particular scenario has not been modelled for this location.

Environment Agency

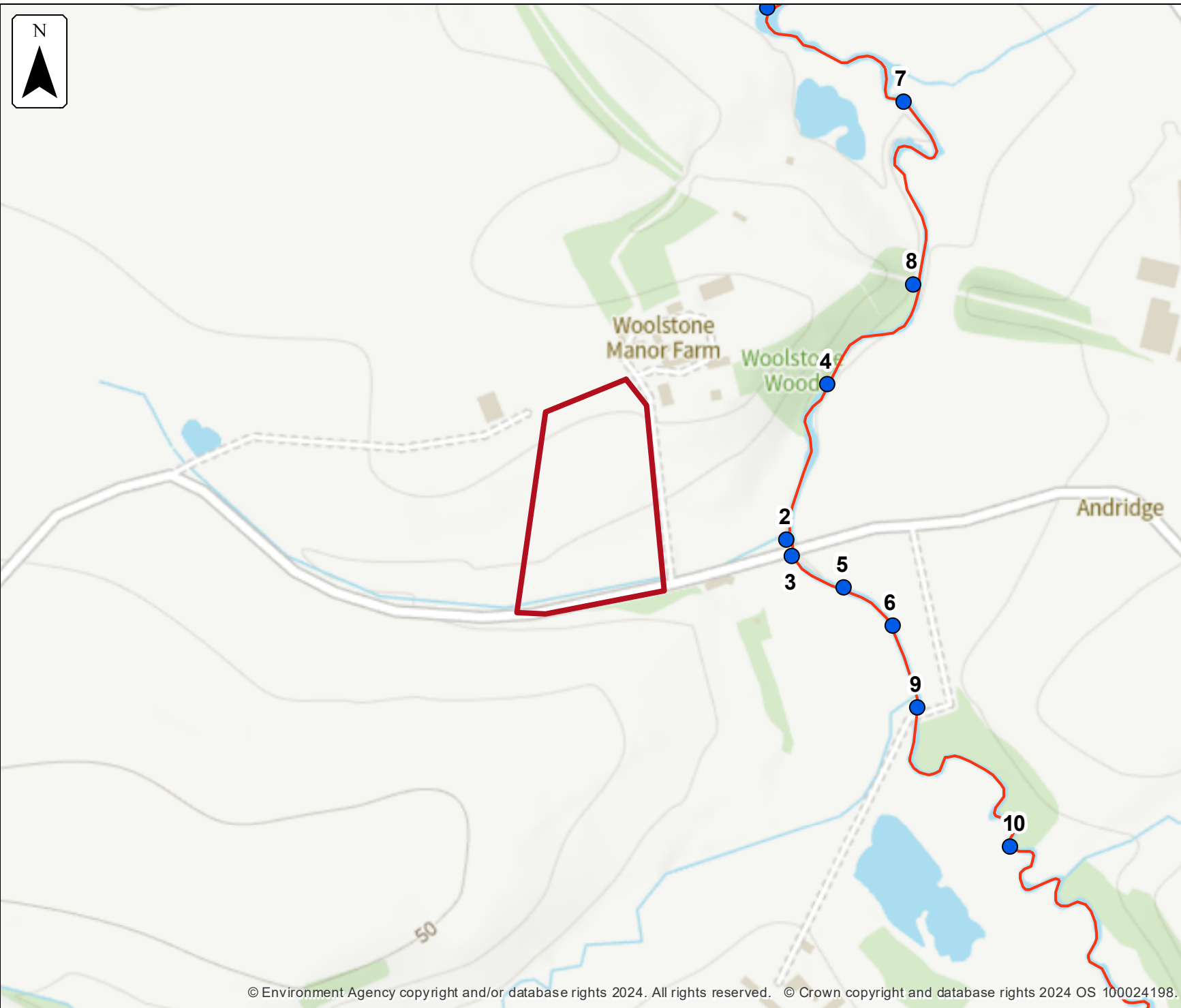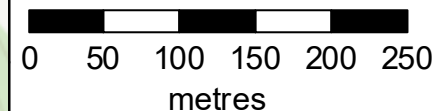**Defences removed climate change modelled fluvial node locations**

Location (easting/northing)
222502/101893

Scale
1:5,000

Created
24 Feb 2024

Model name
Bude SFRM Model 2011

Legend
- Selected area
- Modelled location
- Main river

© Environment Agency copyright and/or database rights 2024. All rights reserved. © Crown copyright and database rights 2024 OS 100024198.

0 50 100 150 200 250
metres

Modelled node locations data

Defences removed climate change

Label	Modelled location ID	Easting	Northing	5.0% AEP (+20%)		1.0% AEP (+20%)		1.0% AEP (+40%)		1.0% AEP (+85%)		0.1% AEP (+20%)		0.1% AEP (+40%)	
				Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow
1	1417210	222672	102376	19.05	47.68	19.23	49.62	6.94	83.77	6.95	93.40	19.54	51.85	7.0	99.45
2	1417340	222690	101861	21.78	35.71	21.86	39.02	55.87	6.31	55.96	7.22	22.15	42.65	56.05	8.21
3	1417196	222695	101845	22.22	35.71	22.42	39.02	56.27	6.31	56.41	7.22	22.97	42.65	56.53	8.21
4	1417338	222729	102012	21.16	36.01	21.34	36.59	6.03	60.74	6.31	62.95	22.04	37.04	6.64	64.91
5	1417151	222746	101814	22.39	31.70	22.58	32.01	56.40	9.23	56.53	12.02	23.02	40.26	56.66	13.23
6	1417232	222793	101777	22.38	36.73	22.54	42.87	56.92	9.23	57.12	12.04	22.98	54.62	57.19	14.36
7	1417390	222803	102285	19.86	43.12	19.95	47.88	6.54	66.97	6.61	73.27	20.12	60.69	6.78	78.35
8	1417318	222814	102108	20.55	45.97	20.71	56.05	6.10	52.02	6.39	53.49	21.09	82.35	6.66	55.21
9	1417141	222818	101697	22.75	34.07	22.94	38.75	54.75	11.93	54.86	13.22	23.40	45.02	54.98	14.72
10	1417240	222907	101564	23.84	37.49	24.03	41.85	56.67	0.0	56.75	0.0	24.37	52.11	56.84	0.0

Data in this table comes from the Bude SFRM Model 2011 model.

Level values are shown in mAOD, and flow values are shown in cubic metres per second.

Any blank cells show where a particular scenario has not been modelled for this location.
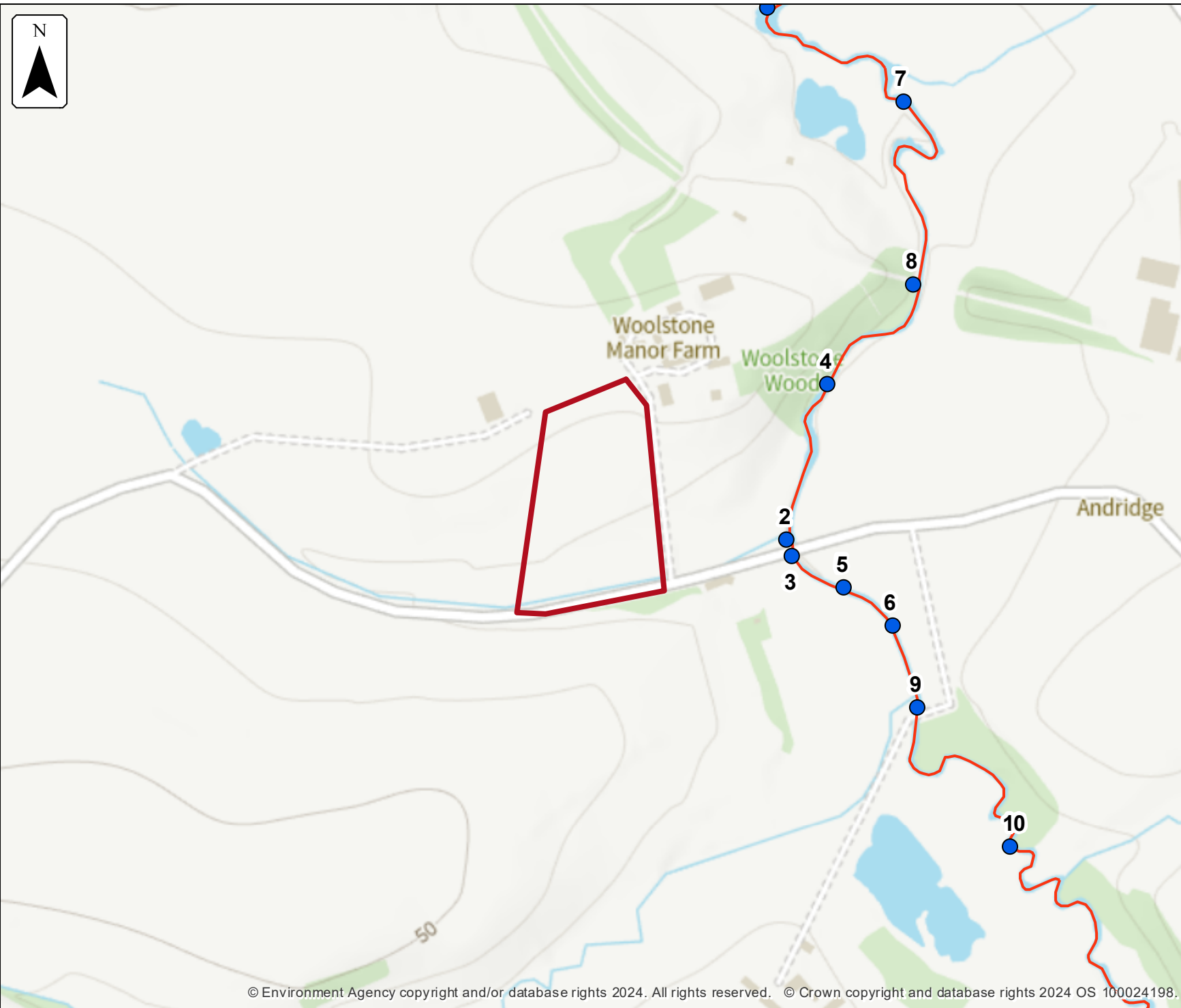
Strategic flood risk assessments

We recommend that you check the relevant local authority's strategic flood risk assessment (SFRA) as part of your work to prepare a site specific flood risk assessment.

This should give you information about:

- the potential impacts of climate change in this catchment
- areas defined as functional floodplain
- flooding from other sources, such as surface water, ground water and reservoirs

About this data

This data has been generated by strategic scale flood models and is not intended for use at the individual property scale. If you're intending to use this data as part of a flood risk assessment, please include an appropriate modelling tolerance as part of your assessment. The Environment Agency regularly updates its modelling. We recommend that you check the data provided is the most recent, before submitting your flood risk assessment.

Flood risk activity permits

Under the Environmental Permitting (England and Wales) Regulations 2016 some developments may require an environmental permit for flood risk activities from the Environment Agency. This includes any permanent or temporary works that are in, over, under, or nearby a designated main river or flood defence structure.

Find out more about flood risk activity permits

Help and advice

Contact the Devon Cornwall and the Isles of Scilly Environment Agency team at dcisenquiries@environment-agency.gov.uk for:

- more information about getting a product 5, 6, 7 or 8
- general help and advice about the site you're requesting data for