

New Forest Inclosures Forest Plan

Appendix 3: EIA (Forestry) Considerations

Carbon

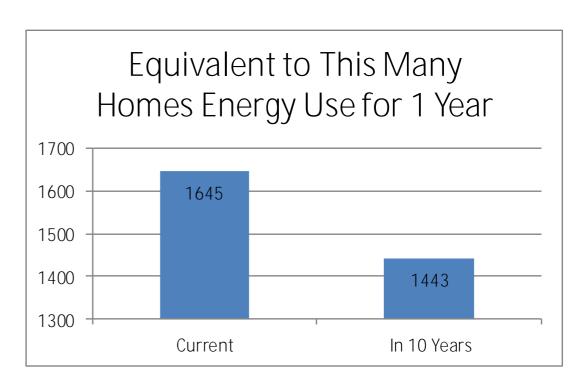
- 1. Main species components of clearfell areas were extracted from the sub-compartment database. These were found to be: Corsican Pine (44%), Scots Pine (27%) and Douglas Fir (15%). The method outlined in the Woodland Carbon Code from July 2012 was used to estimate the tonnes of CO₂e/ha/year. For each species, the average spacing, yield class and age were extracted from the sub-compartment database. It was assumed that the woodlands had undergone thinning for the purposes of this calculation. This was then multiplied by the clearfell area for the next 10 years to calculate a total co₂e/year reduction in sequestration.
- 2. The main species components of all the woodland within the New Forest Crown Lands was extracted from the sub-compartment database and rounded to give a broad estimate of the species present. Firstly, the conifer/broadleaf ratio was determined to be 75% broadleaves to 25% conifers. Of the broadleaved portion, the main species were oak and beech, accounting for over 80% of the broadleaved woodland area. The remaining 20% consists of over 20 other minor species. For this reason, beech and oak were used to classify the broadleaved woodlands. Oak was found to account for around 60% of the broadleaved area with Beech accounting for the remaining 40%. The total broadleaved area was calculated at just over 8000 hectares. The coniferous woodland was found to consist of 3 main species. Scots Pine, Corsican Pine and Douglas Fir were found to account for 50%, 25% and 25% of the coniferous area respectively, with numerous other minor species. Again, these major species were used for this calculation. The method outlined in the Woodland Carbon Code from July 2012 was used to estimate the tonnes of CO₂e/ha/year. For each species, the average spacing, yield class and age were extracted from the sub-compartment database. It was assumed that the woodlands had undergone thinning for the purposes of this calculation. Although this is not the case for the A&O woodlands, which are included in this carbon sequestration calculation, it was deemed suitable to use the 'thinned' category due to the age and open pasture woodland character of these woodlands. This was then multiplied by the respective woodland areas to calculate a total CO₂e/year.
- 3. As the soil types are not likely to be changed by this proposal, as the clearfell areas are plantations upon heathland soils which will remain heathland soils, soil carbon was not used within to determine the effect on carbon sequestration.
- 4. The results were as follows:

All Woodland	Sequestration	n					
	Average Spacing	Average P Year	Average Age	Average YC	Area (Ha)	CO2e/Ha/ vear	CO2e/year
	Spacing	Teal		Average ic	Ai Ca (i ia)	year	
Beech	1.7	1885	132	5	3064	1.8	5515
Corsican							
Pine	1.9	1969	48	15	681	3.55	2417
Douglas Fir	1.8	1958	59	17	681	6.03	4105
Oak	1.7	1868	149	5	5106	0.05	255
Scots Pine	1.7	1925	92	11	1362	2.41	3282
							15574

Sequestration '	Within Areas to C	Clearfell 2017 - 2026					
	% of total area	Average Spacing	Average P Year	Average Age	Average YC	CO2e/Ha	CO2e Total
СР	44%	1.8	1962	55	15	4.55	919
DF	15%	1.7	1955	62	15	6.56	467
SP	27%	1.7	1947	70	11	4.27	528
							1914

'Average P Year' = Planting Year

'Average YC' = Average Yield Class. An average of the growth rate (cubic metres) per hectare per year



Source: https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator



Biodiversity

The nature conservation designations are a main driver for this Plan. Directing our objectives to maintain and restore the qualifying and notified features of this special landscape, as illustrated by the designations of Special Area for Conservation, Special Protection Area, SSSI and RAMSAR.

Clearfelling to open habitat proposed within this Plan is in order to maintain and restore SAC qualifying features, SPA bird habitat and SSSI condition for the benefit of specific biodiversity interest for which the New Forest has been identified.

The accompanying summary of how the Plan proposes to enhance the New Forest environment for these features can be found in the section titled 'How this Plan will Support the Designated Features'.

Historic Environment

Specific maps showing the known historic features which coincide with the clearfell areas within the 10 year Plan period can be found in the appropriate appendix. Historic features are protected during our forestry and other operations by our Operational Planning process. We work with experts to ensure our operators are aware of any features which their work may impact upon and ways to minimise or preferably avoid any disturbance. The full set of maps can be found on the following pages. An example of the Operational Planning form is also available.

Flood Risk

- 1. Evaporation rates of relevant ground cover types were sourced from Table 1 within Forestry Commission Research Note, Water Use by Trees from April 2005. These were averaged to obtain an average evaporation rate per cover type.
- The sub-compartment database was used to determine the estimated area of relevant habitats within the Inclosures plus the Ancient & Ornamental Woodlands outside the Inclosures. The open habitats were then estimated to be an approximately equal area of heather, grass and bracken. By collating these percentage breakdowns, these were deemed to be conifers (13%), broadleaves (28%), heather, grass and bracken at 20% each. These percentages were then used to calculate the change in evaporation rate across the New Forest from the current situation to the proposed changes as a result of the clearfelling to open habitats proposed.
- The comparison is shown in the tables below:

_		- 1
	ırro	m

Current				-	
	per 1000m				
	Transpiration	Interception	Total Evaporation	Current Estimated Area of Habitat (Estimated Cur- rent % cover of New Forest
Conifers	325	350	675	3476	13.0%
Broadleaves	345	125	470	7487	28.0%
Heather	310	175	485	5259	19.7%
Grass	500		500	5259	19.7%
Bracken	500	200	700	5259	19.7%

Current Total Evaporation per 1000mm of rainfall (mm)	551
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In 10 Years Following Proposed Clearfell to Open Habitat

	per 1000mm annual rainfall				
				Current Estimated	Estimated Cur- rent % cover of
	Transpiration	Interception	Total Evaporation	Area of Habitat (New Forest
Conifers	325	350	675	3078.958375	11.5%
Broadleaves	345	125	470	7486.679578	28.0%
Heather	310	175	485	5390.501132	20.2%
Grass	500		500	5390.501132	20.2%
Bracken	500	200	700	5390.501132	20.2%

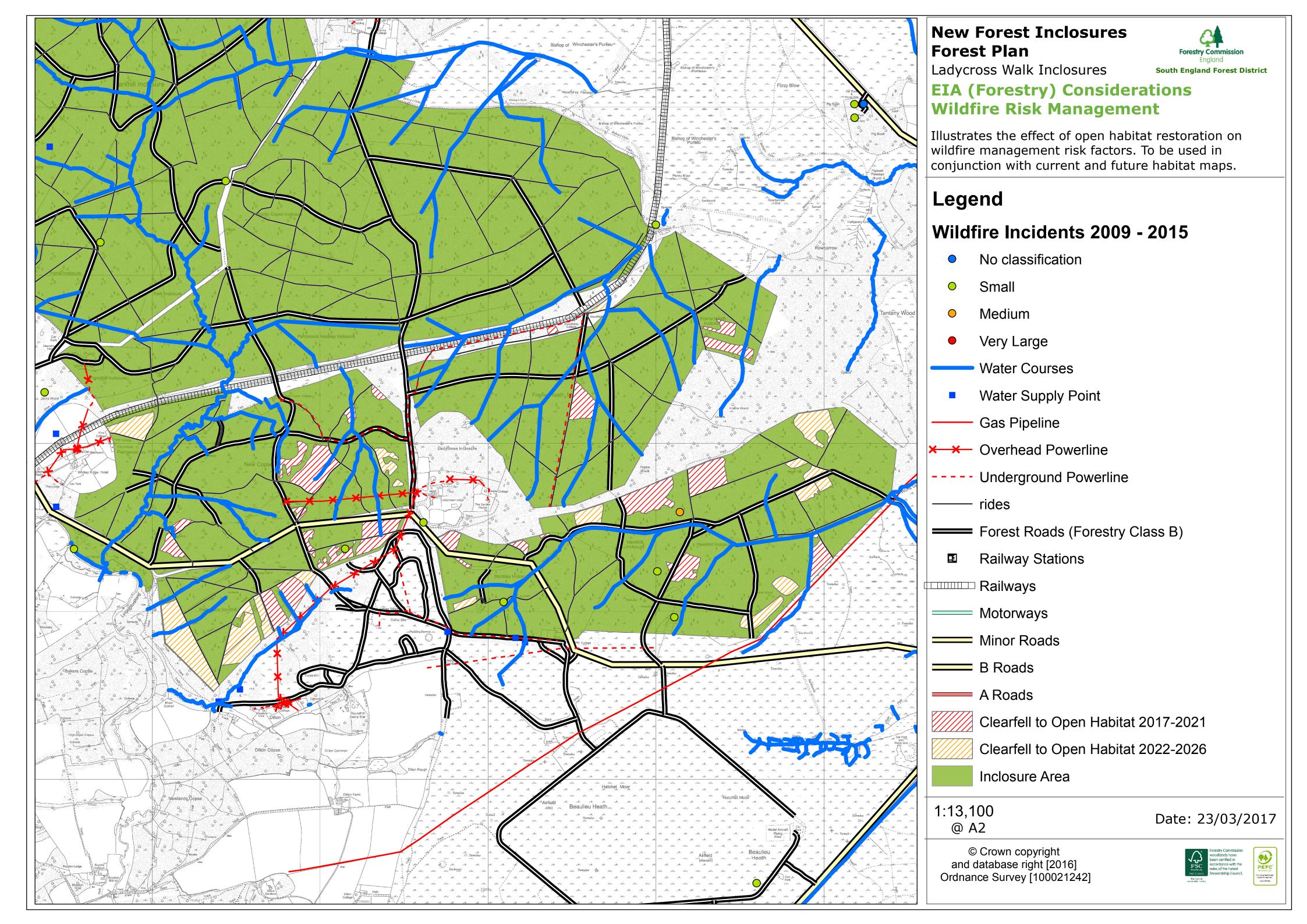
Total Evaporation per 1000mm of rainfall (mm) in 10 Years	
following Proposed Clearfelling to Open Habitat	549

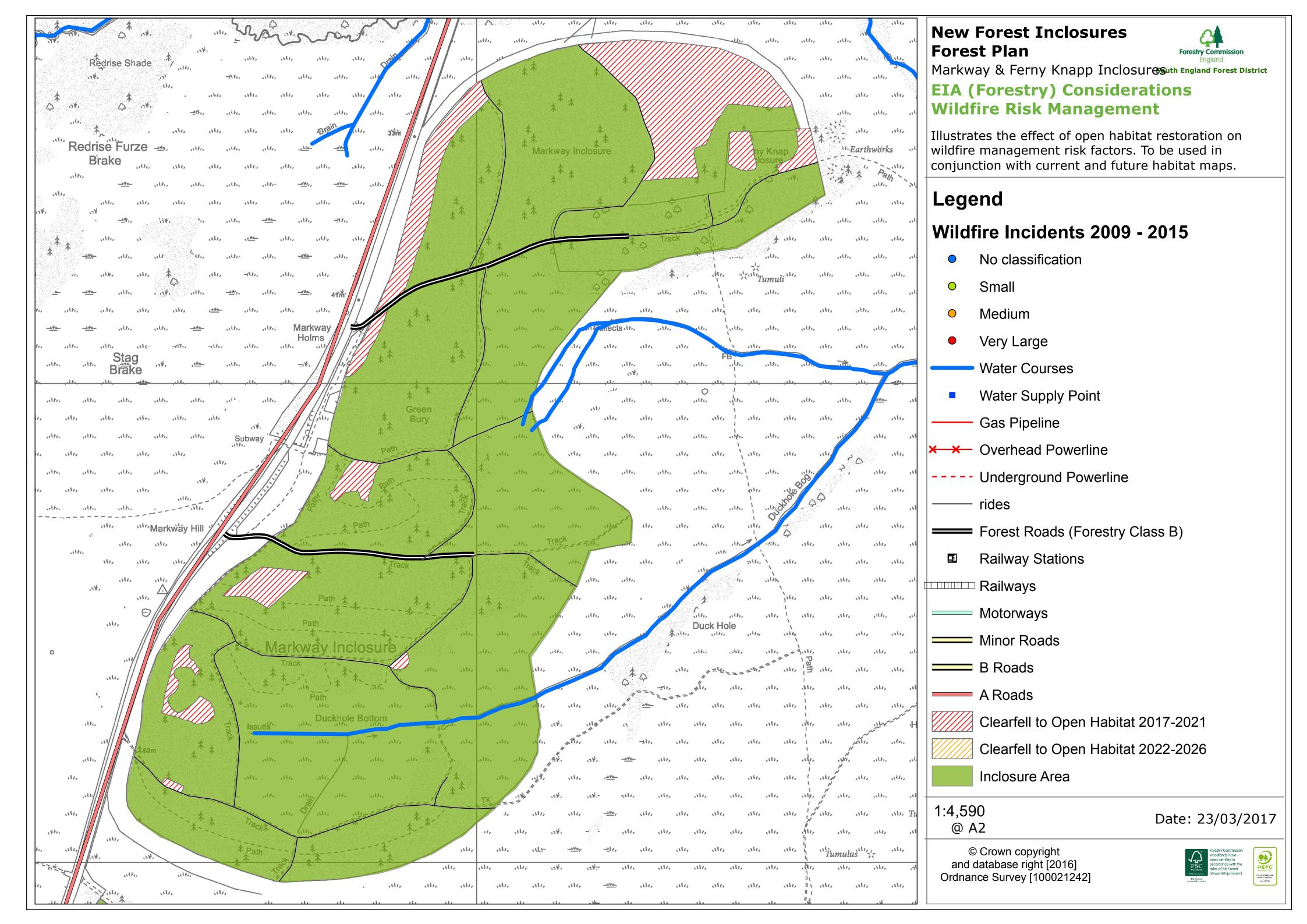
4. This suggests that per 1000mm of rainfall, the vegetation types within the New Forest will, on average, catalyse the evaporation of 551mm (not withstanding other factors such as tracks, roads, waterbodies etc which would behave differently). In comparison, by removing the areas of coniferous plantation proposed within the 10 years of this Plan, and reverting these to a variety of open habitats of bracken heather or grass, the evaporation rate would have been reduced to an average of 549mm per 1000mm of rainfall.

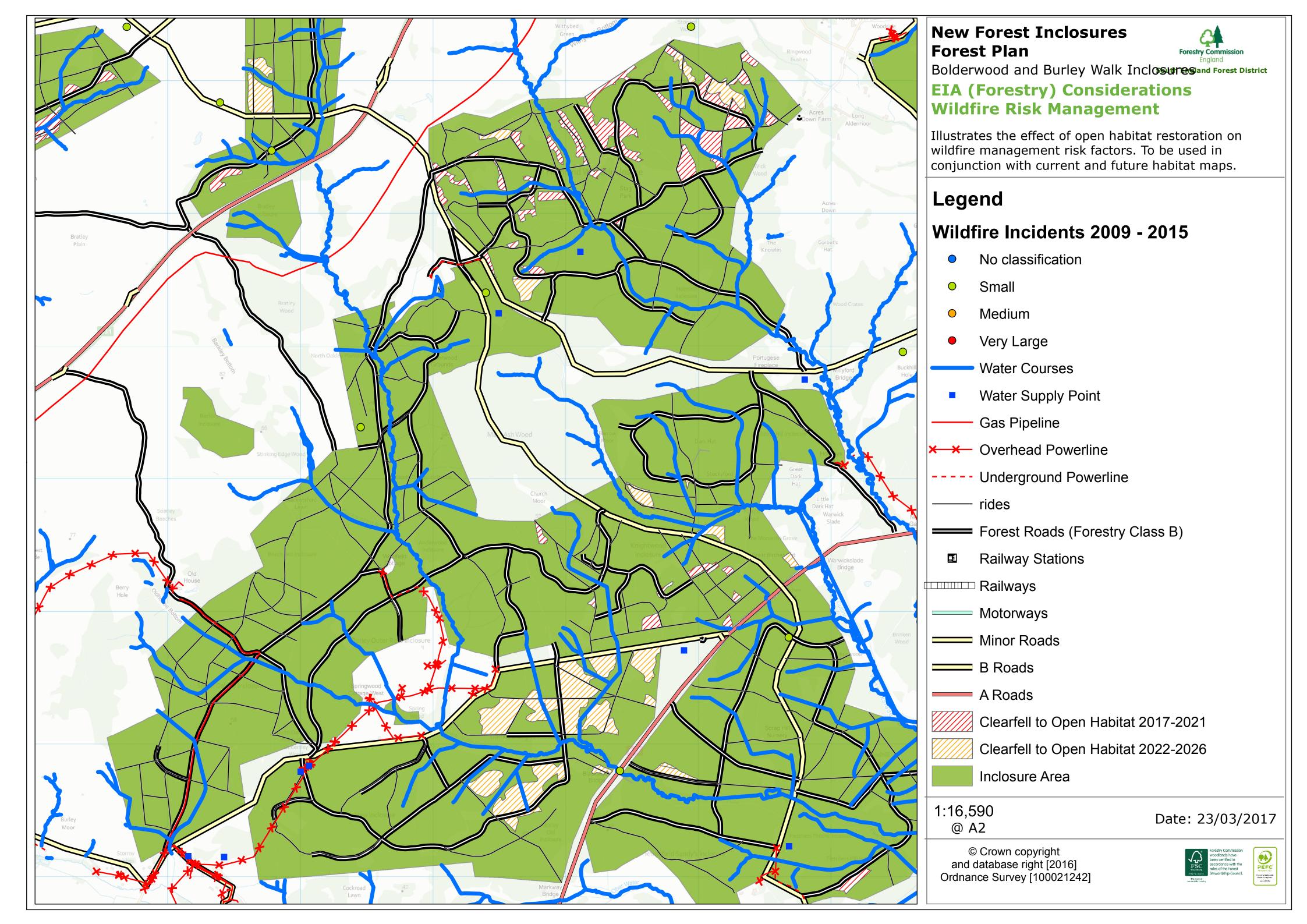
Wildfire

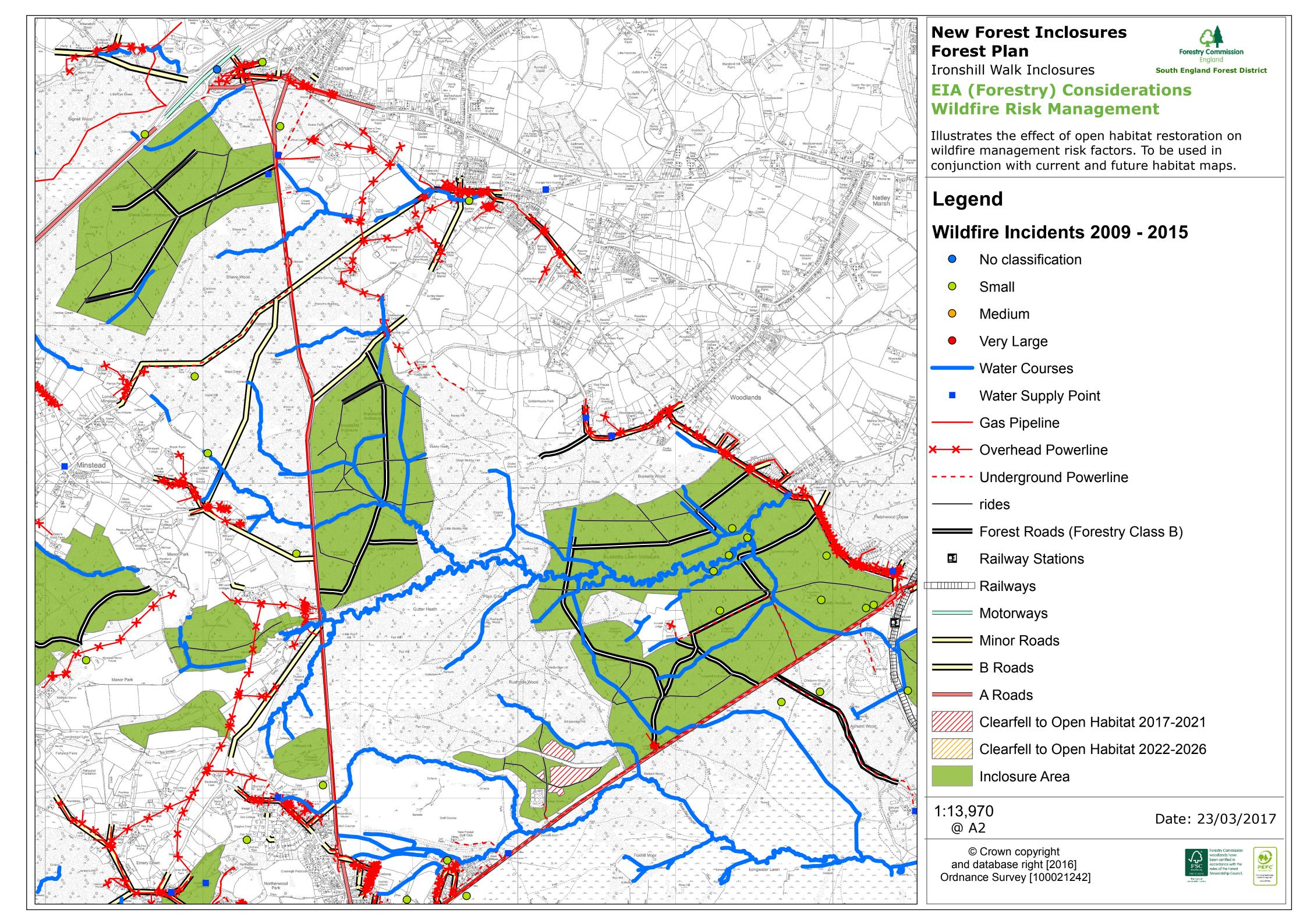
- 1. Appropriate grading criteria were given a rating of either High, Medium or Low depending on their adjacency to certain features or the habitat types present or to be developed as a result of the proposal. These criteria were: road and rail features, residential property, recreational facilities and utilities.
- 2. For habitat types, guidance as detailed in the FC Guidance Booklet 'Building Wildfire Resilience into Forest Management Planning was used. Mature conifer plantation was given a risk factor of 'medium', while open heathland was given a risk factor of 'high'.
- 3. For adjacency to physical features, a distance of over 500m was given a risk factor of 'low', between 100m and 500m distance was given a risk factor of 'medium' and a distance of 1m to 100m was given a risk factor of 'high'.
- 4. A numerical system was used to differentiate high, medium and low in both terms, which was: high = 5, medium = 3, low = 1.
- 5. Scores were then attributed to each site which includes some clearfelling to open habitat within the 10 year timeframe of this Plan, and in addition, the Waterside Inclosures due to their proximity to the large industrial site of the oil refinery.
- These individual scores can be found in the specific appendix. A summary of the change in wildfire risk as a result of clearfelling to open habitat over the course of this 10 year proposal is below. This summary suggests an overall change from low/medium to medium.

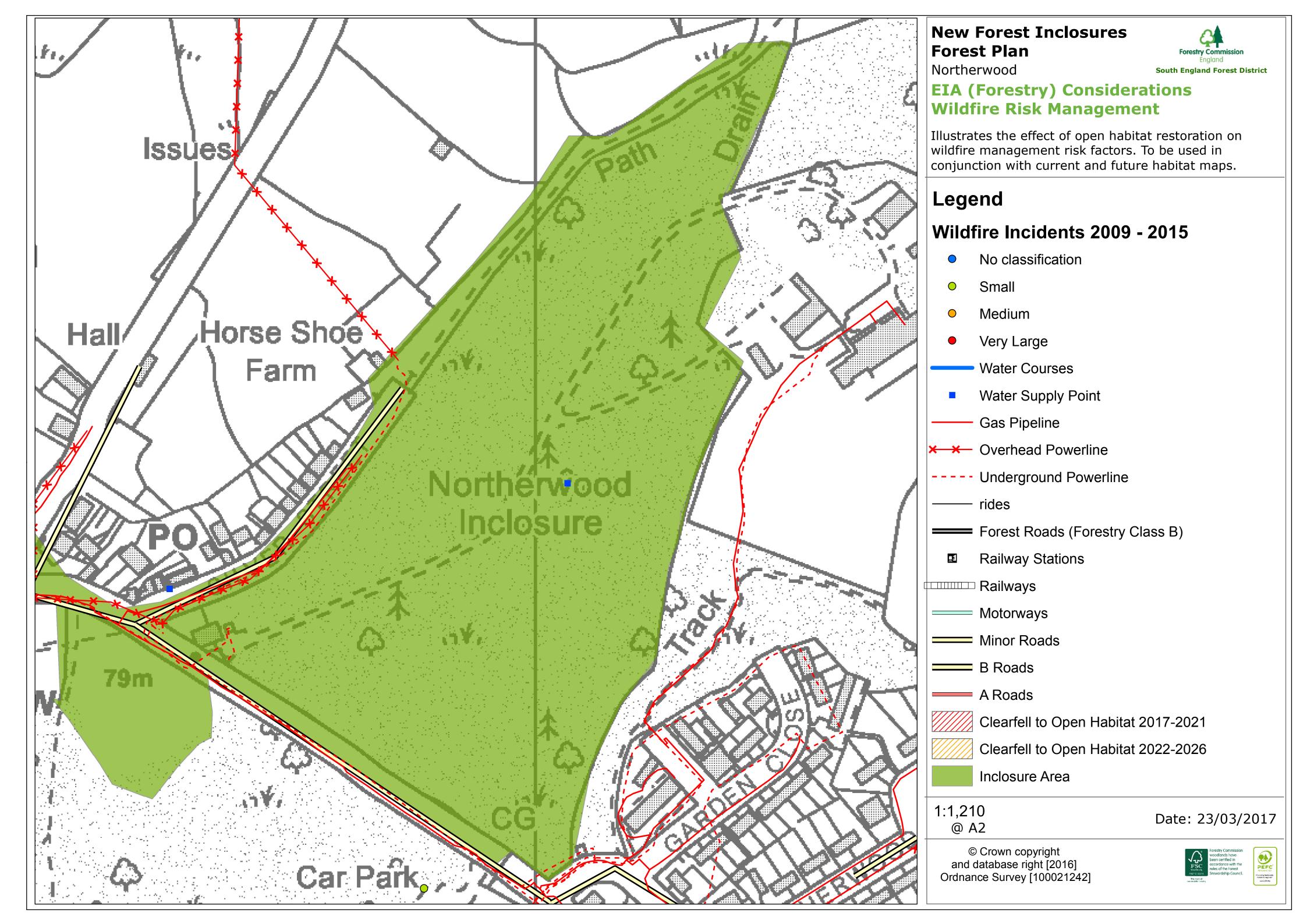
	Current Risk Rating	Risk Rating at Year 5	Risk Rating at Year 10	Future Risk Rating
Habitat Features	2.0	4.7	4.7	4.8
navitat reatures	3.0	4.7	4.7	4.0
Road & Rail Adjacency	3.3	3.3	3.3	3.3
Residential Adjacency	2.4	2.4	2.4	2.4
Recreation Adjacency	1.9	1.9	1.9	1.9
Utilities Adjacency	2.4	2.4	2.4	2.4
Combined Risk Rating	2.6	2.9	2.9	3.0

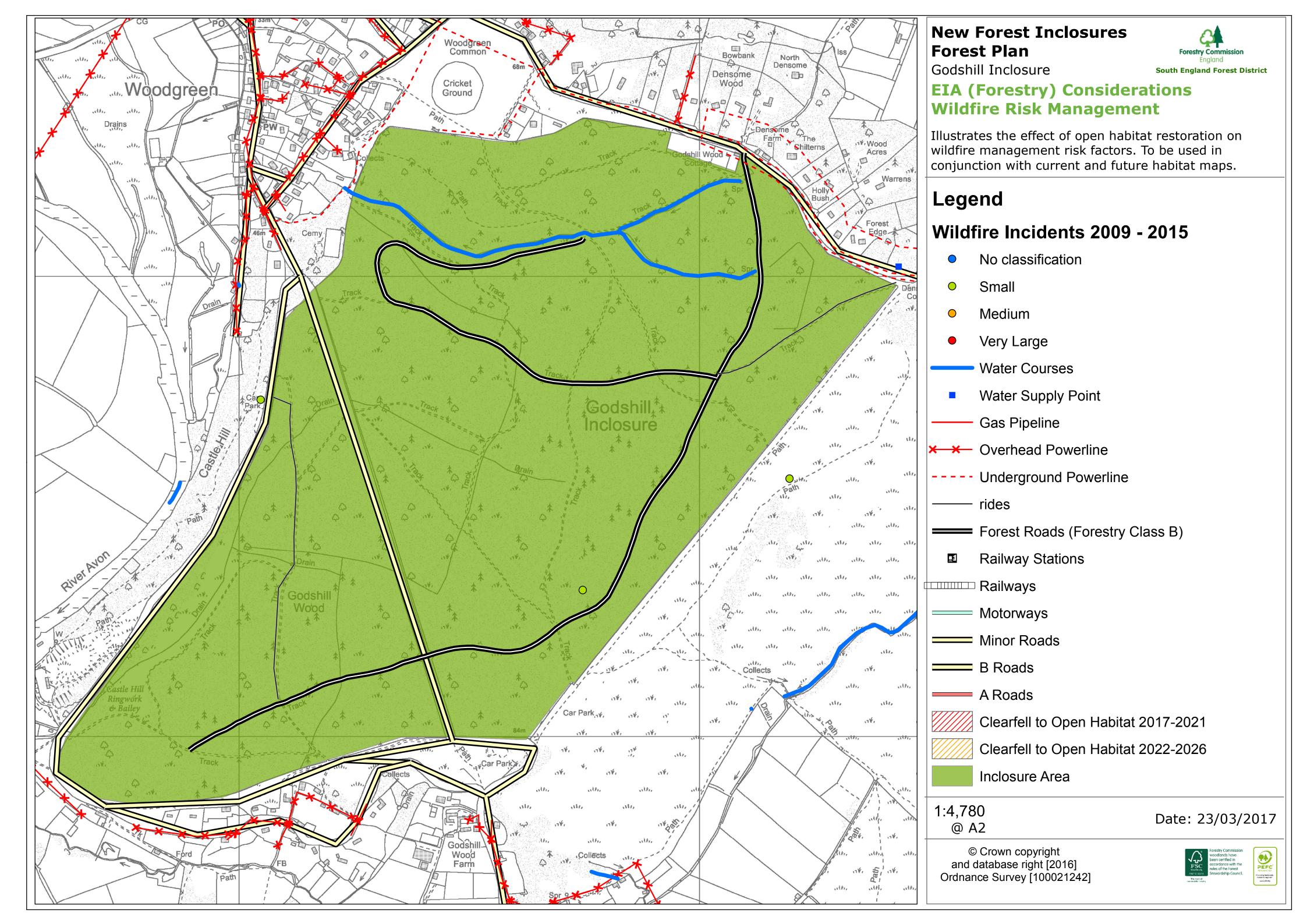


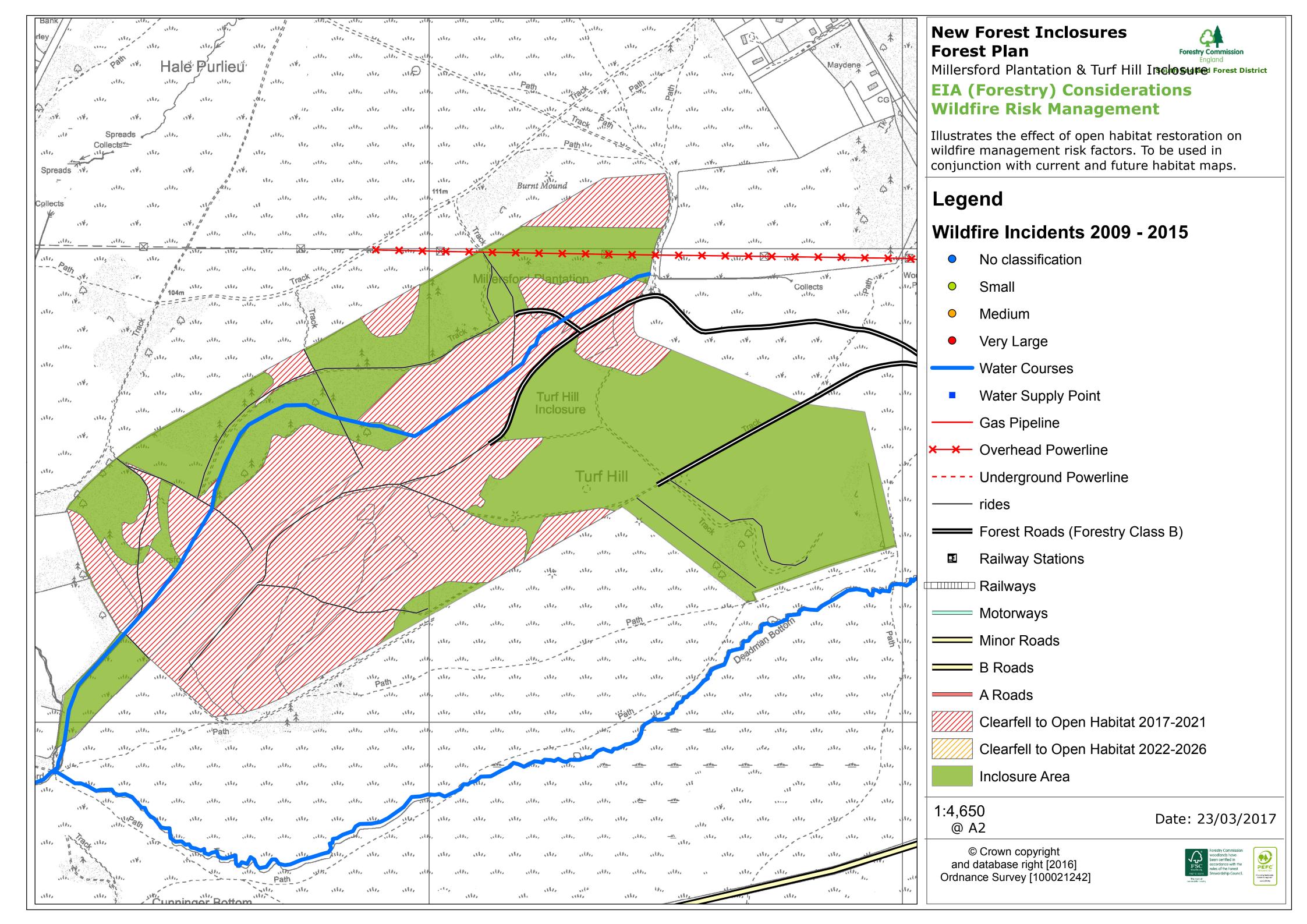


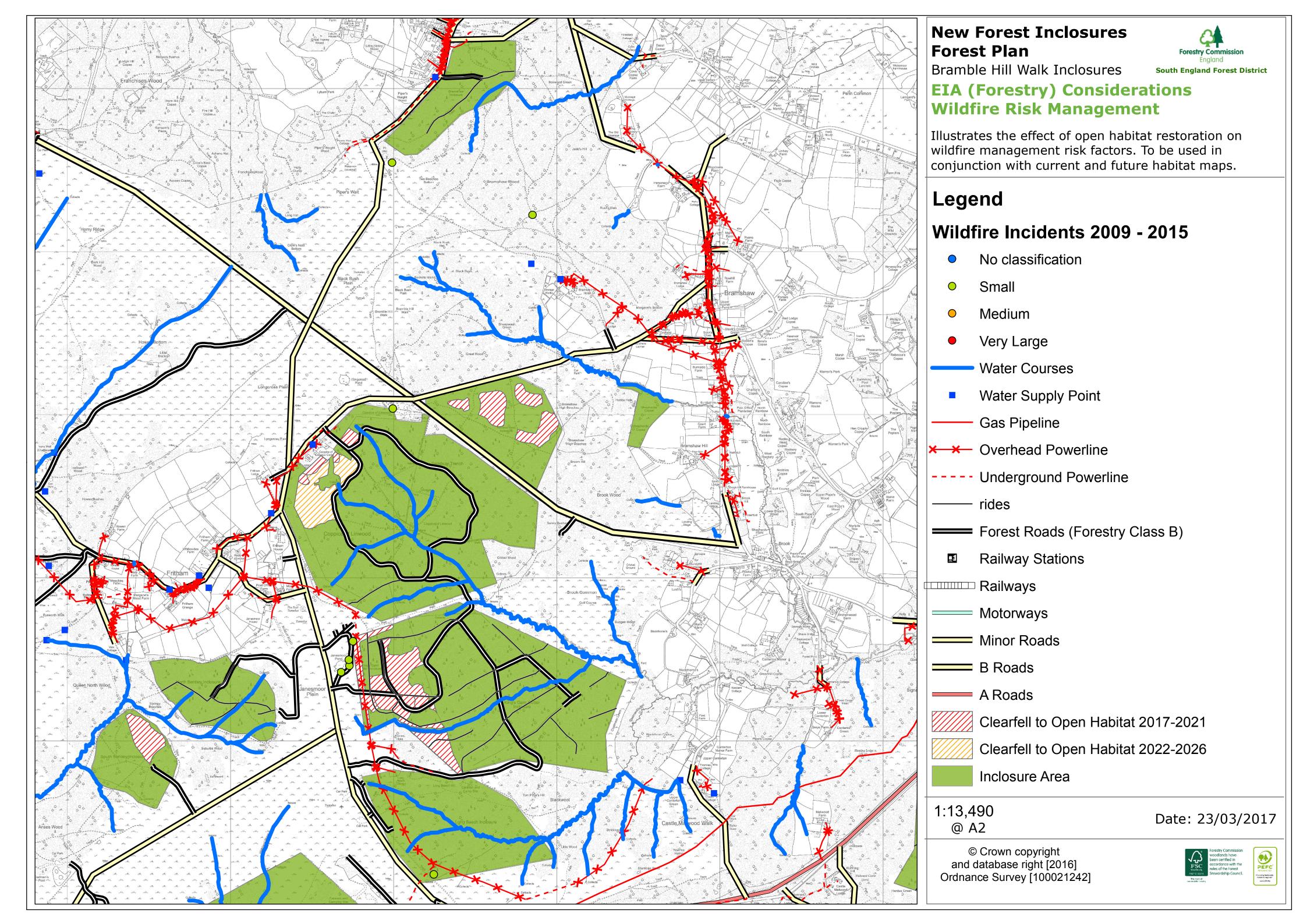


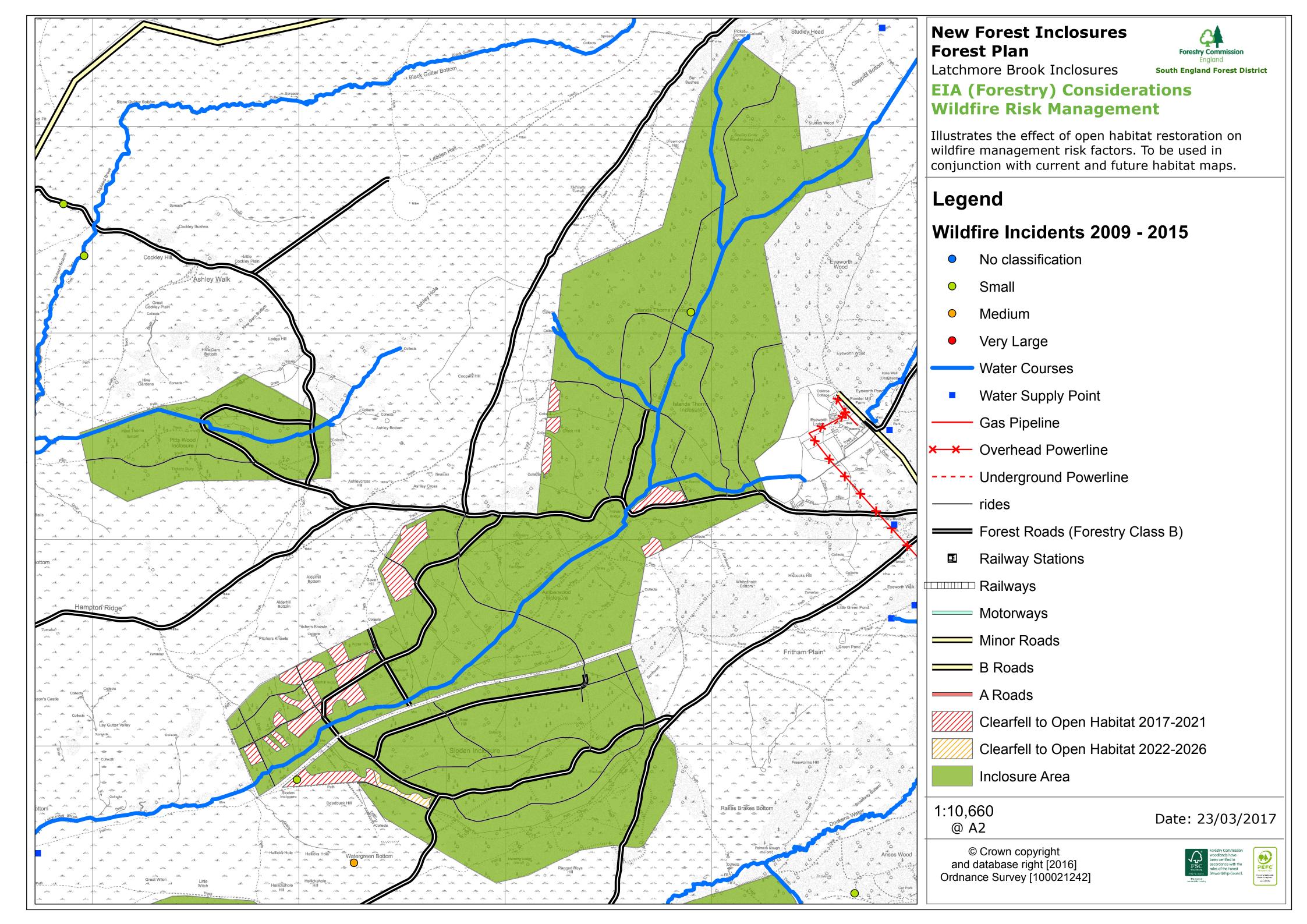


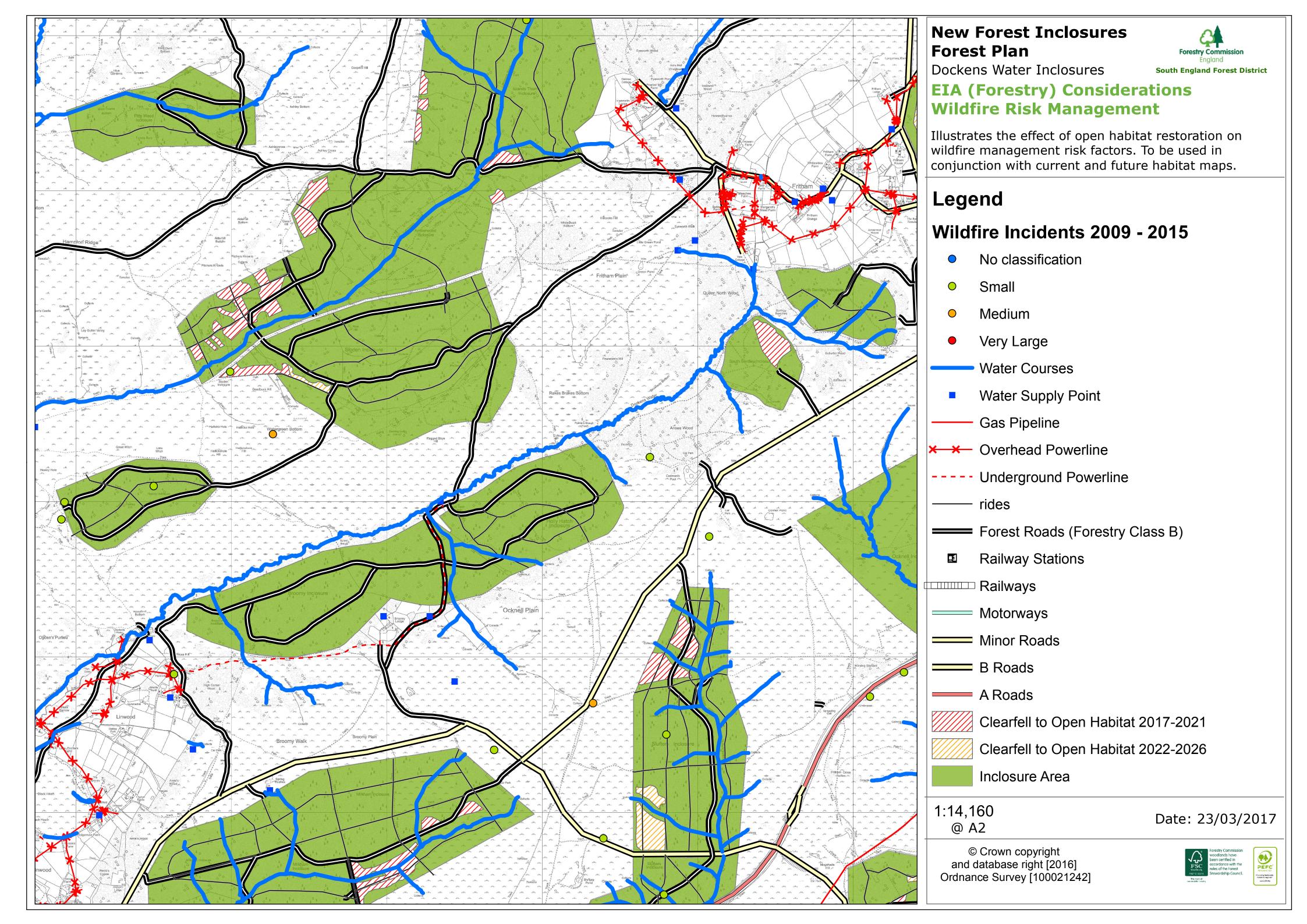


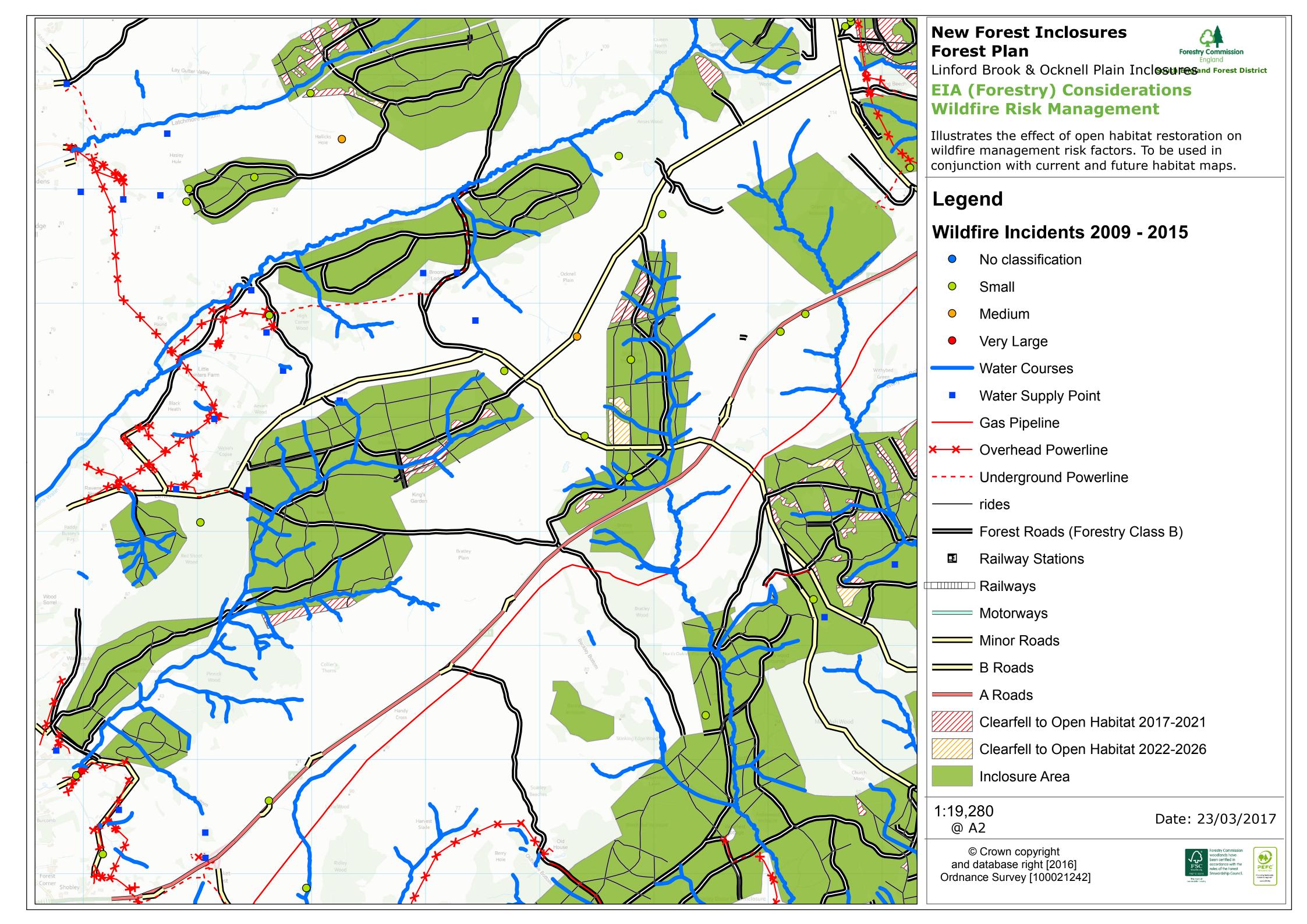


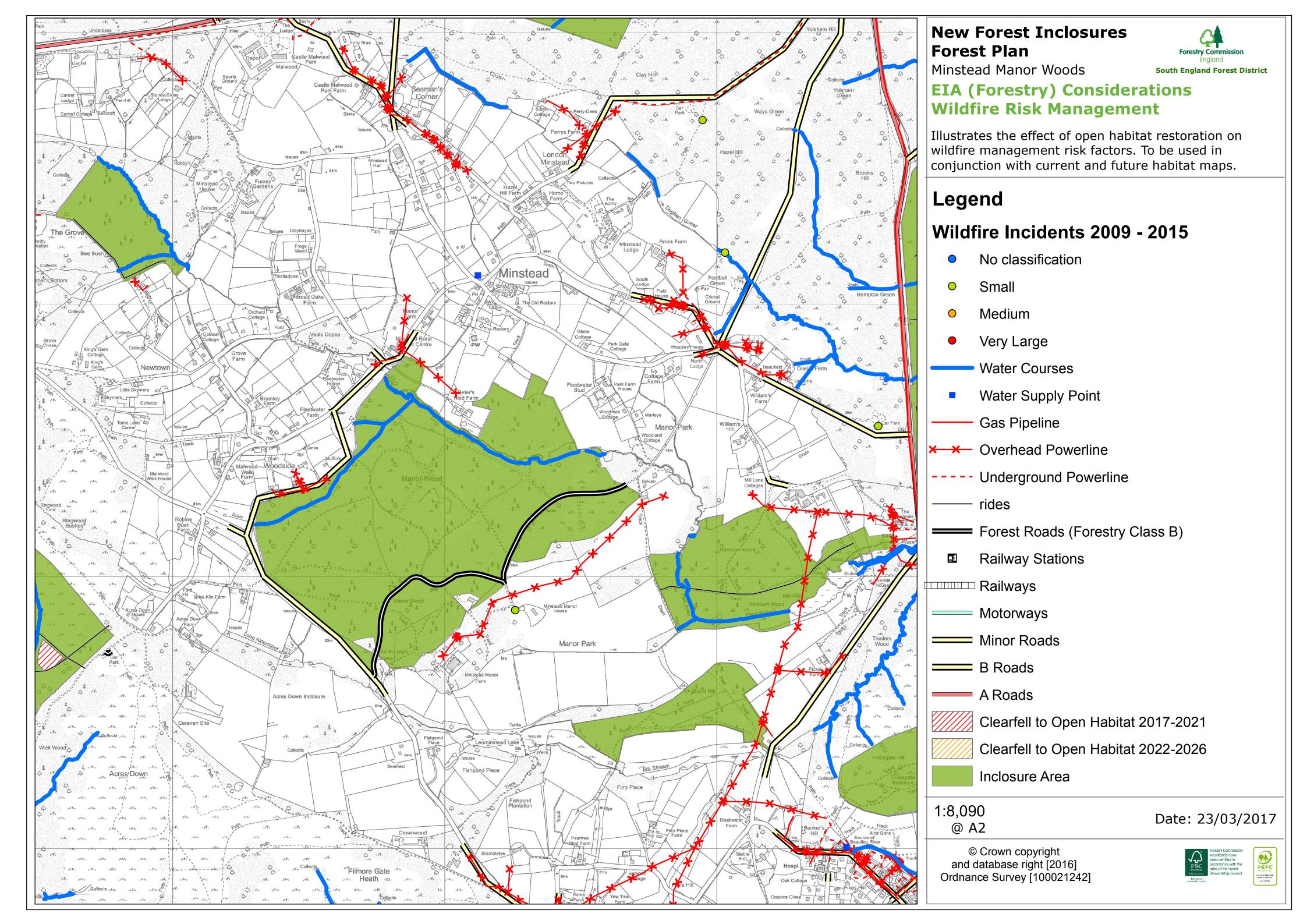


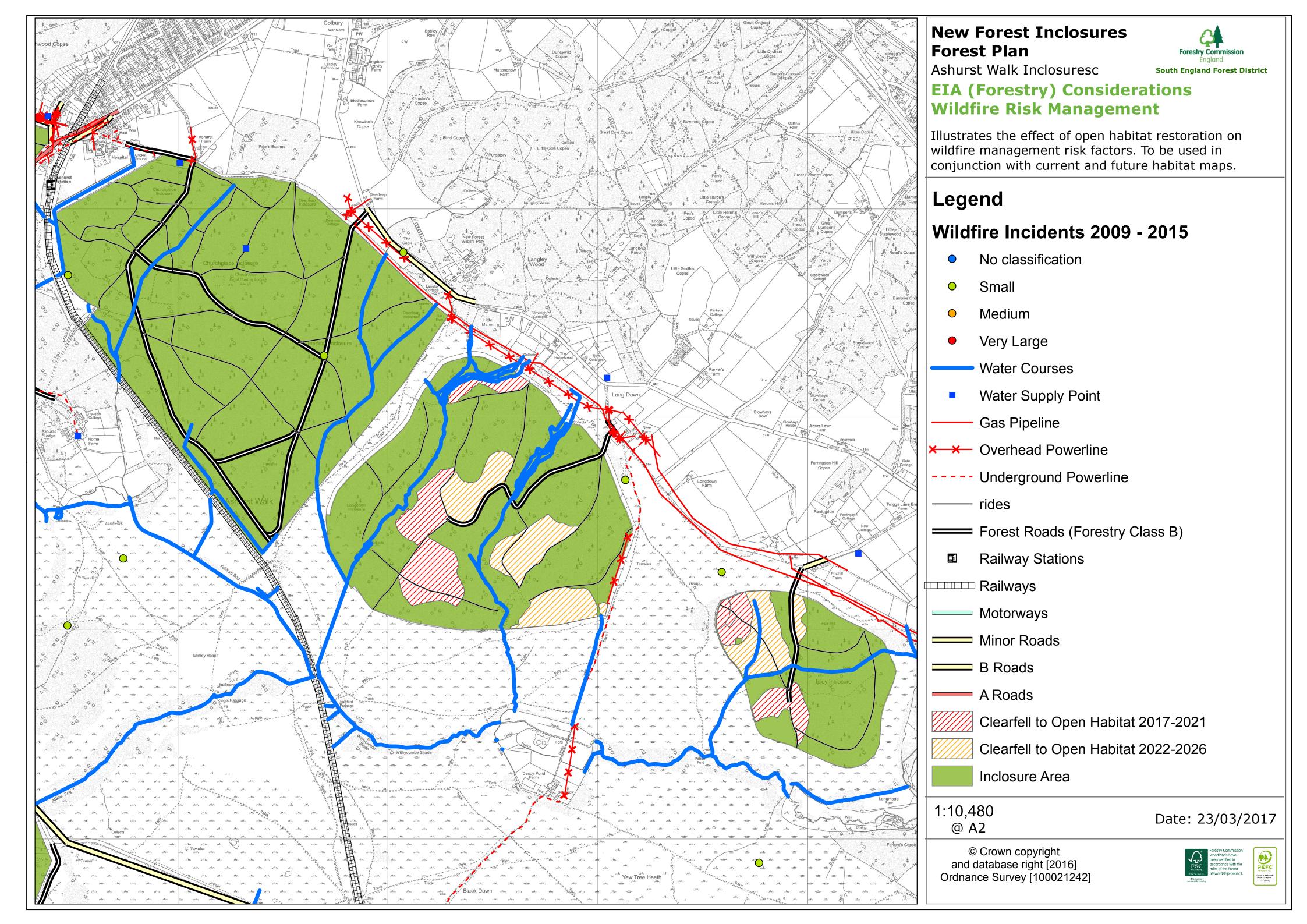


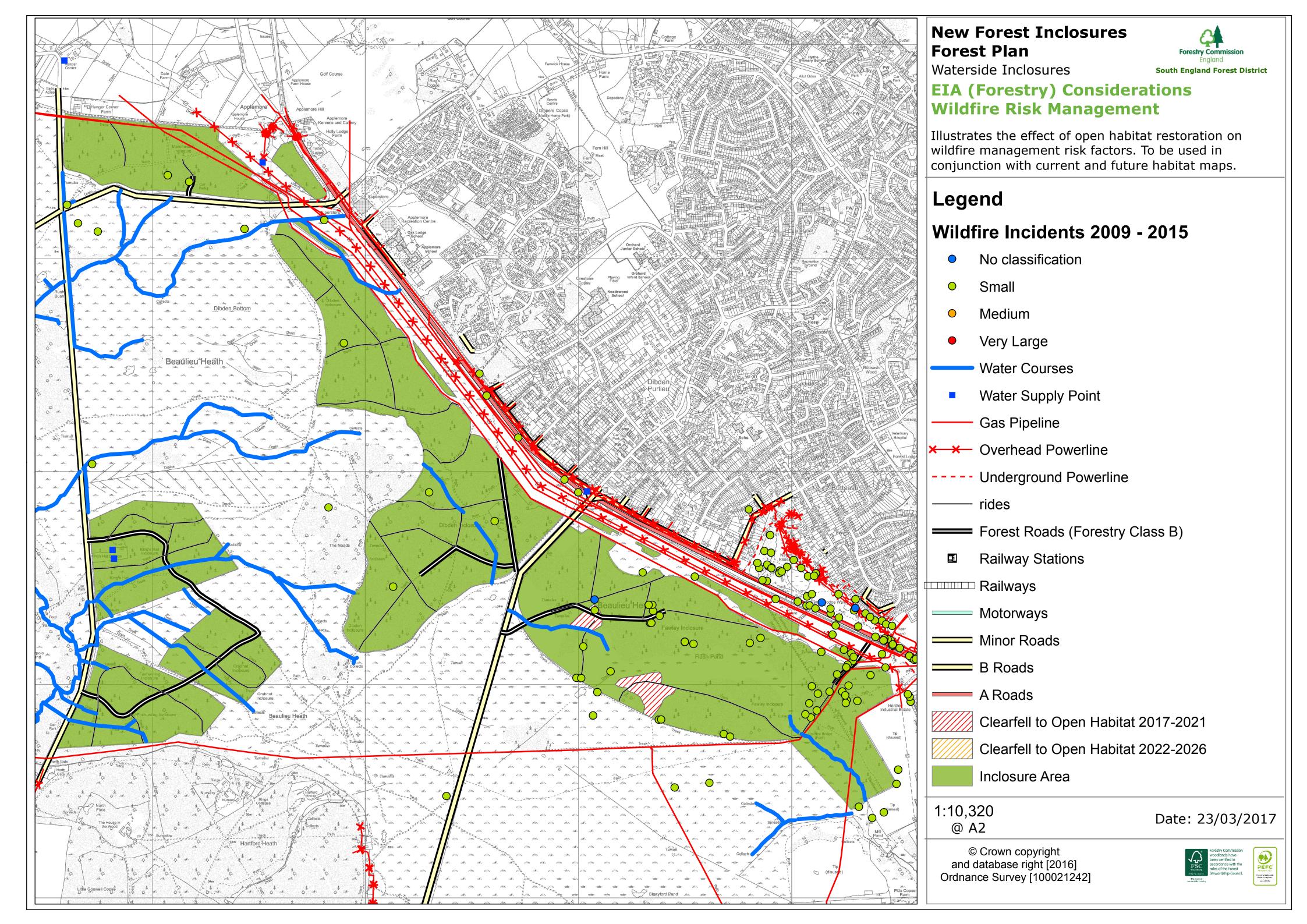


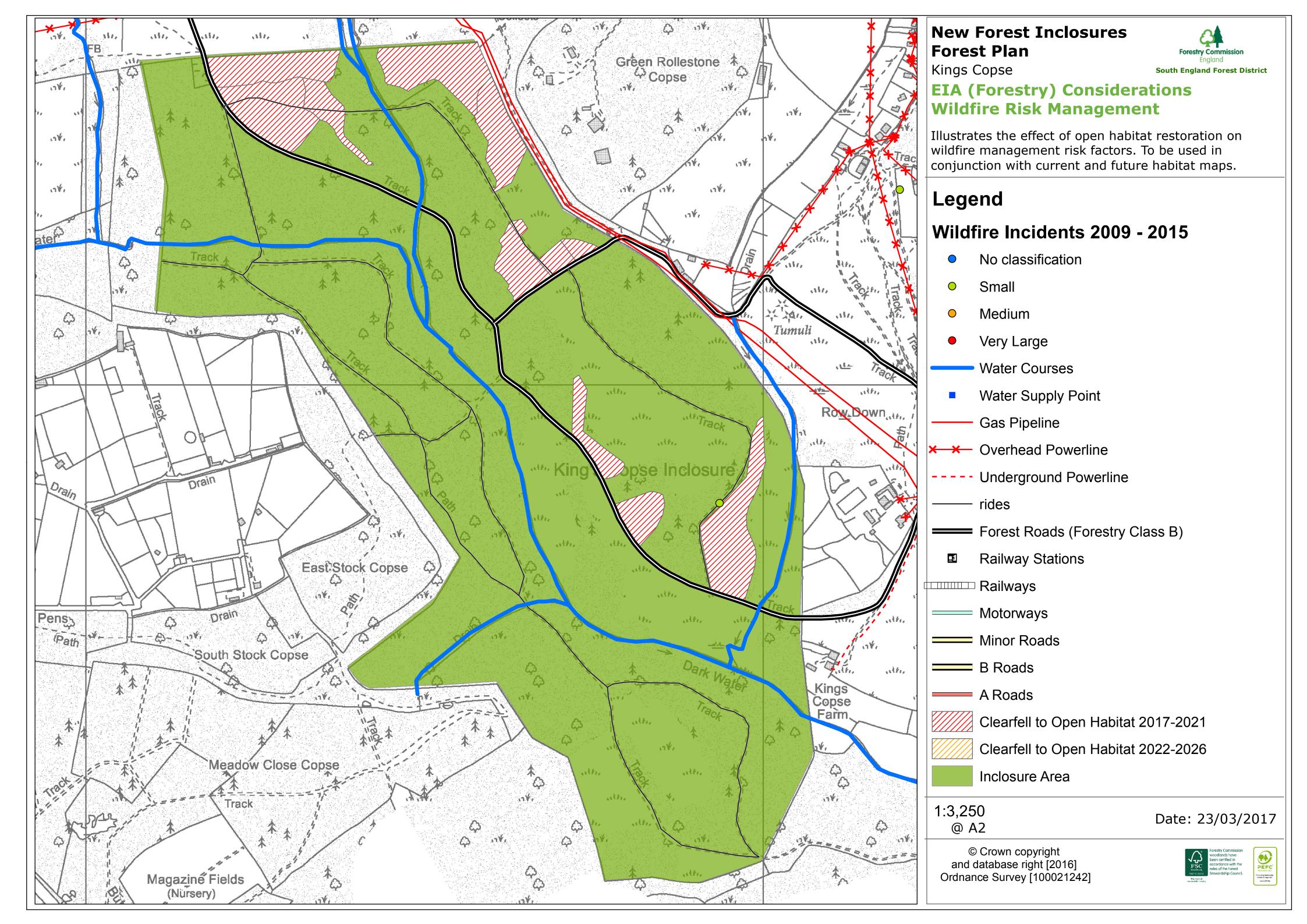


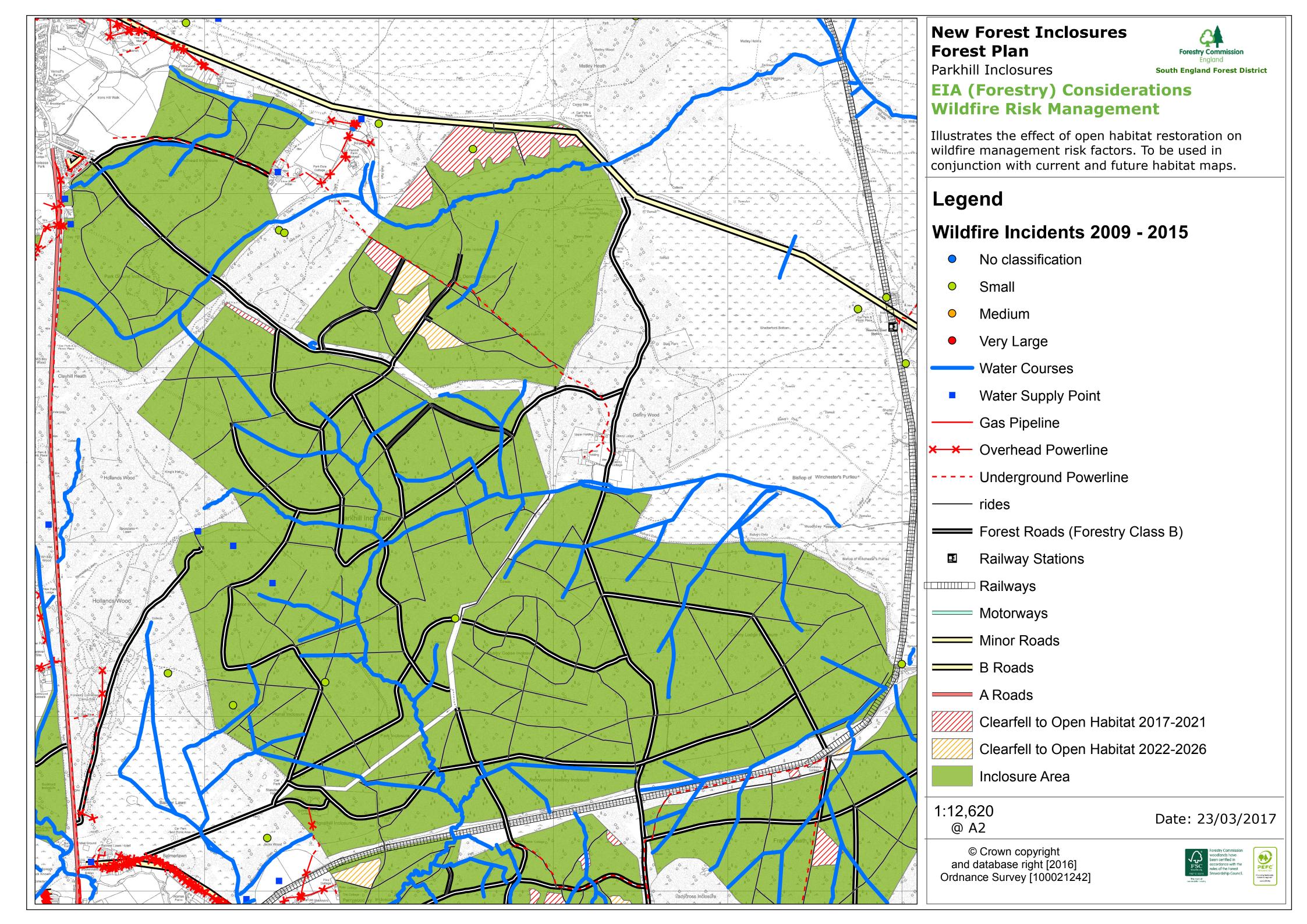


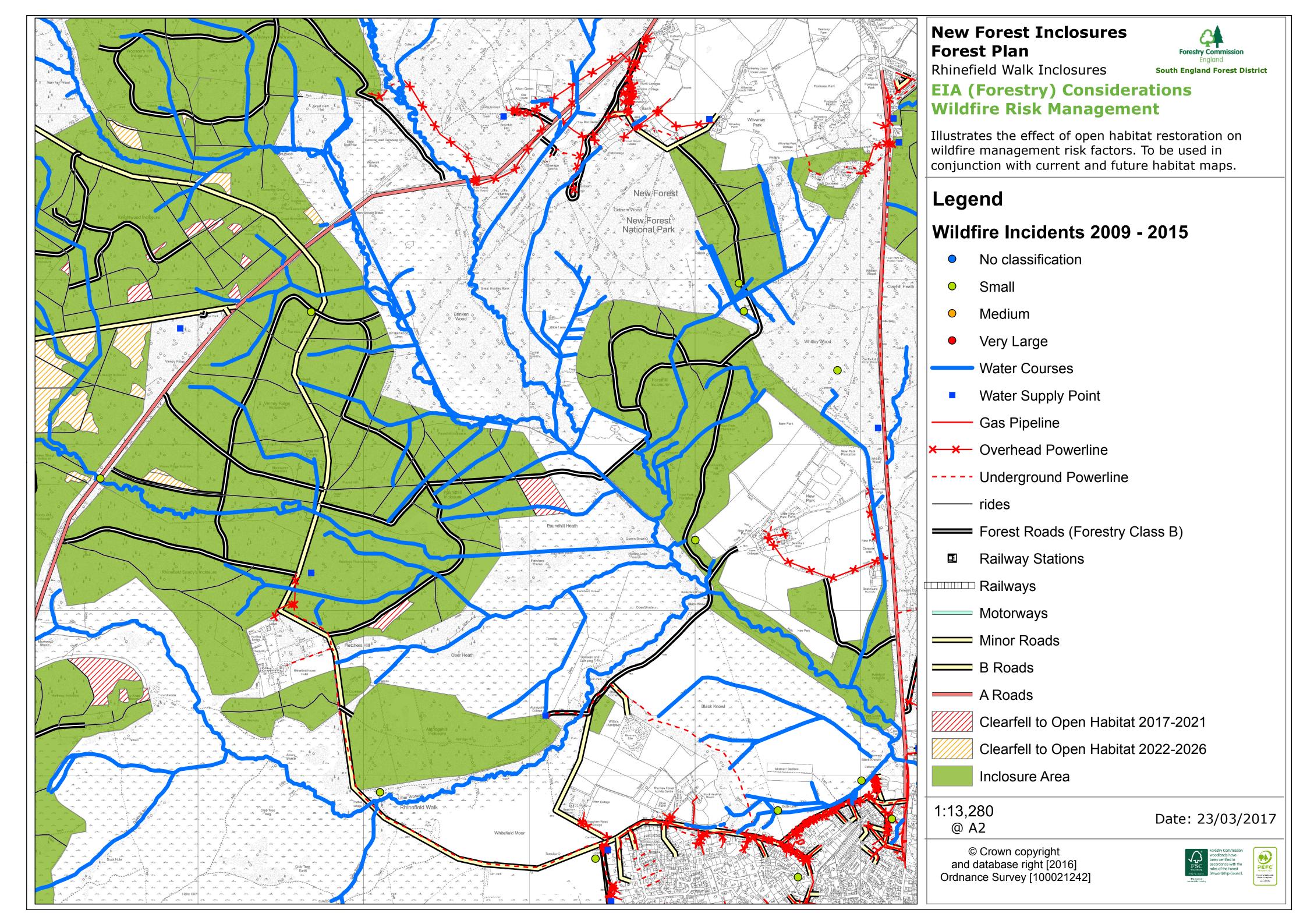


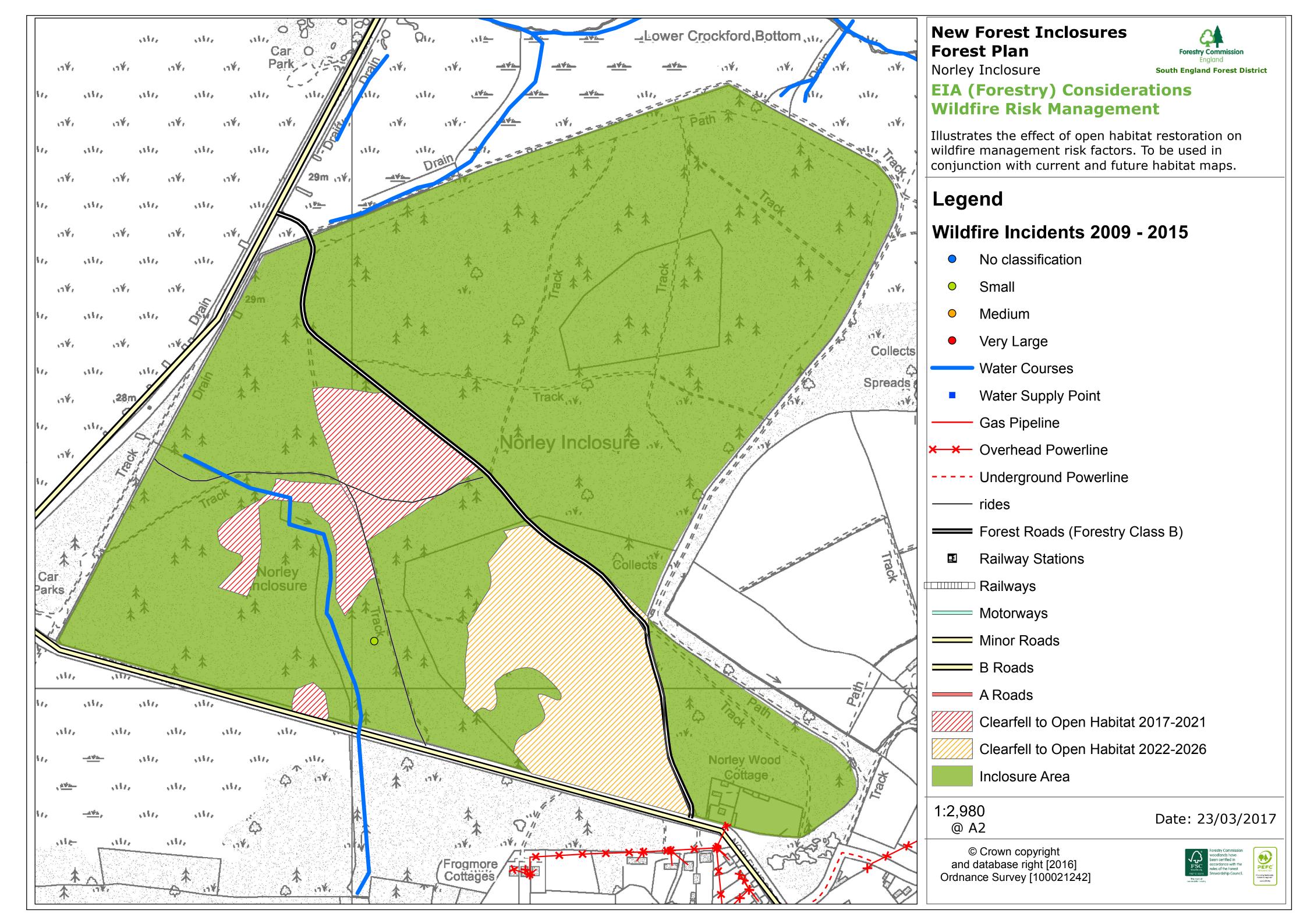


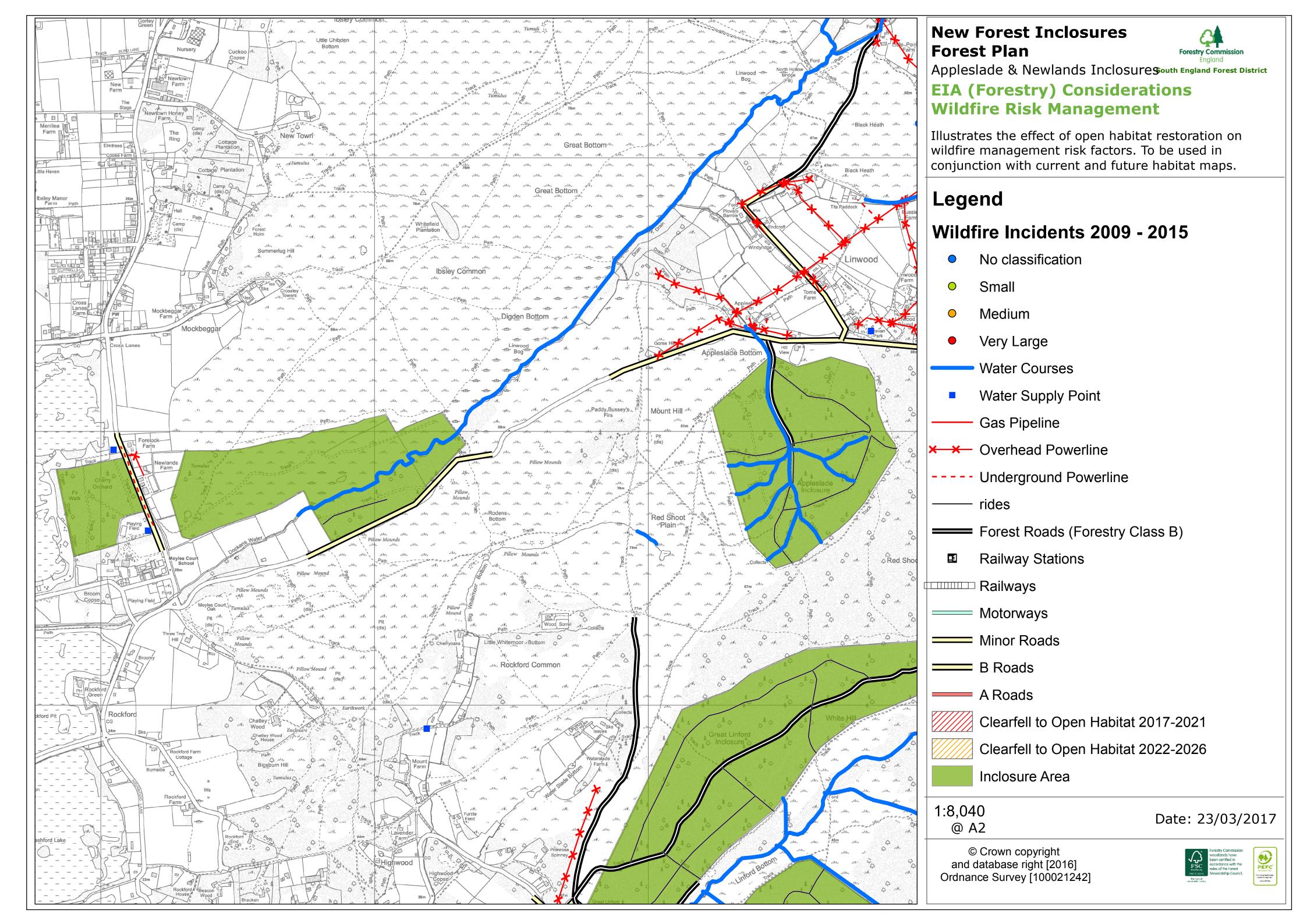


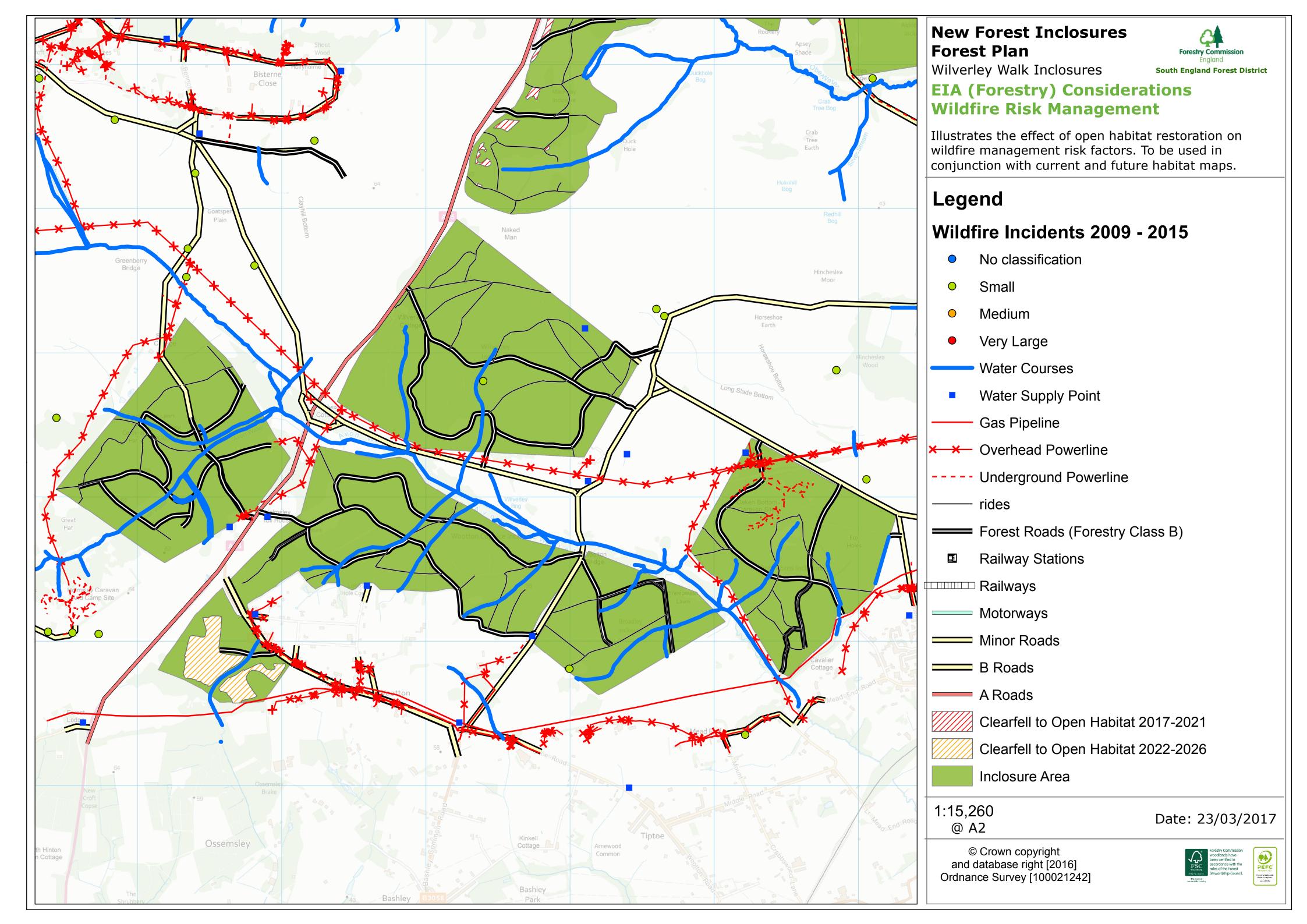


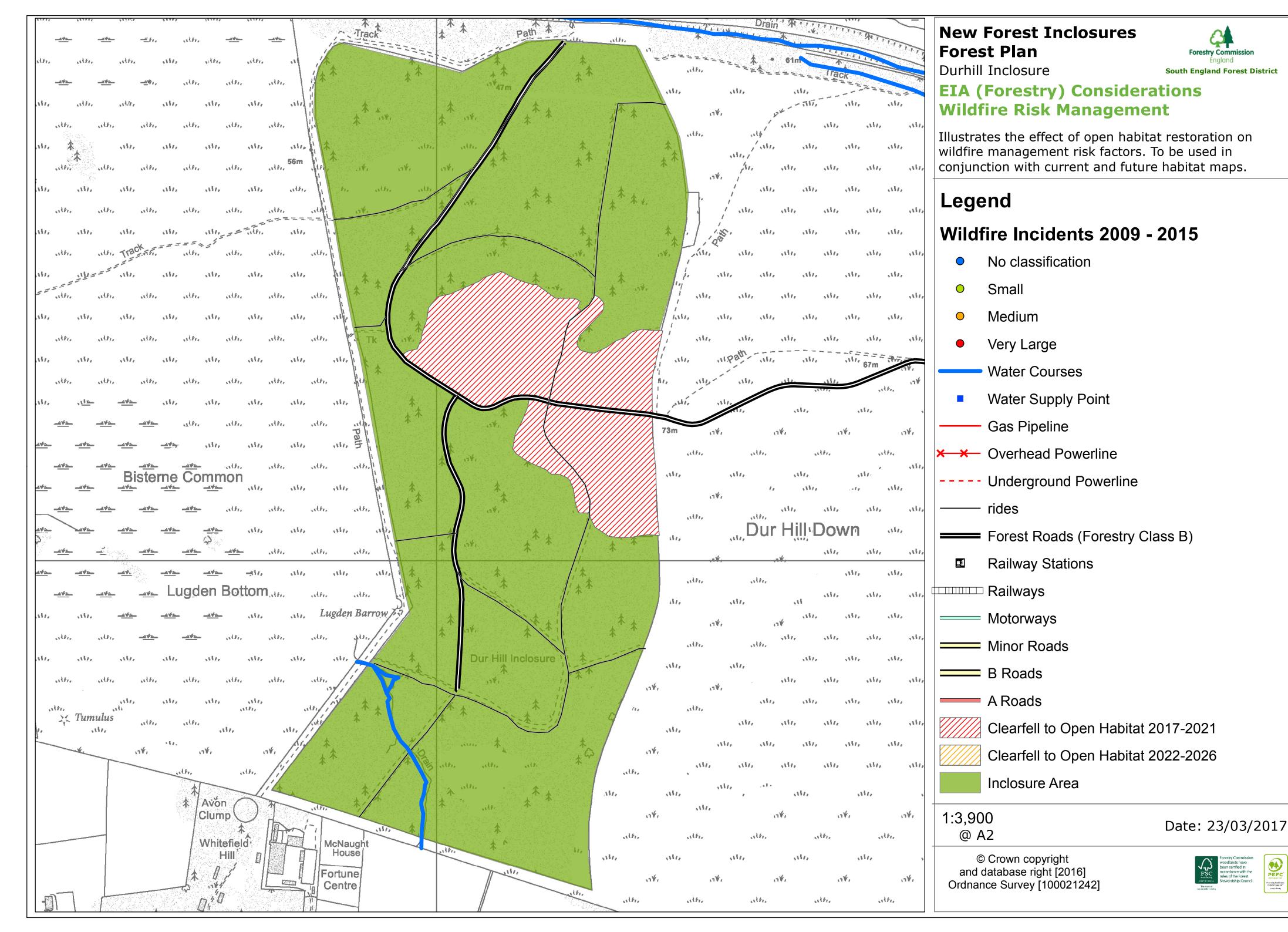


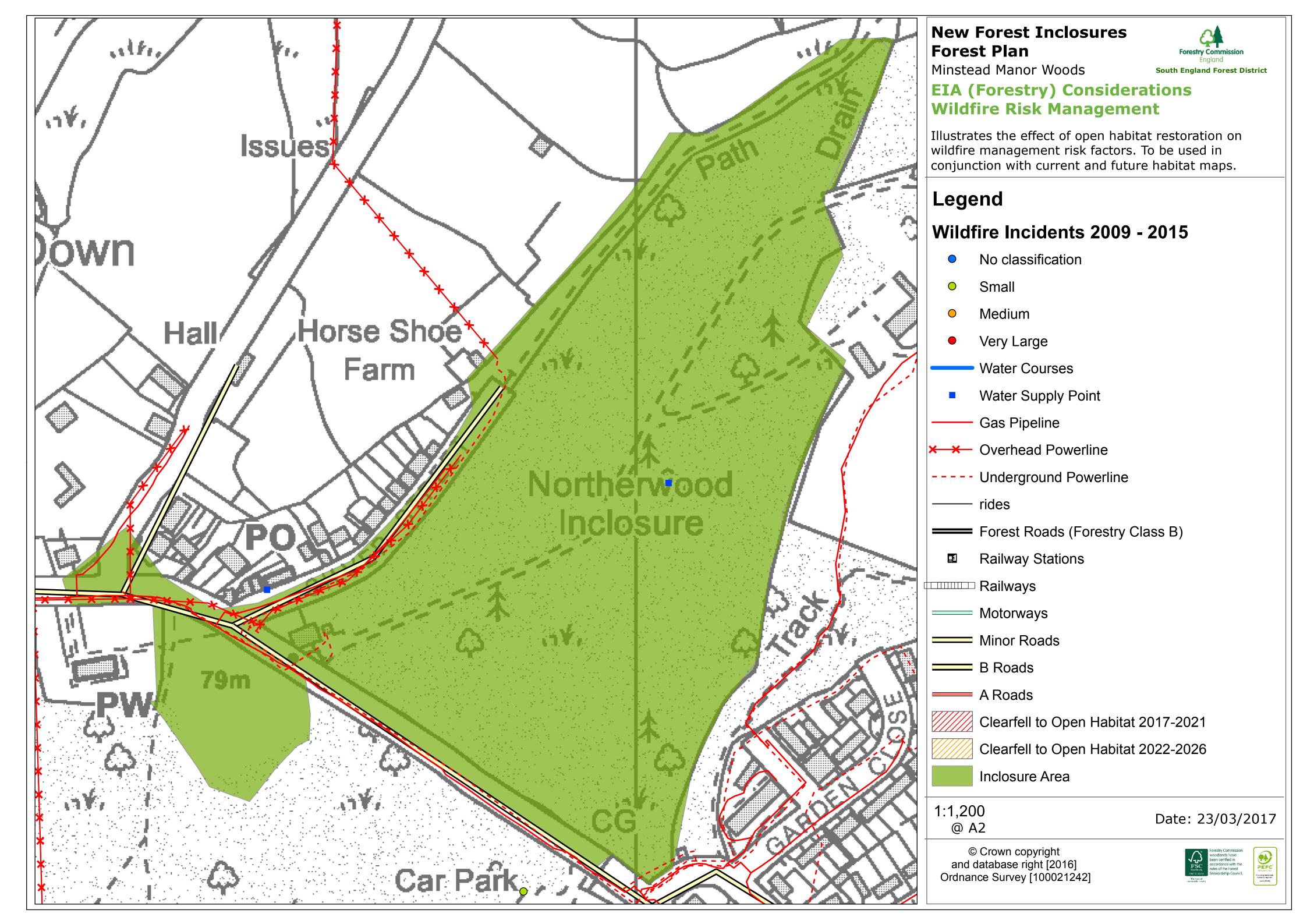


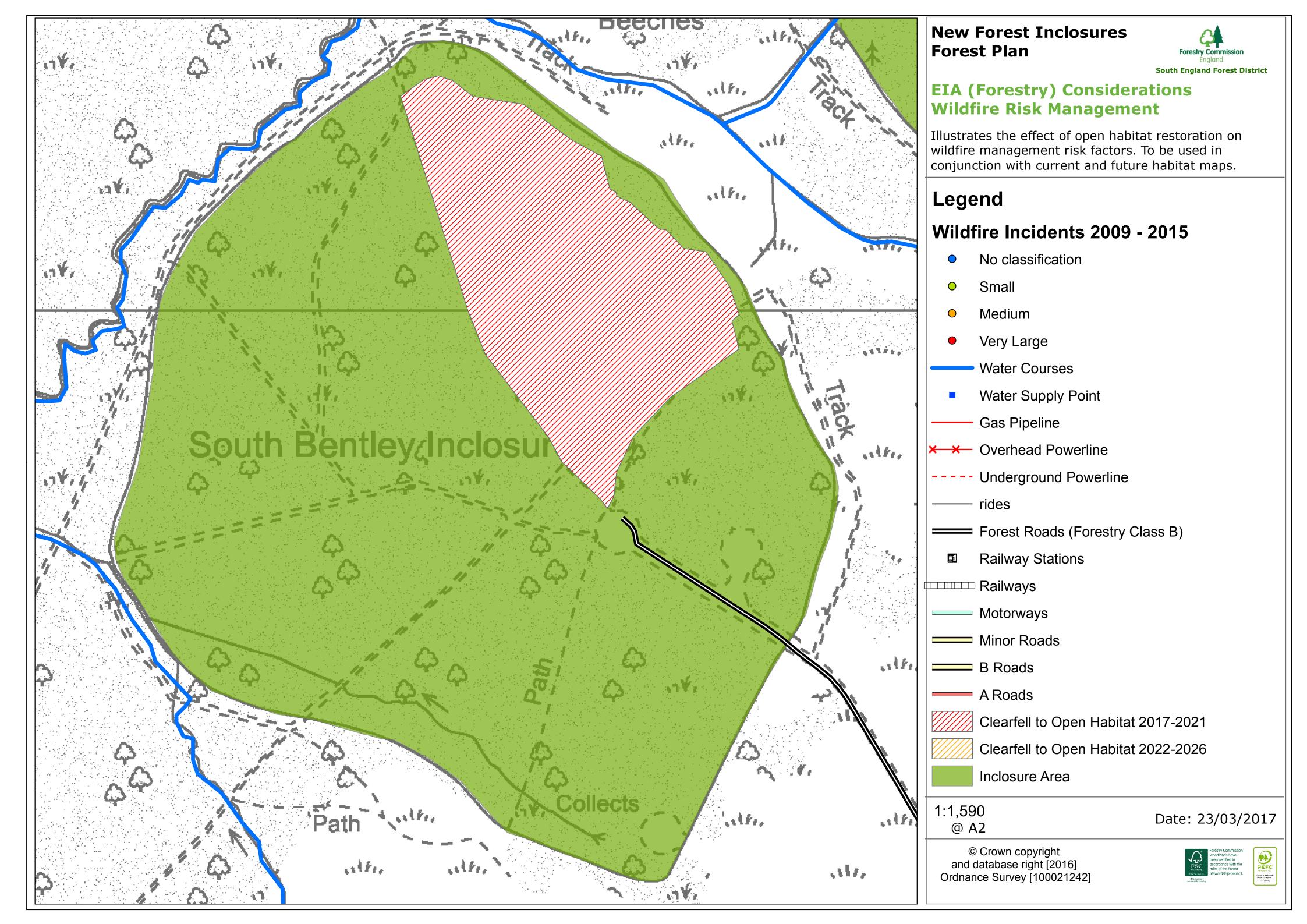












Wildfire Risk Scores for Clearfell Areas 2017 - 2026

Millersford & Turfhill

	Current Risk	Risk Rating at Year	Risk Rating at Year	
	Rating	5	10	Future Risk Rating
Habitat Features	3	5	5	5
Road & Rail Adjacency	1	1	1	1
Residential Adjacency	1	1	1	1
Recreation Adjacency	1	1	1	1
Utilities Adjacency	3	3	3	3
Combined Risk Rating	1.8	2.2	2.2	2.2

Markway

	Current Risk	Risk Rating at Year	Risk Rating at Year	
	Rating	5	10	Future Risk Rating
Habitat Features	3	5	5	5
Road & Rail Adjacency	5	5	5	5
Residential Adjacency	1	1	1	1
Recreation Adjacency	1	1	1	1
Utilities Adjacency	1	1	1	1
Combined Risk Rating	2.2	2.6	2.6	2.6

Denny

	Current Risk	Risk Rating at Year	Risk Rating at Year	
	Rating	5	10	Future Risk Rating
Habitat Features	3	5	5	5
Road & Rail Adjacency	5	5	5	5
Residential Adjacency	1	1	1	1
Recreation Adjacency	3	3	3	3
Utilities Adjacency	1	1	1	1
Combined Risk Rating	2.6	3	3	3

Highland Water

	Current Risk	Risk Rating at Year	Risk Rating at Year	
	Rating	5	10	Future Risk Rating
Habitat Features	3	3	3	5
Road & Rail Adjacency	5	5	5	5
Residential Adjacency	3	3	3	3
Recreation Adjacency	5	5	5	5
Utilities Adjacency	5	5	5	5
Combined Risk Rating	4.2	4.2	4.2	4.6

Waterside

Current Risk	Risk Rating at Year	Risk Rating at Year	
Rating	5	10	Future Risk Rating

Habitat Features	3	3	3	3
Road & Rail Adjacency	5	5	5	5
Residential Adjacency	5	5	5	5
Recreation Adjacency	5	5	5	5
Utilities Adjacency	5	5	5	5
Combined Risk Rating	4.6	4.6	4.6	4.6

Slufters

	Current Risk	Risk Rating at Year	Risk Rating at Year	
	Rating	5	10	Future Risk Rating
Habitat Features	3	5	5	5
Road & Rail Adjacency	5	5	5	5
Residential Adjacency	1	1	1	1
Recreation Adjacency	1	1	1	1
Utilities Adjacency	1	1	1	1
Combined Risk Rating	2.2	2.6	2.6	2.6

Ladycross

	Current Risk	Risk Rating at Year	Risk Rating at Year	
	Rating	5	10	Future Risk Rating
Habitat Features	3	5	5	5
Road & Rail Adjacency	5	5	5	5
Residential Adjacency	3	3	3	3
Recreation Adjacency	3	3	3	3
Utilities Adjacency	3	3	3	3
Combined Risk Rating	3.4	3.8	3.8	3.8

Dur Hill

	Current Risk	Risk Rating at Year	Risk Rating at Year	
	Rating	5	10	Future Risk Rating
Habitat Features	3	5	5	5
Road & Rail Adjacency	1	1	1	1
Residential Adjacency	3	3	3	3
Recreation Adjacency	1	1	1	1
Utilities Adjacency	1	1	1	1
Combined Risk Rating	1.8	2.2	2.2	2.2

Pound Hill

	Current Risk	Risk Rating at Year	Risk Rating at Year	
	Rating	5	10	Future Risk Rating
Habitat Features	3	5	5	5
Road & Rail Adjacency	1	1	1	1
Residential Adjacency	1	1	1	1
Recreation Adjacency	1	1	1	1
Utilities Adjacency	1	1	1	1

Combined Risk Rating	1.4	1.8		1.8
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Norley

	Current Risk	Risk Rating at Year	Risk Rating at Year	
	Rating	5	10	Future Risk Rating
Habitat Features	3	5	5	5
Road & Rail Adjacency	5	5	5	5
Residential Adjacency	5	5	5	5
Recreation Adjacency	1	1	1	1
Utilities Adjacency	3	3	3	3
Combined Risk Rating	3.4	3.8	3.8	3.8

Kings Copse

	Current Risk	Risk Rating at Year	Risk Rating at Year	
	Rating	5	10	Future Risk Rating
Habitat Features	3	5	5	5
Road & Rail Adjacency	1	1	1	1
Residential Adjacency	5	5	5	5
Recreation Adjacency	1	1	1	1
Utilities Adjacency	5	5	5	5
Combined Risk Rating	3	3.4	3.4	3.4

Alderhill

	Current Risk	Risk Rating at Year	Risk Rating at Year	
	Rating	5	10	Future Risk Rating
Habitat Features	3	5	5	5
Road & Rail Adjacency	1	1	1	1
Residential Adjacency	1	1	1	1
Recreation Adjacency	1	1	1	1
Utilities Adjacency	1	1	1	1
Combined Risk Rating	1.4	1.8	1.8	1.8

Milkham

	Current Risk	Risk Rating at Year	Risk Rating at Year	
	Rating	5	10	Future Risk Rating
Habitat Features	3	5	5	5
Road & Rail Adjacency	3	3	3	3
Residential Adjacency	1	1	1	1
Recreation Adjacency	1	1	1	1
Utilities Adjacency	1	1	1	1
Combined Risk Rating	1.8	2.2	2.2	2.2

TOTAL

	Current Risk	Risk Rating at Year	Risk Rating at Year	
	Rating	5	10	Future Risk Rating
Habitat Features	3.0	4.7	4.7	4.8
Road & Rail Adjacency	3.3	3.3	3.3	3.3
Residential Adjacency	2.4	2.4	2.4	2.4
Recreation Adjacency	1.9	1.9	1.9	1.9
Utilities Adjacency	2.4	2.4	2.4	2.4
Combined Risk Rating	2.6	2.9	2.9	3.0

Adjacency Scores		
501m +	1	low
101m-500m	3	medium
1m-100m	5	high
Habitat Type Scores		
Broadleaved Woodland	1	low
Conifer Woodland	3	medium
Heathland / Open		
Habitats	5	high

Landscape

Clearfell areas have been identified according to the following criteria:

- Where the SSSI condition assessment requires restoration to open habitats;
- Where the age and growth rates of the trees shows them to be at the economic age of felling. In forestry terms, their age of maximum mean annual increment. In other words, the age at which the trees' growth has slowed so each year the growth rate decreases;
- Where, if not at economic felling age, early felling would support restoration off a SSSI unit to 'favourable' condition.

Most of the clearfell areas are surrounded by retained woodland and as such, the external landscape change is minimal or non existent. The two bigger clearfells which can be seen from roads are at Denny Inclosure and Millersford Plantation & Turfhill Inclosure.

Additional photographs are shown on the following pages which highlight the trees to be felled and how they currently appear from the roadside.





Denny Wood—Landscape Impact Photos





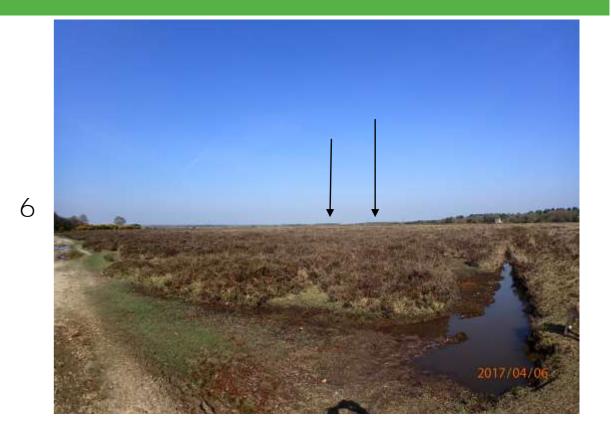
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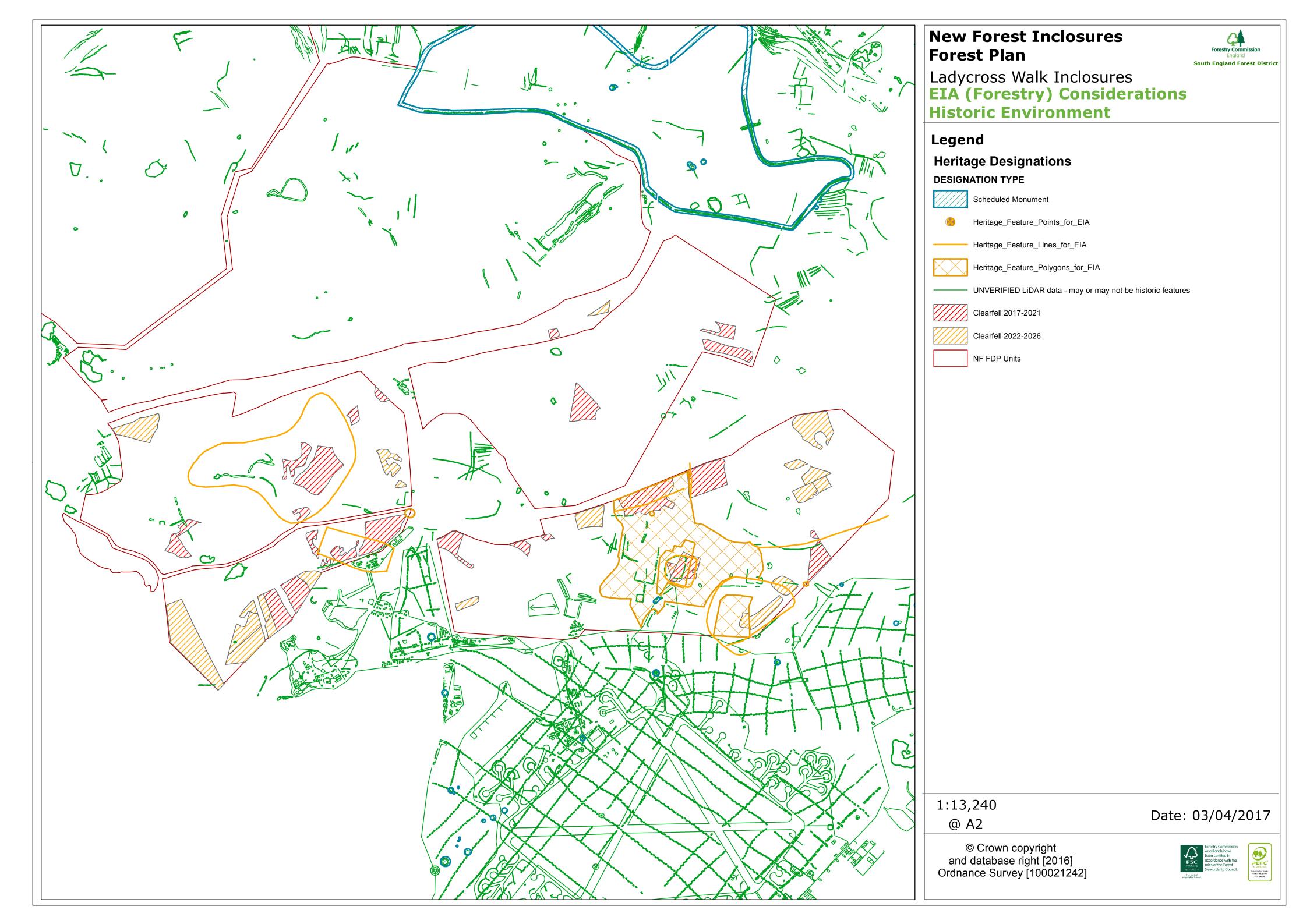
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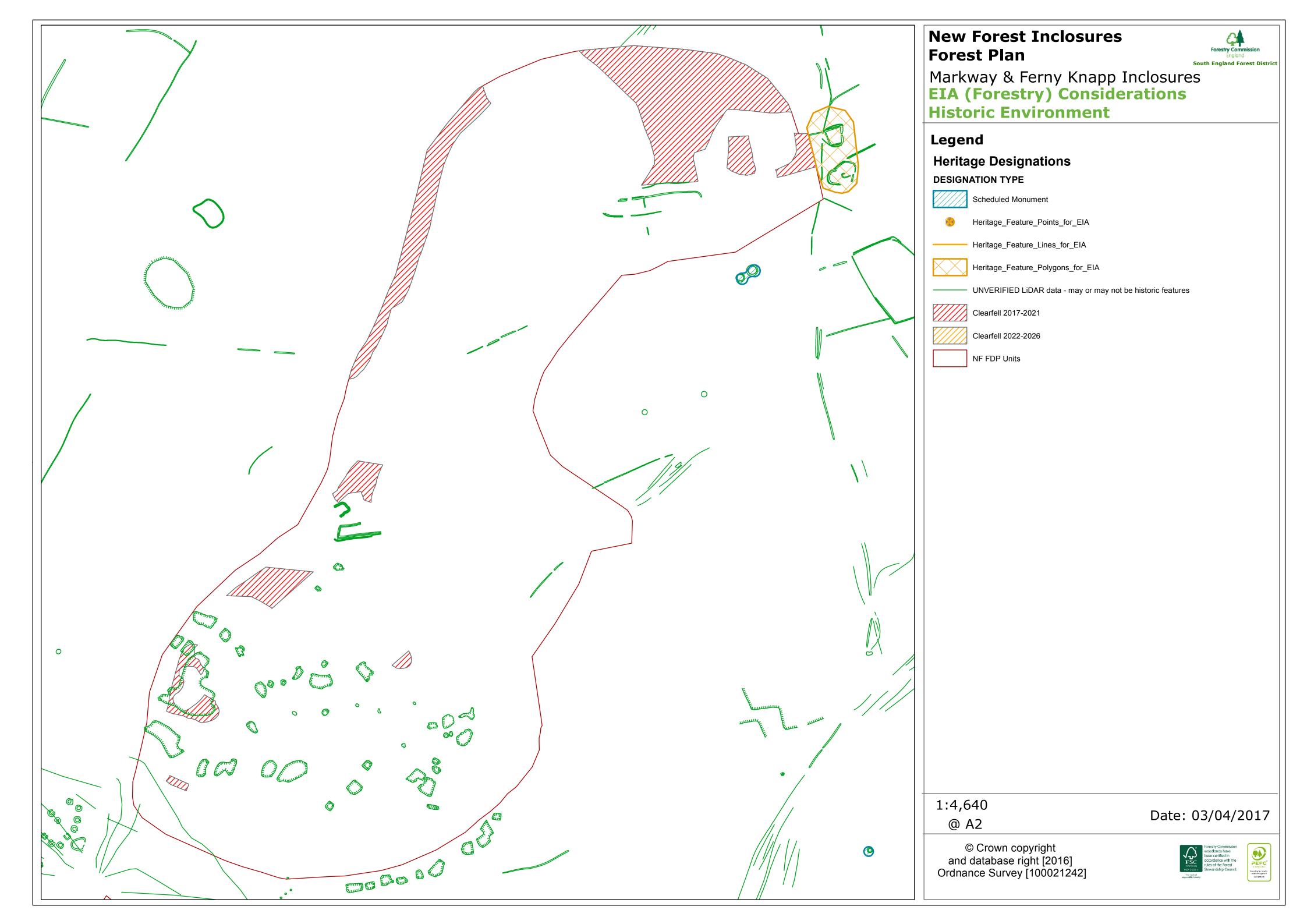
Millersford Plantation & Turfhill Inclosure—Landscape

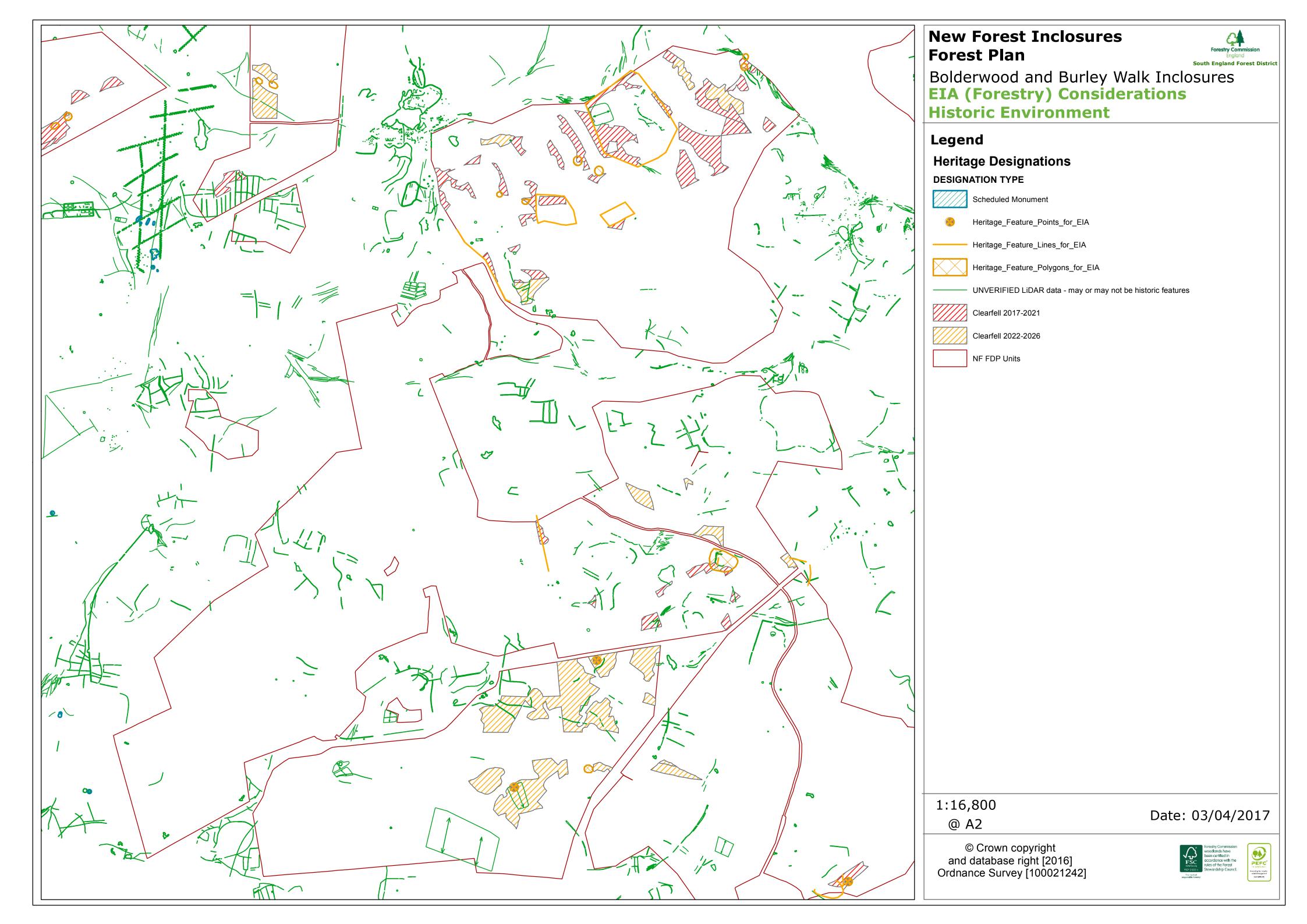


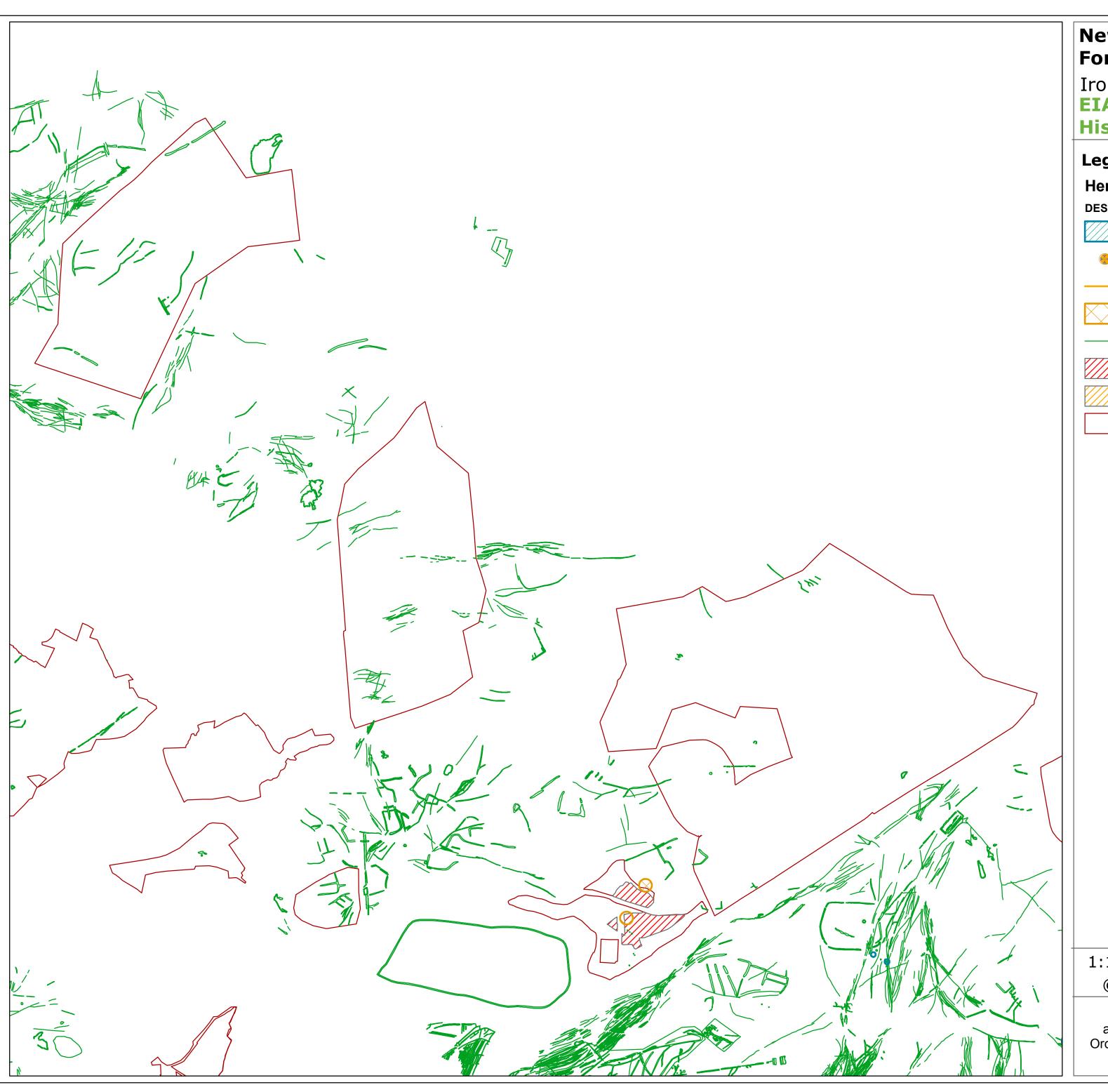














Ironshill Walk Inclosures **EIA (Forestry) Considerations Historic Environment**

Legend

Heritage Designations

DESIGNATION TYPE



Scheduled Monument



Heritage_Feature_Points_for_EIA



Heritage_Feature_Lines_for_EIA



Heritage_Feature_Polygons_for_EIA



UNVERIFIED LiDAR data - may or may not be historic features



Clearfell 2017-2021



Clearfell 2022-2026



NF FDP Units

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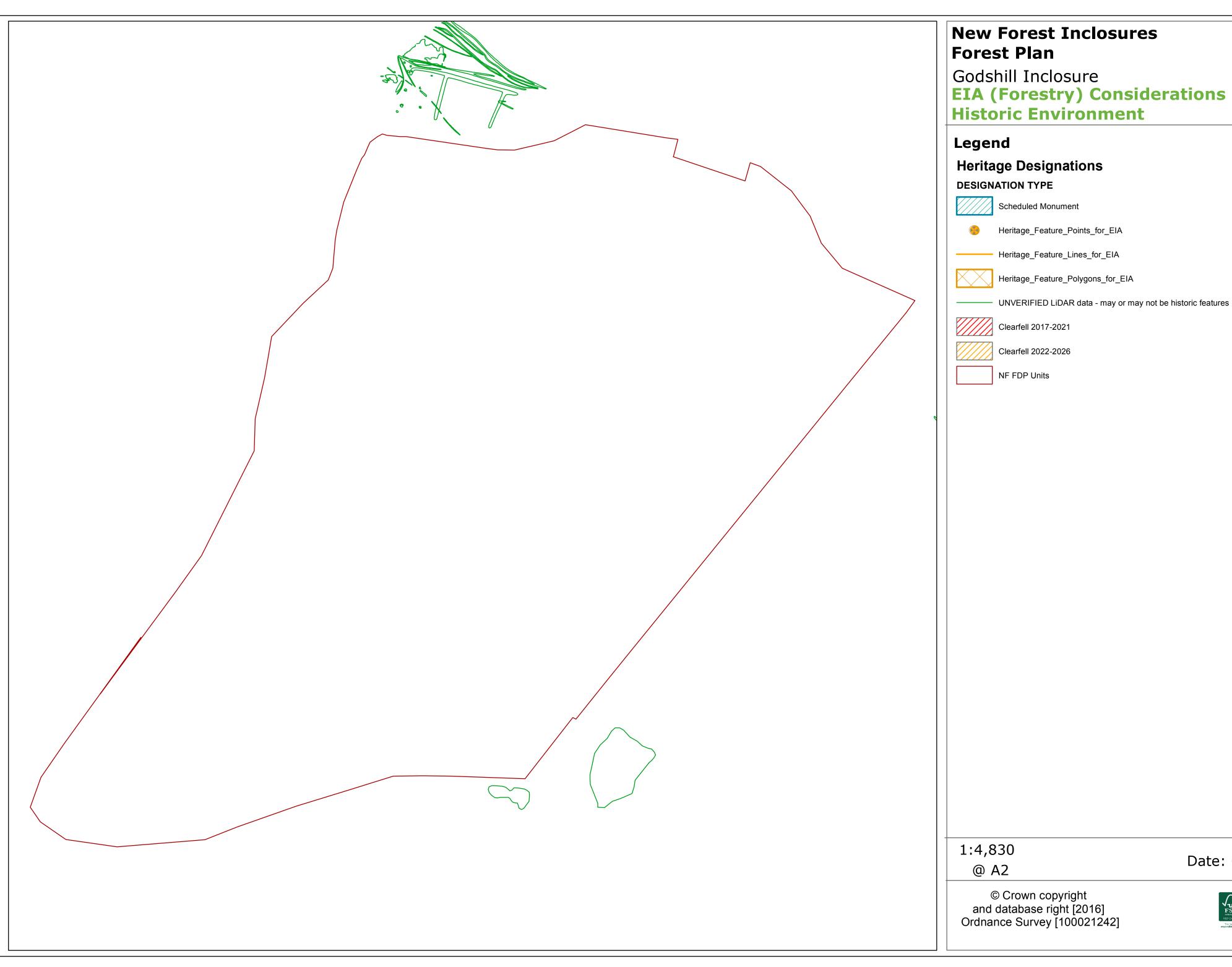
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Godshill Inclosure **EIA (Forestry) Considerations Historic Environment**

Heritage Designations

Scheduled Monument

Heritage_Feature_Points_for_EIA

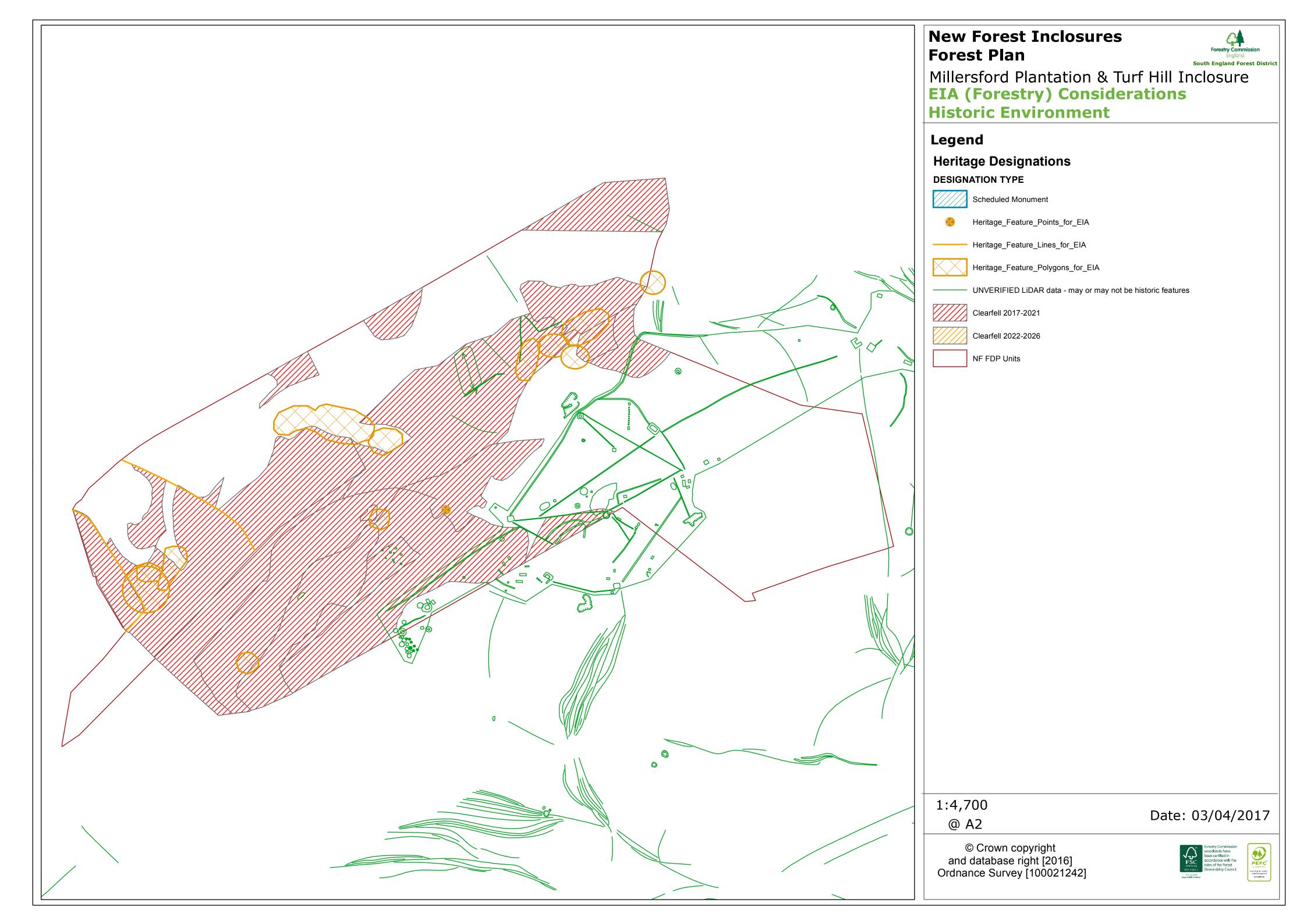
Heritage_Feature_Polygons_for_EIA

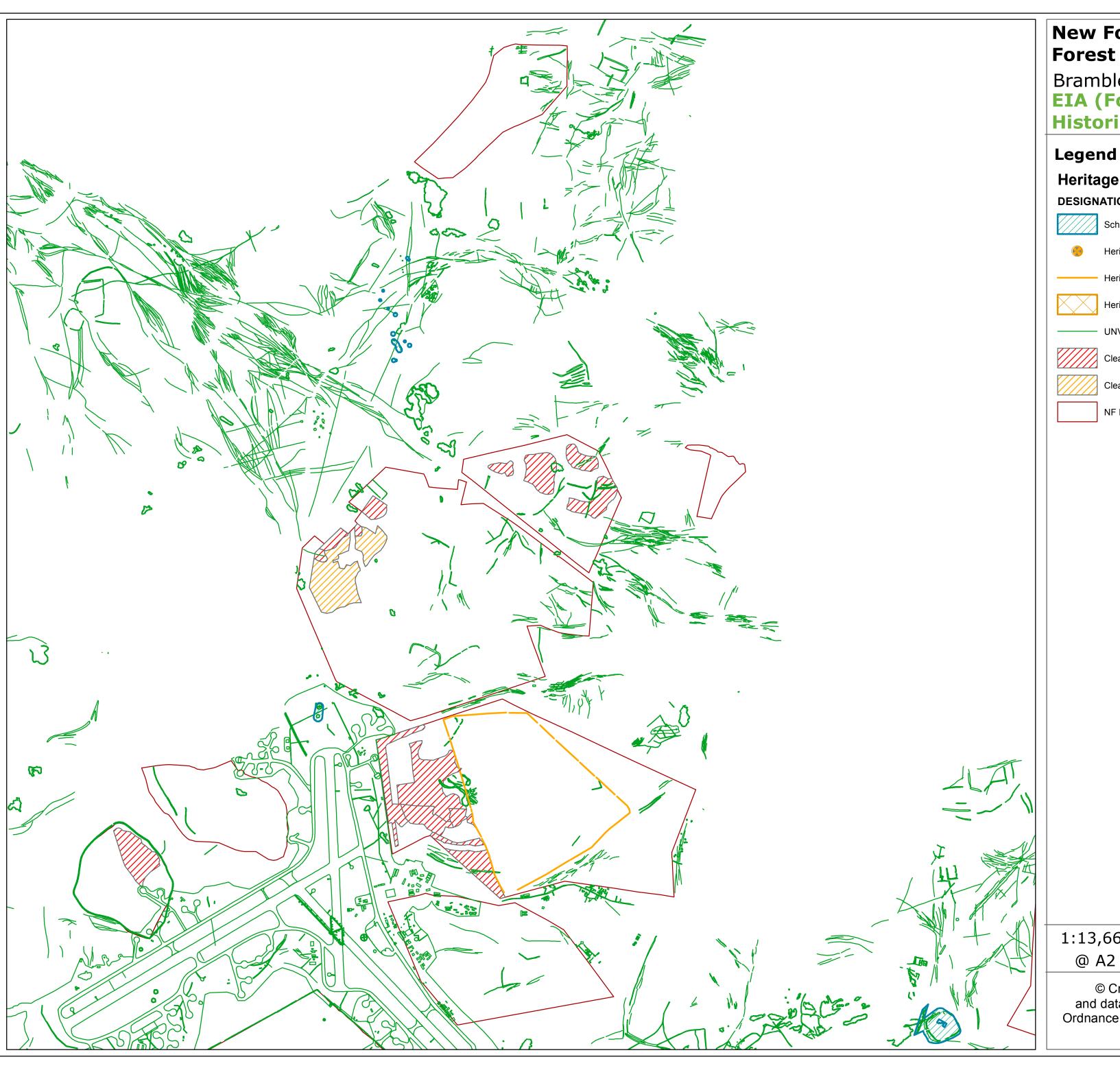
Clearfell 2022-2026

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Bramble Hill Walk Inclosures **EIA (Forestry) Considerations Historic Environment**

Legend

Heritage Designations

DESIGNATION TYPE



Scheduled Monument



Heritage_Feature_Points_for_EIA



Heritage_Feature_Lines_for_EIA



Heritage_Feature_Polygons_for_EIA



UNVERIFIED LiDAR data - may or may not be historic features



Clearfell 2017-2021



Clearfell 2022-2026



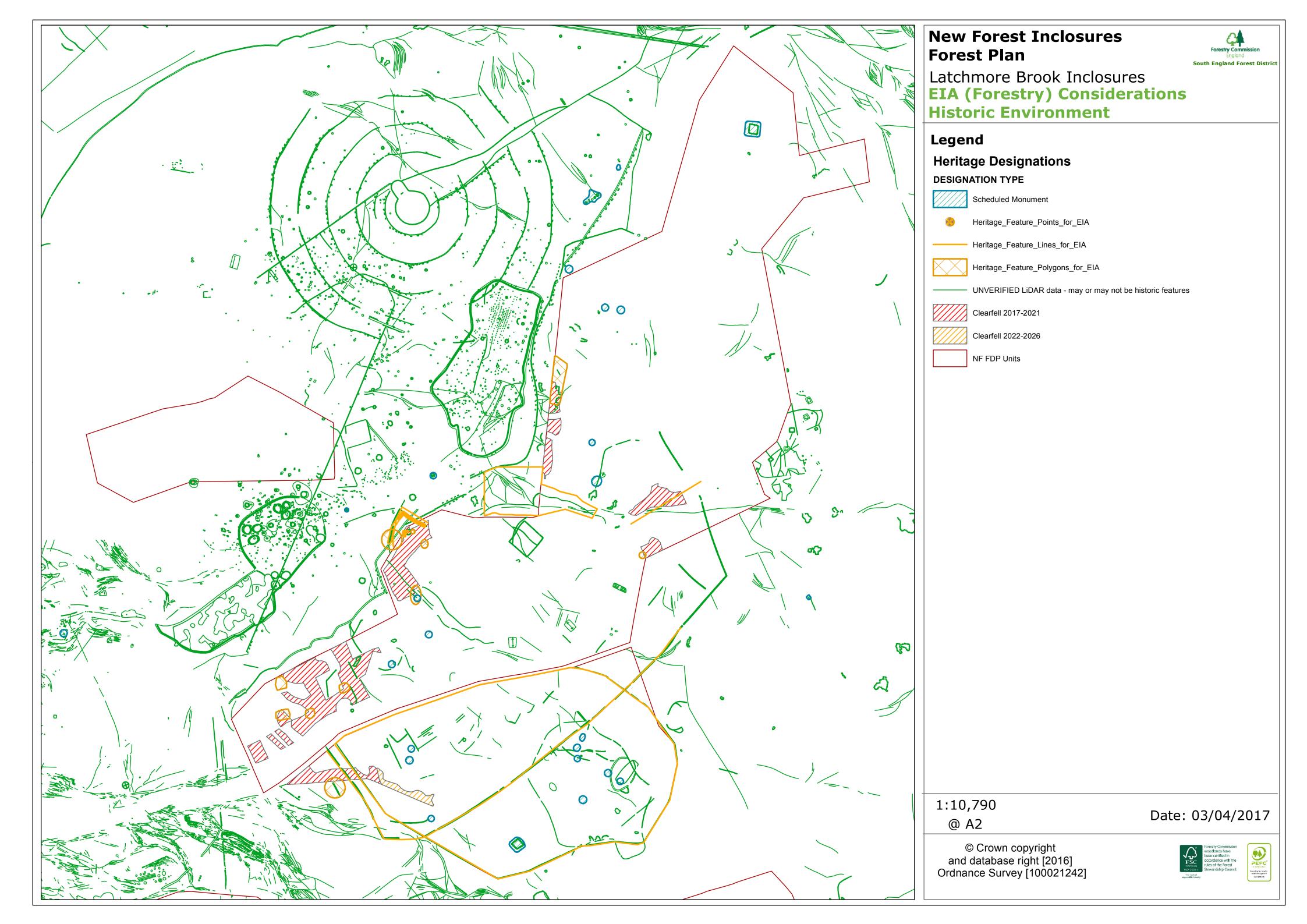
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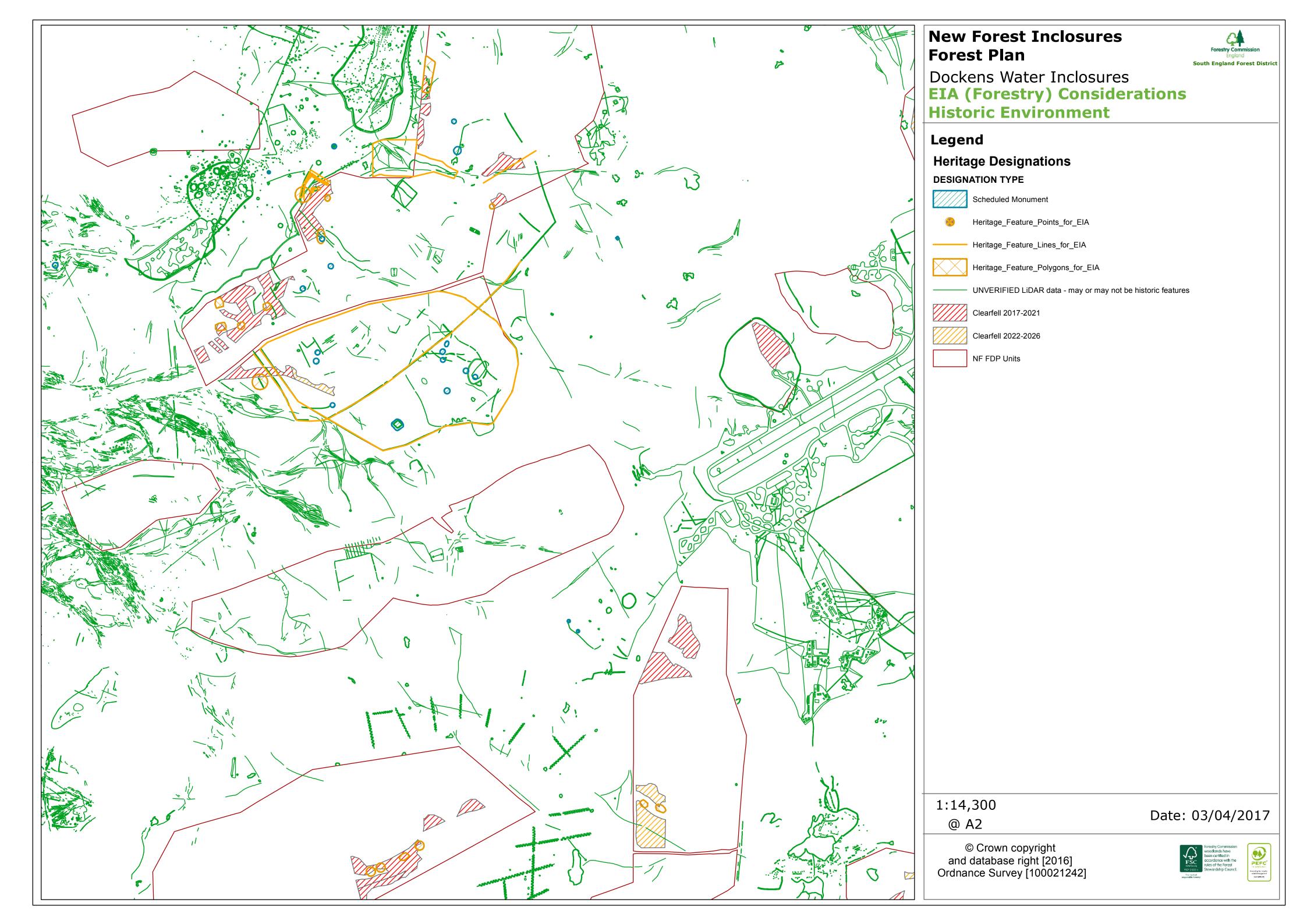
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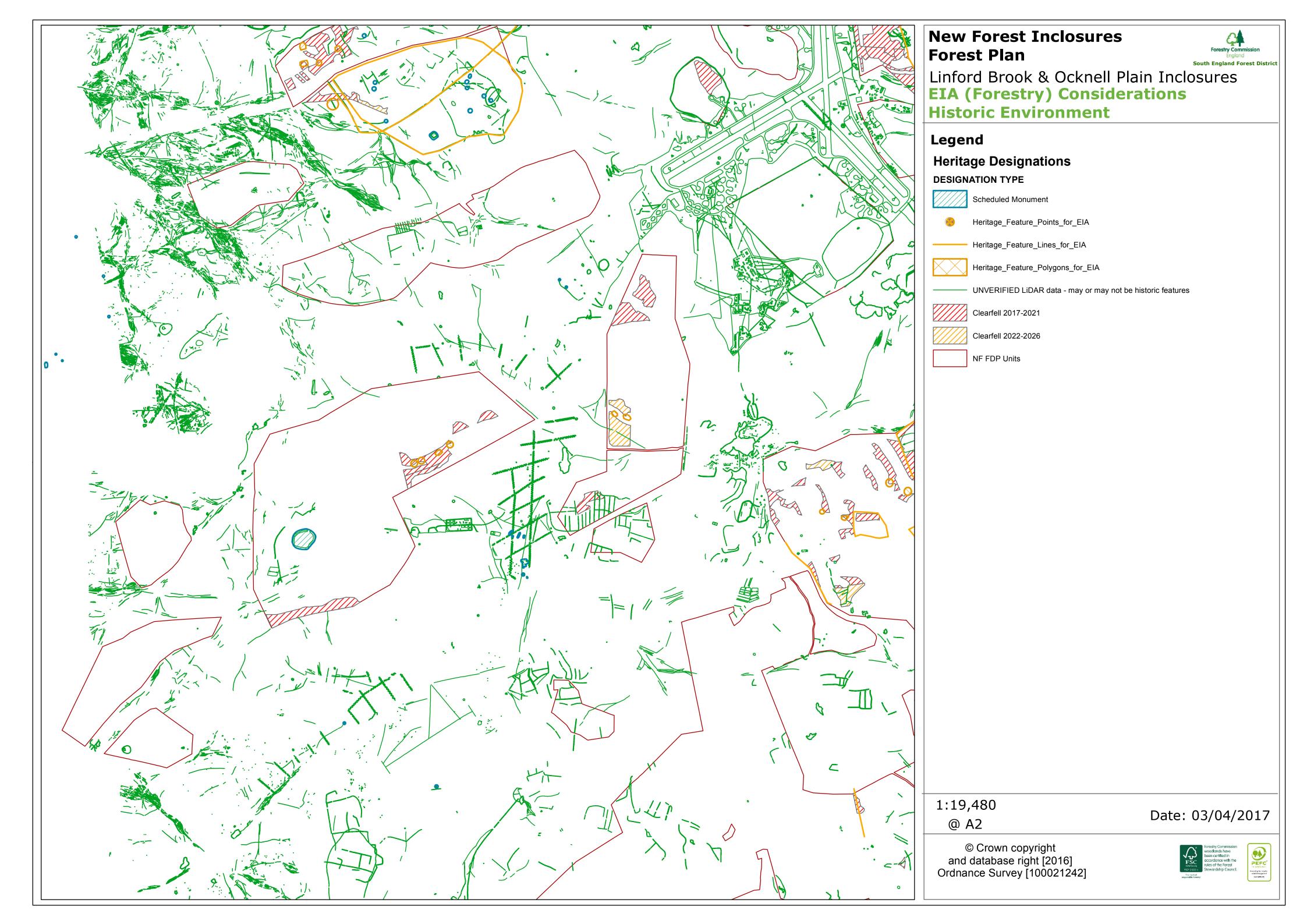
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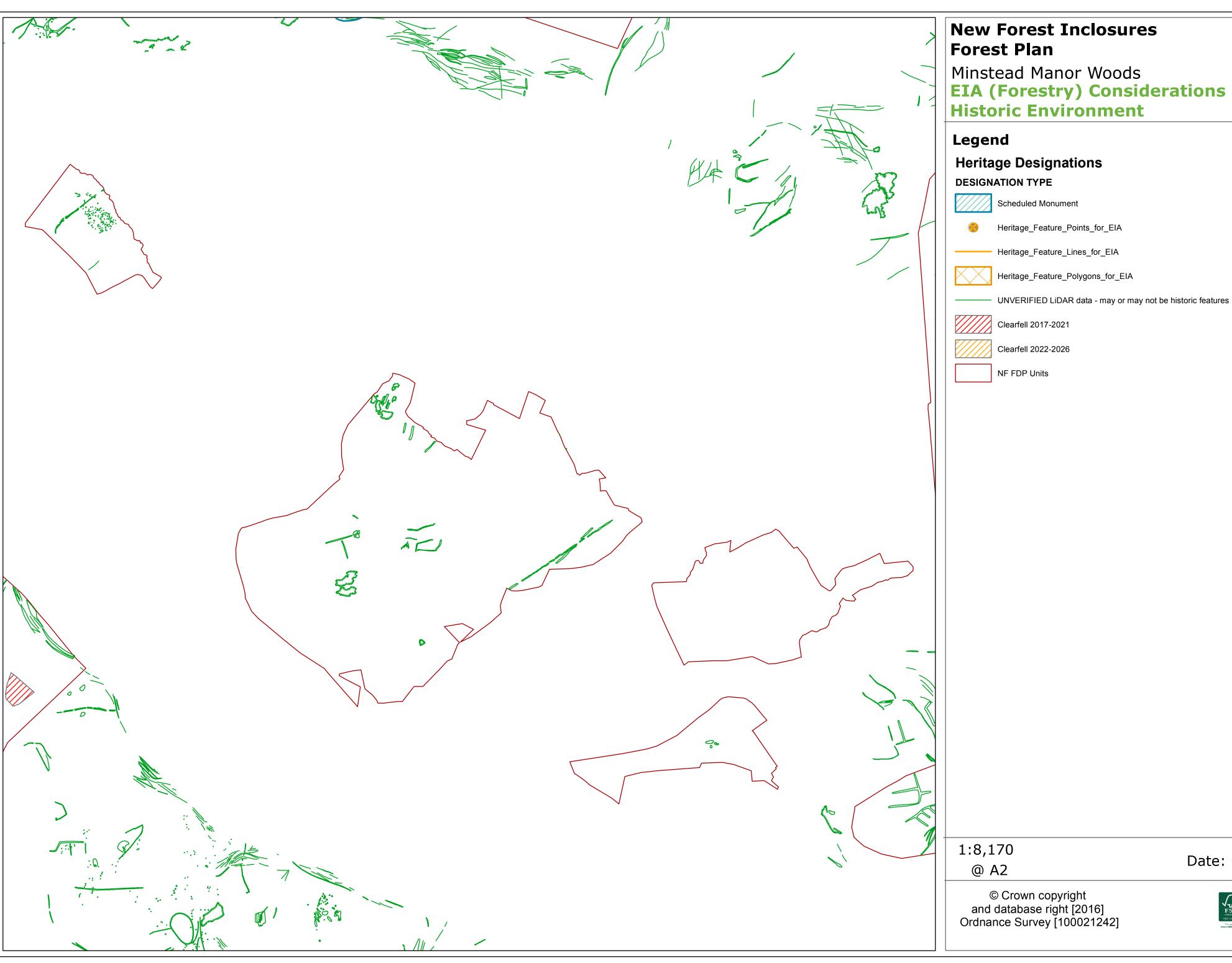














Minstead Manor Woods **EIA (Forestry) Considerations Historic Environment**

Heritage Designations

DESIGNATION TYPE



Scheduled Monument



Heritage_Feature_Points_for_EIA



Heritage_Feature_Lines_for_EIA

Heritage_Feature_Polygons_for_EIA



Clearfell 2017-2021

Clearfell 2022-2026

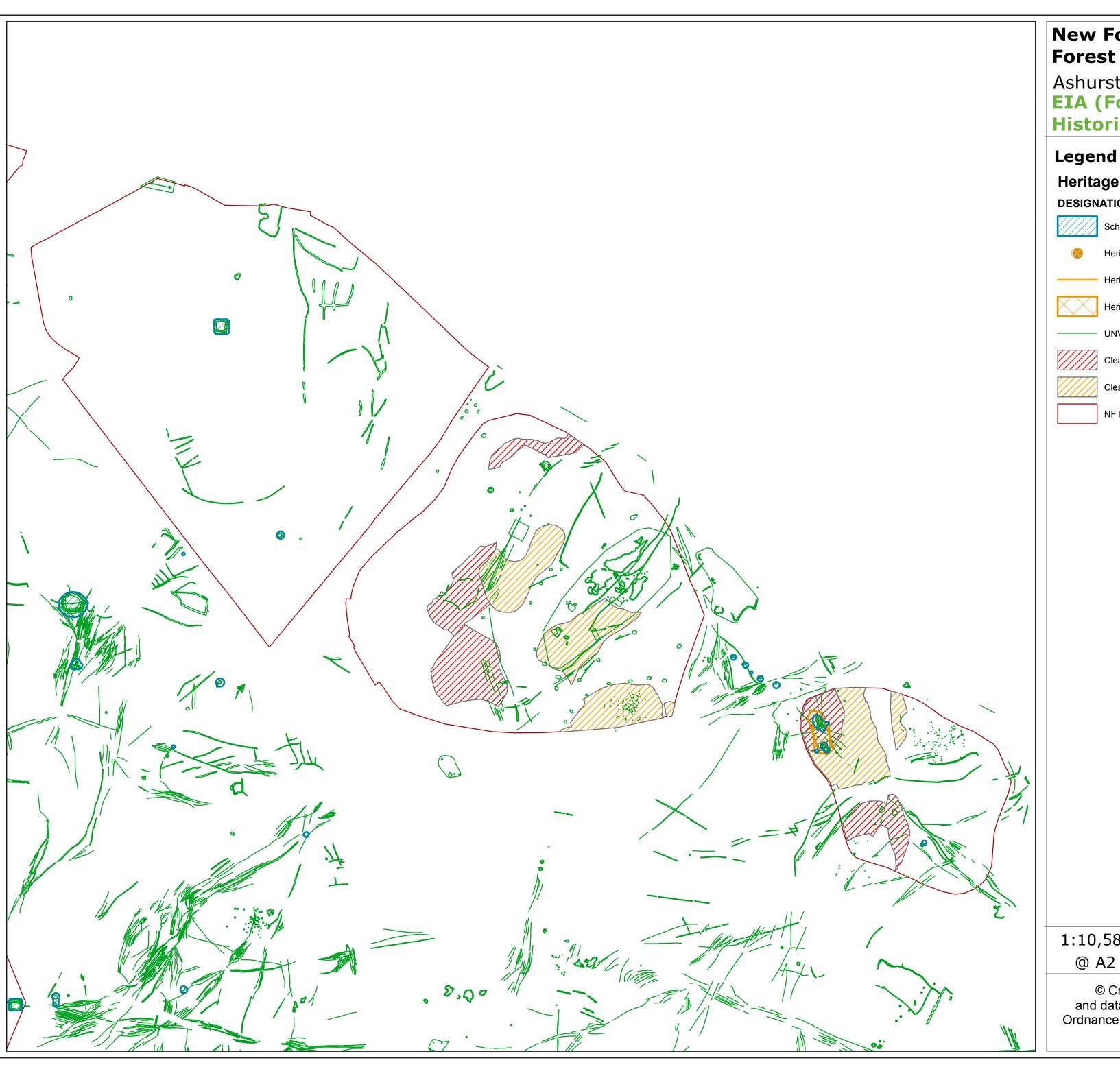
NF FDP Units

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Ashurst Walk Inclosuresc **EIA (Forestry) Considerations Historic Environment**

Legend

Heritage Designations

DESIGNATION TYPE



Scheduled Monument



Heritage_Feature_Points_for_EIA



Heritage_Feature_Lines_for_EIA



Heritage_Feature_Polygons_for_EIA



UNVERIFIED LiDAR data - may or may not be historic features



Clearfell 2017-2021



Clearfell 2022-2026



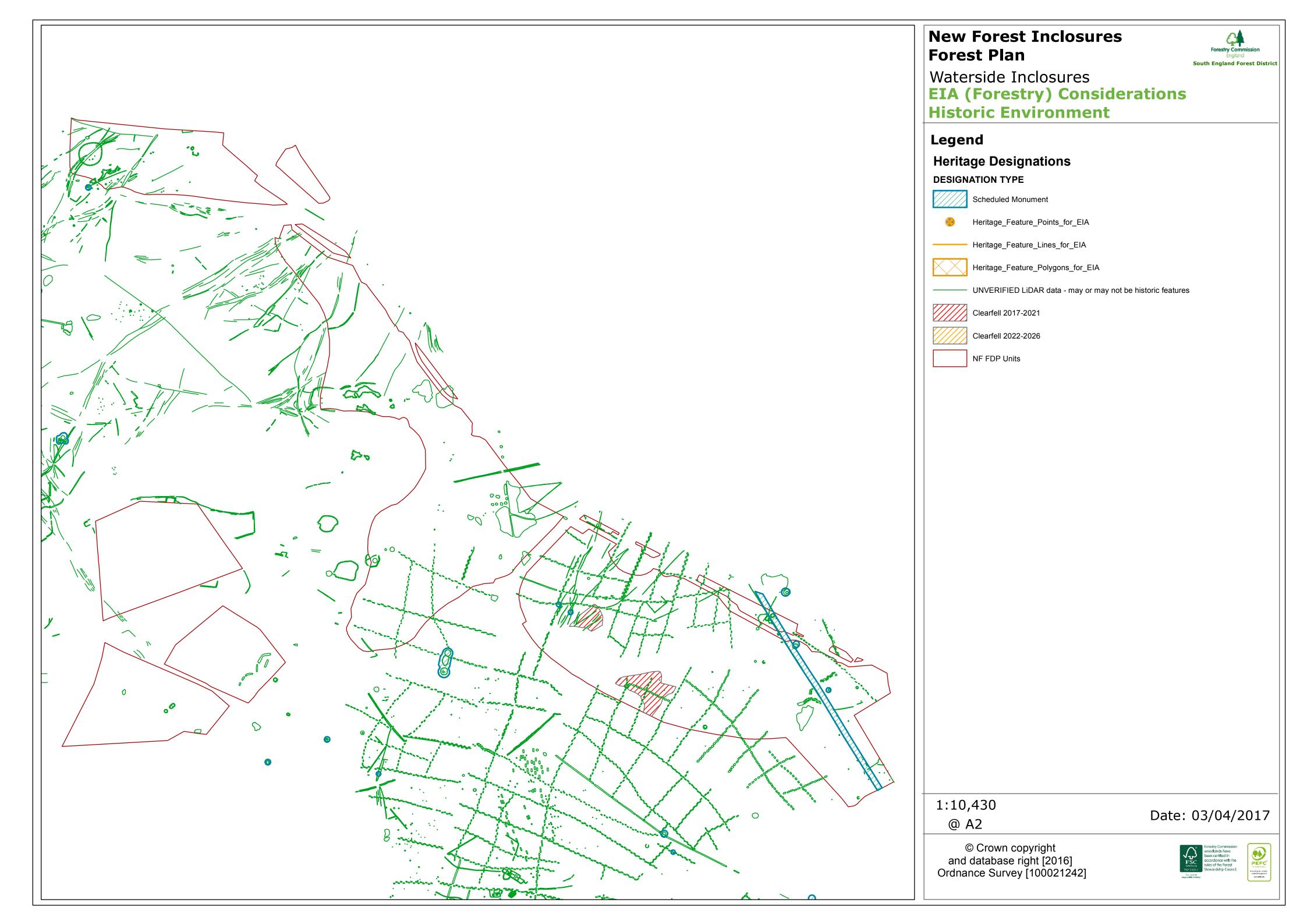
NF FDP Units

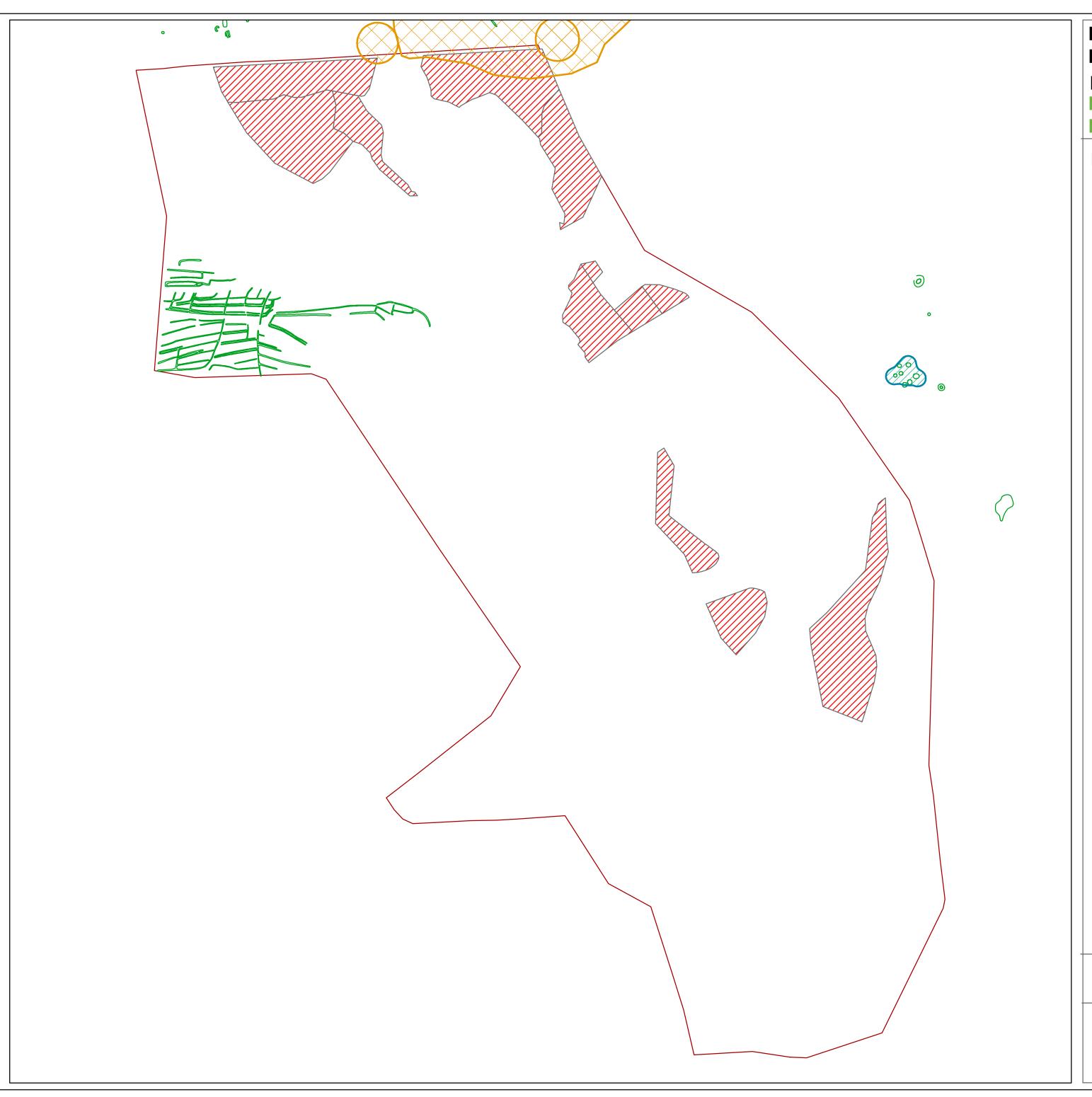
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Kings Copse **EIA (Forestry) Considerations Historic Environment**

Legend

Heritage Designations

DESIGNATION TYPE



Scheduled Monument



Heritage_Feature_Points_for_EIA



Heritage_Feature_Lines_for_EIA



Heritage_Feature_Polygons_for_EIA



UNVERIFIED LiDAR data - may or may not be historic features



Clearfell 2017-2021



Clearfell 2022-2026

NF FDP Units

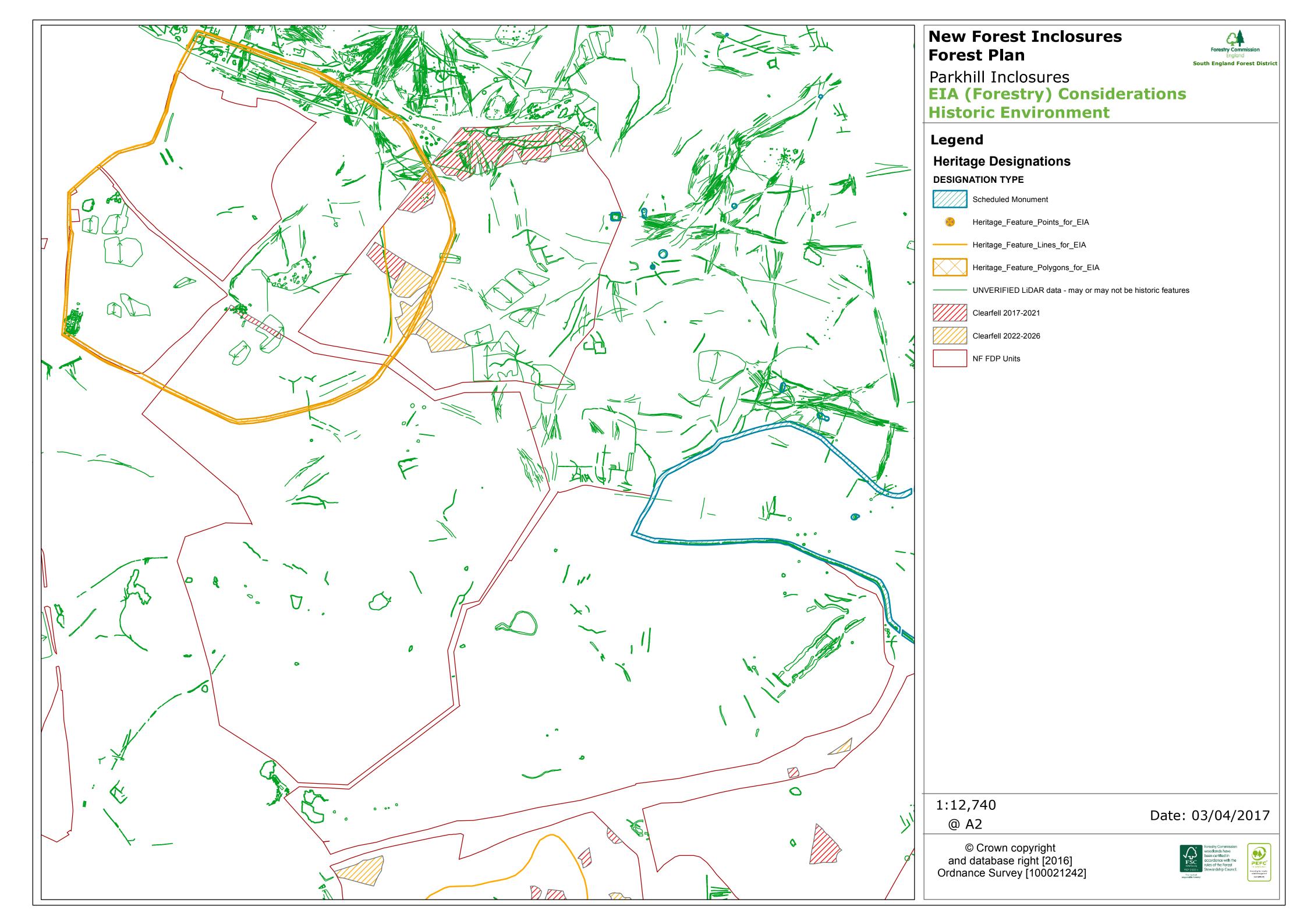
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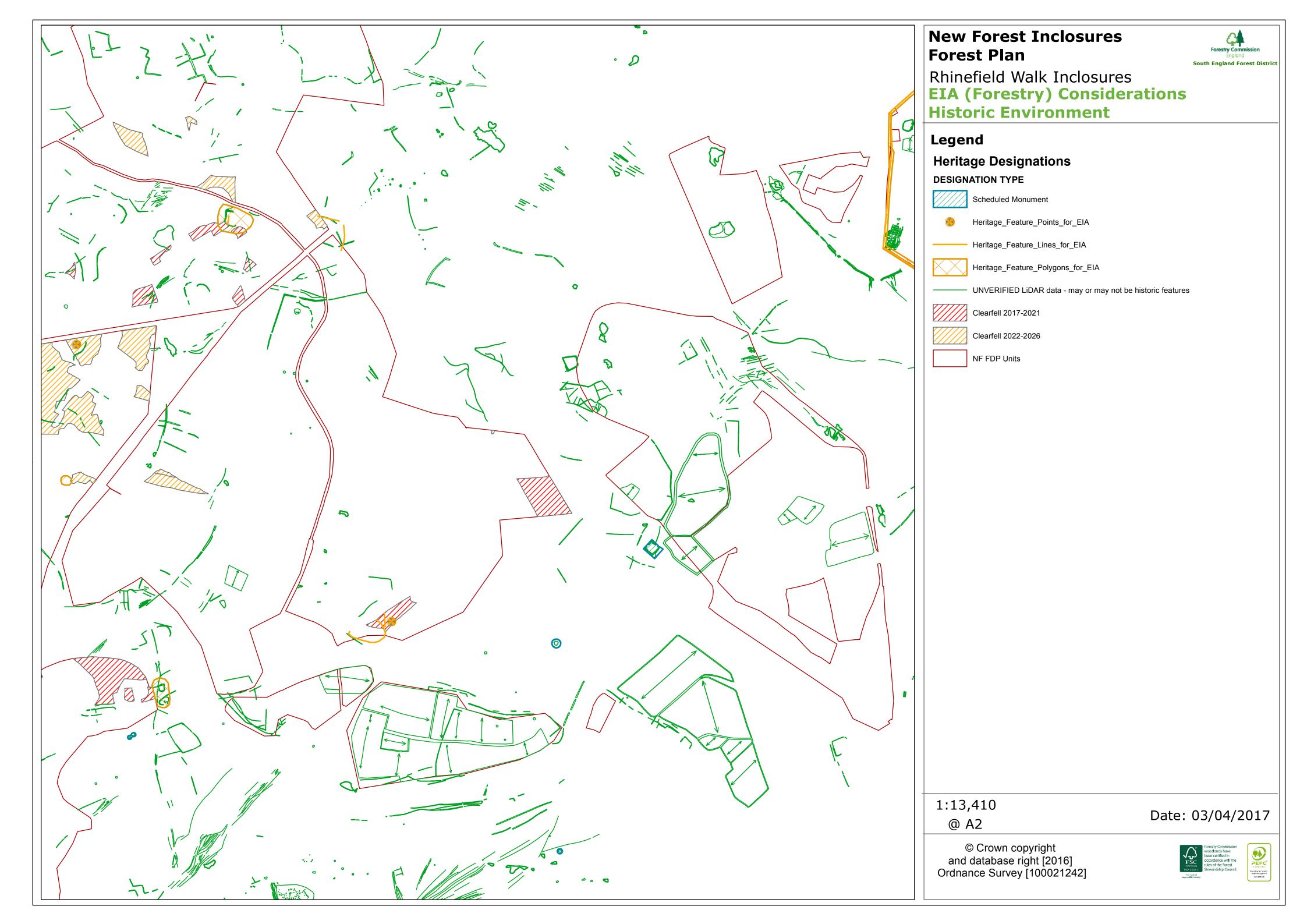
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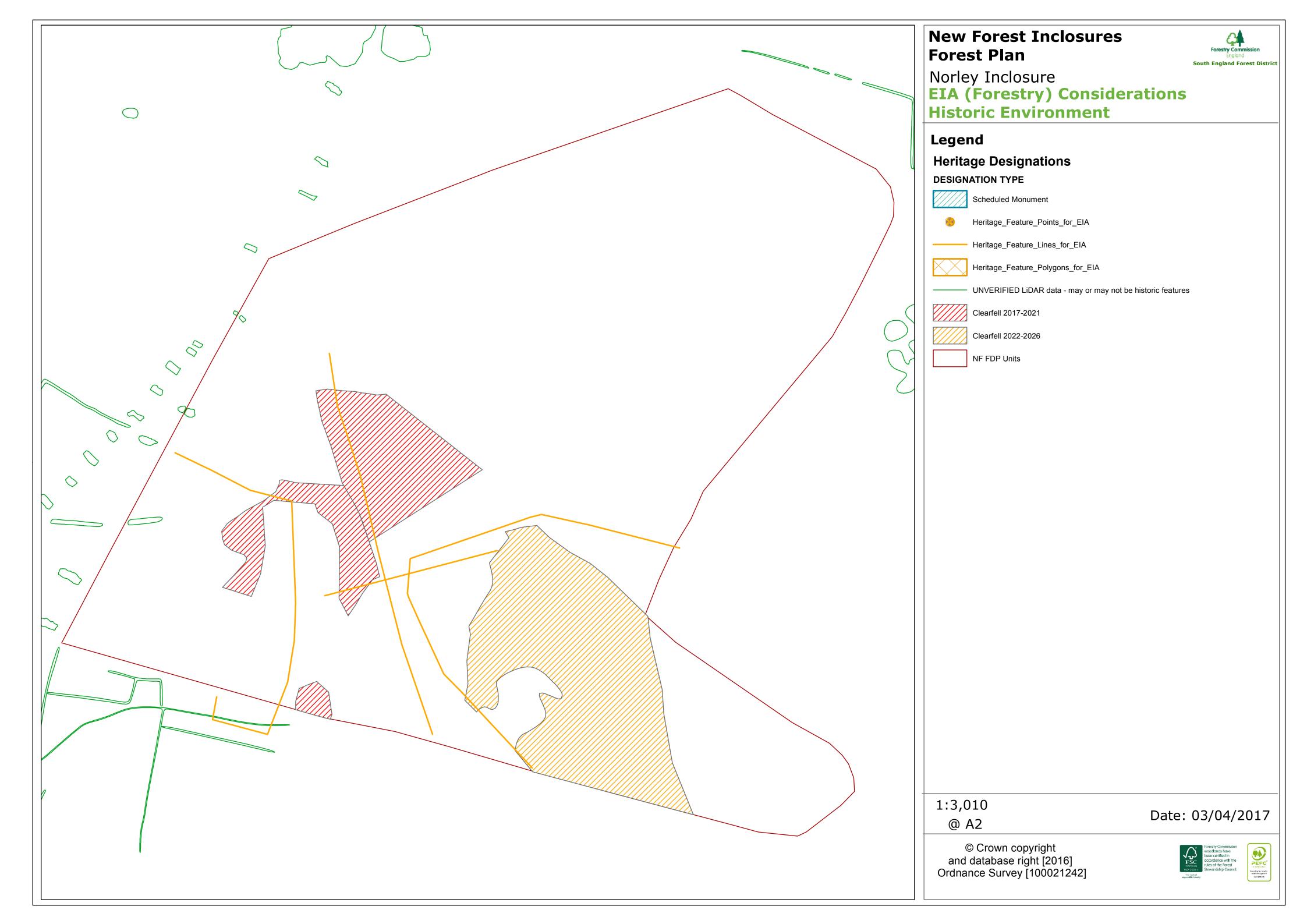
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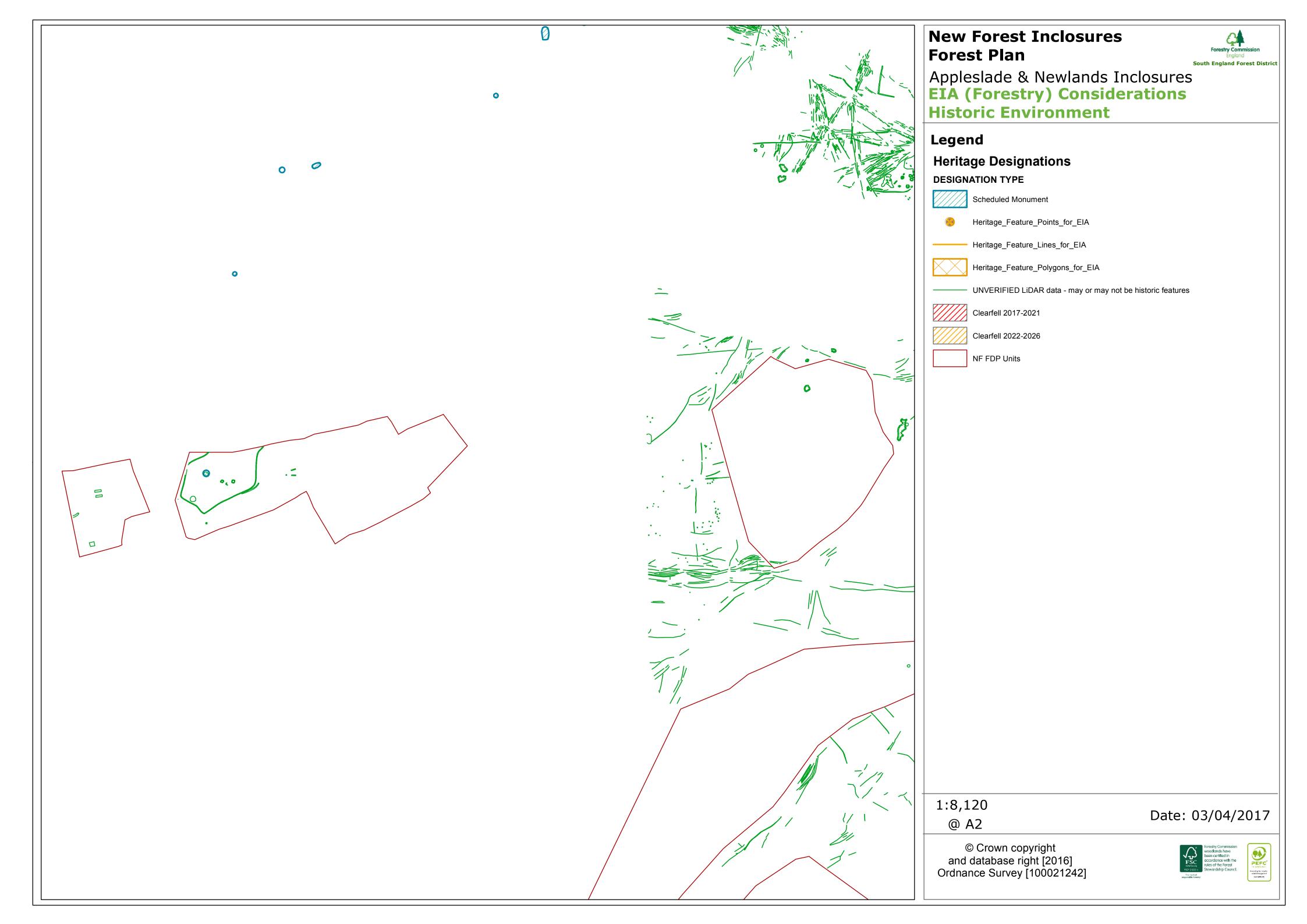


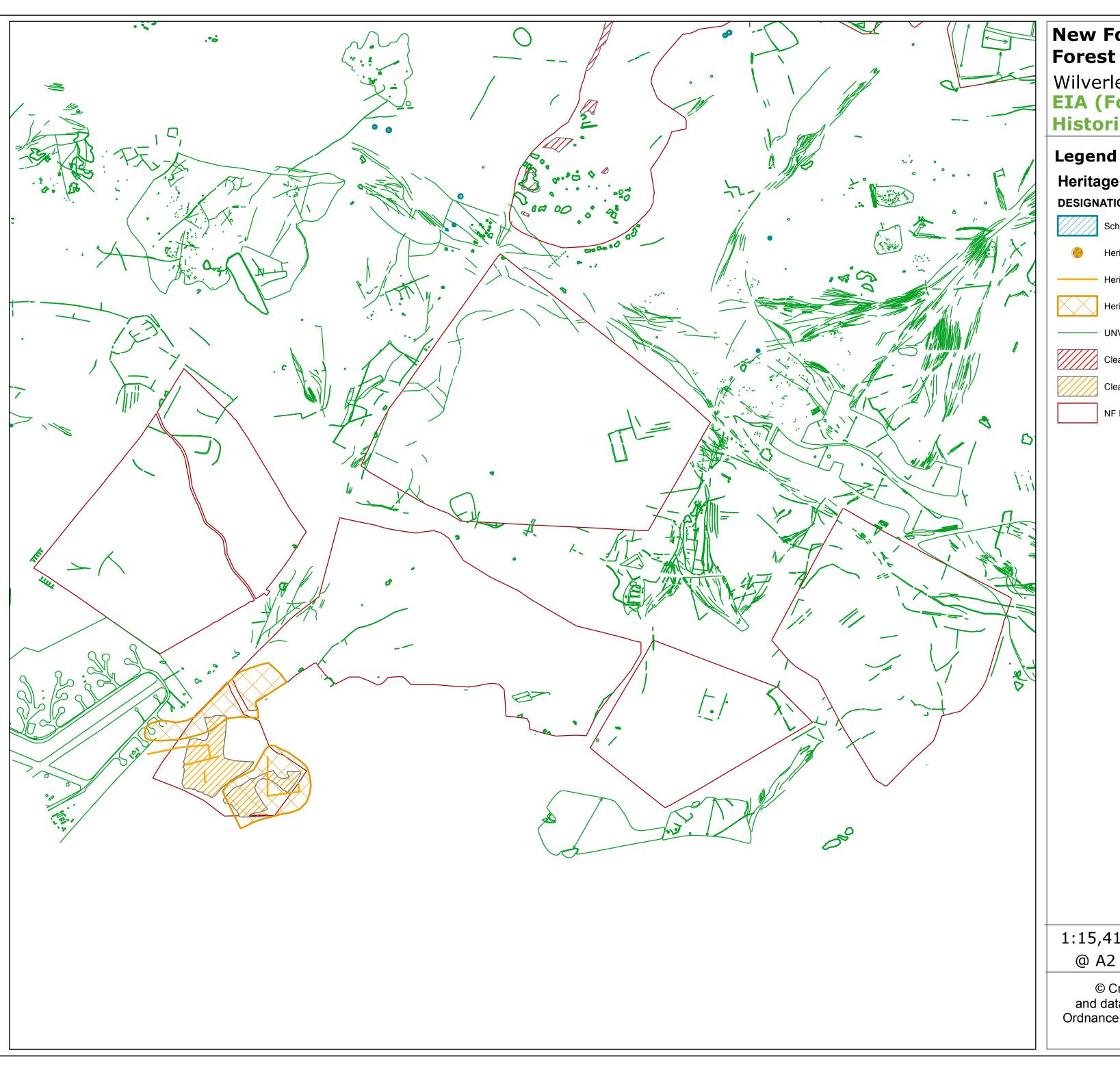














Wilverley Walk Inclosures EIA (Forestry) Considerations **Historic Environment**

Legend

Heritage Designations

DESIGNATION TYPE



Scheduled Monument



Heritage_Feature_Points_for_EIA



Heritage_Feature_Lines_for_EIA



Heritage_Feature_Polygons_for_EIA



UNVERIFIED LiDAR data - may or may not be historic features



Clearfell 2017-2021



Clearfell 2022-2026



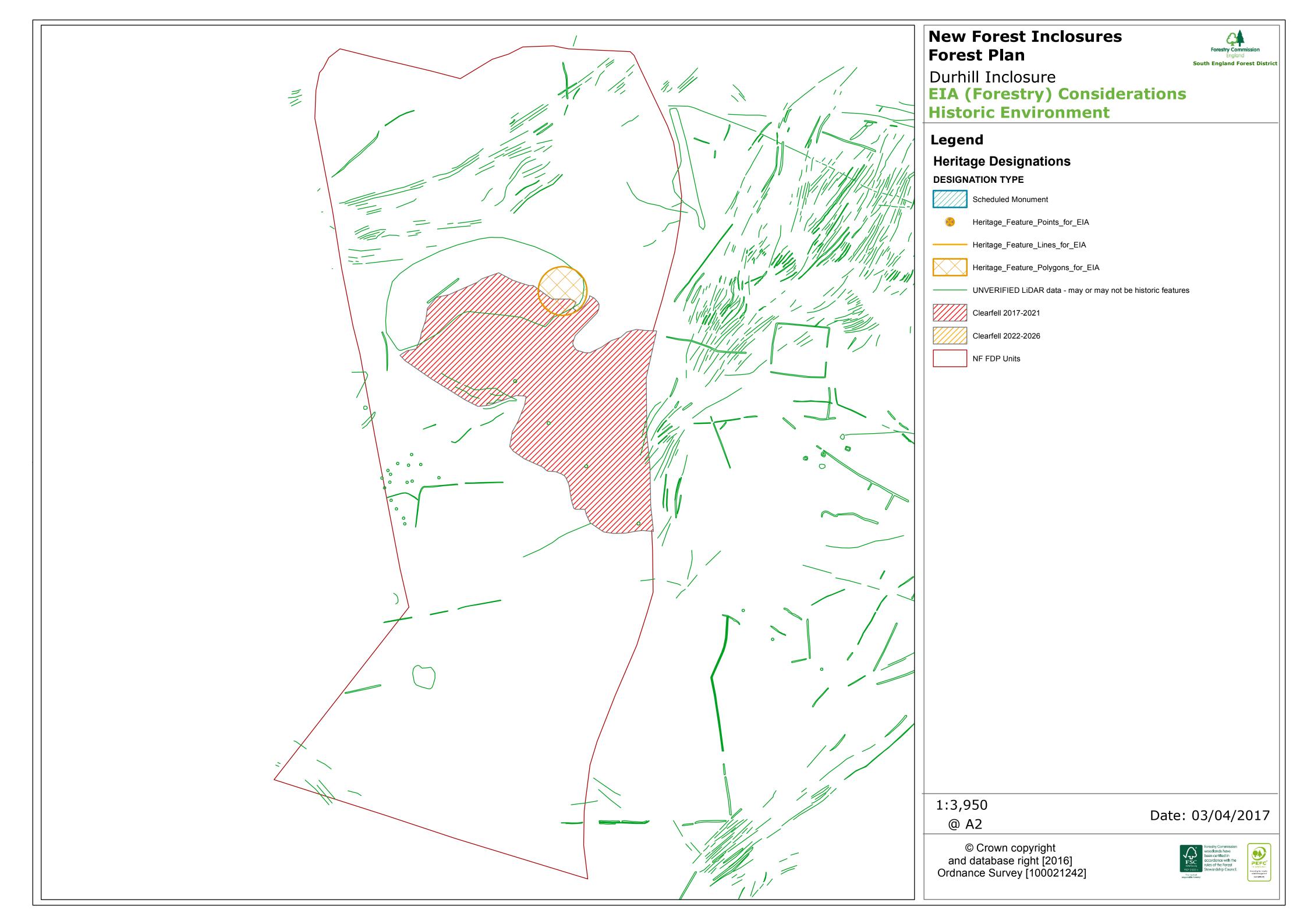
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EIA (Forestry) Considerations





