Chapter 5: Natural Capital Baseline Assessment - landscape character

Baseline landscape character

This chapter comprises a natural capital baseline assessment which includes comment on baseline landscape character. The baseline landscape character details:

- The key characteristics of Derbyshire's landscape
- The landscape character attributes
- Land management actions to maintain and enhance landscape character

It provides an objective account and high-level review of possible management actions from a landscape perspective with all information extracted from existing written published data and publicly available spatial datasets.

The key characteristics of Derbyshire's landscape

The baseline landscape character starts at the national level and includes consideration of existing published assessments such as the National Character Area (NCA) profiles prepared by Natural England. The NCA's identify ecosystem services within each broad character area.

The Landscape Character Baseline assessment reviewed the five major NCAs within the county (highlighted bold below) and a further five NCAs that make a significant contribution to the landscape of the county. The following NCAs have been included within the Landscape Character Baseline Figure 59:

- NCA 30: Southern Magnesian Limestone;
- NCA 38: Nottinghamshire, Derbyshire and Yorkshire Coalfield;
- NCA 50: Derbyshire Peak Fringe & Lower Derwent;
- NCA 51: Dark Peak;
- NCA 52: White Peak;
- NCA 68: Needwood and South Derbyshire Claylands;
- NCA 69: Trent Valley Washlands;
- NCA 70: Melbourne Parklands;
- NCA 71: Leicestershire & South Derbyshire Coalfield; and
- NCA 72: Mease/ Sence Lowlands.

The findings of the NCA mapping have been compared with existing local character assessments prepared by both DCC[24] and the Peak District National Park

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[24] The Landscape Character of Derbyshire, 2014

(PDNP)[25]. Each LCT within the 10 NCA's has also been reviewed to give a finer grain of detail to this document.
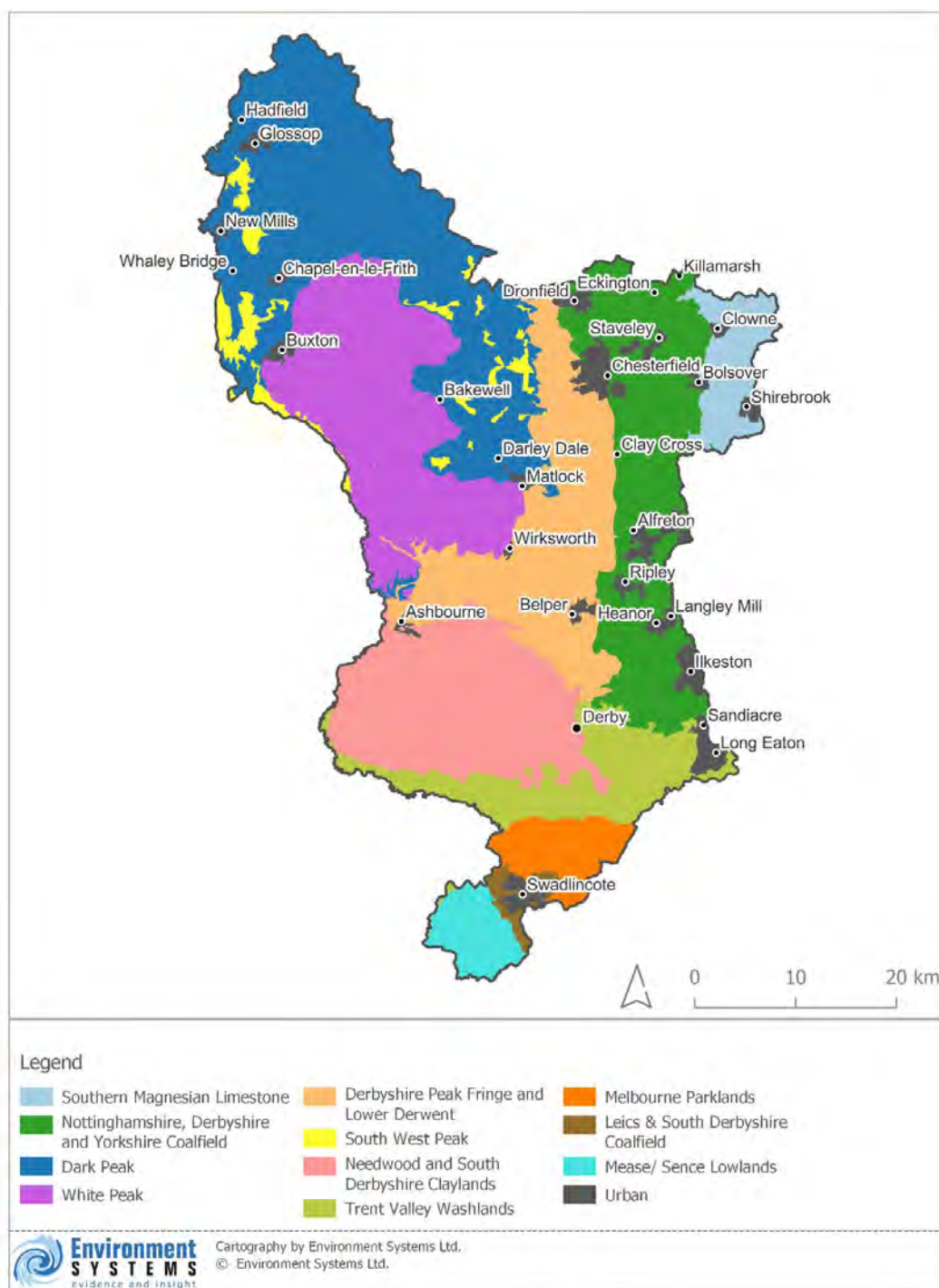

Figure 59: Natural England's National Character Areas in Derbyshire, with interpretation of boundaries across the Derby City urban area

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[25] The Landscape Strategy and Action Plan for the Peak District National Park, 2009

The key characteristics of each NCA are described in Appendix 8. An example for NCA 30: Southern Magnesian Limestone follows:

- Underlying limestone creates an elevated ridge with smoothly rolling landform; river valleys cut through the ridge, in places following dramatic gorges. There are also some dry valleys.
- Fertile, intensively farmed arable land, with large fields bounded by clipped hawthorn hedges, creating a generally large-scale, open landscape.
- Semi-natural habitats, strongly associated with underlying limestone geology, include lowland calcareous grassland and limestone scrub on the free draining upland and gorges with wetland habitats associated with localised springs and watercourses, but all tend to be small and fragmented.
- Large number of abbeys, country houses and estates with designed gardens and parklands, woodlands, plantations and game coverts.
- Long views over lowlands to the east and west, and most prominent in the south;
- Woodlands combining with open arable land to create a wooded farmland landscape in places, where traditionally coppiced woodlands support dormouse populations.
- Unifying influence of creamy white Magnesian Limestone used as a building material and often combined with red pantile roofing.
- Localised industrial influences, especially in the Aire and Don valleys, and in the south and along the fringe of the Coal Measures to the west, with former mines and spoil heaps (many now restored), power lines, settlements, industry and transport routes. Bramham Park is one of a number of large country houses that have designed gardens and parklands.
- Influenced by the transport corridor of the A1 which is apparent in an otherwise undisturbed rural countryside.
- Archaeological evidence, with some notable prehistoric sites, reflects the longstanding importance of the area for occupation and transport.
- A comparison of the NCA profiles has been made with existing and more detailed local character assessments prepared by:
- Derbyshire County Council: The Landscape Character of Derbyshire (2014); and,
- The Peak District National Park: The Landscape Strategy and Action Plan for the Peak District National Park (2009).
- Consideration of these additional character assessments allowed a more detailed and Derbyshire-specific assessment to be carried out.
- Each NCA comprises landscape character types (LCT) as shown Figure 60 and Figure 61, and these have also been reviewed using the more detailed local character assessments to provide more contextual detail.

Legend

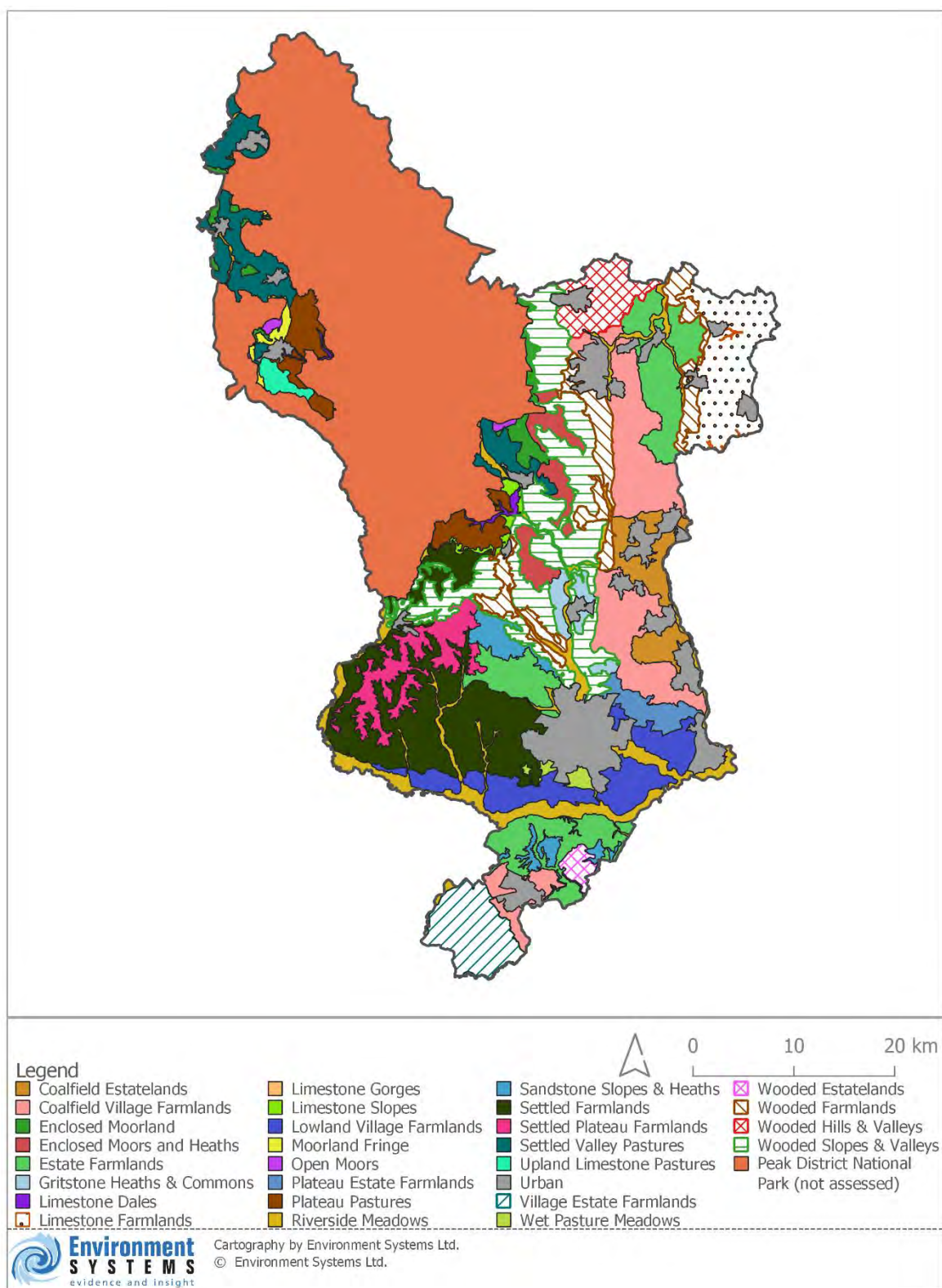|			
Coalfield Estatelands	Limestone Gorges	Sandstone Slopes & Heaths	Wooded Estatelands
Coalfield Village Farmlands	Limestone Slopes	Settled Farmlands	Wooded Farmlands
Enclosed Moorland	Lowland Village Farmlands	Settled Plateau Farmlands	Wooded Hills & Valleys
Enclosed Moors and Heaths	Moorland Fringe	Settled Valley Pastures	Wooded Slopes & Valleys
Estate Farmlands	Open Moors	Upland Limestone Pastures	Peak District National
Gritstone Heaths & Commons	Plateau Estate Farmlands	Urban	Park (not assessed)
Limestone Dales	Plateau Pastures	Village Estate Farmlands	
Limestone Farmlands	Riverside Meadows	Wet Pasture Meadows	

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Figure 60: Landscape Character Types within Derbyshire (outside of PDNP, including an interpretation of NCA boundaries within Derby City

Legend

■ Densely enclosed gritstone upland	■ Limestone village farmlands	■ Upland pastures
■ Enclosed gritstone upland	■ Moorland hills & ridges	■ Upper valley pastures
■ Estatelands	■ Moorland slopes & cloughs	■ Urban
■ Gritstone village farmlands	■ Open moors	■ Valley farmlands with villages
■ Limestone dales	■ Reservoir valleys with woodland	■ Valley pastures with industry
■ Limestone hills & slopes	■ Riverside meadows	■ Village farmlands on shale ridges
■ Limestone plateau pastures	■ Slopes & valleys with woodland	

0   10   20 km

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Cartography by Environment Systems Ltd.
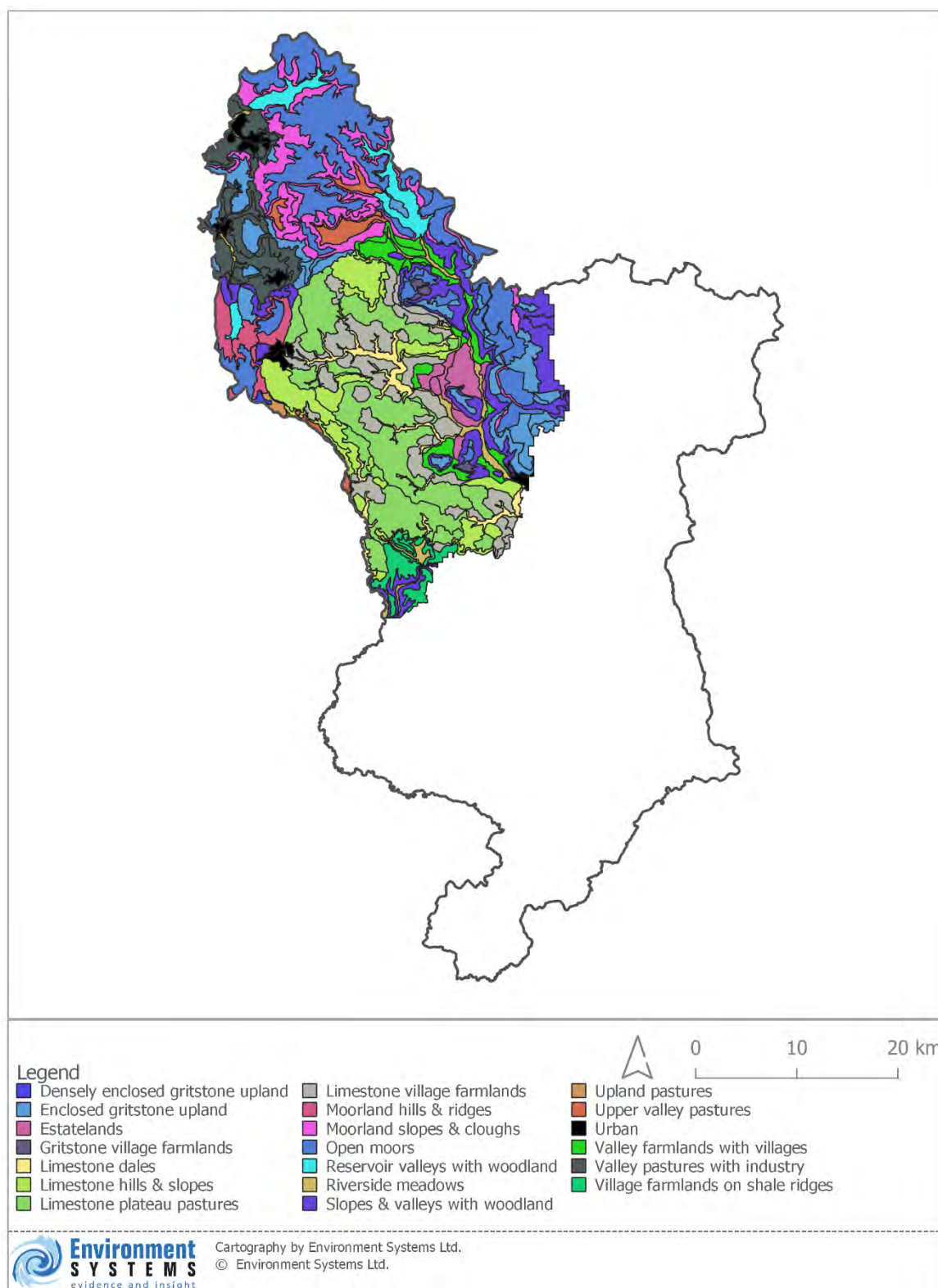© Environment Systems Ltd.

Figure 61: Landscape Character Types in Peak District National Park

An example for the LCT Limestone farmlands within NCA 30: Southern Magnesian Limestone follows:

A gently rolling, agricultural landscape, characterised by large scale open farmland, estate woodlands and limestone villages.

Key Characteristics:
- Gently rolling limestone plateau
- Fertile soils supporting productive arable farmland
- Large and medium estate woodlands
- Amenity trees around small rural villages and isolated farmsteads
- Large regular fields bounded by hedgerows
- Straight roads with uniform width verges
- Nucleated settlement pattern
- Historic buildings constructed of limestone with red clay pantile roofs
- Panoramic views across lowland to the west
- Long distance views over plateau often ending in a wooded skyline

Distinctive Local Characteristics:
- Long distance views are characteristic, due to the gentle relief, lack of hedgerow trees and large arable fields;
- Large and medium estate woodlands including areas of ancient woodland; and Hardwick Hall and Bolsover Castle.

The landscape character attributes

The distinctive elements and features of each LCT have been identified and listed for each LCT (Appendix 8).

Limestone Farmlands	
Land Use	Arable
Main Habitat Type	Farmland
Other Habitat Type	Woodland
Woodland Character	Occasional large plantations
Woodland Vision	Occasional large plantations
Woodland Type	Ash, oak, elm with hazel
Hedgerow Trees	Insignificant
Watercourse	None
Amenity Trees	Localised around settlement
Boundary Type	Thorn hedgerows
Settlement Character	Villages and sparsely scattered farmsteads
Traditional Materials	Limestone with red clay pantile roof
Cultural Interests	Hardwick Hall, Bolsover Castle, Green Lanes

Using landscape character to inform decision making

The distinctive elements and features of each LCT have been identified and appropriate land management actions for future habitat conservation, enhancement, or creation were identified for eight broad habitat types (Grassland; Woodland and forest; Heathland and shrub; Wetland; Sparsely vegetated land; Urban; Cropland; Rivers and lakes) within each LCT-NCA region.

Maps have been produced which identify areas where each broad habitat is of high interest for conservation, restoration or creation, divided into three levels of significance:

- Principal Habitat – habitat is a prominent and key characteristic of the area

- Secondary Habitat – habitat is a variable and local characteristic of the area

- Locally Significant – habitat is unusual, often a minor characteristic of the area

For the purpose of mapping, an interpretation of NCA/LCT boundaries within the 'urban' region of Derby City was provided by Derbyshire County Council, in order to carry out a case study of applying landscap character-based recommendations to an urban area.

The unofficial interpretative dataset of LCT boundaries within Derby City has been incorporated into the analysis in order to provide context for the City of Derby urban area within this baseline study. However, no analysis of this data has been carried out in relation to the setting of management actions, although it can be inferred that they would be similar to the wider LCT as documented in the baseline study.

Combining the PDNP LCTs with wider Derbyshire LCTs creates a total of 47 unique LCTs within Derbyshire. The LCTs for Derbyshire (excluding PDNP) are illustrated in Figure 60, while the LCTs for PDNP are shown in Figure 61.

Using the management action recommendations in the baseline landscape character assessment, with modifications applied in consultation with Derbyshire County Council and PDNPA, each broad habitat type was assigned a principal habitat priority classification (principal, secondary, or locally significant habitat as defined above), for each LCT.

A greater level of detail was applied to the characterisation of the favoured Heathland & shrub habitat type in many LCT regions, and also for some Wetland areas, In order to improve the targeting of management actions for these broad habitat types. In these cases the following sub-categories were assoigned to the principal habitat priority class, identifying the preferred habitat sub-type in the region; heather/moorland, thorn-dominated scrub, or hedgerows. The resulting maps are shown in Figure 62-Figure 69.

Where LCT regions are not shown to have a particular habitat as a principal habitat priority, it means that the region either does not contain notable examples of the specified habitat type, or expanding the habitat type is not a priority because this would be detrimental to the landscape character. Alternatively, it could be because it would be preferable to invest in expanding and restoring the habitat type in other LCTs.

The habitat priorities for each LCT have been defined by recent work undertaken by Derbyshire County Council; this includes an interpretation of the NCA/ LCT boundaries **within the Derby City 'urban' NCA region, based on local landscape and geological** characteristics, in order to allow habitat priorities and management recommendations to be mapped within this urban area, as a case study. Due to the unofficial nature of the NCA/LCT boundaries applied to the Derby City region, these areas are shown as partially transparent within the maps.

Other urban areas have not been included in the analysis of priority land management actions, due to the unavaiability of boundary data defining the different LCTs within these zones; however, should such data become available in the future the same methodology could be applied.

A large-scale map of Grassland habitat principal habitat priority areas within the Derby City area is shown in Figure 70. A full suite of large-scale maps of habitat priorities for Derby City can be found in Appendix 10.

A detailed breakdown of the habitat-specific land management priorities for each LCT is shown in Figure 71-Figure 75; these management actions have been drawn from the Baseline Landscape Character Assessment (Appendix 8), with amendments applied to heathland and wetland areas where sub-categorisation of the habitat had been undertaken. The habitat priorities and management actions are listed in tabular format in Appendix 9.

The proposed land management actions have been reviewed by an expert panel with local knowledge to provide additional input on appropriate management action.

Locations where grassland nature-based solutions (NBS) support the LCT are shown in Figure 71. Locations where heathland and wetland restoration / NBS support the LCT are shown in Figure 72 and Figure 73, respectively. Locations where woodland NBS support the LCT are shown in Figure 74.

A large-scale map of locations in Derby City where grassland NBS support the applied LCT boundaries is shown in

Legend

- ■ Enhance and restore unimproved pasture and neutral grassland
- ■ Enhance unimproved pasture
- ■ Enhance unimproved pasture - restore floodplain grazing marsh and lowland meadows
- ■ Urban
- ■ Rivers and lakes

Cartography by Environment Systems Ltd.
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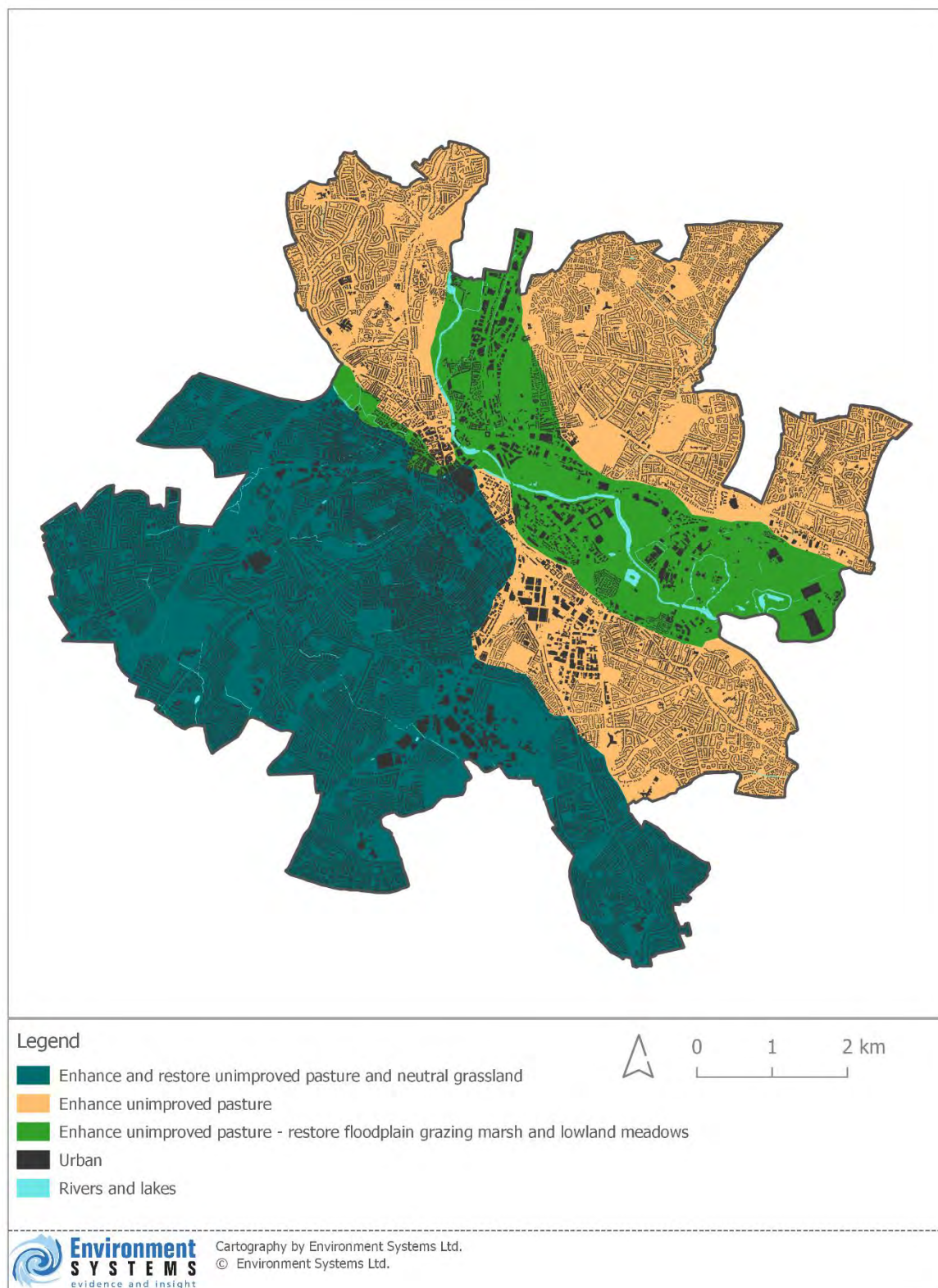Figure 76. A full suite of large-scale maps of NBS actions for Derby City is provided in Appendix 10. These maps should be viewed as a guide to be followed by more detailed investigation of site suitability prior to land management decisions being taken, due to the unique opportunities and constraints to NBS solutions within the urban environment; an analysis of which was outside the scope of this work.

Key findings: preferred habitat actions within LCT regions

- Grassland action is a priority in most LCTs in Derbyshire

- Woodland acrion is desired across most LCTs in Derbyshire, but is preferred in the east, in the Derwent valley, and in the southern tip (National Forest area) of the county.

- Heathland action is a priority in the majority of LCTs, with the exception of areas within White Peak, where the habitat is of more localised significance. It is a preferred habitat in Needwood & South Derbyshire Claylands, and Peak Fringe & Lower Derwent.

- A balance will need to be struck between heath enhancement/expansion and grassland or woodland expansion to work towards a sustainable habitat matrix.

- Restoration and enhancement of existing semi-natural grasslands, and floodplain grazing marsh, is a priority for many LCTs.

- Hedgerow planting is a priority for many LCTs, as is riparian/floodplain woodland planting, and restoration of ancient woodland sites.

- River restoration, and enhancement of the natural continuity of river corridors, is a priority in most LCTs.

- Wetlands are a priority for many LCTs, with the areas dominated by limestone geology being a notable exception. Priority actions focus on enhancing existing wet meadows and marshes, and restoration of upland and lowland bog habitats.

- Cropland priorities focus on improving the ecological value of intensive farmlands, and conserving and enhancing the mixed farm landscape where it is still present.

- The land management recommendations are a guide, and should be field-checked in prior to action being taken at the specific site level.

A future pathway for defining more targeted recommendations for Derby City (and other urban areas) should incorporate a Townscape Assessment, and consideration of management actions such as street trees, grass verge cutting regime, green roofs and walls, SuDS, and garden wilding.

Landscape character considerations influence decision-making on the prioritisation of natural capital opportunities. The rules used for modelling ecosystem service stock, risk and opportunities maps reflect this. For example:

- hedgerow planting and woodland creation is not appropriate for the White Peak and other areas in Derbyshire where the policy vision developed by Derbyshire County Council in landscape character spatial data is to maintain an open/unwooded landscape character.

- there are limited opportunities for wetland creation in some places characterised by limestone geology (e.g. the Southern Magnesian Limestone character type).

The final decisions on what types of management action should be taken where must combine the outputs of the ecosystem service opportunity mapping with the outputs of the baseline landscape character assessment; in many places it would be biophysically possible to undertake multiple habitat restoration options; for example planting riparian buffer strips of either woodland or species-rich grassland composition; the final decision on which habitat type, land use and matrix of habitats are most suitable for a particular location will be influenced by the landscape character considerations, as well as whether the area lies within a particular ecological network.
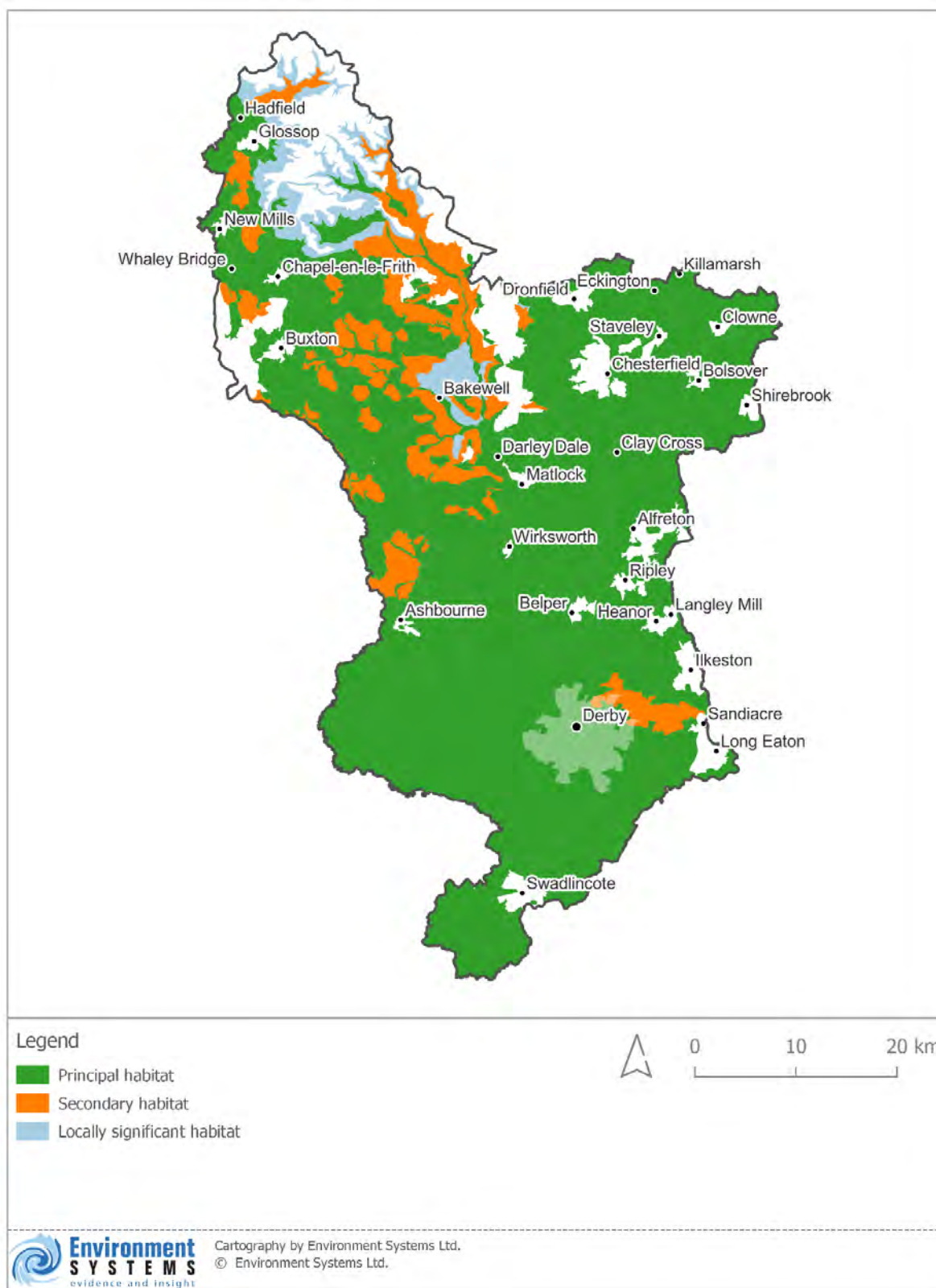
Figure 62: Landscape Character Types where the Grassland broad habitat type is a priority for conservation, restoration or habitat creation (interpreted boundary areas mapped as partially transparent)

Legend

- 🟩 Principal habitat
- 🟧 Secondary habitat
- 🟦 Locally significant habitat

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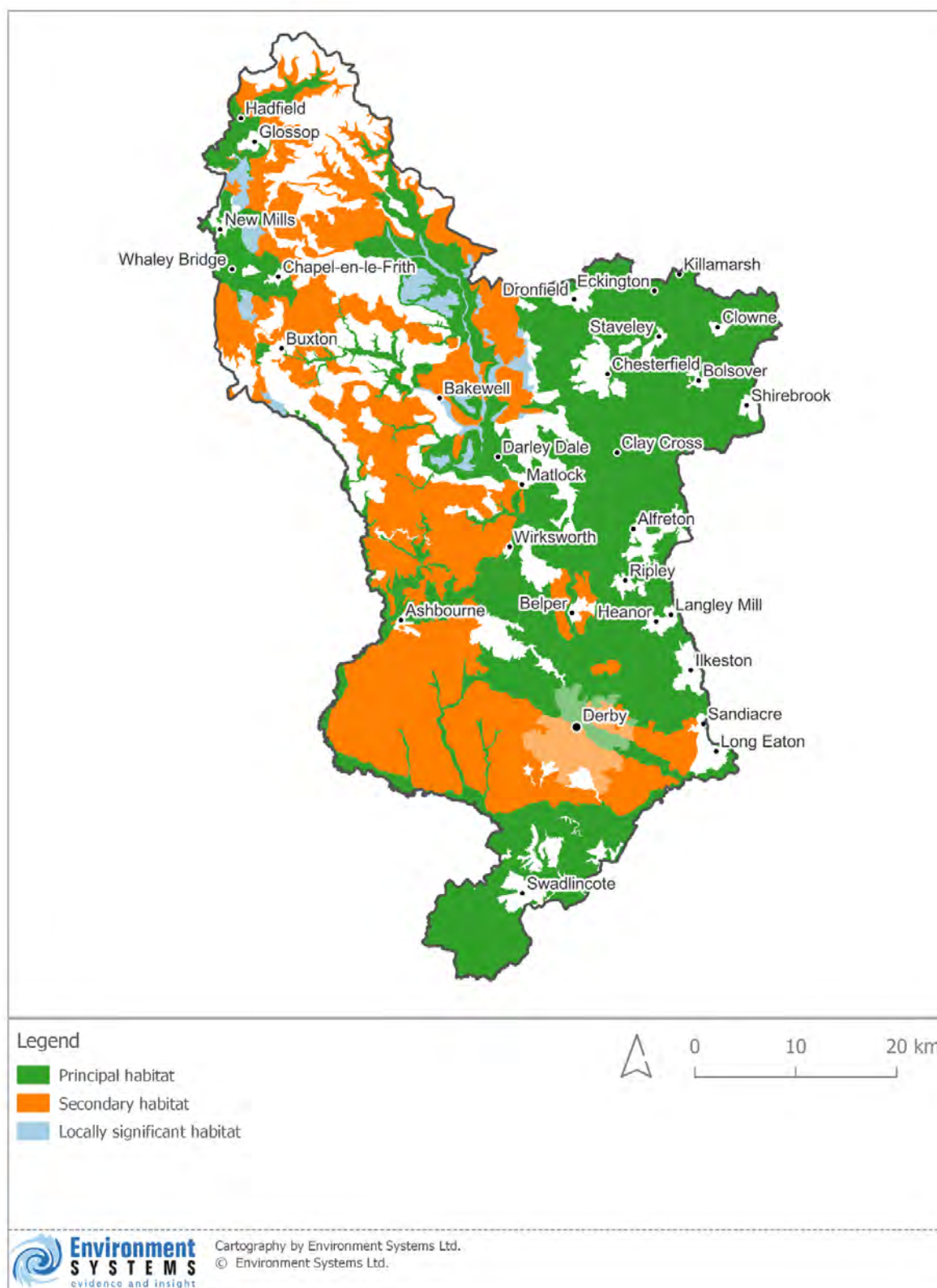
Figure 63: Landscape Character Types where the Woodland & Forest broad habitat type is a priority for conservation, restoration or habitat creation (interpreted boundary areas mapped as partially transparent)

Legend

- Principal habitat
- Principal habitat specifically relates to heather/moorland
- Principal habitat specifically relates to hedgerows
- Secondary habitat
- Secondary habitat specifically relates to heather/moorland
- Secondary habitat specifically relates to thorn-dominated scrub
- Secondary habitat specifically relates to hedgerows
- Locally significant habitat
- Locally significant habitat specifically relates to hedgerows
- Locally significant habitat specifically relates to heather/moorland

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Figure 64: Landscape Character Types where the Heathland & Shrub broad habitat type is a priority for conservation, restoration or habitat creation (interpreted boundary areas mapped as partially transparent)
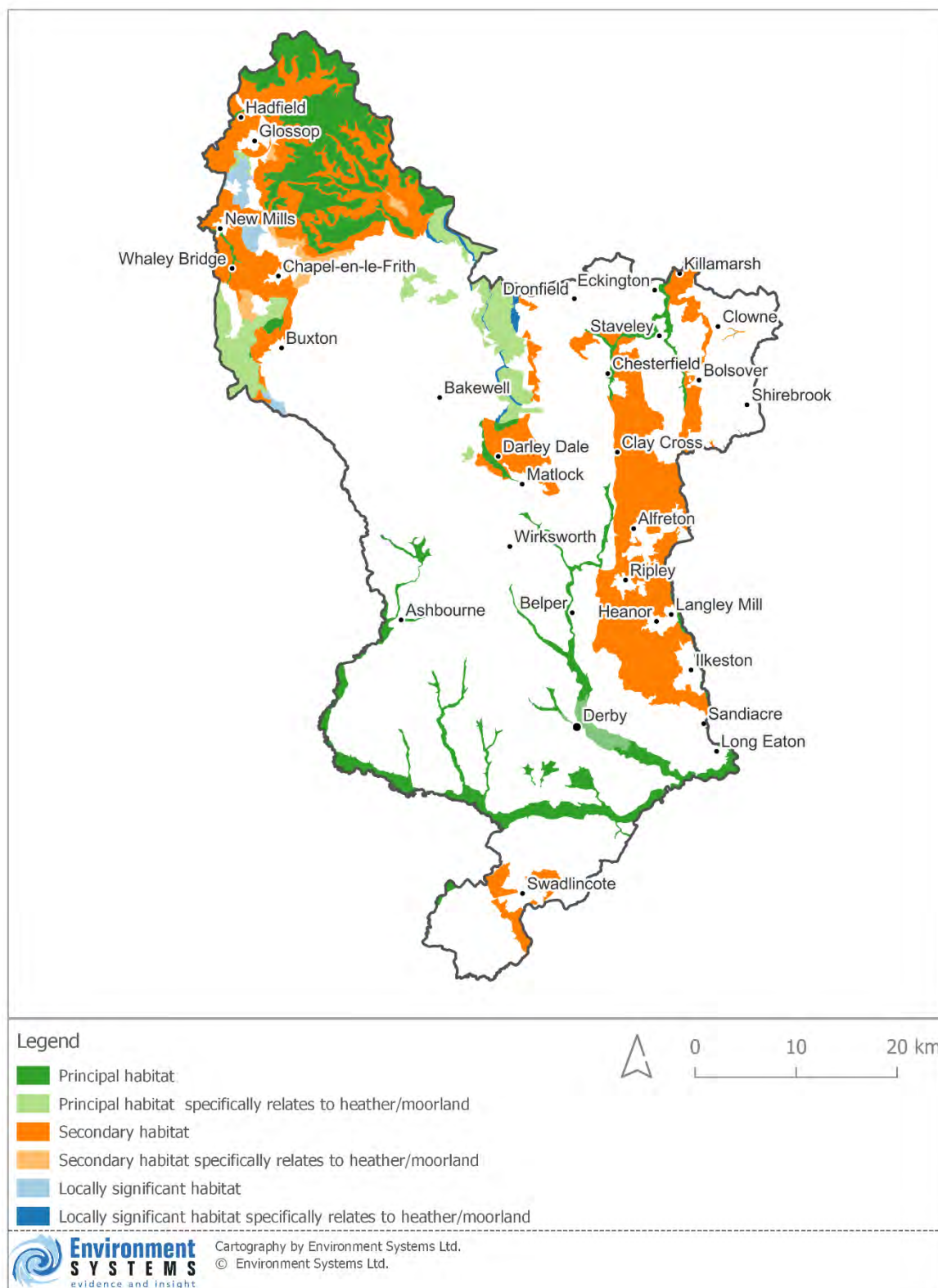
Figure 65: Landscape Character Types where the Wetland broad habitat type is a priority for conservation, restoration or habitat creation (interpreted boundary areas mapped as partially transparent)

Legend
- 🟩 Principal habitat
- 🟧 Secondary habitat
- 🟦 Locally significant habitat

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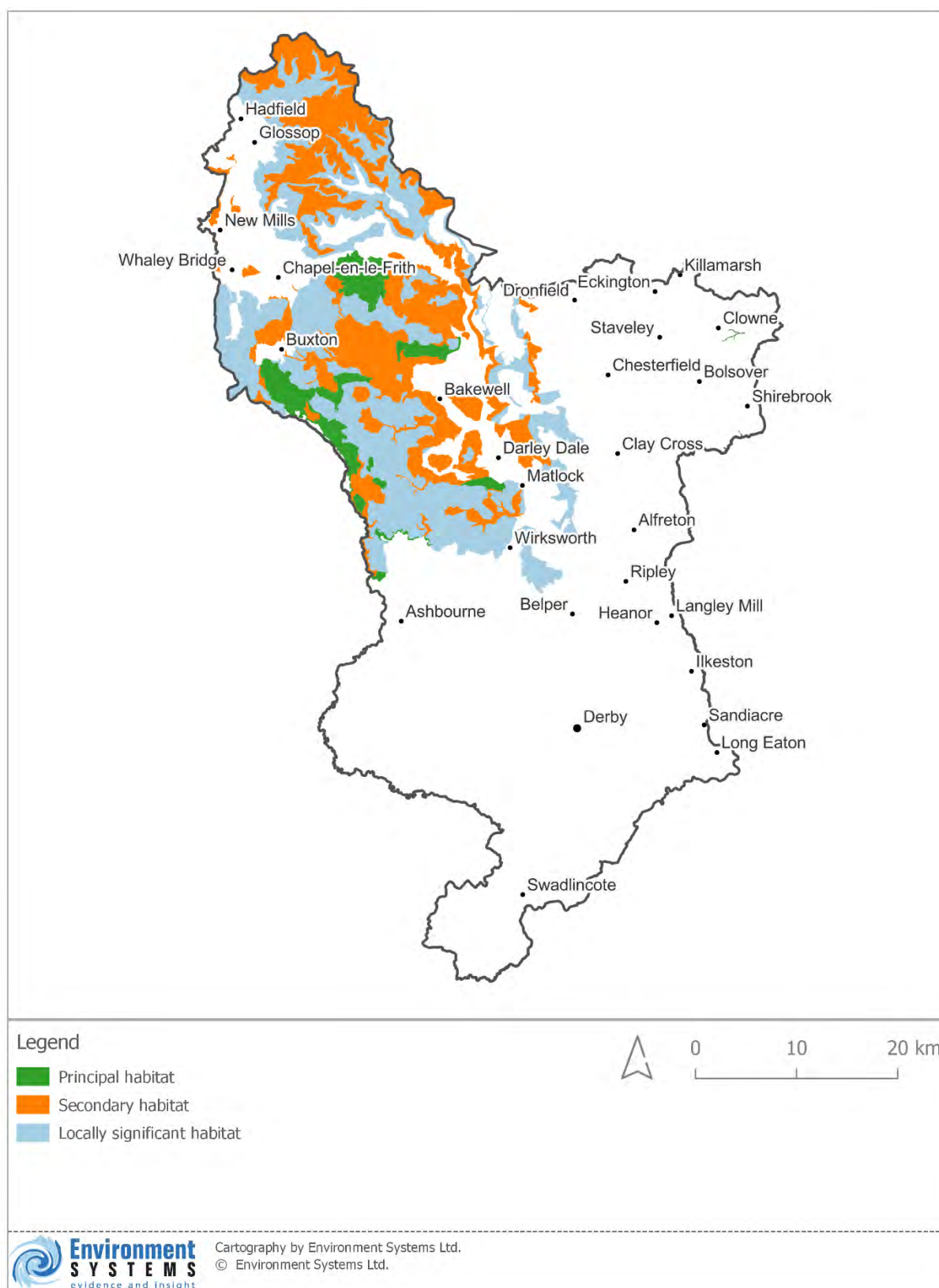
Figure 66: Landscape Character Types where the Sparsely vegetated land broad habitat type is a priority for conservation, restoration or habitat creation (interpreted boundary areas mapped as partially transparent)
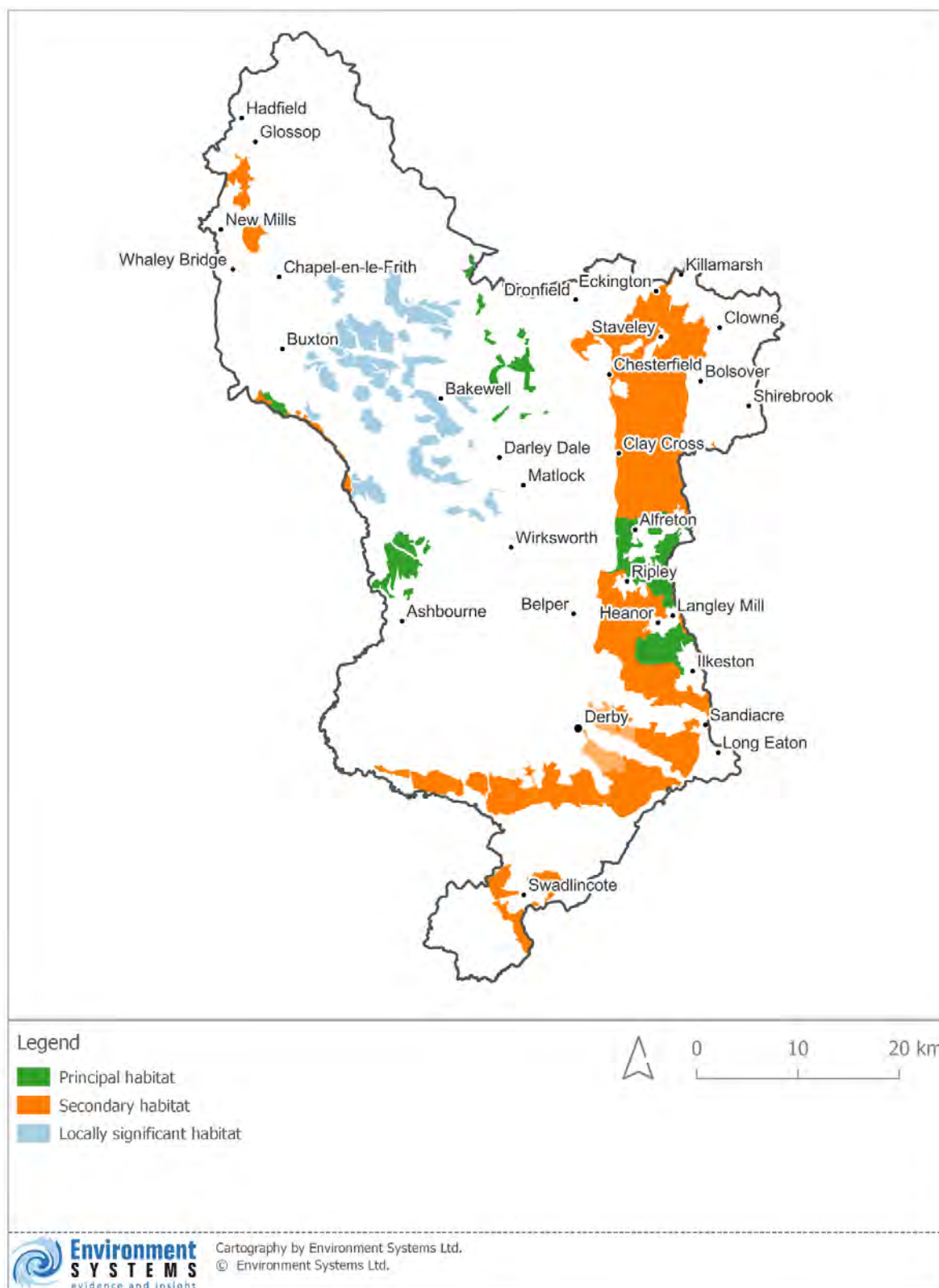
Figure 67: Landscape Character Types where the Urban broad habitat type is a priority for conservation, restoration or habitat creation (interpreted boundary areas mapped as partially transparent)

Legend

■ Principal habitat
■ Secondary habitat
■ Locally significant habitat
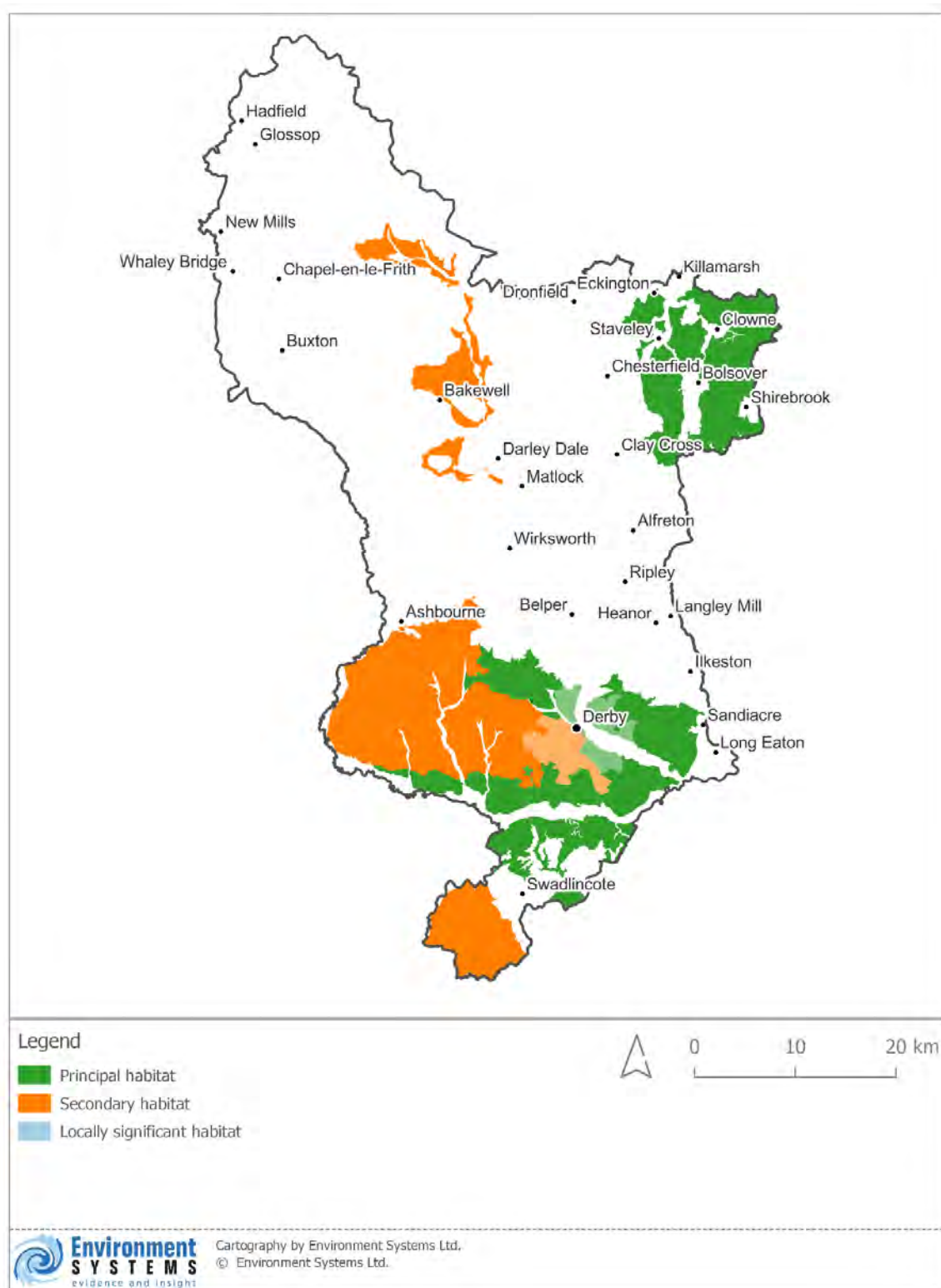
Figure 68: Landscape Character Types where the Cropland broad habitat type is a priority for conservation, restoration or habitat creation (interpreted boundary areas mapped as partially transparent)
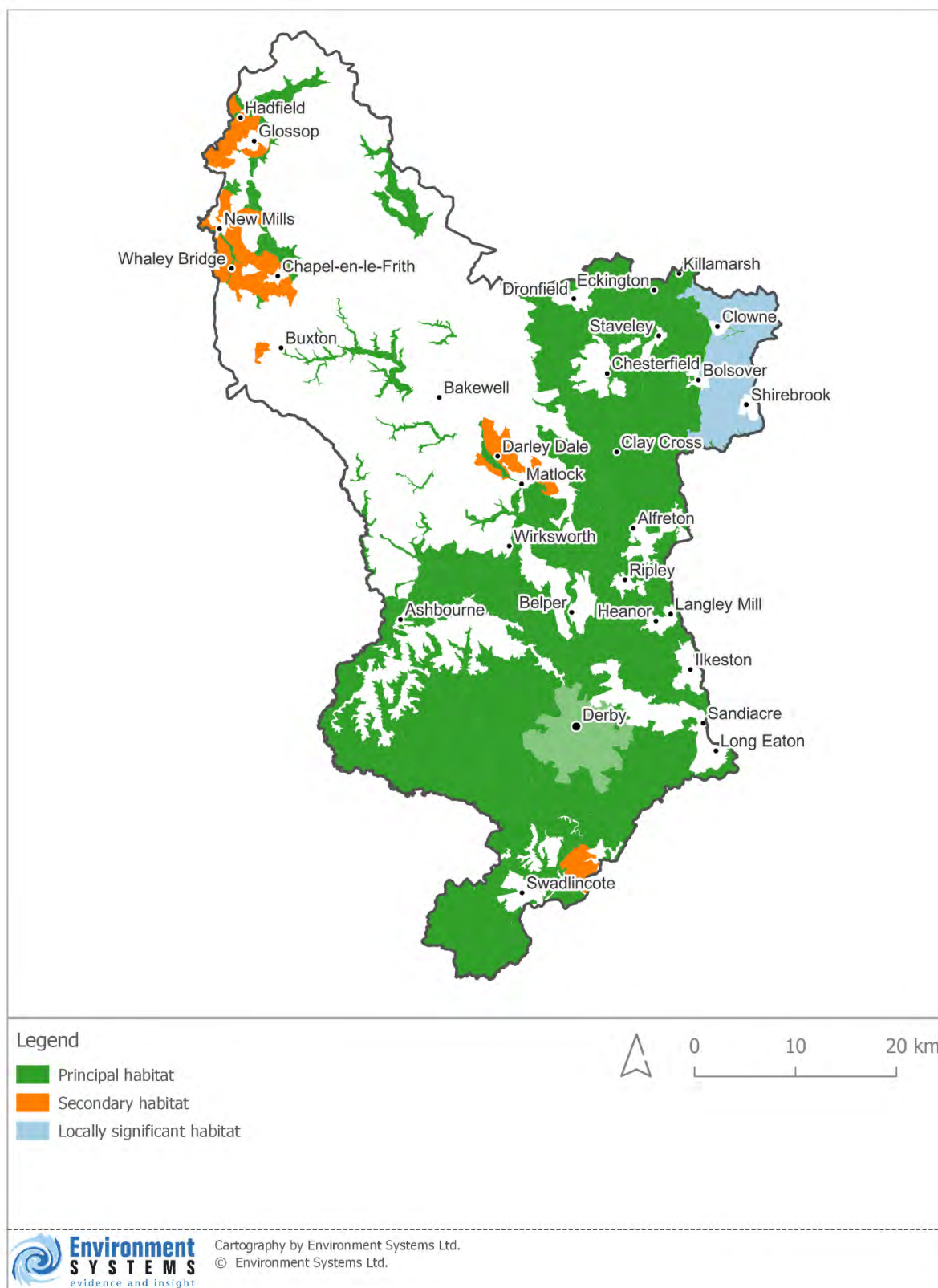
Figure 69: Landscape Character Types where the Rivers & Lakes broad habitat type is a priority for conservation, restoration or habitat creation (interpreted areas mapped as partially transparent)

Legend

- ■ Principal habitat
- ■ Secondary habitat
- ■ Locally significant habitat
- ■ Urban
- ■ Rivers and lakes

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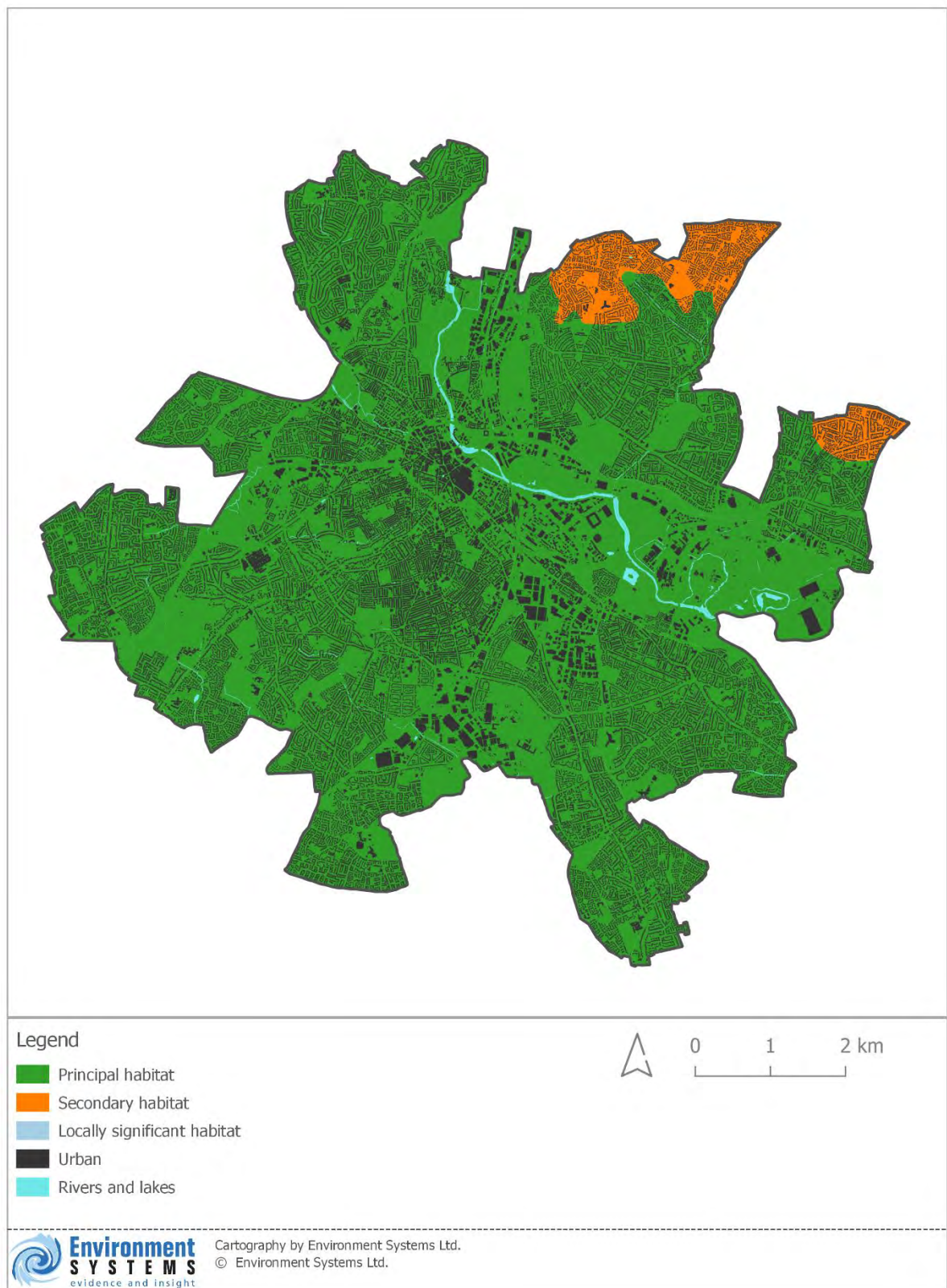
Figure 70: Landscape Character Types (interpreted boundaries) within Derby City where the Grassland broad habitat type is a priority for conservation, restoration or habitat creation
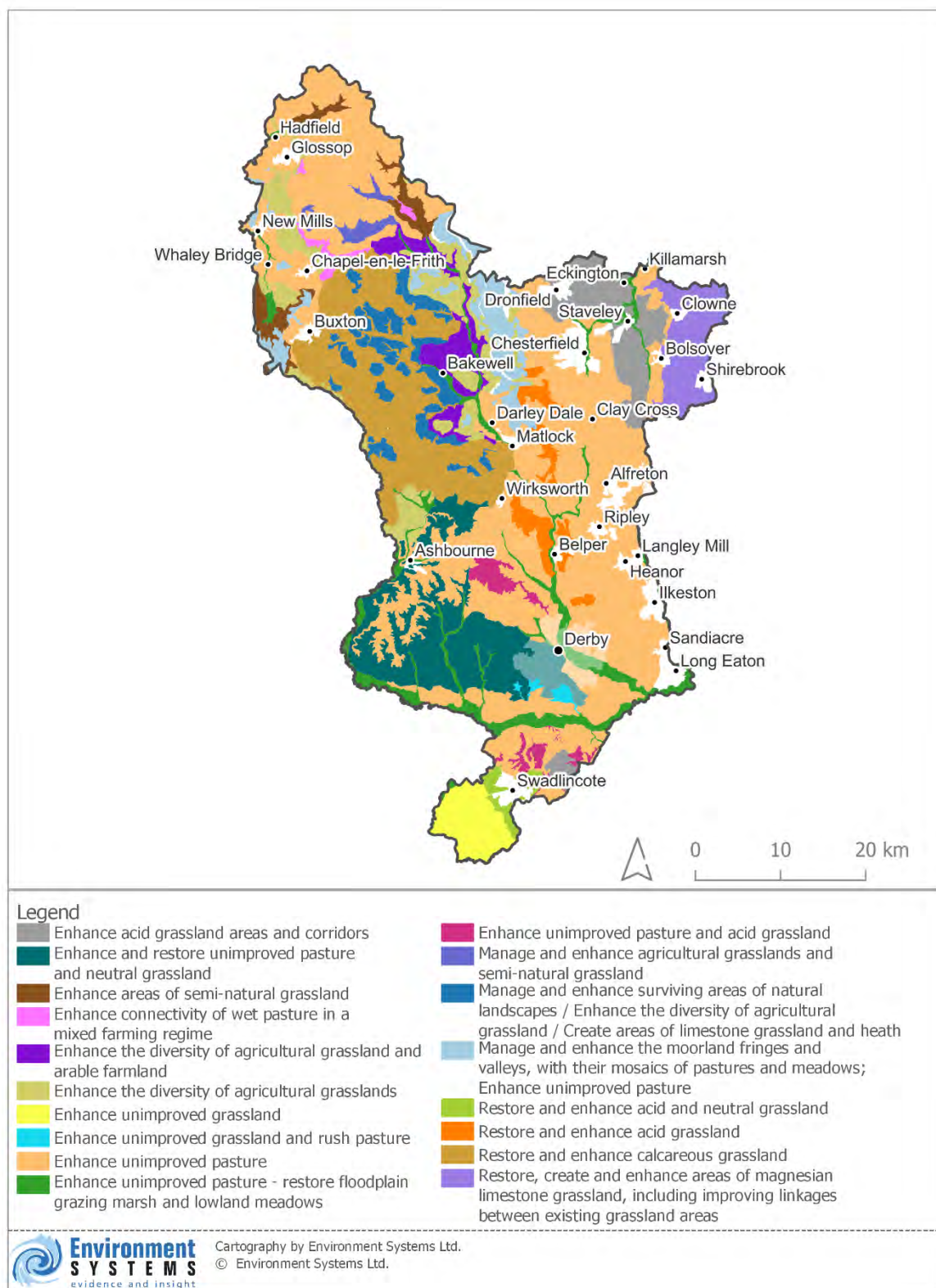
Figure 71: Locations where grassland-based habitat restoration or nature-based solutions could support the Landscape Character Type (interpreted boundary areas mapped as partially transparent)

Figure 72:Locations where heathland-based habitat restoration or nature-based solutions could support the Landscape Character Type (interpreted boundary areas mapped as partially transparent)

Legend

- Restore, enhance and plant hedgerows
- Enhance or create scrub habitat adjacent to woodland
- Enhance and restore moorland landscapes
- Restore, enhance and create heathland
- Restore, enhance and limestone heaths
- Restore, enhance and create heathland and moorland
- Restore, enhance and create heathland and shrub habitat
- Enhance and create scrub in conjunction with calcareous grassland
- Creation and extension of heath/moor may be considered in some locations
- Enhance or create scrub habitat adjacent to woodland. Restore, enhance and plant hedgerows
- Restore and enhance any heathland or scrub habitat, particularly around hedgerows
- Create areas of limestone grassland and heath, albeit only a consideration in some locations where appropriate

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0   10   20 km

Legend

- Enhance wet meadow and marsh habitats
- Enhance wet meadow and marsh habitats. Restore, enhance and create natural continuity of river corridors
- Manage and enhance wetland landscapes and create and link patches of wetland farmland habitats
- Manage and enhance wetlands, such as lowland bog
- Restore and enhance canals and areas of standing open water
- Restore and enhance floodplain and wet meadow habitats especially around the Ramsley Brook
- Restore, enhance and create moorland/bog habitats
- Restore, enhance and create natural continuity of river corridors
- Restore, enhance and create natural continuity of river corridors and wet woodlands
- Restore, enhance and create wetland habitats
- Seek opportunities to restore biodiversity
- Restore, enhance and create moorland/wetland habitats

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Figure 73: Locations where wetland-based habitat restoration or nature-based solutions could support the Landscape Character Type (interpreted boundary areas mapped as partially transparent)

Legend

☒ 01.		▨ 17.	
■ 02.		■ 18.	
■ 03.		■ 19.	
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■ 10.		■ 26.	
■ 11.		☒ 27.	
■ 12.		■ 28.	
■ 13.		■ 29.	
■ 14.		■ 30.	
■ 15.		■ 31.	
■ 16.			

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0   10   20 km

Figure 74: Locations where woodland-based habitat restoration or nature-based solutions could support the Landscape Character Type (interpreted boundary areas mapped as partially transparent); key to LCT regions shown in Figure 75)

Legend

01. Conserve tree groups that occur within and around rural settlements and plantations and Create areas of thinly scattered small plantations

02. Conserve trees around rural settlements, and encourage pollarding practice. Ensure new planting does not occur on sensitive landscape features, e.g. ridge and furrow

03. Consideration should be given to the creation of clough woods, the protection of historic parkland landscapes, and historic hedgerows in some locations

04. Create and enhance native woodland - general, and hedgerow planting

05. Create and enhance riparian woodland and floodplain woodland

06. Create and enhance small scale native woodland - general, riparian woodland, and hedgerow planting

07. Create small areas of riparian woodland - but not at the cost of overall landscape/habitat value

08. Create small areas of riparian woodland and hedgerow planting - but not at the cost of overall landscape/habitat value
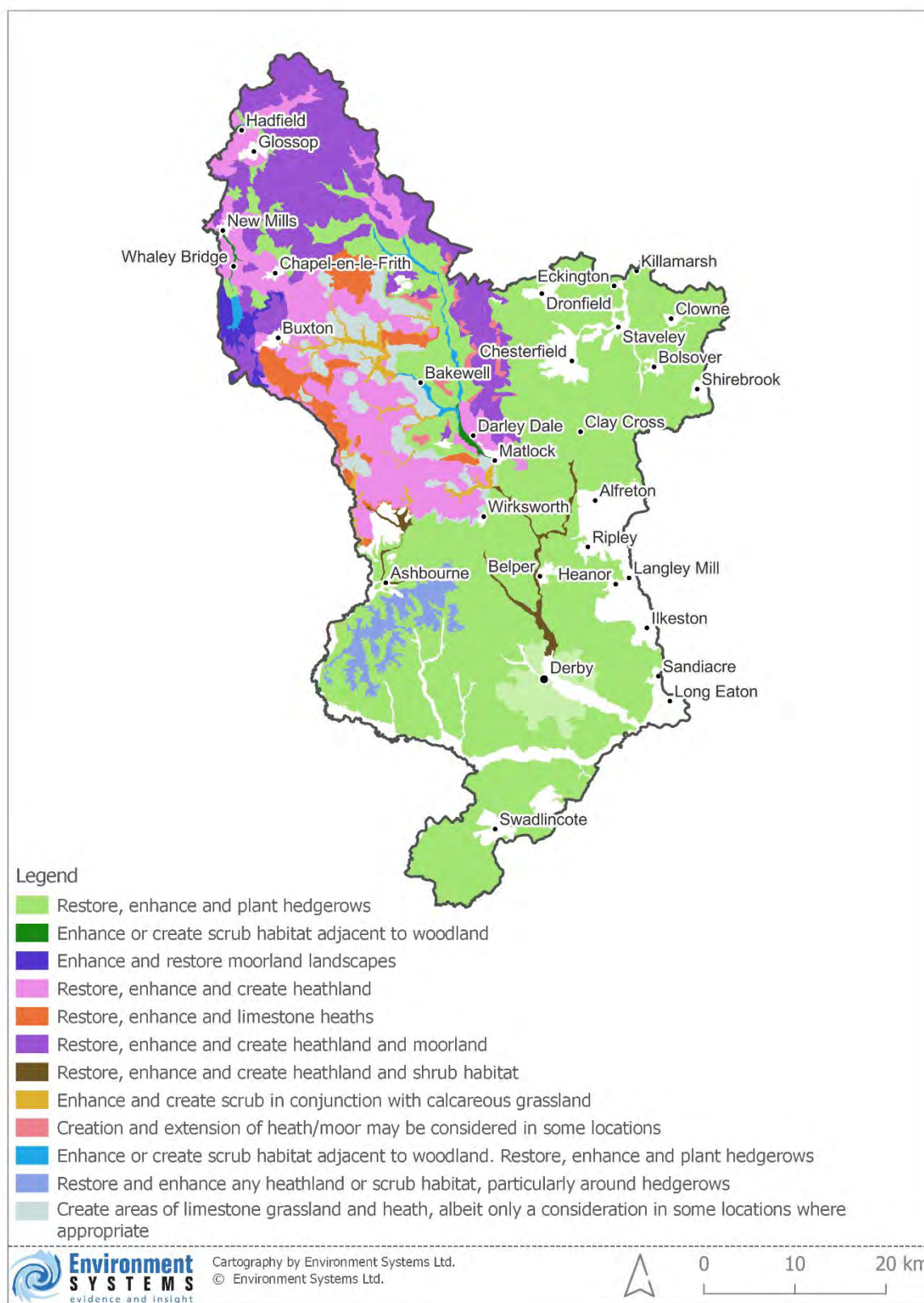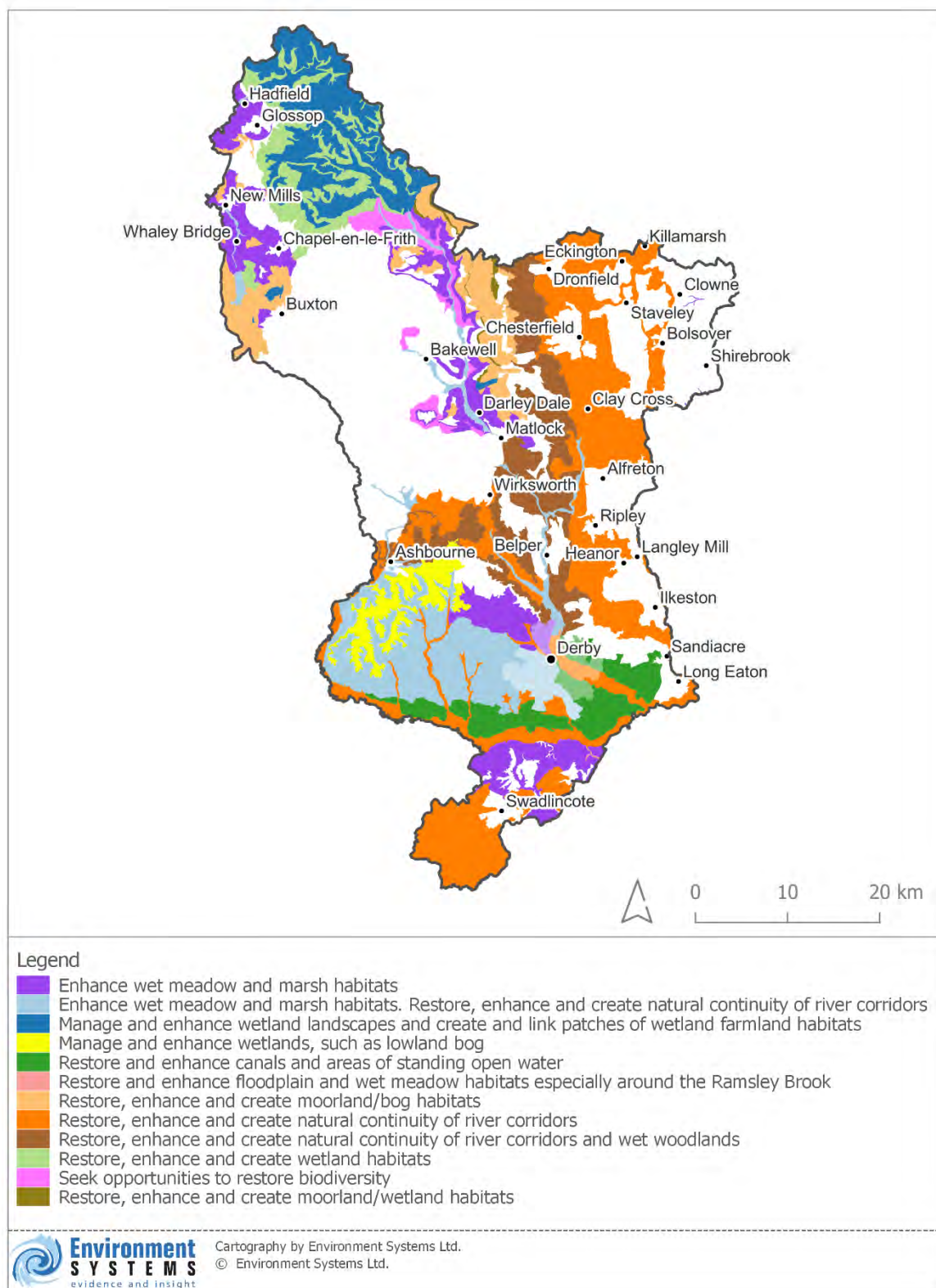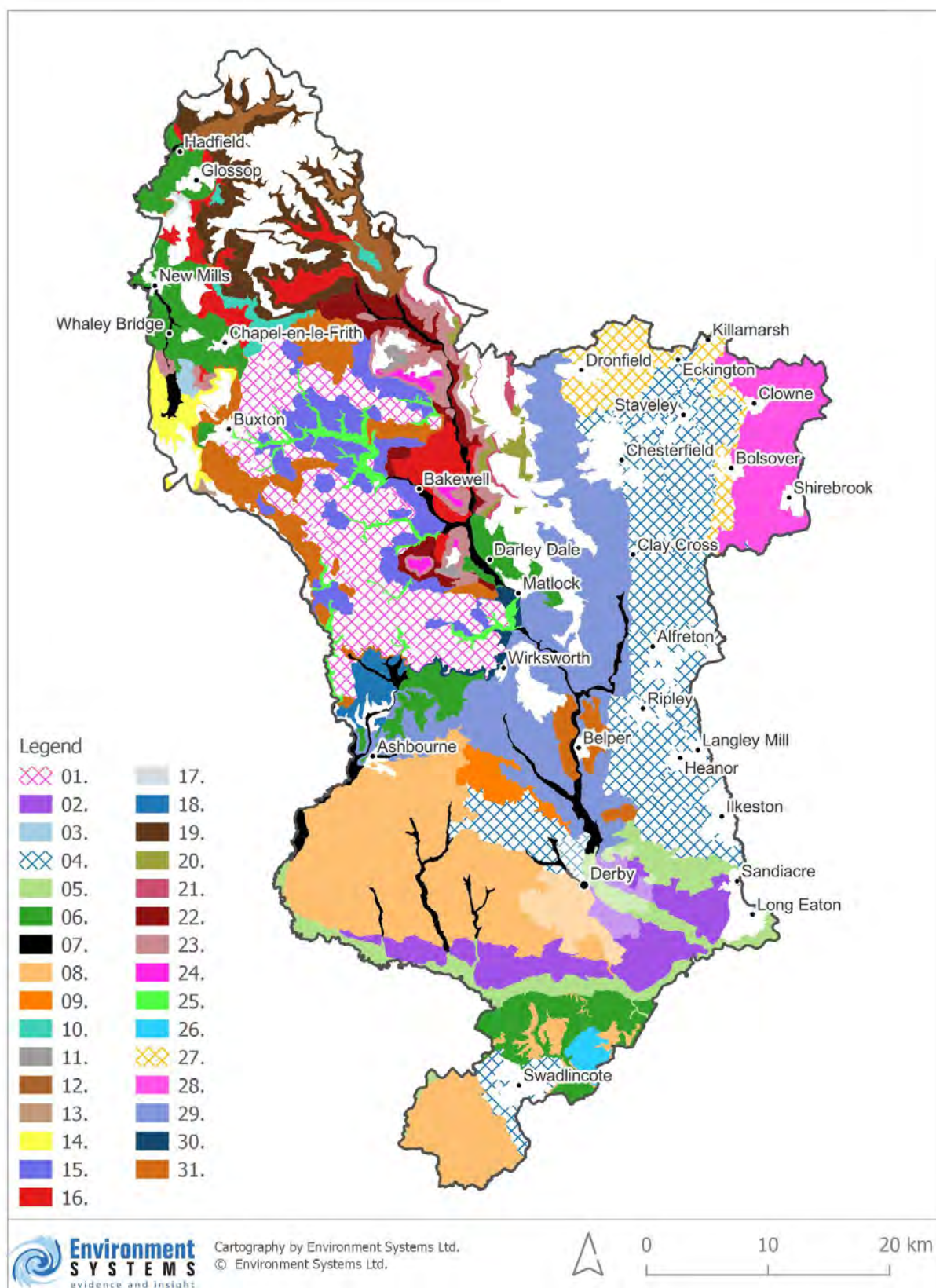
09. Create small areas of scattered woodland - but not at the cost of overall landscape/habitat value

10. Manage and enhance existing tree groups and shelterbelts

11. Manage and enhance linear tree cover and amenity trees.

12. Manage and enhance plantation woodland and landscape around reservoirs

13. Manage and enhance plantation woodlands

14. Manage and enhance plantation woodlands, some consideration of the establishment of clough woodland

15. Manage and enhance traditional plantation woodlands, linear tree cover and amenity trees and create new native broadleaved woodland

16. Manage and enhance woodlands

17. Manage and enhance woodlands and create new native broadleaved woodland

18. Manage and enhance woodlands and manage and enhance linear tree cover and amenity trees

19. Manage and enhance woodlands as well as create and restore clough woods

20. Manage and enhance woodlands may be considered in some locations

21. Manage and enhance woodlands particularly plantation woodlands

22. Manage and enhance woodlands, hedgerows, linear tree cover and amenity trees

23. Manage and enhance woodlands, historic hedgerows, clough woodlands, plantation woodlands, linear tree cover and amenity trees

24. Manage the extent of birch scrub to maintain a diverse landscape mosaic may be considered in some locations.

25. Restore all ancient woodland sites, enhance riparian woodland

26. Restore all ancient woodland sites. Create and enhance native woodland - general, and hedgerow planting

27. Restore all ancient woodland sites. Create and enhance native woodland - general, and hedgerow planting. Create scrub and secondary woodland to link with existing habitats

28. Restore all ancient woodland sites. Create and enhance native woodland - general, riparian woodland and hedgerow planting - but not at the cost of overall landscape/habitat value

29. Restore ancient woodland sites, create and enhance native woodland, riparian habitats and hedgerows and where suitable, consider removal of conifer plantation woodlands

30. Small scale woodland planting and conserve the tree groups that occur within and around rural settlements and isolated farmsteads

31. Where suitable, consider removal of conifer plantation woodlands

Figure 75: Key to LCT regions as applied to woodland NBS actions (Figure 74)

Legend

- ◼ (teal) Enhance and restore unimproved pasture and neutral grassland
- ◼ (tan) Enhance unimproved pasture
- ◼ (green) Enhance unimproved pasture - restore floodplain grazing marsh and lowland meadows
- ◼ (black) Urban
- ◼ (cyan) Rivers and lakes

0   1   2 km

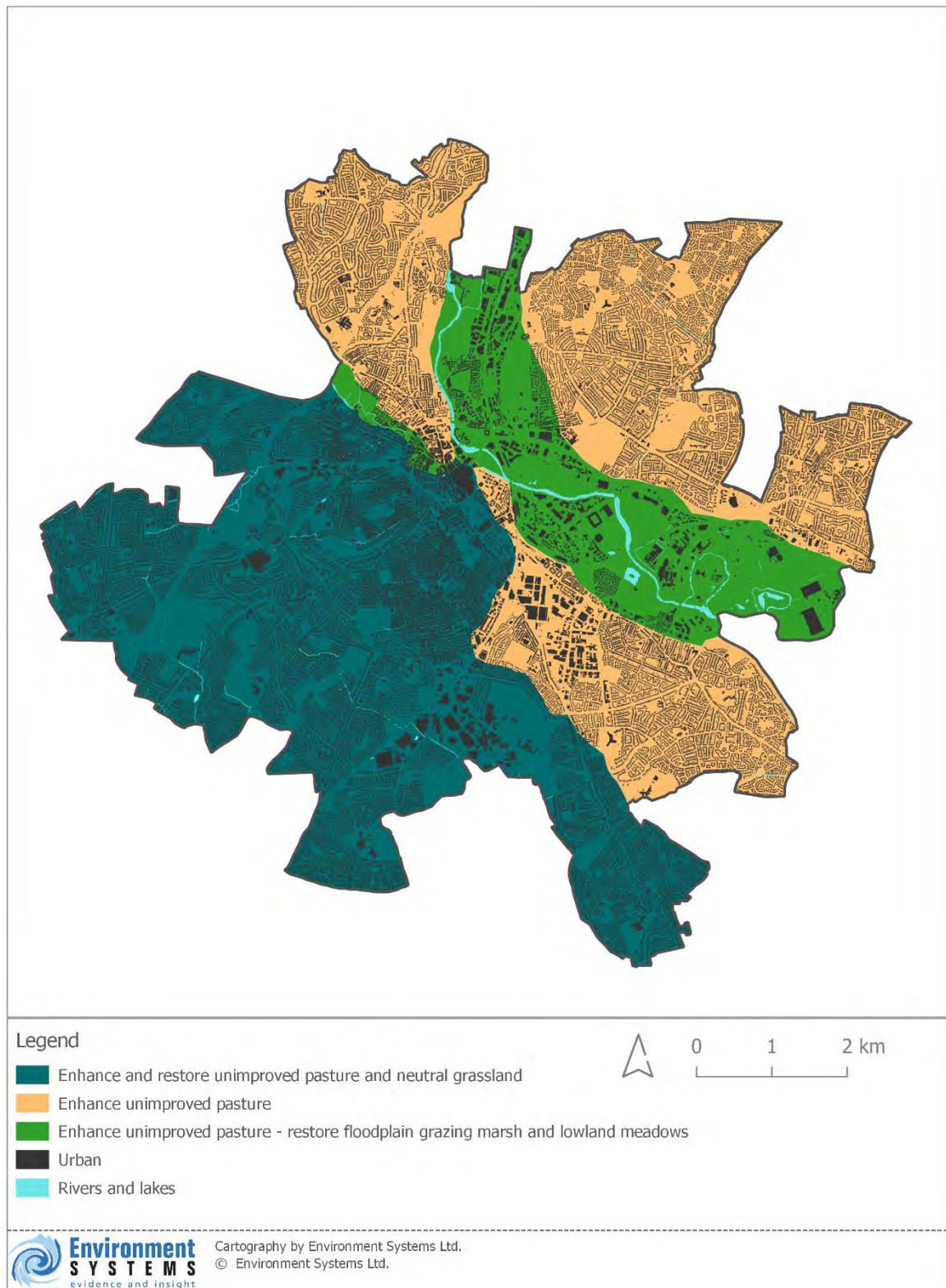Cartography by Environment Systems Ltd.
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Figure 76: Locations where grassland-based habitat restoration or nature-based solutions could support the Landscape Character Type in Derby City (interpreted LCT boundary data)