

Chichester District Council

Strategic Wildlife Corridors Local Plan Review Background Paper



1 Introduction

- 1.1 Chichester District itself is home to a wide variety of wildlife across a rich diversity of habitats. Many of the most valuable sites are internationally or nationally designated: there are 10 European sites, 38 Sites of Special Scientific Interest (SSSI) and 130 Local Wildlife Sites (LWS). Although the vast majority of these sites lie within either the South Downs National Park (SDNP) or the Chichester Harbour Area of Outstanding Natural Beauty (AONB), the Plan area is also home to wildlife which utilises corridors to travel between their habitats. The movement of wildlife by its nature does not recognise formal boundaries. It is therefore important to understand and encourage patterns of connectivity where opportunities arise.
- 1.2 The designated sites are the 'jewels' of biodiversity in the District, but they cannot exist in isolation. To maintain them in the long term requires a living landscape around them and connections between them. This connectivity, which does not recognise the Plan area boundaries per se, allows animals the space to forage, feed and breed, in a wider landscape and also to move between sites, maintaining genetic diversity and allowing them the chance to adapt to changes in their surroundings, both natural and man-made.
- 1.3 This paper sets out the methodology used to identify, map and safeguard the wildlife corridors, to justify the policy approach used in the Local Plan Review.

2 Policy Context

- 2.1 The National Planning Policy Framework (NPPF) states that, in planning for our local area, local authorities should (paragraph 174a):

“Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation.”
- 2.2 Further guidance on ecological networks is provided in the Planning Practice Guidance, which outlines the relevant evidence required in identifying and mapping local ecological networks, and in the Natural Environment White Paper.

3 Strategic Overview

- 3.1 This paper aims to identify proposed strategic corridors of existing wildlife value that run north-south connecting the South Downs National Park to Chichester and Pagham Harbours. The wider aim is to direct development to areas outside of these corridors over the long term, leaving these designated sites as wildlife oases.
- 3.2 This paper includes data from two main sources: firstly habitat connectivity modelling, and secondly data from individual species recording and more general wildlife surveys. The habitats data identifies areas that are very likely to provide suitable habitats for key indicator species, such as bats and water voles, which are known to use linear and interlinked habitats. These habitats will also support a broad assemblage of plant and animal species in addition to the headline indicator species

identified. Where several habitat networks overlap this is an indicator of a more significant wildlife corridor.

- 3.3 The presence of protected or rare species data observations within corridor areas indicates actual presence and use by the species named. However, not all areas of the Plan area are equally covered by surveys and many species are under-recorded. Similarly, other areas may have had a concentration of recording effort over time, resulting in an apparent cluster of records which, whilst it represents a true density of records, could be replicated in other areas if more surveying were to be undertaken.
- 3.4 This data provides a picture of the current connectivity across the landscape. Within these overlapping networks the Council has identified the best existing routes that form links between the South Downs National Park and Chichester Harbour, using the main peninsulas of the coastal zone. These are Thorney Island, the Chidham Peninsula, the Bosham Peninsula and the larger area of the Manhood Peninsula. The latter also contains Pagham Harbour SPA/Ramsar site on its eastern flank and this paper also examines the potential for links from the South Downs National Park down the eastern side of Chichester City that provide a route to Pagham Harbour SPA. This network, which is based on the natural geography of the area, is designed to provide a sustainable minimum level of connectivity that can support and sustain the ecology of the Plan area and wider district over the long term.

4 Methodology

- 4.1 In 2012, the Council commissioned Forest Research to map ecological networks within the district boundary, and the project was completed in 2014. The work was intended to fulfil the Council's requirement to accord with the NPPF.
- 4.2 The Council has a service level agreement with Sussex Biodiversity Records Centre. The Centre provides data on, and locations of, the international, national and locally designated sites of importance for biodiversity, as well as areas of priority habitat and records of rare or protected species. Forest Research was appointed to identify the additional components of the ecological networks, including the wildlife corridors and stepping stones.
- 4.3 The work adopted a species-based approach to define ecological networks and six focal species were identified to represent key habitats and landscape features within the Plan area. For each focal species a set of rules and assumptions was developed about the species, their habitat requirements and potential movement, to allow the construction of six species-specific but widely representative ecological networks maps to be created. The final output of the project was a series of GIS layers which represented the commuting networks for the focal species.
- 4.4 Linear features such as streams, ditches, hedgerows, and banks of trees are highly important to the functioning of connecting habitats. Within these, there may be higher value features such as ancient woodland, ponds and Local Wildlife Sites (formerly known as Sites of Nature Conservation Importance).
- 4.5 For more details on the methodology, please refer to appendices 1 – 3.

Identification and mapping of strategic corridors

- 4.6 The mapping of the proposed strategic corridors has involved the identification of distinct ecological networks connecting the South Downs National Park to Chichester and Pagham Harbours and including local wildlife sites, priority habitats such as ancient woodland, protected and rare species, and bat records. The water vole networks and bat networks, as identified by Forest Research, have been particularly useful in identifying corridors in the form of hedges and treelines, which are used by bats, and ditches and rifes which are used by water voles.
- 4.7 The routes of the corridors have been established to follow where the ecological networks of different species (Bats, Barn Owls and water voles) overlap. Some of the corridors also contain areas identified by local partnerships for habitat restoration or creation in accordance with the NPPF, namely the Biodiversity Opportunity Areas (BOA) as identified by the Sussex Biodiversity Partnership. BOAs represent the targeted landscape-scale approach to conserving biodiversity in Sussex and the basis for an ecological network. The BOAs identify where the greatest opportunities for habitat creation and restoration lie. Continuity of connection is aimed for, but not always achieved. Small gaps have had to be tolerated in places on the 'stepping stone' principle. However, where large discontinuities have become apparent, this has led to the rejection of alternative routes.
- 4.8 The A259, the railway line and the A27 provide a barrier to some species of wildlife; anecdotally this can be seen from the roadkill whereby individual larger mammals, such as foxes, badgers and deer, have been unsuccessful in crossing. Others individuals will be more successful, particularly at night, and birds, insects and some species of bat will be less affected by these barriers. Evidence indicates that water voles and other mammals are crossing the A27 through culverts and under the bridges. In addition, where these barriers are particularly vegetated, they are providing a wildlife corridor, running east to west.
- 4.9 Maps illustrating the locations of the proposed Strategic Wildlife Corridors are provided in Appendix 4 and 5. Further details on each corridor are set out below.

5 Details of the proposed corridors

Proposed Hermitage to Westbourne Strategic Wildlife Corridor

- 5.1 The River Ems forms the central feature of the corridor, which includes the River Ems and Meadows Local Wildlife Site (formerly SNCI). Slipper Mill Pond and Peter Pond Local Wildlife Site (LWS) are included and form the main connection to the Chichester Harbour SPA. The corridor includes an area of ancient woodland north of Hermitage, and a bat movement network (with good bats records) to the east of Westbourne to provide an enhanced connection to the SDNP, which would otherwise be partially blocked by the village of Westbourne itself. The corridor falls largely within the Westbourne chalk streams to Compton tributaries BOA, as identified by the Sussex Biodiversity Partnership. A statement on this BOA can be found in Appendix 2. The components of the corridor are illustrated in Figure 1 and Table 1.
- 5.2 Alternatives considered: Unable to look to the west as it is outside the District and CDC does not have the evidence base; to the east, linear features are very sparse

and isolated around Southbourne, meaning that although there is a good network around Woodmancote there is no means of connecting it south towards the Harbour SPA other than by going as far east as Hambrook, which forms the next area of search.

Figure 1: Proposed Hermitage to Westbourne Strategic Wildlife Corridor

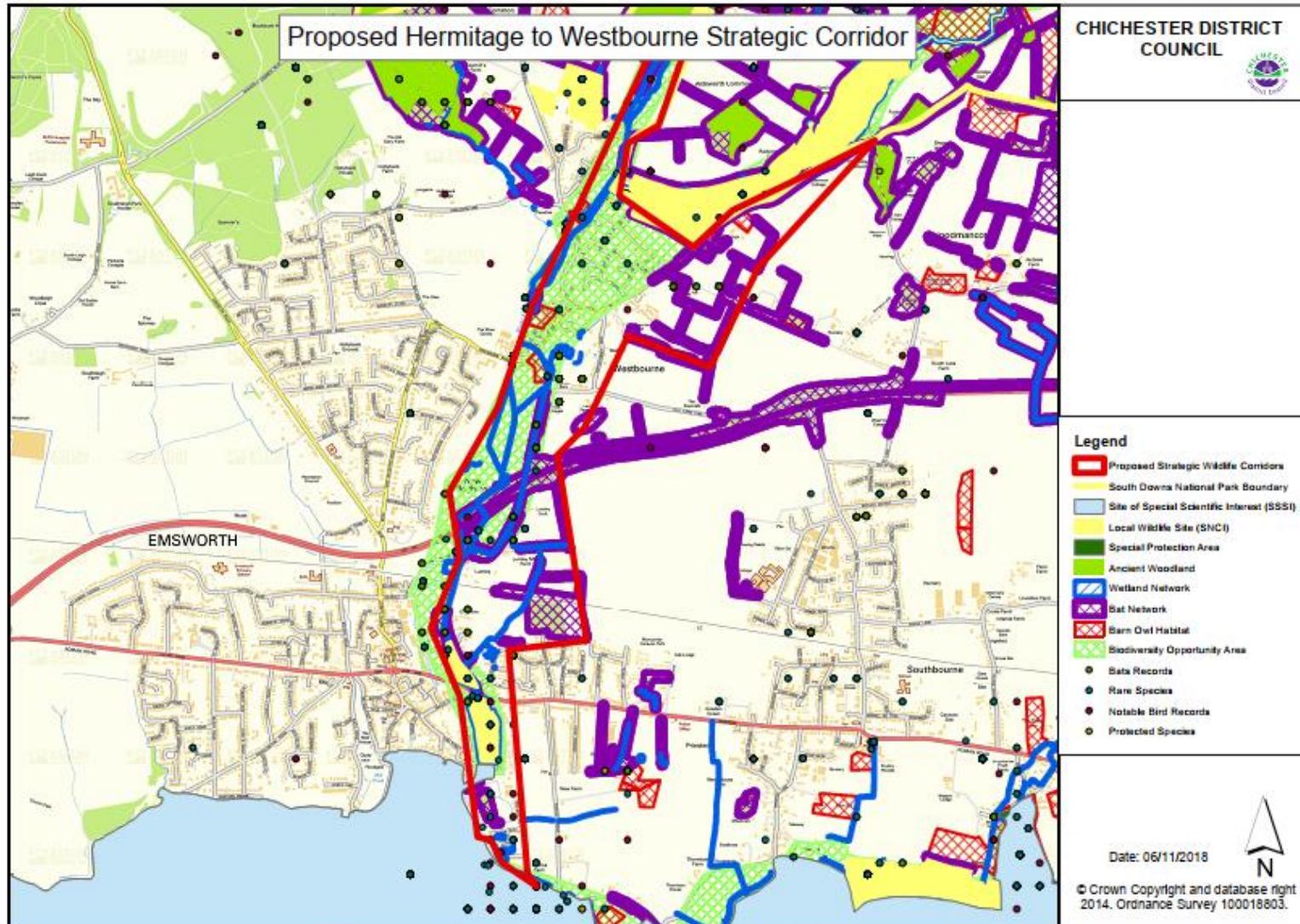


Table 1: Components and their sources for the proposed strategic wildlife corridor

Component of Proposed Strategic Wildlife Corridor/GIS Layer	Source
Chichester Harbour Special Protection Area	Sussex Biodiversity Records Centre (SxBRC) or Defra Magic Mapping (magic.defra.gov.uk)
The River Ems and Meadows Local Wildlife Site	SxBRC
Slipper Mill Pond and Peter Pond LWS	SxBRC
Ancient Woodland	SxBRC
Bat Records	SxBRC
Protected Species Records	SxBRC
Rare Species Records	SxBRC
Notable Bird Records	SxBRC
Westbourne chalk streams to Compton tributaries Biodiversity Opportunity Area	Sussex Biodiversity Partnership
Bat Network (including treelines, hedgerows and partials of woodland used by bats)	Forest Research UK report and data layers
Wetland/Water vole Network (watercourse, ditches and rifes)	Forest Research UK report and data layers
Barn Owl Habitat	Forest Research UK report and data layers

Proposed Chidham/East of Nutbourne Strategic Wildlife Corridor

- 5.3 The southern end of the proposed corridor starts at an area of woodland within the Chichester Harbour SPA. Watercourses and hedgerows provide the links to an area of woodland, Maybush Copse, west of Cot Lane which is being used by a number of species of bats. This is further connected via hedgerows to an area of woodland used by bats, west of Chidham Lane and east of Hamstead Meadow and to the north, behind the Bosham Inn. Further hedgerows, treelines, scattered trees and watercourses connect up to the Newells Lane Pond and Meadows LWS.
- 5.4 The connections continue north of the A27 via treelines and hedgerows to parcels of ancient woodland at Newell Farm Barn and south of Southbrook Road. The components of the proposed corridor are illustrated in Figure 2 and Table 2.
- 5.5 Alternatives considered: It is difficult to identify an alternative route which will maintain the connections between the various components of the local ecological network. The loss of the treelines, hedgerow and scattered trees connecting to the ancient woodland and LWS, could result in the degradation of their condition. East of the corridor are few ecological features, excluding the watercourse. West of Nutbourne there are a number of ecological features but the close proximity of residential areas and proposed development, mean that the corridor may be too narrow to act as a suitable functional strategic corridor.

Figure 2: Proposed Chidham/East of Nutbourne Strategic Wildlife Corridor

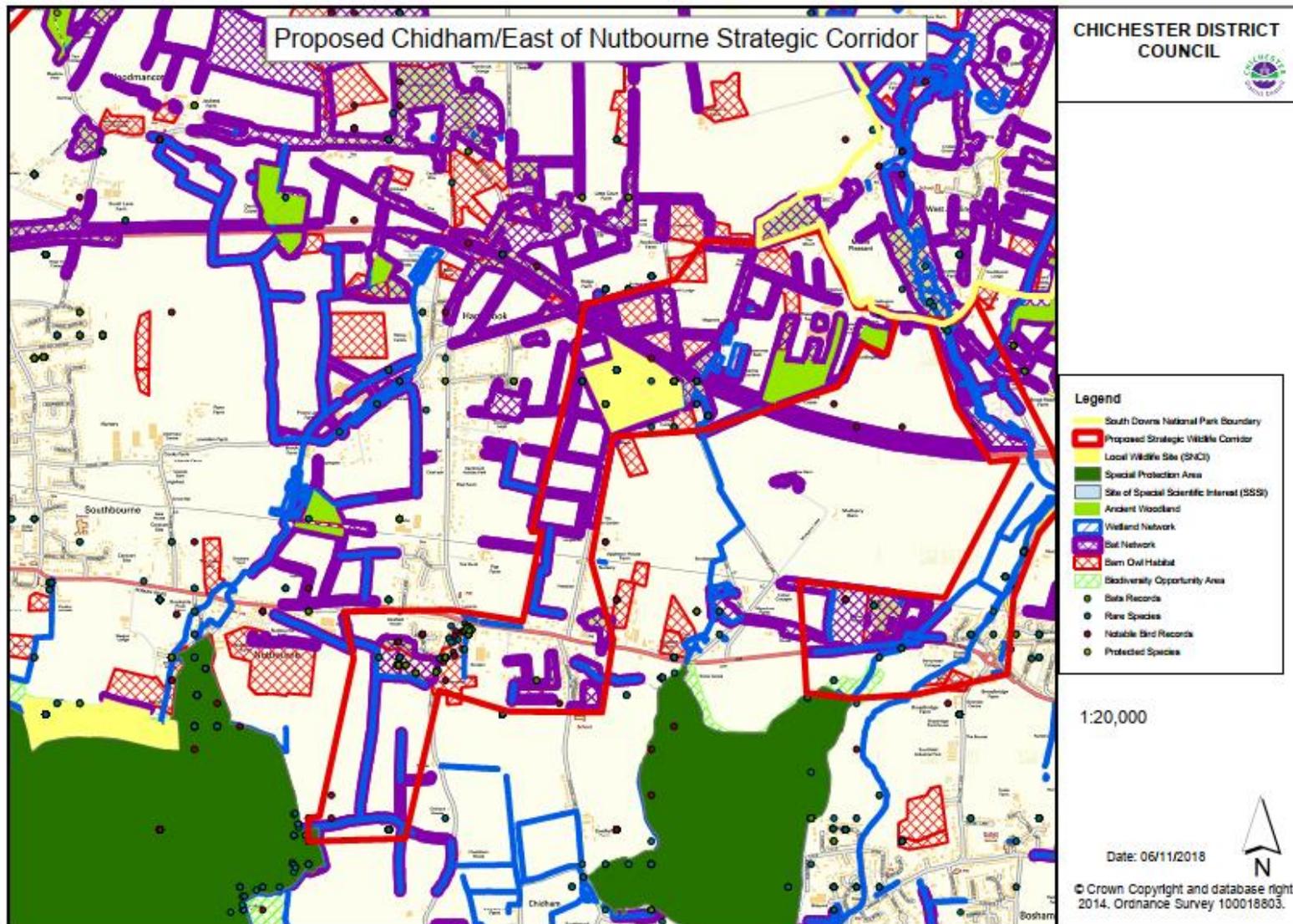


Table 2: Components and their sources for the proposed strategic wildlife corridor

Component of Proposed Strategic Wildlife Corridor/GIS Layer	Source
Chichester Harbour Special Protection Area	Sussex Biodiversity Records Centre (SxBRC) or Defra Magic Mapping (magic.defra.gov.uk)
Newells Lane Pond and Meadows LWS	SxBRC
Ancient Woodland	SxBRC
Bat Records	SxBRC
Protected Species Records	SxBRC
Rare Species Records	SxBRC
Notable Bird Records	SxBRC
Bat Network (including treelines, hedgerows and partials of woodland used by bats)	Forest Research UK report and data layers
Wetland/Water vole Network (watercourse, ditches and rifes)	Forest Research UK report and data layers
Barn Owl Habitat	Forest Research UK report and data layers

Proposed Broadbridge to East Ashling Strategic Wildlife Corridor

- 5.6 The Chichester Harbour SPA connects to an area of wooded bat habitat, between the A259 and railway line, via watercourses and scattered trees. The proposed corridor follows the watercourses and water vole habitat between the railway line and A27, connecting to an area of woodland (bat habitat) north of the A27 and west of Ratham Lane. North of the A27, the network is extensive and the corridor could travel east or west but goes east to provide the shortest and most direct line to the SDNP boundary at Southbrook Road. The components of the proposed corridor are provided in Figure 5 and Table 3 below.
- 5.7 Alternatives considered: The corridor could go west above the A27 and just below the boundary with the National Park. However the current route ensures the continuation of the wetland features. Between the railway and A27, there is little scope for moving the corridor as this appears to be the only continuous ecological connection in that area.

Figure 3: Proposed Broadbridge to East Ashling Strategic Wildlife Corridor

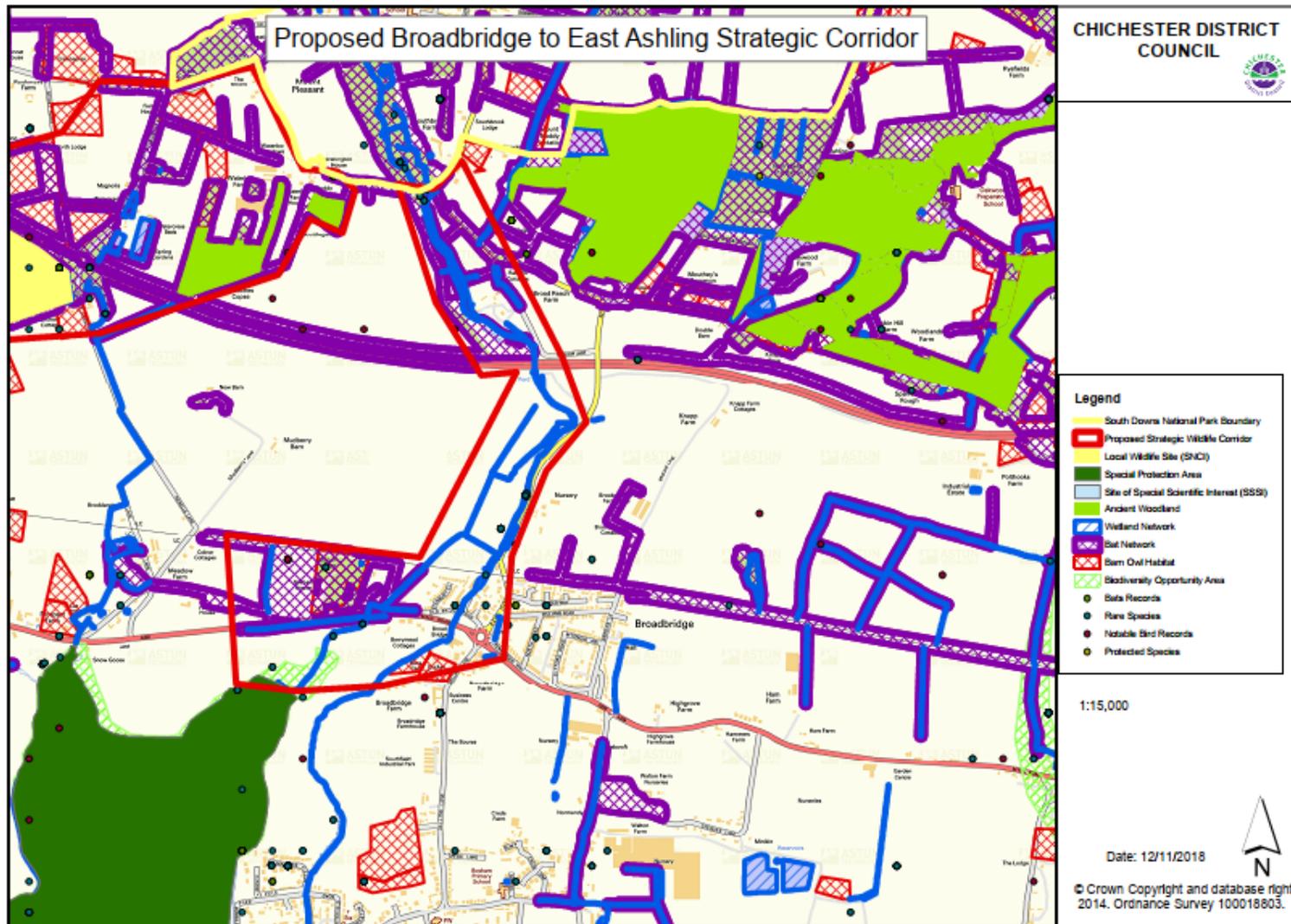


Table 3: Components and their sources for the proposed strategic wildlife corridor

Component of Proposed Strategic Wildlife Corridor/GIS Layer	Source
Chichester Harbour Special Protection Area	Sussex Biodiversity Records Centre (SxBRC) or Defra Magic Mapping (magic.defra.gov.uk)
Bat Records	SxBRC
Protected Species Records	SxBRC
Rare Species Records	SxBRC
Notable Bird Records	SxBRC
Bat Network (including treelines, hedgerows and partials of woodland used by bats)	Forest Research UK report and data layers
Wetland/Water vole Network (watercourse, ditches and rifes)	Forest Research UK report and data layers
Barn Owl Habitat	Forest Research UK report and data layers

Proposed West of Chichester to Fishbourne Strategic Wildlife Corridor

- 5.8 The southern end of the proposed corridor starts at the Chichester Harbour SPA, connecting to Fishbourne Meadows LWS, with connections through the fields north of Fishbourne Meadows, where bat network, water vole network and barn owl habitat overlap. Although the corridor at this point is quite narrow, the watercourses and field margins are key in providing connectivity up to the A27 and beyond (see figure 4b). Water vole records on the Whitehouse Farm site indicate they are able to move through the culverting under the A27. The hedgerows and treelines north of the A27 connect up the parcels of woodland, including ancient woodland (the Slab) which records indicate is extensively used by bats for commuting, and the Local Nature Reserve (LNR) at Brandy Hole Copse beyond.
- 5.9 The proposed corridor encompasses the Fishbourne and Chalk Streams BOA, as identified by the Sussex Biodiversity Partnership. This identifies the area as a distinct ecological network which contains chalk streams and part of their watersheds, and a chalk spring at Fishbourne Meadows. See Appendix 3 for the statement on the Fishbourne and Chalk Streams BOA.
- 5.10 The corridor maintains the route of the Fishbourne BOA (which meets with the Lavant Watershed BOA north of the City), continuing the connection of bat and barn owl habitat above Old Broyle Road, meeting the South Downs National Park boundary at Little Tomlins Copse.
- 5.11 Alternatives considered: An option for the corridor to run to the west of Fishbourne was considered. However, the connections are weaker to the west, with discontinuities and a lack of overlapping networks compared to the route selected to the east. The western arm of the BOA does not connect to the area north of the A27. Secondly a corridor further west would provide a link to the Bosham Peninsula but it would only provide a very indirect link to the Manhood Peninsula, increasing the likelihood of the Downs and the western Manhood being isolated from each other. Maintaining the connection in the location shown (to the east of Fishbourne) ensures

that the strategic link from the Downs to the Manhood is strongly made and that the corridor makes best use of existing wildlife networks and connections.

- 5.12 North of the A27, the corridor ensures connectivity between various parcels of woodland, including the ancient woodland and the LNR at Brandy Hold Copse. Above Old Broyle Road the network is extensive and the corridor could run East or West. However, as proposed, it maintains the route of the BOAs and the shortest route to the SDNP boundary.

Figure 4a: Map indicating location of the Proposed West of Chichester to Fishbourne Strategic Wildlife Corridor

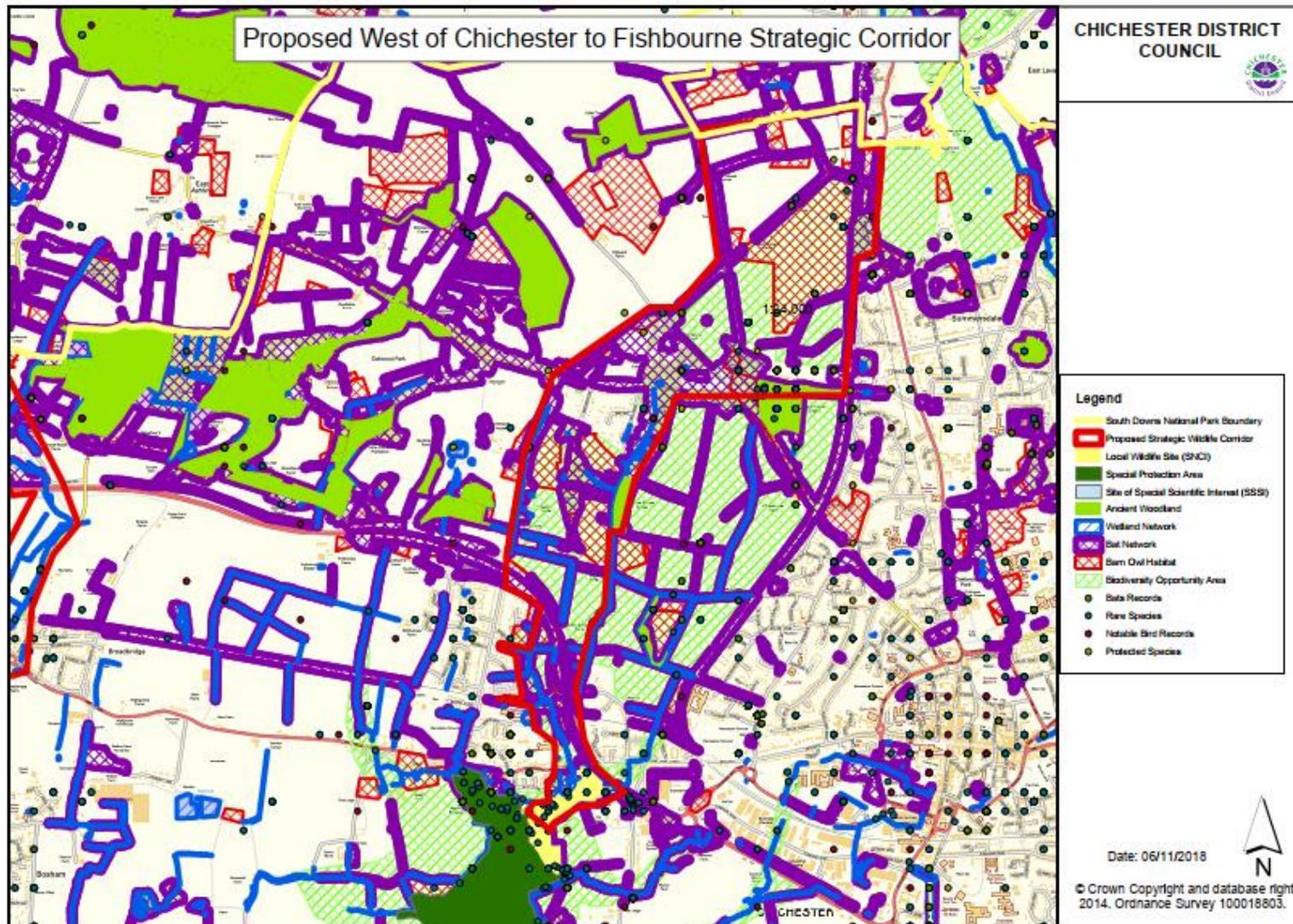


Figure 4b: More detailed maps of the connections within the Proposed Fishbourne Strategic Wildlife Corridor

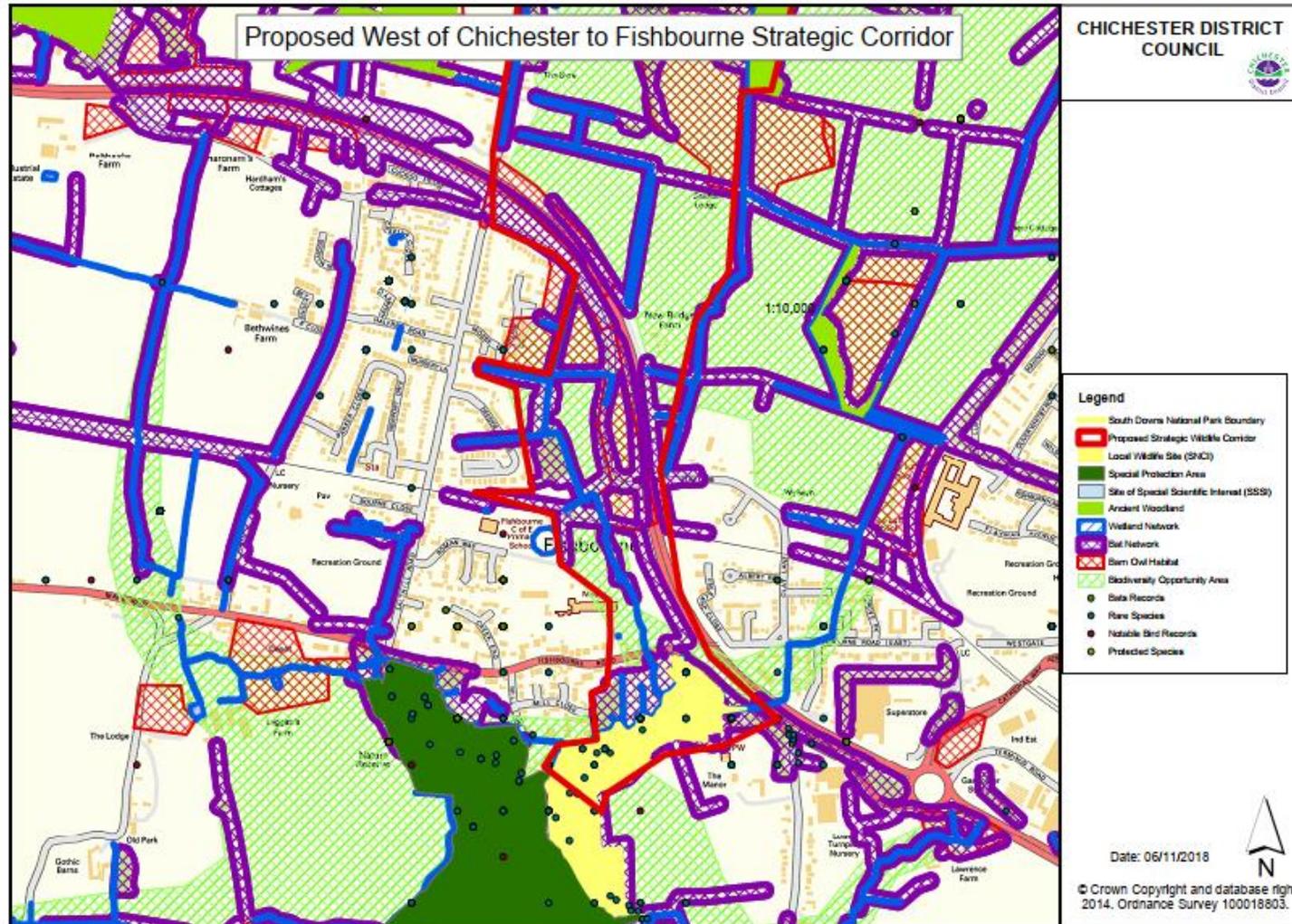


Table 4: Components and their sources for the proposed strategic wildlife corridor

Component of Proposed Strategic Wildlife Corridor/GIS Layer	Source
Chichester Harbour Special Protection Area	Sussex Biodiversity Records Centre (SxBRC) or Defra Magic Mapping (magic.defra.gov.uk)
Fishbourne Meadows LWS	SxBRC
Ancient Woodland	SxBRC
Bat Records	SxBRC
Protected Species Records	SxBRC
Rare Species Records	SxBRC
Notable Bird Records	SxBRC
Fishbourne and Chalk Streams Biodiversity Opportunity Areas	Sussex Biodiversity Partnership
Lavant Watershed Biodiversity Opportunity Areas	Sussex Biodiversity Partnership
Bat Network (including treelines, hedgerows and partials of woodland used by bats)	Forest Research UK report and data layers
Wetland/Water vole Network (watercourse, ditches and rifes)	Forest Research UK report and data layers
Barn Owl Habitat	Forest Research UK report and data layers

Proposed Westhampnett to Pagham Harbour Strategic Wildlife Corridor

- 5.12 The proposed corridor connects Pagham Harbour SPA in the south, to Pagham Rife, and then along the watercourses on the district boundary with Arun and incorporating an area of ancient woodland, close to Saltham House. It continues north along the watercourse and hedgerows, east of Chichester City, incorporating some barn owl habitat and connecting up to Shopwhyke Lakes. There it runs eastwards along the hedgerow along the A27, before heading north-west along the hedgerow and watercourse before meeting the boundary with the National Park at the Goodwood Estate. This corridor also encompasses part of the Chichester Coastal Plain BOA, as identified by the Sussex Biodiversity Partnership. The corridor is illustrated in Figures 5a and 5b, with the components identified in Table 5.
- 5.13 Alternatives considered: When the corridor reaches the A27, there is the option of going straight across to Dairy Lane, rather than running eastwards, with more of a stepping stone approach before joining the bat network at the Goodwood Estate. However a continuous corridor is preferable to a stepping stone approach.

Figure 5a: Proposed Westhampnett to Pagham Harbour Strategic Wildlife Corridor (southern part)

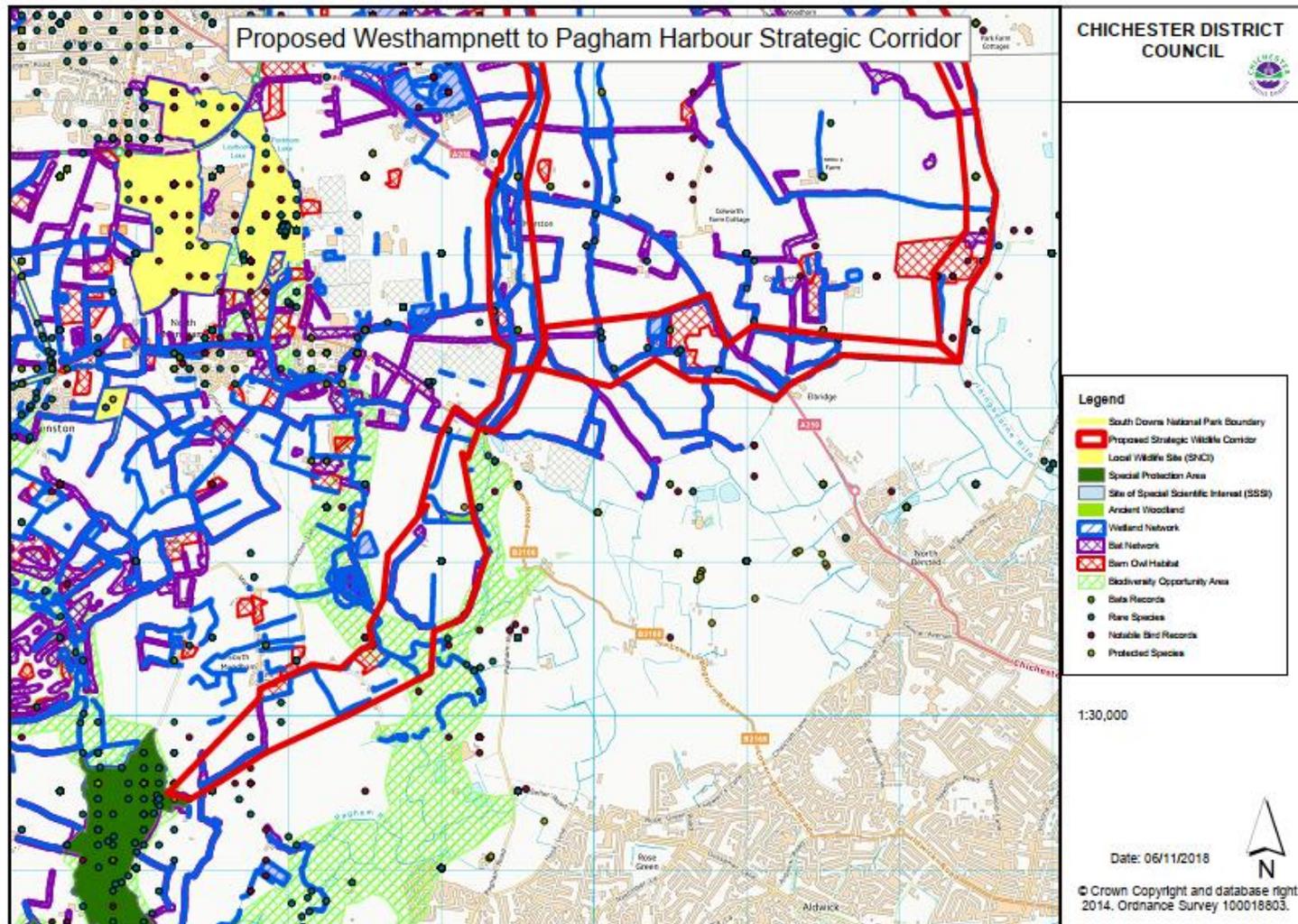


Figure 5b: Proposed Westhampnett to Pagham Harbour Strategic Wildlife Corridor (northern part)

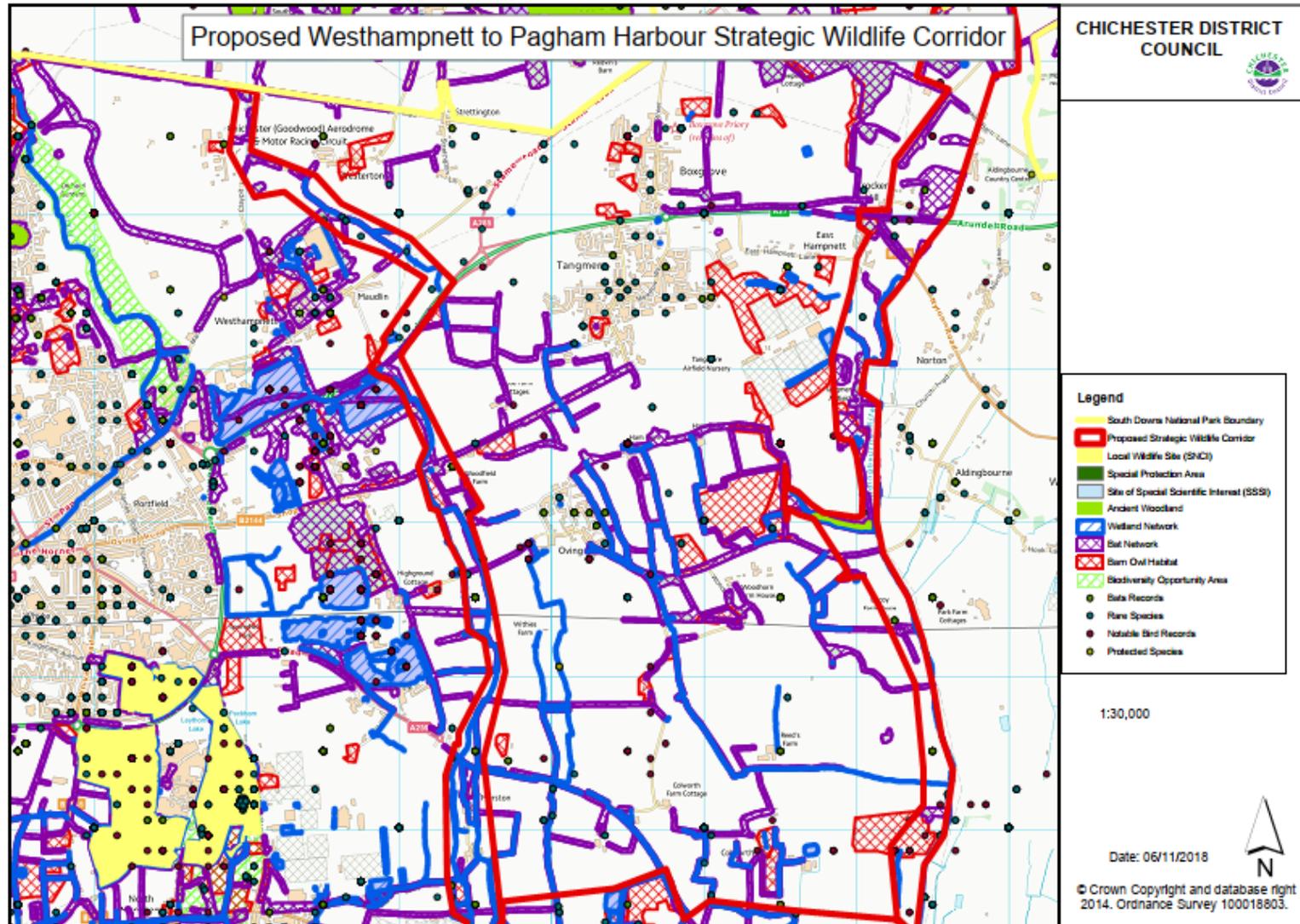


Table 5: Components and their sources for the proposed strategic wildlife corridor

Component of Proposed Strategic Wildlife Corridor/GIS Layer	Source
Pagham Harbour Special Protection Area	Sussex Biodiversity Records Centre (SxBRC) or Defra Magic Mapping (magic.defra.gov.uk)
Bat Records	SxBRC
Protected Species Records	SxBRC
Rare Species Records	SxBRC
Notable Bird Records	SxBRC
Ancient Woodland	SxBRC
Chichester Coastal Plain Biodiversity Opportunity Areas	Sussex Biodiversity Partnership
Bat Network (including treelines, hedgerows and partials of woodland used by bats)	Forest Research UK report and data layers
Wetland/Water vole Network (watercourse, ditches and rifes)	Forest Research UK report and data layers
Barn Owl Habitat	Forest Research UK report and data layers

Proposed Aldingbourne and Elbridge Rifes Strategic Wildlife Corridor

5.14 The proposed corridor continues eastwards from the Westhampnett to Pagham corridor along the Elbridge Rife, incorporating both bat network and barn owl habitat. It then heads north, along Aldingbourne Rife, incorporating bat network, barn owl habitat and ancient woodland, east of Decoy Lane. The corridor continues north along the bat network and encompassing bat habitat including patches of woodland such as Dyer's Copse. The corridor meets the National Park Boundary at Thicket Lane. The corridor is illustrated in Figures 6a and 6b, with the components identified in Table 6.

Figure 6a: Proposed Aldingbourne and Elbridge Rifes Strategic Wildlife Corridor (northern part)

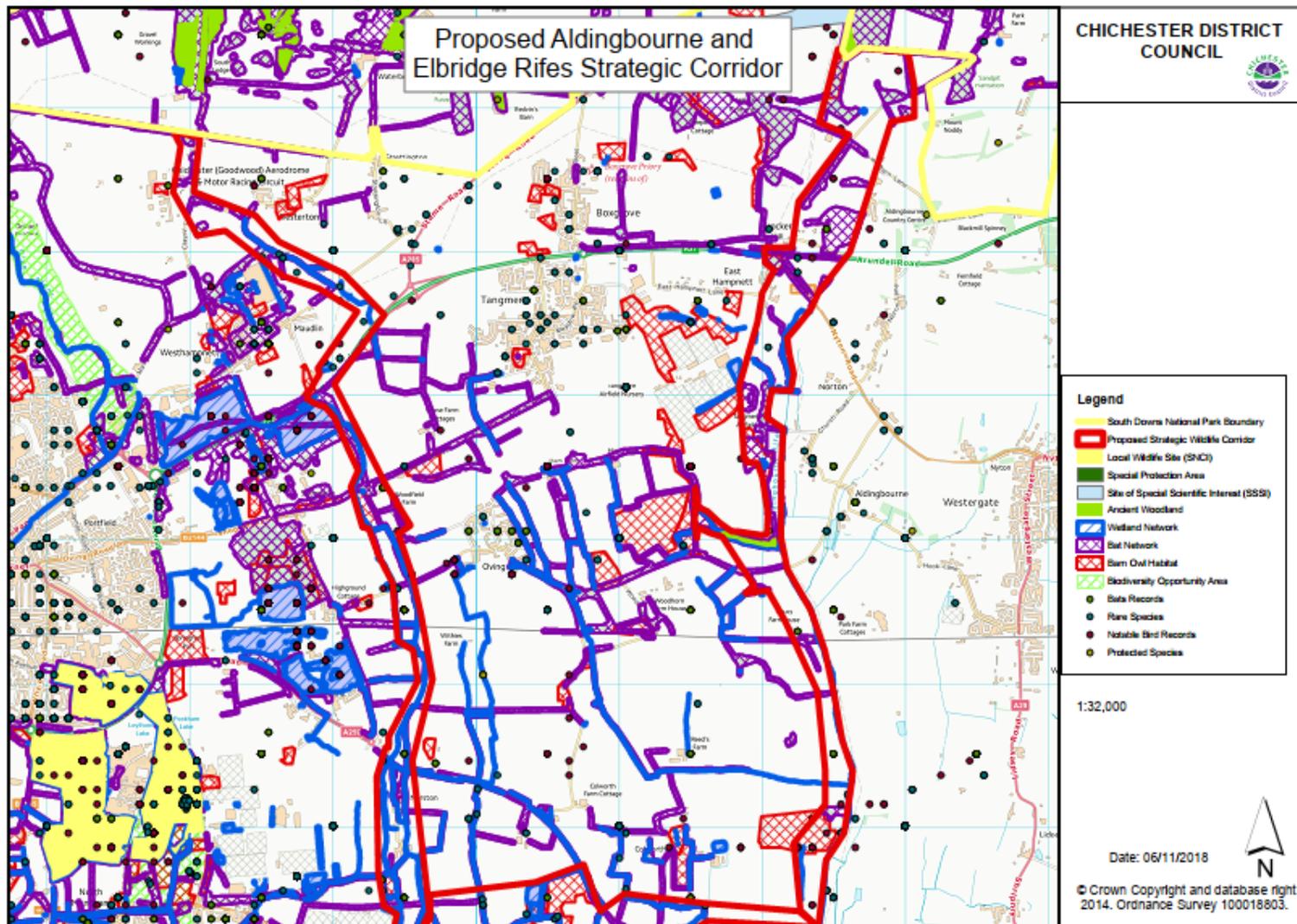


Figure 6b: Proposed Aldingbourne and Elbridge Rifes Strategic Wildlife Corridor (southern part)

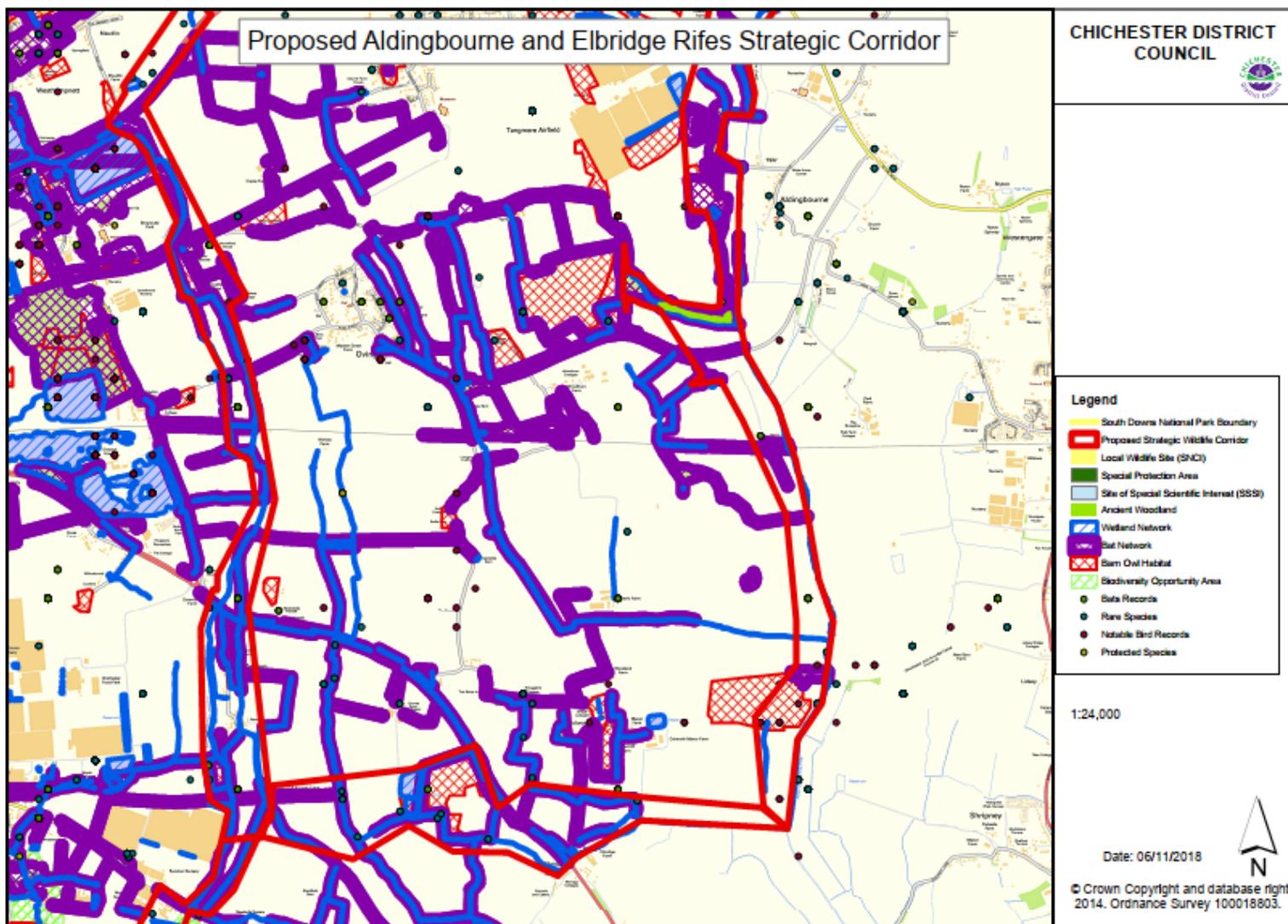


Table 6: Components and their sources for the proposed strategic wildlife corridor

Component of Proposed Strategic Wildlife Corridor/GIS Layer	Source
Ancient Woodland	SxBRC
Bat Records	SxBRC
Protected Species Records	SxBRC
Rare Species Records	SxBRC
Notable Bird Records	SxBRC
Bat Network (including treelines, hedgerows and partials of woodland used by bats)	Forest Research UK report and data layers
Wetland/Water vole Network (watercourse, ditches and rifes)	Forest Research UK report and data layers
Barn Owl Habitat	Forest Research UK report and data layers