

Dorset's Ecological Networks

A Dorset Local Nature Partnership Publication



Summary

Sites of wildlife importance in England have been lost or damaged at an alarming rate over the last 70 years. Those that remain are smaller and more isolated, and often in less favourable management regimes. This has meant that wildlife species have in general declined, with only those species with very generalist requirements and highly adaptable to our modified environments doing well. In 2010, an independent review of England's wildlife sites and ecological networks, chaired by Professor Sir John Lawton, concluded unequivocally that England's collection of wildlife areas does not represent a coherent and resilient ecological network capable of responding to the challenges of climate change and other pressures. The review made 24 recommendations, but summarised what needed to be done in just four words: more, bigger, better and joined. Government has adopted the suggested approach, and the concept of an ecological network is now embedded in the National Planning Policy Framework (NPPF) (first published in 2012, updated in 2018), Natural Environment White Paper (2011) and Biodiversity 2020 (2011), the government's strategy for wildlife and wildlife sites.

This paper, and the accompanying maps, represents the suggested approach in Dorset, and has been produced by Dorset Local Nature Partnership (DLNP) and its partners.

1. What is an Ecological Network?

When considered together, all sites and areas of wildlife value form a network, some parts of which will be closely interlinked, others less so, which has a value for the natural environment greater than the sum of its parts. This includes all known sites of wildlife importance, together with habitats that may be widespread but are nevertheless valuable for wildlife as part of the ecological function of the landscape, for dispersal (termed corridors and stepping stones) or to cushion wildlife sites from harm (termed buffers).

A **potential ecological network** also maps areas which are not currently of high nature value but have the greatest potential to be managed or enhanced to play a valuable role in future.

Inclusion of an area of land in the ecological network does not infer that its management is favourable, or could not be more beneficial for wildlife than it currently is. For example there will be areas of non-native conifer plantation included, which could be enhanced in some cases by conversion to broadleaved woodland, or in others by restoration to open habitats such as heathland, a habitat which was often lost when the plantation was made. Through appropriate management measures, the whole network can bring enhanced benefits for wildlife (the "better" element of Lawton's approach) as well as fulfilling many other functions.



2. Why is the ecological network important?

Though designated wildlife sites of local, national and international levels are important in their own right, if each individual site is isolated and surrounded by habitats and land uses which are hostile to wildlife, then they become 'closed systems', ever more vulnerable to the impacts of harmful events, either catastrophic (for example extreme weather, disease, fire) or gradual (such as pollution, erosion, invasive species). Sites that are situated within a well-connected and robust network of similar and complementary habitats and with connecting and buffering land will be much more resilient.

An effective ecological network will function better not just for wildlife, but at the same time be of greater value for all aspects of life, be they economic (such as providing refuges for crop pollinators or creating tourism attractions), social (for example providing green spaces which benefit physical and mental health or reducing the impacts of flooding on communities) or environmental (such as protecting landscape and heritage). Establishing such a network would effectively conserve biodiversity and ecosystem services, delivering many benefits to people, while also making efficient use of scarce land and resources. This requires a shift in emphasis, away from piecemeal conservation actions and towards a more effective, more integrated, landscape scale approach.

3. What does national policy say about Ecological Networks?

Biodiversity 2020: A strategy for England's wildlife and ecosystem services states (executive summary):

"13. The independent review of England's wildlife sites and ecological network, chaired by Professor Sir John Lawton, concluded that England's collection of wildlife areas (both legally protected areas and others) does not currently represent a coherent and resilient ecological network capable of responding to the challenges of climate change and other pressures. The review concluded that establishing such a network would effectively conserve biodiversity and ecosystem services, delivering many benefits to people, while also making efficient use of scarce land and resources.

14. Effectively establishing coherent and resilient ecological networks on land and at sea requires a shift in emphasis, away from piecemeal conservation actions and towards a more effective, more integrated, landscape scale approach."

The Government's 25 Year Environment Plan (2018) states that:

"Protected sites have safeguarded many of our best wildlife habitats, but the wider environment needs to be considered too."

And in the Ministerial Foreword that:

"we will ensure that we support development and the environment by embedding the principle that new development should result in net environmental gain – with neglected or degraded land returned to health and habitats for wildlife restored or created."

The 25 Year Environment Plan refers to a new initiative to create a Nature Recovery Network. It states:

"Through changes in the way we manage our land, we will develop a Nature Recovery Network providing 500,000 hectares of additional wildlife habitat, more effectively linking existing protected sites and landscapes, as well as urban green and blue infrastructure. Such a network will deliver on the recommendations from Professor Sir John Lawton."

"As well as helping wildlife thrive, the Nature Recovery Network could be designed to bring a wide range of additional benefits: greater public enjoyment; pollination; carbon capture; water quality improvements and flood management."

The Nature Recovery Network has yet to be specifically detailed, however ecological network maps can clearly help to target where this should happen, and the planning system has a role to play in facilitating creation of habitats as part of the Nature Recovery Network.



The **National Planning Policy Framework, 2018** states (paragraph 170(d)) that:

“Planning policies and decisions should contribute to and enhance the natural and local environment by:

d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;”

Paragraph 171 states:

“Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.”

Paragraph 174 states:

“To protect and enhance biodiversity and geodiversity, plans should:

a) 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 creation⁵⁷; and

b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

⁵⁷ Where areas that are part of the Nature Recovery Network are identified in plans, it may be appropriate to specify the types of development that may be suitable within them.”

And, regarding working with Local Nature Partnerships, paragraph 25 states that:

“Strategic policy-making authorities should collaborate to identify the relevant strategic matters which they need to address in their plans. They should also engage with their local communities and relevant bodies including Local Enterprise Partnerships, Local Nature Partnerships,”



Road Verges such as near Alder Hills can form important wildlife corridors.

Photo: © Borough of Poole



Parts of the Ecological Network will also provide public access, benefitting **health and wellbeing**.

Photo: © Dorset Local Nature Partnership



4. The Dorset Ecological Network

Dorset Ecological Network maps have been produced by Dorset Local Nature Partnership (DLNP), working with Dorset Environmental Records Centre (DERC), and with support from the DLNP partners, particularly Dorset Area of Outstanding Natural Beauty, Dorset County Council, Dorset Wildlife Trust and Natural England.

The Dorset Ecological Network is made up from a series of layers, each incorporating different data sets. Together the national sites, local sites, wildlife corridors, stepping stones and buffer areas create a functioning ecological network. Sites can appear in more than one category, for example a nature reserve (local site) may also be part of a SSSI (national site); in which case the site is mapped as a national site as that takes precedence. Wetland bodies are also part of the network; some of these may be designated at national or international level as well, for example the River Avon and The Fleet, but the whole wetland layer is shown on top for clarity. It is important to note that some areas of valuable habitat such as species-rich hedgerows and road verges, ponds and veteran trees are often too small in area to be shown on the maps, but nevertheless are part of the fabric of the ecological network as corridors and stepping stones or in their own right, and where they occur they should be considered part of the network even if they are not recorded on these maps. There may also be local knowledge and mapping which is not yet held at DERC which demonstrates further locations of good habitat which should be considered part of the Network whether or not shown on the Network maps.

The Network maps extend into the marine environment, insofar as designated marine sites are shown. However further work is needed to map local features in the marine environment and to develop a policy framework relating to marine planning policy.

The Potential Ecological Network maps are comprised of areas that are not yet part of the functioning network but which could play an important part in the future. They may also be the areas which have the best potential for future restoration work or to improve connectivity. It is not essential that habitat restoration is carried out on all sites in the potential network, the maps just help target where the best and most effective action could be taken.



Areas such as conifer plantations have the **potential to be restored** to high quality habitats, as here at Bracketts Coppice nature reserve, shown before (2005) and after (2017) restoration to grassland with scattered scrub and trees.

Photos: © Tony Bates MBE



5. Suggested use of the Dorset Ecological Network

The Dorset Ecological Network, used alongside local ecological knowledge and data, allows local planning authorities to appropriately respond to paragraphs 170, 171 and 174 of the NPPF, as well as other related paragraphs such as 175 - development control and biodiversity. Their use can also be part of fulfilling the requirement in paragraph 25 for engagement with the LNP.

The Network can be used to assist in planning the best locations for habitat enhancement, restoration and creation, to meet the objectives for biodiversity conservation and enhancement in national strategies and planning guidance and through Dorset's Natural Capital Investment Strategy¹.

5.1 Local Plans

It is recommended that the Local Plan, as well as using Dorset's Ecological Network as part of the evidence base, uses policy to facilitate retention of the network, and enhancement of its ability to function for wildlife. Local Plans should already include policy covering wildlife corridors and stepping stones, and biodiversity outside of designated sites, and an ecological network policy can encompass these elements in a more holistic way, which sets the context for the purpose of such policy much more clearly.

The Network should inform the Local Plan throughout its development, not just through inclusion of policy wording, but by applying the policy throughout the process. By ensuring that development allocations, alongside site management measures that are outside the scope of a Local Plan, are set up to support and enhance the Network, there can be a more coherent, better functioning Network at the end of the plan period than at its start. This means considering where development might hinder the functioning of the network and what could be done to avoid, mitigate and/or compensate for that, and conversely where development could enable enhancement or creation of habitat, for example through Green Infrastructure provision, and ensure that such requirements are included from the outset.

The Ecological Network is not a statutory designation. It does not over-ride other biodiversity-related planning policies and principles or wildlife legislation, such as the mitigation hierarchy and protected species legislation, but is designed to complement them and set the hierarchy of international, national and local sites, which should have their own policies in the Local Plan, into context. Other than compliance with the aforementioned policies, the Ecological Network should not be viewed as an absolute barrier to development; instead it can guide the location of development and the location, design and proposals for habitat protection, restoration and creation. Local knowledge and bespoke habitat mapping or wildlife surveys can augment, ground truth and adjust the Network maps used in Local Plans.

5.2 Development Management

The Dorset Ecological Network dataset can be used in a development management context to inform both the master planning of individual proposals and an appraisal of their appropriateness. It is equally applicable to planning case officers as it is to developers themselves. The earlier the dataset is used in the process of developing a proposal, the greater the chance of that proposal contributing in a positive and cost-effective way to the Ecological Network. Where local evidence demonstrates further high quality habitat, those sites should be considered part of the Ecological Network, whether or not included on these maps.

The Dorset Biodiversity Appraisal² system is designed to help plan appropriate mitigation and enhancement measures and it (or similar in Bournemouth and Poole) should be used to assist in securing appropriate actions through planning that maintain and enhance the Ecological Network. The Dorset Biodiversity Compensation Framework³, requires compensatory habitat to be created (or financially compensated for) to

¹ www.dorsetlnp.org.uk/Natural_Capital_Investment_Strategy.html

² <https://www.dorsetforyou.gov.uk/countryside-coast-parks/countryside-management/biodiversity/biodiversity-appraisal-in-dorset.aspx>

³ Contact Dorset County Council Natural Environment Team for more details net@dorsetcc.gov.uk



enhance the Network, where loss of a part of the Network (that is not a designated wildlife site but is categorised as priority habitat) cannot be avoided.

Very minor developments, such as extensions or conversions of existing buildings will clearly be outside the scope of the Ecological Network. At the other end of the scale, large housing schemes and infrastructure projects are likely to have the greatest potential to secure wildlife enhancements, or indeed cause the most concerns if not well-planned.

This guidance may be used to help inform developers when preparing the environmental statements that are needed for many types of development under the Environmental Impact Assessment Regulations. An awareness of the Ecological Network, alongside site-specific environmental data searches, will be valuable for anyone considering the environmental impacts of schemes. As schemes which require environmental statements tend to be larger they may also have greater opportunities to create new habitats and linkages between habitats. This guidance will therefore best be used early in the planning of developments. Local Planning Authorities should make developers aware of this guidance and the Ecological Networks dataset as early as possible; particularly when approached for pre-application advice, or when giving scoping opinions on matters which need to be considered in environmental statements.

6. Details of sites included in the Dorset Ecological Network

6.1 International Sites

This consists of Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar Sites, mapped from information provided by Natural England.

6.2 National Sites

This includes National Nature Reserves (NNR), Sites of Special Scientific Interest (SSSI) and Marine Conservation Zones (MCZ), mapped from information provided by Natural England.

6.3 Local Sites

Within this category are Local Nature Reserves (LNR), Dorset Wildlife Trust Reserves, Sites of Nature Conservation Interest (SNCI), Monitored Conservation Verges, Veteran Tree Sites, many churchyards and sites that form the Great Heath Project.

Most Local Geological Sites (LGS) are included here as they often have areas of semi-natural habitat. Some geological sites are managed to clear the rock face leaving the geology exposed but also an opportunity for pioneer species to appear and, away from the rock face, there can be areas of undisturbed scrub or grassland. The LGS designation for the Isle of Portland is not shown in the mapping as it is too extensive to be useful in this case.

A handful of sites which qualify as Local Sites are not included because of the sensitive nature of their wildlife or geology, meaning it is not appropriate to show their location on a publicly available map. Other sites managed for conservation may also be included.



Wildlife corridors and stepping stones shelter **pollinators** like the red-tailed bumble-bee
Photo: © Ken Dolbear MBE



Broadleaved woodlands, whether large or small, are crucial elements of the Ecological Network.
Photo: © Tony Bates MBE



6.4 Wildlife Corridors and Stepping Stones

Wildlife Corridors form links between sites or through urban areas and out to the wider countryside. Stepping Stones maybe more isolated, like a small copse in an arable landscape or individual veteran trees. They may not qualify as an SNCI but they can provide important refuges for more mobile species. It is not possible to map all of the smaller corridors and stepping stones, as explained in paragraph 4. Where such features occur they should be considered part of the network even if they are not recorded on these maps.

Within the Dorset AONB, a project to map landscape permeability for wildlife produced a useful data set that included semi-natural habitat mapped adjacent to or between existing sites. The project used a combination of remote sensing and existing habitat data to map areas such as small woods, wide hedges, areas of scrub and semi-improved grassland. These core areas are included in the Wildlife Corridors and Stepping Stones (for the full report see Medcalf and Ties, 2012).

This data layer does not exist across the whole of Dorset but some local projects have provided useful alternatives. A desk top study of the Borough of Weymouth and Portland (DERC, 2009) identified corridors and stepping stones within the urban area. Similarly a project in Bournemouth Borough surveyed and classified open spaces as Bournemouth Wildlife Sites. Those with the best scores for biodiversity will already be included as national or local sites but other areas of moderate interest (scoring 3 – 5) will be included here.

Railways and trailways can provide important linear features for the movement of species where there is good semi-natural habitat adjacent to the route.

Rivers, ponds and other wetlands provide an important link for aquatic and semi-aquatic species. Even when the river has been engineered or runs through an urban area, aquatic species will often use it as a direct route or, for example, to disperse seed. Some of the wetlands shown also hold national or international designations.

Mineral sites undergoing restoration which will enhance the ecological value will be included here. Eventually, many of these sites will be managed for conservation long-term as part of their restoration plans and become part of the Local Sites network.

7. Potential Ecological Network

The Potential Ecological Network may include mineral sites before restoration work begins where we know the biodiversity potential is high; Bournemouth Wildlife Sites with poor biodiversity (scoring 1 or 2), school playing fields and other open greenspaces; plus some parts of the long-distance trailways where they are not bordered by existing sites or good linear habitats. Enhancements for wildlife in these areas would benefit the existing network. The Dorset AONB landscape permeability project also mapped “sub-core” habitat areas, buffers around existing areas of habitat (the width of the buffer depended upon the adjacent habitat and how permeable it is to species trying to move from one area of good habitat to another), areas adjacent to existing core habitat (“tier 1”) which would be suitable for restoration, plus areas in proximity (“tier 2”) or fragments outside the current network (“tier 3”). All these areas are included in the potential network. The intention is that the Potential Ecological Network will help target where the best and most effective enhancements could be made.



8. The Dorset Ecological Network and public access

Whilst some of the sites included in the network will be very familiar to Dorset residents through rights of way, open access land and nature reserves, many of the sites are privately owned and do not have open access or public rights of way. Their inclusion here is linked to the movement of wildlife rather than people and the map does not infer any right of access.

9. Other areas shown on the maps

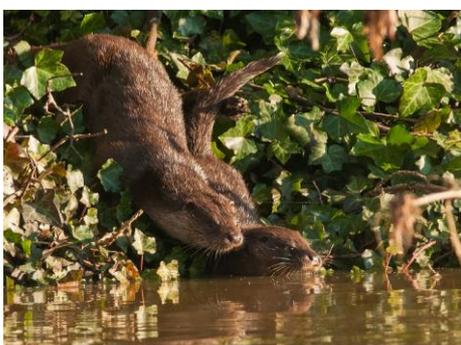
Boundaries are shown for areas which complement the ecological network data, including:

- Dorset AONB & Cranborne Chase AONB;
- Indicative flood plain (included within the Potential Ecological Network);
- Wild Purbeck Nature Improvement Area.

10. How the Dorset Ecological Network will be provided to users

1. A set of pdf maps showing the existing and potential ecological network for each district will be publicly available on the Dorset Local Nature Partnership website: www.dorsetlnp.org.uk/ecological_networks
2. The existing and potential networks are available on Dorset Explorer: <https://explorer.geowessex.com/> (open layer control and you will find them under Environmental Records)
3. Users can contact DERC for pdf maps showing specific areas (e.g. a Neighbourhood Plan area) or a GIS dataset. A charge may apply for processing this data request.
4. GIS datasets will be available through a data agreement with DERC (currently this includes Local Planning Authorities, Dorset Wildlife Trust, Wessex Water and Environment Agency).

The Dorset Ecological Network will need to be periodically updated as revised datasets are made available. We aim to do this annually. Updating the network maps is relatively low cost, though nevertheless funding support to enable this is crucial.



Rivers and wetlands are vital wildlife corridors for species like otters with large home ranges.

Photo: © Stewart Canham



Churchyards like at Broadmayne can shelter wild flowers and are an important stepping stone.

Photo: © Dorset Wildlife Trust



11. References

DERC (2009) *Urban Wildlife Corridors and Stepping Stones; Weymouth and Portland Borough*. Unpublished report.

Medcalf & Ties (2012) *Mapping Landscape permeability within the Dorset AONB to prioritise area for targeted habitat creation and protection*. Environment Systems Ltd for the South West Protected Landscapes and Dorset AONB.

Defra (2011) *Biodiversity 2020: A strategy for England's wildlife and ecosystem services*: www.gov.uk/government/uploads/system/uploads/attachment_data/file/69446/pb13583-biodiversity-strategy-2020-111111.pdf

Ministry of Housing, Communities and Local Government (2018). *National Planning Policy Framework*: <https://www.gov.uk/government/collections/revised-national-planning-policy-framework>

Biodiversity Appraisal in Dorset, Dorset Councils: <https://www.dorsetforyou.gov.uk/countryside-coast-parks/countryside-management/biodiversity/biodiversity-appraisal-in-dorset.aspx>

Making Space for Nature: A review of England's Wildlife Sites and Ecological Network (2010), Chaired by Professor Sir John Lawton: <http://webarchive.nationalarchives.gov.uk/20130402151656/http://archive.defra.gov.uk/environment/biodiversity/documents/201009space-for-nature.pdf>

HM Government (2018), *A Green Future: Our 25 Year Plan to Improve the Environment*: <https://www.gov.uk/government/publications/25-year-environment-plan>

12. For more information

The Dorset Ecological Network and Opportunity maps are available at: www.dorsetlnp.org.uk/ecological_networks

Please contact the Dorset Local Nature Partnership for further information: info@dorsetlnp.org.uk or see the website: www.dorsetlnp.org.uk

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A well-connected Ecological Network runs through urban areas and into the marine environment in parts of Poole

Photo: © Mike Thornton



Appendix 1: Sites included in the Dorset Ecological Network

Dorset Ecological Network				Potential Ecological Network	Additional Datasets
International Sites	National Sites	Local Sites	Wildlife Corridors & Stepping Stones		
Designated as of international importance.	Designated as of national importance.	Recognised in Dorset as of county nature conservation value.	Forming links between sites or through urban areas; small sites of wildlife value; areas of habitat restoration or creation.	Improvements to these areas would benefit or extend the existing network including areas with high potential for restoration.	May be shown on maps to complement existing network.
Special Area of Conservation (SAC) ^{1,2}	Site of Special Scientific Interest (SSSI) ^{3,4}	Local Nature Reserve (LNR)	W&PBC – Wildlife Corridor & Stepping Stones survey	Other open green spaces (e.g. playing fields)	Areas of Outstanding Natural Beauty (AONB)
Ramsar Sites ^{1,2}	Marine Conservation Zone (MCZ)	Site of Nature Conservation Interest (SNCI)	Bournemouth Wildlife Sites survey (scoring 3-5)	Bournemouth Wildlife Sites survey (scoring 1-2)	Wild Purbeck Nature Improvement Area (NIA)
Special Protection Area (SPA) ^{1,2}	National Nature Reserve (NNR)	Local Geological Site (LGS)	Habitat Restoration Sites (ponds with a 5m buffer)	Minerals sites before restoration begins	Water layer (rivers, ditches, ponds)
		The Great Heath (TGH) Project sites	AONB Landscape Permeability study core areas.	AONB Landscape Permeability study sub-core areas	Enclosed tidal water
		Monitored Conservation Road Verges	Veteran trees (not shown on District-wide maps)	AONB Landscape Permeability study buffers	
		Nature Reserves (including DWT, RSPB, BC, ARC)	Ponds (with suitable survey data)	AONB Landscape Permeability study Tier 1 (suitable adjacent habitat)	
		Churchyards in the Living Churchyard project	Ancient Semi-natural Woodland	AONB Landscape Permeability study Tier 2 (suitable habitat in proximity)	
		Veteran tree sites	Trailways, railways and roads with good semi-natural habitat adjacent	AONB Landscape Permeability study Tier 3 (small isolated fragments)	
		Nature Parks designated in Local Plans	Nature Parks established by local partnerships	Plantations on Ancient Woodland sites	
				Trailways and roads with poor/no adjacent habitat	
				Indicative fluvial floodplain	
				RSPB heathland potential areas (East Dorset)	

¹Parts of Chesil & The Fleet SAC and Chesil Beach & The Fleet SPA and Ramsar are shown as 'Tidal Water'

²Part of River Avon SAC is shown as 'Inland Water'

³Part of Christchurch Harbour SSSI is shown as 'Tidal Water'

⁴Parts of Moors River and River Frome SSSIs are shown as 'Inland Water'

Ecological Network Maps

Potential Ecological Network Maps

