Surrey Nature Partnership
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Surrey in the national Nature Recovery Network

1. Policy background

For the past decade the **Surrey Nature Partnership** (SNP) has recommended using their identified Biodiversity Opportunity Areas (BOA) for adoption by the county's Local Planning Authorities (LPA), as the basis for meeting national policy obligations for mapping and promoting the county's Local Ecological Networks.

A document offering guidance to the planning policy directives for establishing a Surrey Ecological Network, as well as use of BOAs in the planning system, has been issued by the SNP as *Biodiversity Opportunity Areas: the basis for realising Surrey's ecological network*[1] (Surrey Nature Partnership, Revised 2019).

To recap, the **National Planning Policy Framework** (NPPF) 2019 requires that;

Planning policies & decisions should contribute to and enhance the natural and local environment by 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 170].

Plans should 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 171]. And;

To protect and enhance biodiversity and geodiversity, plans should 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 local partnerships for habitat management, enhancement, restoration or creation; and promote the conservation, restoration and re-creation 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.' [paragraph 174].

In 2018 the government published *A Green Future: our 25 year plan to improve the environment* (the '**25-Year Environment Plan**' (25YEP)). Partly in response to lobbying by the environmental NGO sector, this pledged to develop a **Nature Recovery Network** (NRN) that will *"..complement and connect our best wildlife sites, and provide opportunities for species conservation and the reintroduction of native species*"; and to provide *"..500,000 hectares of additional wildlife habitat, more effectively linking existing protected sites and landscapes, as well as urban green and blue infrastructure..*", as the key delivery vehicle for the recommendations of the Lawton Report[2]. Since its launch, it has become clearer that the 25YEP's Nature Recovery Network envisions the integrated linkage of county ecological networks, to comprise an aspiring but eventually complete meta-network traversing the country at national level. There is also a proposal for a new landscape level piloting scheme that would approve up to 25 'recovery areas', where the initial focus would be on peatland restoration, natural flood management and woodland planting.

[1] See; *Biodiversity Opportunity Areas: The basis for realising Surrey's ecological network* (SNP 2019)
[2] See; *Making Space for Nature: A review of England's Wildlife Sites and Ecological Network* (Defra 2010).

National planning policy guidance (MHCLG, July 2019) answers the FAQ; How do local ecological networks relate to the Nature Recovery Network? as follows;

"*As set out in the Government's 25 Year Environment Plan, the Nature Recovery Network is an expanding and increasingly-connected network of wildlife-rich habitat across England. It comprises a core network of designated sites of importance for biodiversity and adjoining areas that function as stepping stones or wildlife corridors* [&] *areas identified for new habitat creation... Defra, Natural England and other government bodies are working with national and local partnerships to deliver the Network, which includes support for developing maps and advice to show where actions to improve and restore habitats would be most effective.*

Local ecological networks can make a significant contribution to developing the Nature Recovery Network. Local ecological networks can be identified and mapped as a part of the plan-making process, with policies identifying appropriate levels of protection and opportunities to create, restore or enhance habitats or improve connectivity."

2. Identifying Surrey's Local Ecological Network

The Surrey Biodiversity Opportunity Areas were identified and mapped to comprise a synergistic, exemplary (ie. not all-inclusive) network, selected from the following elements;

- The broad geological, geomorphological and bio-geographical character of the county, creating its main landscape types;
- key natural systems and processes within the area, including river catchments;
- the location and extent of internationally, nationally and locally designated sites;
- the distribution of protected and priority habitats and species;
- habitats where specific land management practices are required for their conservation;
- main landscape features which, due to their linear or continuous nature, support migration, dispersal and gene flow, including any potential for new habitat corridors to link any isolated sites that hold nature conservation value, and therefore improve species distribution;
- areas identified by the Surrey Nature Partnership with potential for habitat enhancement, restoration or re-creation, including those necessary to help biodiversity adapt to climate change or which could assist with the habitat shifts and species migrations arising from climate change.

These elements align with the evidence base as described by the National planning policy guidance to be appropriate for mapping of local ecological networks, with the exception of the following;

- audits of green infrastructure, such as open space within urban areas; [*only partly available for Surrey*]
- information on the biodiversity & geodiversity value of previously developed land and the opportunities for incorporating this in developments; [*only partly available for Surrey*]
- areas of geological value which would benefit from enhancement and management; [*not applicable to the remit of the Surrey Nature Partnership*], and
- areas of irreplaceable natural habitat[3] [*only indirectly considered, and not comprehensively*].

The protocol used to identify BOAs across the former South East region is summarised as *South East Regional Opportunity Area mapping methodology* (SEEBF, August 2008).

[3] Note; the Surrey Nature Partnership is preparing *Irreplaceable habitats guidance for Surrey* (Surrey Nature Partnership, in prep.)

3. Discussion

The purpose of the Surrey BOAs is to prioritise those broad areas of the county where improved habitat management, as well as efforts to restore and re-create priority habitats[4a] will be most effective in enhancing connectivity to benefit recovery of priority species[4b]. Therefore, although the entire county asset for the elements described above were considered in this prioritisation, the analysis resulted in multiple, distinct sections of varying areal extent to make up the collective network, representing the most deserving strategic foci for targeting landscape scale conservation action. Importantly, our BOAs are contiguous with those of neighbouring counties (Berkshire, Hampshire, Sussex and Kent) where these are present, as part of a South-East regional ecological network.

Surrey is comparatively rich in semi-natural habitats and a major proportion of these qualify as priority/Habitats of Principal Importance (HPI). The **Surrey Habitat Framework** presents the best available data-set for the distribution and extent of priority habitats in Surrey (see **Figure 1**). In total HPI aggregate to c.44,650 ha (26%) of the county. By far the largest contributing priority habitat is Mixed deciduous woodland (>20% of the county). Collectively the BOA network aggregates to 65,182 ha, which is 39% of Surrey (see **Figures 2** & **3**). At least 95% of the aggregated HPI total falls within the BOA network.

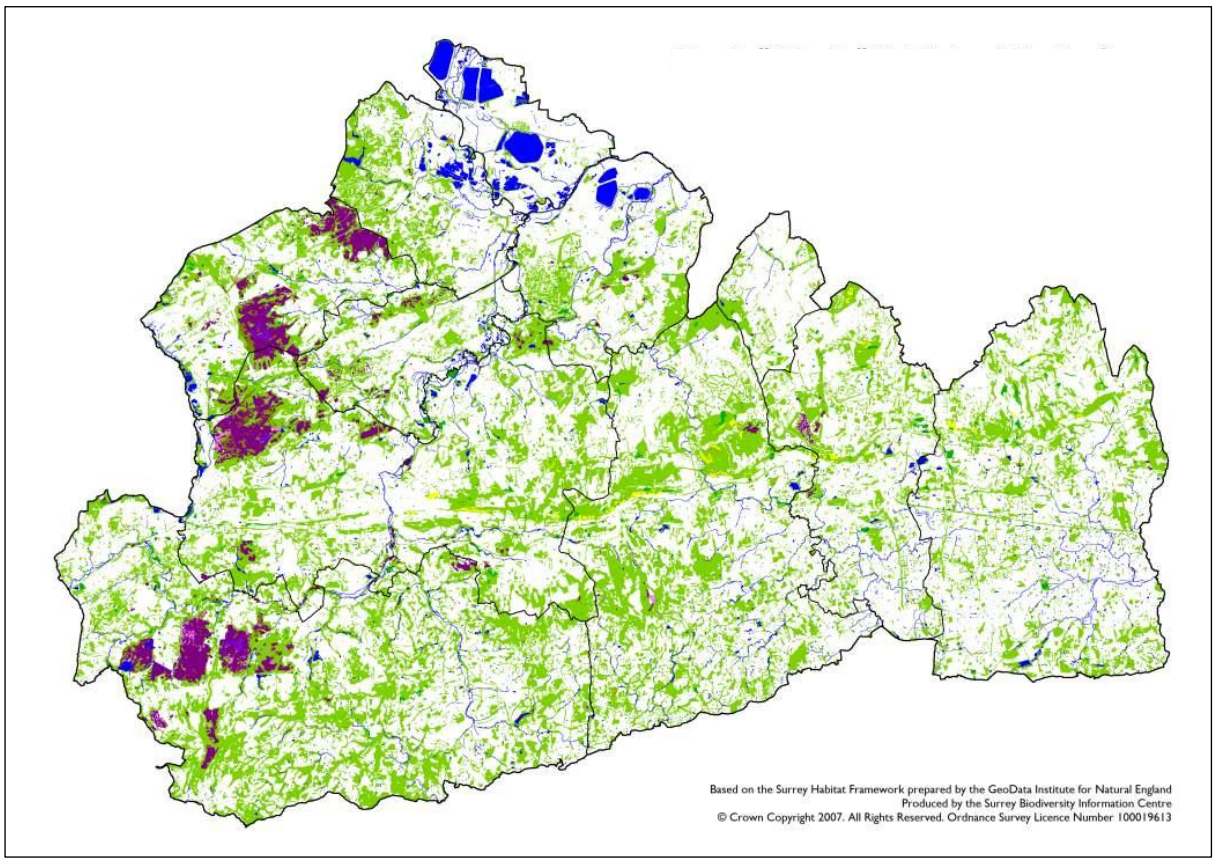

Figure 1: HPI within the Surrey Habitat Framework[5]

[4a-b] Listed under Section 41 of the *Natural Environment & Rural Communities Act* 2006 as 'Habitats & Species of principal importance for the conservation of biological diversity in England', for which all public bodies must have regard in the proper exercise of their functions under Section 40.

[5] See; Surrey Habitat Framework, Surrey Biodiversity Information Centre (in prep.). Green=combined woodland HPI; blue=combined wetland HPI; purple/pink=heathland; yellow=combined unimproved grassland HPI.

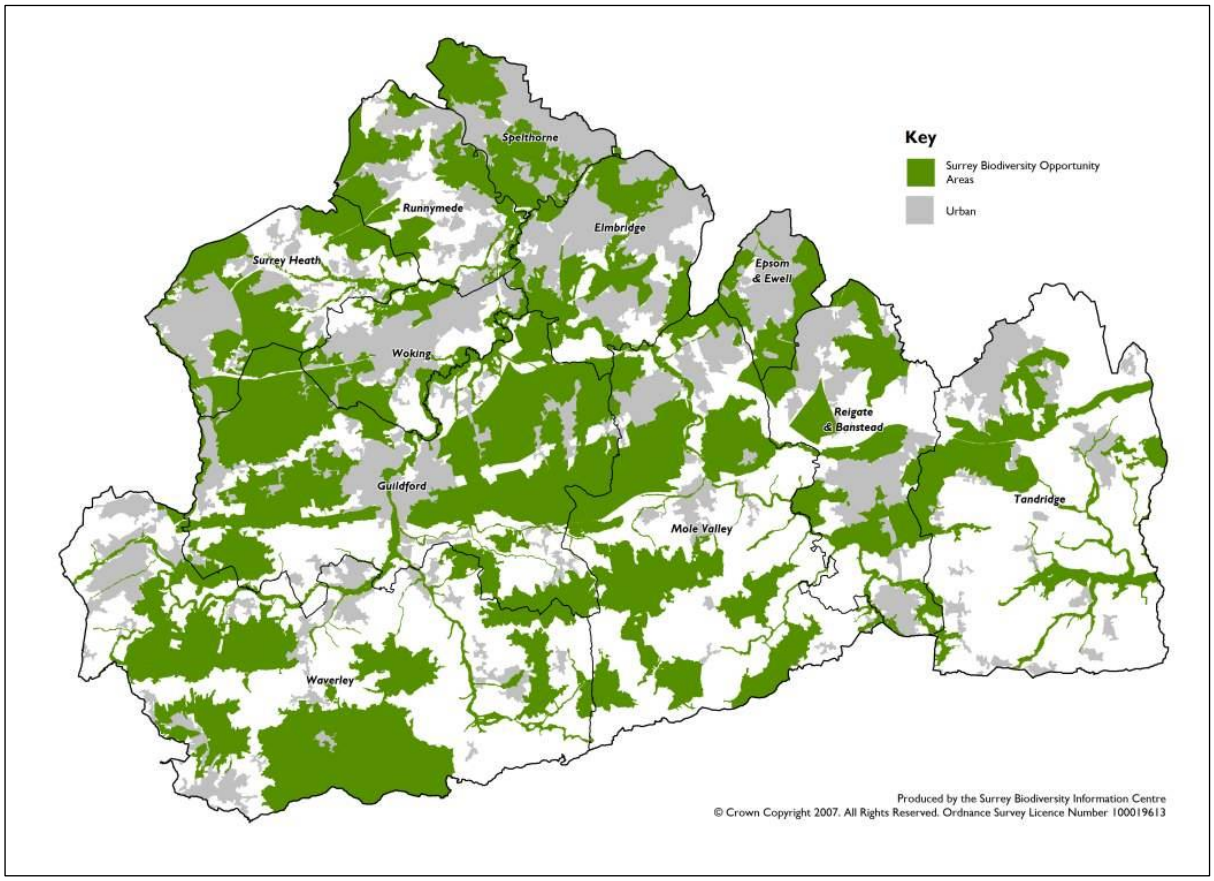

Figure 2: Biodiversity Opportunity Areas in Surrey

Because of this relatively high proportional cover of HPI there are few areas of Surrey where some generic level of habitat connectivity has not been retained, achieved in the least by extensive occurrence of 'stepping stone' (typically native broadleaved woodland) habitat patches. The key barriers are the strategic transport infrastructure network and larger urban centres of Surrey, but even there residual green infrastructure will play some connective role, which is yet to be fully recognised through a consistent methodology.

The necessity for a 'landscape scale' approach to biodiversity conservation was argued in *Making Space for Nature*[2]. This offered the oft-quoted mission epithet to achieve a *Better, Bigger, More & Joined* network of biodiverse habitats spanning the country. The importance of tailoring the local emphasis of implementing this strategy to the individual character of any given region, county or other jurisdictive area is discussed at length by the authors. For areas typical of the majority of Surrey's countryside, it would be considered most important to make sure that the existing semi-natural habitat assets are being managed as positively as possible, first towards achievement and then to maintain their optimum condition (ie. '*Better*'). Consolidation of habitat connectivity between sites would then come next, through the focused restoration and enhancement of peripheral buffering land around the existing patches (to make them '*Bigger*')[6].

[6] See; *Surrey Wildlife Trust Living Landscapes Strategy*, pp.15-17 (Surrey Wildlife Trust, 2014)

Taken within this context, it makes clearest sense to approach the identification of our local ecological network as a prioritisation of exemplar proactivity project areas, which is exactly as the mapping exercise for the Surrey BOAs has proceeded. The format of the individual sets of BOA objectives and targets further reflects this approach. The question of how to regard those areas falling between the BOAs remains a matter for further, local interpretation by individual jurisdictive interests and these have included both parish/neighbourhood fora as well as at district level. A key priority here must be to recognise the existence and potential for enhancing biodiverse green infrastructure networks to penetrate our larger urban centres from their peri-urban fringes. In more rural contexts the focus will be on restoring field boundary networks and creating extra stepping stone habitats, including hedgerow complexes as well as field ponds and small woodland shaws.

In addition, the invertebrate conservation charity Buglife is currently promoting its B-Lines initiative[7]. This seeks to identify broad landscape corridors traversing the entire country, to prioritise the creation and restoration of wildflower-rich habitats for the recovery of invertebrate pollinator populations. Surrey has recently had its piece in the national B-Line strategy mapped, which successfully builds on our BOA network, especially where these meet those of our neighbours.

4. Reconciling the NRN objectives with Surrey's BOA network

We would first postulate that via a process of lengthy iteration Surrey's ecological network has been developed to a higher standard than in most parts of the country, where these indeed exist[8]. Our strategy includes clear targets for HPI restoration and re-creation, as well as recovery of related priority species. It goes still further to provide an initial site schedule indicating where and by which mechanisms a significant proportion of these targets could be realised.

The Hampshire Biodiversity Information Centre (HBIC) was commissioned by Natural England to undertake a review of their ecological network approach[9]. The result is a map representing the hierarchy of international, national and locally designated sites of importance for biodiversity, plus other priority habitats and areas identified for habitat restoration or creation, all overlain with their BOAs. Significantly this work concluded for Hampshire that; "*BOAs* [alone] *were considered too broad-brush for defining ecological networks for use in planning at the local scale, plus they excluded large parts of Hampshire. A much more precise delineation of an ecological network was required, whilst retaining BOAs as the "strategic ecological network" for landscape scale projects*."

The Surrey ecological network (as represented by our BOAs) is acknowledged as having similar limitations, mainly from the perspective of certain LPAs. Outside of the BOAs there are clear areas of varying size apparently lacking in landscape-scale contextual information, and this is more or less dictated by the individual character of LPAs[10]. But as the mapping of the complete Surrey HPI and other relevant asset baselines are widely available elsewhere, it is difficult to recognise the added value that a further map consolidating all such data (as with the Hampshire 'NRN' produced by HBIC) would actually offer us in Surrey.

By contrast, a more informative application of the priority habitat data-set is achievable by deriving indices for the relative 'connectedness' of our Surrey landscapes for biodiversity, using a GIS

[7] See; https://www.buglife.org.uk/our-work/b-lines/.
[8] See; Environment Bill Explanatory Notes (Bill 3-EN), Section 858, p.111, October 2019.
[9] See; Mapping the Hampshire Ecological Network (HBIC, updated November 2018).
[10] For example, 59% of Guildford Borough is within the BOA network, compared with 18% of Tandridge District.

modelled approach. This would also indicate precisely where HPI enhancement, restoration or re-creation projects should be targeted spatially to make an evidence-based and measurable increase in landscape connectivity over the current situation. The Surrey Wildlife Trust (SWT) is currently undertaking this level of work using a *Circuitscape*[11] methodology, within the prioritised BOAs of its current Strategic Plan 2018-2023. Here, SWT has gone beyond a simplified, generic interpretation of physical connectivity to model a more realistic concept of functional, ecological connectivity, obtaining baseline indices for the most important HPI across its prioritised target areas, informed by an expertly-advised 'focal species' approach[12].

To conclude, any piloting of proposed 'nature recovery areas' could well consider parts of Surrey for observation of indicators of success and best practice in the recovery of biodiversity at scale. Examples of eligible areas might equate to the North Downs BOAs (both the scarp and dip-slopes); the Thames Basin Heaths BOAs and/or those of the south-western Wealden Greensand heaths, any of which could also involve our neighbouring counties in partnership (ie. Kent, Hampshire and Berkshire, or West Sussex).

	within BOAs (ha)	%	**beyond BOAs** (ha)	%	**Surrey total** (ha)
Heathland	3790	92	330	8	4120
Calcareous grassland	267	87	40	13	307
Acid grassland	149	99	2	1	151
Meadows	32	98	1	2	33
Standing waters	3375	100	-	-	3375
Rivers	2.5	100	-	-	2.5
Reedbeds & Fen	139	100	-	-	139
Floodplain grazing marsh	*tbc*	100	-	-	*tbc*
Wet woodland	*tbc*	>86	*tbc*	<14	36071
Beech & Yew woodland					
Mixed deciduous woodland	*tbc*	>85	*tbc*	<15	
Wood pasture & parkland	*tbc*	>80	*tbc*	<20	*tbc*

Figure 3: areas & % of selected HPI within Surrey's ecological network

[11] See; https://circuitscape.org
[12] See; Siggery, B et al. 2020. *A methodology for quantifying & measuring connectivity across Surrey and beyond* (Surrey Wildlife Trust).