

A Living Landscape for Surrey

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A Living Landscape for Surrey...



“The publication of Surrey Wildlife Trust’s Living Landscapes Policy is the culmination of a number of years work, recognising the success we have had in recent times in improving habitat management but also acknowledging that targets to improve biodiversity by 2010 have not been met.

Over the last ten years, and since the introduction of the Surrey Biodiversity Action Plan, there have been some notable successes for biodiversity within Surrey. In particular, habitat management has made some remarkable progress with large areas maintained,

restored and created within that time. However, this is set against a backdrop of continued and increasing decline in the species diversity within those habitats, as well as the continuing problem of habitat fragmentation which exacerbates the problem of isolation, rendering these species all the more vulnerable to extinction. The recent publication by Natural England, *Lost life: England’s lost and threatened species* has documented the scale of this decline, with nearly 500 species having been lost in the last 200 years.

Surrey faces a number of perennial threats to its biodiversity in the shape of demanding targets for new housing and associated infrastructure, and now also from future climate change. In response to such threats, conservation organisations worldwide have recognised the need to think differently, and in particular The Wildlife Trusts have launched their Living Landscapes campaign.

Living Landscapes recognises the need to reconnect habitats in order to provide more robust refuges for wildlife by enabling it to move more readily throughout the landscape and adapt to changes caused by the pressures outlined above.

The publication of this policy describes what Living Landscapes means for the Surrey Wildlife Trust and provides us with a springboard to continue the excellent work achieved so far, whilst defining how we can move forward into the future to ensure that a rich biodiversity continues to flourish in wondrous complexity at the heart of the County’s much prized landscapes.”

Ron Pritchard, Chairman

1. Introduction

Over the past decade, organisations involved with wildlife conservation have increasingly realised that reversing the continuing declines in **biodiversity*** will require some changes in approach. Both statutory and voluntary sector organisations now understand that they need to be operating not just in the specially protected areas, but throughout the wider countryside - at the **ecosystem**, or landscape scale. There is also a dawning realisation that the speed of climate change will amplify the negative effect of habitat fragmentation as species populations become stranded in unsuitable climatic conditions, unable to adapt or extend their distribution northwards. In tandem, there has been a desire for a holistic, integrated approach to environmental policy making, moving away from traditional departmentalised working to consider whole environmental systems rather than their individual elements (for example biodiversity, recreation, agriculture, forestry, water, etc.).

Landscape scale does not mean abandoning the established approaches to conservation, such as designating and managing protected areas, or prioritising the most endangered species and habitats. Rather, the Surrey Wildlife Trust (‘the Trust’) regards the ecosystem approach as a method for applying a coherently structured series of measures effective at various scales. Towards one end this might include promoting the design and use of school nature gardens, while at the other end of the scale we pressure effectively for planning policy drivers to support the design and management of ecologically functioning green infrastructure, to maximise environmental and social benefits at the county level and beyond.

This ‘joined up’ perspective should enable a far more strategic approach to tackling the perennial threats to biodiversity and prioritise the use of resources at the appropriate scale. In time, it should also identify and utilise synergies rather than conflicts between social, economic and environmental objectives.

This publication seeks to clarify what we at the Trust mean by landscape scale conservation - ‘Living Landscapes’ - and advocate its widespread adoption across Surrey.

It will also attempt to map out the processes involved in implementation and who might be responsible. As ever, effective partnerships will be the key to realising the Living Landscapes vision; with everyone on board and bound for a common goal we will grasp this last great opportunity to achieve a sustainable future for Surrey’s cherished yet beleaguered wildlife.

* see Glossary (all text in green)



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2. Background to Living Landscapes



Staffhurst Wood © Katy Gower

Surrey's natural characteristics

Surrey has a varied geology ranging from acidic sands and gravels to **calcareous** chalk. This geo-diversity supports a wide range of habitats, each with its associated flora and fauna. Surrey's natural heritage is unique in several respects; it is England's most densely wooded county and supports 13% of the UK's diminished lowland heathland. It also has 3% of its remaining chalk downland, and is drained by two major Thames basin tributaries; the Rivers Wey and Mole. In the north of the county there are a number of large open water-bodies, the legacy of past minerals extraction as well as water provision to the vast population of London on our doorstep.

These habitats contain internationally important populations of fascinating and often very appealing wildlife. This is recognised in their designation as RAMSAR sites or European *Natura 2000* Special Protection Areas and Special Areas of Conservation, covering some 5% of Surrey (see Box, right). Sites of Special Scientific Interest of national importance

account for a further 2%. Over 70% of the county is currently protected within the Green Belt, supporting a far higher proportion (4%) of **Ancient woodland** than anywhere else in Britain. Purely on a species-count basis, Surrey is the UK's second richest county for butterflies.

This rich, diverse landscape is the bedrock of many aspects of life and economics within Surrey. Many people choose to live and work here

Brockham Chalk Cliff © Charlie Hoare

partly because of the beautiful landscape. And by default, the county is extremely prosperous – in fact, it is the wealthiest in the UK by some margin. But maintaining the wealth of the landscape also requires our constant attention.

Effective wildlife management is an essential yet largely hidden requirement to maintain the countryside through which people drive, walk their dogs, are inspired and refreshed by, but largely take for granted. The social and economic dynamism within Surrey certainly poses threats to its environment, but could also be seen as a possible solution. The very people whose needs can pressure their environment can also help protect and enhance their local biodiversity.

Thames Basin Heaths SPA

The Thames Basin Heaths were designated a Special Protection Area in 2005 under provisions in the EU Birds Directive. The SPA covers 8,275 ha of prime heathland in Surrey (with over 50%), Berkshire and Hampshire. 83% of the UK's former lowland heathland has been lost since the early 19th century. The Trust manages 37% of the SPA falling within five major sites; Colony Bog & Bagshot Heath, Ash to Brookwood Heaths, and Ockham & Wisley, Horsell, and Chobham Commons. The SPA is important for its breeding populations of three iconic heathland birds; Nightjar, Dartford warbler and Woodlark. Housing development on nearby land presents a major threat to these birds as they all nest at around ground-level and are thus extremely sensitive to recreational pressure, particularly dog-walking and cat ownership, and the elevated incidence of arson. A strategic approach is being advanced by a partnership of relevant local authorities (advised by Natural England, The Wildlife Trusts and the Royal Society for the Protection of Birds), in order to allow an appropriate level of development but also comply with the legislation protecting the SPA and its birds. In essence this involves providing sufficient extra green infrastructure within the vicinity to dilute the added recreational pressure on the SPA. If sensitively designed and managed this open space should also deliver effectively on Living Landscape strategic linkage aspirations.



Dartford Warbler © Charlie Hoare

The role of Surrey Wildlife Trust

The Trust belongs to the national federation of 47 county Wildlife Trusts, and is the only organisation concerned solely with the conservation of all forms of wildlife in Surrey. Working in partnership with several key organisations and agencies, its mission is:

'To protect and regenerate Surrey's wildlife'

The Trust manages 82 nature reserves, covering over 8,000 hectares of Surrey's countryside for the benefit of people and wildlife. In 2002 the Trust formed a unique partnership with Surrey County Council and assumed management responsibilities for almost its entire countryside estate. A grazing agreement with the Ministry of Defence to manage Ash, Pirbright and other estate ranges was set up in 2006, and in 2007 the Trust assumed management of five Mole Valley District Council countryside sites.

The Trust works closely with communities and volunteers across Surrey to improve local green spaces, and is currently expanding this work via the Surrey Greenspace Project (see Box, right). The Trust is also involved in strategic planning and development control issues, as well as wildlife consultancy and ecological survey work across the county. It hosts the Surrey Biodiversity Information Centre, which is responsible for gathering, managing and disseminating information on the county's habitats and species. The Trust also provides out-of-school environmental education to 7,500 children per annum from four centres across Surrey.

Surrey Biodiversity Partnership and Biodiversity Action Plan

Living Landscapes has not sprung out of a vacuum. Rather, it is a natural evolution of various successful wildlife conservation strategies to date. For almost two decades, these have centred on the Surrey Biodiversity Partnership and the implementation of its Biodiversity Action Plan¹. The Trust has been a leading partner on the SBP from the outset, hosting its co-ordinating officer and leading on several action plans. So far the BAP has focused effort on important habitats such as Chalk grassland and Heathland, as well as threatened species such as the Otter and the Small blue, a declining downland butterfly. Living Landscapes seeks to build on this by re-structuring the action plan approach to carefully targeted geographic areas, aiming to create and connect up larger areas of habitats to form an ecologically functional network.

¹ See: *The Surrey Biodiversity Action Plan, achievements and future action* (Surrey Biodiversity Partnership, 2010)



Surrey Greenspace Volunteers © Charlie Hoare

Surrey Greenspace Project

2009 marked the launch of the Surrey Greenspace Project, the Trust's 5-year outreach initiative funded by the Heritage Lottery which aims to facilitate opportunities for Surrey residents to engage more actively in the management of local natural open spaces. There are ten principal target sites located within the urban centres of Guildford, Woking and Merstham where project staff presently concentrate their efforts. Here, a programme of regular events and activities is designed to encourage more people into the sites and to use them with appropriate sensitivity, whilst gaining physical fitness through undertaking practical conservation work. This improves the sites' general profile and access by the local community, and engenders new respect for natural heritage and its conservation. 16 schools are also targeted by the project and several have been encouraged to pursue a 'Forest Schools' approach, where grounds are managed to benefit wildlife and special effort is made to engage in more out-of-classroom learning. An Environmental Group Support Officer is also available to advise new and existing 'Friends' groups across Surrey on managing their local green spaces. Wildlife gardening is a further area of promotion, where work has developed alongside a local sponsor, gardening suppliers Squires Garden Centres.

3. The problem...

Continuing biodiversity losses

Nationally and locally, Biodiversity Action Planning has achieved some notable successes, including work to restore key (mostly *Natura 2000*) sites under the Natural England 2010 initiative, and by placing statutory duties on public bodies to consider biodiversity across their entire core business (via the *Natural Environment & Rural Communities Act, 2006*). In Surrey, the Trust has achieved optimal and restorative management over a vast area of BAP priority habitat, working both unilaterally and in partnership with other key land-owners, such as Surrey County Council and the Ministry of Defence (see Case study1). Over two-thirds of this land is of national significance and the work has been well grant-assisted by the agencies administering agri-environment schemes.

Nevertheless, national biodiversity indicators continue to decline². Across the UK, it is estimated that 39% of threatened habitats and 27% of threatened species are still declining. In particular, research indicates that restorative management of habitats is not necessarily achieving the same positive results for their priority threatened species³. A significant impediment to halting the decline in biodiversity - let alone reversing it - is the continuing fragmentation of the landscape⁴, making it overall less 'wildlife-friendly'. Isolated sites cannot sustain their wildlife in the long term. Living Landscapes is the response - aiming to reverse this fragmentation, by linking areas of existing and potential conservation value to create corridors through which wildlife populations may naturally disperse and colonise.

The United Nations Millennium Ecosystem Assessment of 2004-5 concluded that we are depleting the Earth's natural resources at an alarmingly unsustainable rate and the services to humankind that these underpin (so-called 'Ecosystem Services'), are being increasingly degraded in consequence. Internationally, there was evidence for significant damage to at least 60% of the sampled global ecosystem services under examination. At the heart of the UN assessment is a stark warning. Human activity is putting such strain on the natural functions of Earth that the ability of the planet's ecosystems to sustain future generations can no longer be taken for granted. The provision of food, fresh water, energy and materials to a growing population has come at considerable cost to the complex systems of plants, animals and biological processes that make

the planet habitable. In many cases, it is literally a matter of living on borrowed time. By using up supplies of fresh groundwater faster than they can be recharged for example, we are depleting these assets at our children's cost.

In parallel, society has become increasingly disconnected from the natural world due to the combined distractions of urbanisation⁵, globalisation, runaway technological advance and an apparent media obsession with celebrating materialistic lifestyles. This manifests in the abuse and under-use of natural open space and facilities, and a widening disregard for our natural heritage - thus paving the way for unopposed corporate environmental degradation. A re-engagement of communities with their local wildlife, sites and habitats is clearly essential to achieving the Living Landscapes vision.

Projected demands on Surrey's natural resources

Habitat fragmentation is the result of compounded historic land-use changes, including the steady growth of towns and villages with expanding human populations as well as progressive agricultural intensification. 'Urban' land-use now accounts for some 20% of Surrey (see Figure 1 in appendix), including residential and commercial development, the highways and rail networks, and other artificial surfaces. The South East Plan (GOSE, 2009) forecasts Surrey's population to change significantly, both in terms of age range and in overall size. This is the primary driver for a projected demand for just under 58,000 additional dwellings over the next two decades, requiring substantial **infrastructure** enhancements. The latter include transport networks, both energy and water supply, waste treatment capacity and flood defences. All of this is to be imposed on a current situation already widely viewed as "infrastructure deficient" for key areas of provision.

Predicting future demands on resources accurately is made difficult by the unpredictability of consumer attitudes. For example with domestic waste management, experience over recent decades suggests that waste volume can grow far quicker than the population producing it. Waste generation has more to do with people's behaviour, affluence and their consumption of goods. Concerning water supply, consumption per head in Surrey is currently amongst the highest in the country. Three Valleys Water's supply area (the provider in the north of the county) is already a designated area of severe water stress, yet 200,000 new properties are anticipated here by 2030. Research for the EU **Water Framework Directive** concludes that a large number of Surrey's rivers do not meet new water quality standards and the Environment Agency considers that most of the county's sewage

treatment works will require performance upgrading in the near future.

Such projections add up to gathering pressure for even more of Surrey to be built over, with precious little room left for this in more obvious areas of opportunity⁶. As so much of the county's open countryside is currently protected within the Green Belt, the previous Government advanced an argument to renege on this historic commitment to release a significant area of greenfield sites for development, initially on the margins of existing residential and employment hubs.

Green infrastructure is a planning term in current use to emphasise the importance of undeveloped land and its functions alongside but integral to that of the built sector. Strategic green infrastructure in Surrey is managed by a variety of agencies and as mentioned previously, many sites are managed by the Trust on behalf of Surrey County Council. Other large areas of strategic open space are managed by Natural England and the National Trust. Additional development places increased strain on this too, as more is demanded of these essential functions, from recreational space to flood retention capacity. It will be a major challenge to ensure that measures are in place to protect the natural environment as it comes under pressure from development.

Climate change

Our biodiversity now also faces the deeply worrying threat from future rapid climate change, the full significance of which is still only dawning. All predictions indicate that over the current millennium we will experience hotter, drier summers and warmer, wetter winters with an increasing frequency of extreme weather events. Adaptation to climatic change is a major evolutionary driver, but the pace and scale of this man-induced change will be unprecedented. Moreover, an inability for wildlife populations to respond naturally by extending their ranges in a generally northward, cooler direction due to habitat discontinuity in the modern fragmented landscape, will surely result in many untimely local (and ultimately national) extinctions. Although we can confidently surmise that the least mobile species are likely to fare worst, how this then impacts their complex communities and the supporting ecosystems of which they are part, is less predictable. Of course we know our flora and fauna is in a natural state of flux and that some change is inevitable - however, the fate of some of our best-loved wildlife will be sealed in the absence of a coherent ecological network of escape routes to alternative suitable habitats.

² *Conserving Biodiversity - the UK Approach* (Defra, 2007).

³ See; *Lost life: England's lost and threatened species* (Natural England, 2010).

⁴ *Halting biodiversity loss - Thirteenth Report of Session 2007-8* (House of Commons Environmental Audit Committee, November 2008).

⁵ See; *A Child's Place: Why environment matters to children* (Green Alliance/Demos, May 2004).

⁶ See; *Study into the Environmental Impacts of Increasing the Supply of Housing in the UK* (Defra, April 2004)

4. The solution...

Landscape scale conservation as climate change adaptation

The considered ecological response to these real and present threats is a reinvigorated strategy to embed the principle of biodiversity conservation across the entire landscape; to address the 'oceans' separating the island hotspots as represented by already recognised wildlife sites (variously protected but nonetheless managed primarily for their nature conservation interest).

Such a landscape scale approach to conservation is certainly not a new concept. Protected landscape designations first came into use following the Second World War with the passing of the *National Parks and Access to the Countryside Act*, and have evolved since with an eye to changing confidences in national and European-wide food security, timber production and so on. A local example is the Surrey Hills Area of Outstanding Natural Beauty (AONB), set up in 1958 and covering approximately a quarter of the county (see Box, right). Designation of such areas has assumed a role in promoting, through subsidy, a traditional approach to agriculture which focuses less on yields and more on sustainability in method. The degree to which state-backed nature conservation mechanisms attempt to influence day-to-day agricultural practice has always begged controversy however, and remains a somewhat polarised debate for many involved.

As a solution to the climatic stranding of wildlife within protected yet isolated sites as described in the previous chapter, the re-connection of these sites via an ecologically-functioning 'corridor' network effective throughout the landscape would appear the most obvious and pragmatic. As the ability of such a network to provide for the full range of biodiversity can never be certain however⁷, it makes sense to also appeal for a revived approach to sustainability within both agriculture and land-use planning, to raise their performance on wildlife conservation across the board.

In urban areas and where new development is planned, a sufficient proportion of land must remain as green open space - as local Green Infrastructure - which is carefully designed to function ecologically as well as recreationally (or whatever it's primary designated purpose) so as to supply that essential connectivity

into the surrounding countryside, and itself present some minimum standard intrinsically as wildlife habitat.

These are the elements of an ideal adaptation strategy to 'climate-proof' our wildlife for the future, rendering it more resilient



Surrey Hills AONB © SWT

Surrey Hills AONB

The Surrey Hills Area of Outstanding Natural Beauty was first designated in 1953. The prime purpose of AONB designation is to conserve and enhance the natural beauty of the landscape, which is mainly achieved through planning controls and an appropriately sensitive approach to practical countryside management. The Surrey Hills occupy some 23% of the county, including much of the North Downs and the Wealden greensand ridge. The Trust is a significant stakeholder, managing such prominent sites as Norbury Park, White Downs, Newlands Corner and Leith Hill. The National Trust is another major landowner with flagship sites such as Box Hill, Polesden Lacey, Ranmore Common and the Devil's Punchbowl. The Surrey Hills Board was established in 2008 as a Joint Management Committee and overall administration is co-ordinated by Surrey County Council. The Board's work is further supported and scrutinised by the Surrey Hills Partnership advisory forum. Several wider countryside management projects have operated within the AONB for some time, for example the Heathland, Downlands and Mole Valley Projects.

This long-established, protected landscape designation provides a clearly defined and obvious vehicle for implementing the Living Landscapes initiative across a wide swathe of the county. It is just this thinking behind a new proposal to establish a Living Landscapes Working Group operational throughout the AONB, following on from the successful Mid Surrey Downs pilot project to restore the chalk scarp grassland between Dorking and Guildford.

For more information see www.surreyhill.org

⁷ See; Dawson D. 1994. *Are habitat corridors conduits for animals and plants in a fragmented landscape? A review of the scientific evidence.* English Nature

to climate change. Only with this in place might we consider the ground adequately prepared for populations of wild plants and animals to again disperse naturally throughout the landscape, establishing new colonies in new ideal situations as a response to the changing environment. In many instances this will take place on sites pre-emptively created or restored for the purpose.

This is the vision of the national biodiversity conservation sector to take effect across the entire country. We in Surrey are responsible for only a small piece of the jigsaw, yet still an important one for all the reasons described in the earlier section on Surrey's natural characteristics. Despite the intense pressures on land, our relatively small county still presents a predominantly rural character, with a high proportion of natural open space supporting a rich and in some cases unique biodiversity. Moreover, wildlife recognises no human-drawn political boundaries; all of Surrey's 'Natural Character Areas' continue across the South East England region to varying degrees.

The Wildlife Trusts have by tradition championed the non-statutory aspect of wildlife conservation in the UK - that affecting the "wider countryside" beyond legally protected sites. So naturally they have positioned themselves at the forefront of the movement bent on ramping-up conservation efforts to operate on the landscape scale, and branded their corporate response as the Living Landscapes initiative. They see the fundamental requirement for a physical re-connection of important wildlife sites and habitats as synonymous with a parallel need to re-connect society with its dependency on its natural heritage, and hence the ecosystem services this has always supplied. Only by reinvigorating stakeholder inclusivity in environmental decision-making will we be able to successfully advance the argument for a more sustainable approach to land-use planning that landscape scale conservation demands.

A consortium of South East English Wildlife Trusts has together produced a visioning statement titled *A Living Landscape for the South East*. This summarises the overarching philosophy of Living Landscapes and neatly gives it a regional perspective - as such, it is an essential companion to this document.

In essence, the Surrey Wildlife Trust envisions Living Landscapes to be a bold, coherent attempt to integrate the management and use of Surrey's natural environment to ensure improved benefits for both people and wildlife.

Living Landscapes aims to combine existing and create new wildlife habitats. It will restore large-scale, ecologically functioning open space networks to enable plants and animals to move and adapt. Living Landscapes will connect existing to new natural areas of wildlife value by creating **wildlife corridors** and **buffer zones**. In the countryside our special wildlife sites will be linked mainly across open farmland, and in urban areas via gardens, schools and community recreation grounds. Gardens are especially important, as they often represent the only regular contact people have with wildlife. They also cover some 12% (20,000 ha) of Surrey and in some areas, extend and buffer areas of higher biodiversity.

Surrey Wildlife Trust's contribution

As a Wildlife Trusts initiative, we propose that Living Landscapes in Surrey will be co-ordinated by the Trust. The main thrust of our approach will be about influencing multi-partnership initiatives across defined areas. The Trust will not attempt to manage the entire area of every identified Living Landscape project, but will aim to influence land management and educate people, for the improvement of biodiversity. **We intend to continue to lead by example in areas where we operate currently, and to encourage new and further targeted work by partners where we have a less direct role.**



Volunteers working at Chinthurst Hill © Charlie Hoare

5. The method...

Conserve; Create; Connect; Celebrate

Living Landscapes implementation has been broken down into four critical activity themes – elsewhere dubbed “the 4 C’s” – to include;

- | | |
|------------------------|---|
| 1. Conservation | ...of sites of known wildlife value to maintain these at peak adaptive condition (ie. with their important species populations at maximum carrying capacity); |
| 2. Creation | ...of new sites of wildlife value, through strategic habitat restoration and creation; |
| 3. Connection | ...of wildlife sites via, and integral to, their landscapes, and; of people & communities with their natural environment. |
| 4. Celebration | ...of the joy & inspiration that accessible – yet protected – wildlife brings to people’s lives. |

Conserve

Living Landscapes does not call for a complete shift in focus from conserving important habitats and species within sites of known wildlife value. It aims to improve our chances of successfully conserving them in the long term by taking a more holistic approach to prioritising and managing our conservation activities. Thus, we should continue to identify, protect and enhance biodiversity hotspots, to ensure their ability to support wildlife populations of greatest significance at peak carrying capacity. Site acquisition ‘scouts’ will remain alert to opportunities for purchasing, leasing or otherwise directing the management of sites known to have significant value for nature. For Living Landscape purposes, these are our ‘**Foundation sites**’, which may combine ecologically to form part of a surrounding ‘**Core Area**’ (see Box, below). In essence, the latter is a geographic clustering of near-contiguous sites and habitats, which due to their proximity are likely to hold some degree of ecological relevance to one another (perhaps supporting elements of important species ‘**metapopulations**’).

A Core Area will be typically large and spatially ‘recognisable’; for example sections of the North Downs, the Thames Basin Heaths and the floodplain of the River Wey. Such areas have within them large tracts of high quality habitat that is not just rich in wildlife but should

also have strong cultural resonance with their local communities. In reality however, this essential geographic cohesion could in most instances be significantly improved, while the cultural valuation may be vaguely under-representative at best and non-existent at worst.

Create

Conserving existing areas and sites of ecological value is not sufficient in a world of continued development pressure, increasing urbanisation and impending climatic chaos. Key to enhancing the cohesion and effective resilience of Core Areas, is targeted expansion via **habitat creation and restoration**. And by involving local people in the decision-making and (where appropriate) the actual hands-on management to achieve this, there is immediately created a perfect opportunity to provoke a re-evaluation and inevitably the renewed appreciation of local natural open spaces.

So for a Living Landscape, we must seek out and realise every opportunity to create new and extend existing sites of wildlife value. This can only be accomplished by working closely with local communities, and by influencing landowners and managers. When working with communities in the urbanised parts of Surrey, the aim should be to create ecologically useful open spaces (being both inter-linked and of some intrinsic worth) throughout the built environment, to form green corridors that successfully integrate town with country and serve to connect wildlife with people.

Connect

Living Landscapes will develop long-term projects to **connect** – indeed **reconnect** – our fragmented landscapes and bring them back to life.

Living Landscapes projects will connect existing and future sites of wildlife value by creating ‘**Buffer zones**’ and strategic ‘**Wildlife corridors**’ to allow wildlife to move through the landscape, and thus help mitigate against the pressures of land use and climate change. Mechanisms to achieve this will be broadly similar to those involved in creating and restoring new wildlife sites, however planning will also play a significant role: only by ensuring that the strategic opportunities remain open and are targeted for appropriate enhancements will these connections be successfully realised.

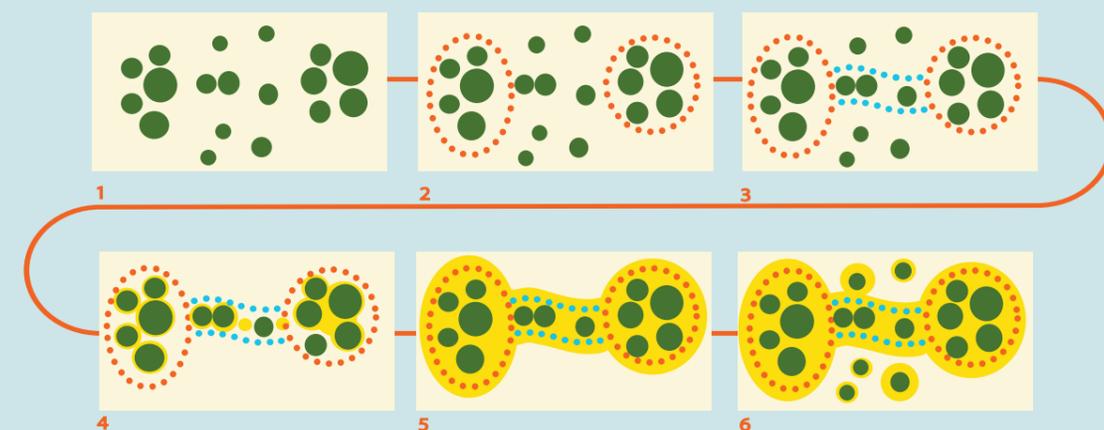
Celebrate

Living Landscapes is a shared vision, aimed at creating a sustainable future for wildlife and the people of Surrey, South East England and the UK. Living Landscapes cannot be achieved by any one organisation alone; it requires strong levels of both **communication and partnership**. We can then widely celebrate the rewards of achieving a sustainable landscape where people and wildlife may once again live together in harmony.



Jay's wing feather on leaf © Jeremy Early

Developing a Living Landscape



- 1 Map all existing habitats and protected wildlife sites ('Foundation sites').
- 2 Identify clusters of these ('Core Areas').
- 3 Identify potential linkage routes ('Wildlife Corridors') between Core Areas.
- 4 Buffer and link Foundation sites within Core Areas & Wildlife Corridors to realise the identified connection opportunities, thus creating larger, more resilient protected habitat areas integral to a regional/national Ecological Network.
- 5 Wildlife-sensitive management of built or farmed land around, within & between the Core Areas will improve the network's effectiveness.
- 6 Beyond the network, isolated Foundation sites should still be managed, and may be buffered by habitat creation and/or appropriate land management to eventually bring them into the network.

Surrey BOAs & spatial planning policy

Stages 1 to 3 of the diagram in the Box opposite have been achieved in Surrey, identifying our Core Areas and potential linkages as integral to the South East Wildlife Trusts Ecological Areas Network ('Econet' for short). Following on from this original work, the South East England Biodiversity Forum has prompted a further refinement of the Econet to translate Core Areas into 'Biodiversity Opportunity Areas', or BOAs (see Figure 2 in appendix). Stages 4 to 6 of the diagram represent the practical implementation of the four activity themes (the “4 C’s” of the previous section) for initiation across the entire map.

This BOA map provides us with a sound evidence base for directing future nature conservation strategy and hence defining Living Landscape project areas in Surrey. PPS9, the national planning guidance on biodiversity conservation⁸, although currently under review remains clear on the requirement for regional spatial strategies to include targets for the restoration and re-creation of priority habitats, and for Local Development Frameworks to identify on-the-ground opportunities for habitat restoration and creation which will contribute to the regional targets. LDFs must also support the implementation of this work through appropriate policies.

PPS9 also reiterates the rationale for maintaining 'Networks of Natural Habitats': “...[these] can link sites

⁸ See; *Planning Policy Statement 9: Biodiversity and Geological Conservation* (ODPM, 2005)

5. The method continued

of biodiversity importance and provide routes or stepping stones for the migration, dispersal and genetic exchange of species in the wider environment. Local authorities should aim to maintain networks by avoiding or repairing the fragmentation and isolation of natural habitats through policies in plans. Such networks should be protected from development, and, where possible, strengthened by or integrated within it.”

In compliance with PPS9, the South East Plan includes a comprehensive set of targets for the recovery of priority habitats across the region. It also includes due reference to the Econet map through the derivation of its ‘Areas of Strategic Opportunity for Biodiversity Improvement’. To accord with this, the relevant portions of the far more detailed Surrey BOA map should now be included as part of district-level biodiversity policy in all of Surrey’s emerging Local Development Frameworks.

This would go a long way towards fulfilling the South East Plan recommendation for Borough and District planning authorities to identify their local Areas of Opportunity for Biodiversity Improvement, where they should furthermore pursue; “Opportunities for biodiversity improvement, including connection of sites, large-scale habitat restoration, enhancement and re-creation.”

Implementation drivers & mechanisms

In summary of the potential ways local planning and other authorities may support and implement biodiversity improvements, the South East Plan suggests they should “...influence and apply

agri-environment schemes, forestry, flood defence, restoration of mineral extraction sites and other land management practices to deliver biodiversity targets [to thereby] increase the wildlife value of land.”

With particular regard to the planning system, the Plan elaborates on this to say;

“Planning has an important and positive role to play in protecting and enhancing the region’s biodiversity, and helping natural systems to adapt to climate change impacts. Local authorities, government agencies and other organisations should work together to achieve biodiversity targets by:

- Ensuring that opportunities for biodiversity improvement are sought and realised as part of development schemes, including regeneration and development of previously developed land, and that where possible these contribute to creation and enhancement of green corridors and networks.
- Pursuing joint projects on areas that cross administrative boundaries, particularly where this enables a more strategic approach to restoration of habitats and reconnection of fragmented sites.
- Identifying and securing measures to help implement biodiversity improvement including, for example, developer contributions and targeting of agri-environment schemes.

To expand on some of the above implementation ‘mechanisms’; in wholly rural areas of the county agri-environment (including forestry) schemes are likely to be the most appropriate biodiversity enhancement incentives on privately-owned land. These currently include Entry and Higher Level Stewardship administered by Natural England and the Woodland Grant Scheme from the Forestry Commission. Whether in parallel or combination, these schemes can deliver the planting and management of whole new woodlands as well as hedgerows; the re-creation of species-rich grassland and heathland; and the creation of new wetlands.

In direct response to the demand for improved flood defence in low-lying parts of the county (and especially where this relates to local climate change adaptation), watercourses may be restored to function more naturally through selective reach re-profiling and targeted wetland creation to improve storage capacity⁹, (see Case study 3). Wetland creation may also be achieved through the restoration of aggregate extraction sites and several highly successful examples of this can already be seen across the county, with others in process (see Box, right).

Within existing conurbations and on the urban-fringe, all proposed development must include the provision of sufficient open

land from the outset, as part of its ‘Green Infrastructure’ requirement. This in turn should include a majority proportion of ‘natural open space’ of intrinsic worth for biodiversity, the value of which will be determined as much by its spatial lay-out relative to neighbouring land-uses as by its actual created habitat and species composition dictated through landscaping specifications. Master-planning of such provision must identify any particular opportunities for biodiversity in the form of existing features of value, which could be enhanced or expanded in area perhaps through developer contributions. Connectivity and ‘green corridor’ opportunities are a further design prerequisite, both from beyond the margins of the development as well as working internally within it.

Finally, the new South East Green Infrastructure Framework provides a further policy driver for implementing the latter mechanism. This clearly views the “...planning and management of sub-regional networks of multi-functional open space” as integral to its concept of Green Infrastructure provision. Such networks can include;

- “Natural and semi-natural urban greenspaces – including woodlands, urban forestry, scrub, grasslands (eg. downlands, commons and meadows), wetlands, open and running water, wastelands and derelict open land and rock areas (eg. cliffs, quarries and pits).
- Green corridors – including river and canal banks, cycleways, and rights of way.”

And to come full circle, in its elaboration on the biodiversity conservation and enhancement function of Green Infrastructure, the Framework refers back to the House of Commons Environmental Audit Committee’s conclusion of the need for an ‘ecosystems approach’ to halt biodiversity loss (see page 6);

“Expanded, well-managed and better connected networks of green infrastructure... will deliver enhancements for wildlife, contributing to national BAP targets and allowing species to respond and adapt to climate change. The most effective way to conserve and enhance regional biodiversity using green infrastructure is to create an ecological network that extends and links existing areas of high biodiversity value, facilitating the colonisation of new areas in response to new opportunities or changing conditions.”



Courting Great crested grebes © Peter Oak

Molesey Reservoirs restoration

Molesey Reservoirs are located on the south bank of the River Thames and formerly comprised eight retention basins, known as the Chelsea & Lambeth Group. Following identification of the area for aggregates extraction in the county minerals plan, a restoration-led scheme is being implemented that will eventually deliver a post-extraction 60 ha wetland nature reserve with public access. A partial driver for this was the site’s former status as a proposed Special Protection Area under the EU Birds Directive for its wintering wildfowl. Disuse of the reservoirs had already caused bird numbers to decline however, and scheme partners Thames Water and Island Barn Aggregates hope to revive this interest through their inspired approach to the after-use of the area. The key here has been successfully planning the complex phasing of both the extraction and restoration works, to achieve the maximum potential benefit for wildlife throughout the life of the scheme. To facilitate this, important stands of aquatic vegetation have been carefully removed, stored and re-used in restoration. Water level adjustments will be controlled largely by using the existing Victorian pipework and hides are to be provided to allow public access and enjoyment without disturbing the birdlife.

Sunset over Boldermere Lake ©Johan Ingles
Le Nobel

⁹ See; *Nature’s Place for Water*, The Wildlife Trusts (2007)

6. Conclusion

Centuries of human development have boxed our wildlife into rich yet isolated sites where there is little chance of survival in the long-term. In tandem, modern life-styles have conspired to disconnect people from nature and we are in danger of forgetting just how important the natural environment, and the ecosystem services it provides, is to our health and well-being. Wildlife is now also threatened by rapid future climate change and this modern, fragmented landscape will deny plants and animals in biodiversity hotspots any chance of retreating ahead of the changing conditions. Without a connected network of escape routes they will be surely marooned and die out.

Our vision of ‘a Living Landscape’ for Surrey is one where our nature reserves and other protected natural open spaces are re-connected across the county, providing opportunities for wildlife populations to interact and expand, and be able to co-exist alongside an enlightened human population. The barriers to this are modern farmscapes, the built environment and transport infrastructure. But ways may be found through and around these by protecting, creating and adapting existing green infrastructure to provide greatly enhanced landscape permeability for wildlife.

This document presents a clear vision for the future direction of wildlife conservation in Surrey – that is, for everyone concerned to now be working on the landscape scale; looking far beyond the bounds of their traditional remit.

We at Surrey Wildlife Trust call this approach ‘Living Landscapes’ – a bold coherent attempt to better integrate the management and use of Surrey’s natural environment, in order to secure a healthy long-term future for both wildlife and people.

Thundry Meadows © Kate Cheal
Kingfisher © Dylan Mackey
Otter © Thames Water plc
School party at Nower Wood © SWT

Case studies



1. West Surrey Heathland Arc

The West Surrey Heathland Arc is effectively a “super” Core Area integrating the county’s majority stake in the Thames Basin Heaths SPA (see Box on page 4), where the Trust is restoring large areas of heathland in partnership with the Ministry of Defence, the Surrey Heathland Project and Natural England. One of the primary delivery mechanisms achieving this is the Trust’s ‘Grazing Project’, a pioneering site management initiative which has concentrated on building both capacity and flexibility into our county-wide conservation grazing programme. Living Landscapes is central to the objectives of the Grazing Project, clearly addressing page 10’s activity themes 1 and 2; ‘Conserve’ and ‘Create’ in a cross-cutting manner effective across multiple BOAs.

Begun in 2007, the herd has expanded to over 200 Belted Galloway and other hardy cattle breeds, now deployed to achieve conservation grazing on 7 sites. Conservation grazing is the optimum method to maintain open heathland and contain invasion by dense scrub. Grazing a site reduces the dominance of strongly competitive species and allows rarer wildflowers and heathers to flourish, leading to a more open landscape with a far wider diversity of micro-climates. Grazing is also the most environmentally sensitive way of restoring neglected heathland sites across Surrey.

A grazing agreement with the MoD has facilitated the introduction of over 100 head of cattle into a grazing compartment on Ash Ranges, covering up to 900 hectares. The cattle are permitted to roam freely across most of the site but more dangerous areas on the ranges are restricted. To assist in their welfare, a few animals have been fitted with Global Positioning System collars which send text messages of their locations direct to the Trust’s offices. Through this we can also monitor the pressure and impact of grazing across the site using a unique combination of traditional land management techniques and 21st century technology. **For more information see www.surreywildlifetrust.org.uk.**



2. Nutfield Marsh

Two Trust nature reserves have been successfully connected up through the aspirations of the Nutfield Ridge & Marsh Project – a wider wetland restoration project located east of Redhill that thoroughly embodies the Living Landscapes vision. At the western end is The Moors, while at the other lies Spynes Mere, a former sandpit. Both support a rich variety of wildlife, particularly aquatic birds and insects. These came under Trust control in 2008 and 2003 respectively. Between the two a third water body within Mercers Country Park is mainly used for water sports and angling although it too has biodiversity interest for wintering waterfowl. A more recent wave of habitat creation on land immediately adjacent to these three sites has now produced a continuous, functioning wildlife corridor of some 3 kms in length. Holmethorpe Lagoons are just north of the Moors, restored by developer Linden Homes as green infrastructure for their adjacent ‘Watercolour’ estate. Mercers West is a further sandpit occupying land between Spynes Mere and the country park, actively being restored by Sibelco UK (formerly WBB Minerals) as

Case studies continued



a nature reserve. Meanwhile, the Trust's Surrey Greenspace Project (see Box on page 5) has been busy in nearby South Merstham, successfully engaging the community to activate a keen body of conservation volunteers dedicated to wetland management tasks.

To the south is Biffa Waste Services' enormous landfill site, while beyond the M23 to the east are further aggregates workings by Sibelco. Both companies have financially supported much of the work here, all under the visionary guidance of Surrey County Council's Environmental Enhancement Officer. Both the North Park Farm sandpits and eventually the landfill site will be restored, offering further opportunities for extending the wildlife corridor east to the Trust's ancient woodland Kitchen Copse reserve. Other members of the successful partnership behind the Nutfield Ridge & Marsh Project include the Environment Agency, Aquasports, relevant parish councils as well as the Reigate Area Conservation Volunteers.

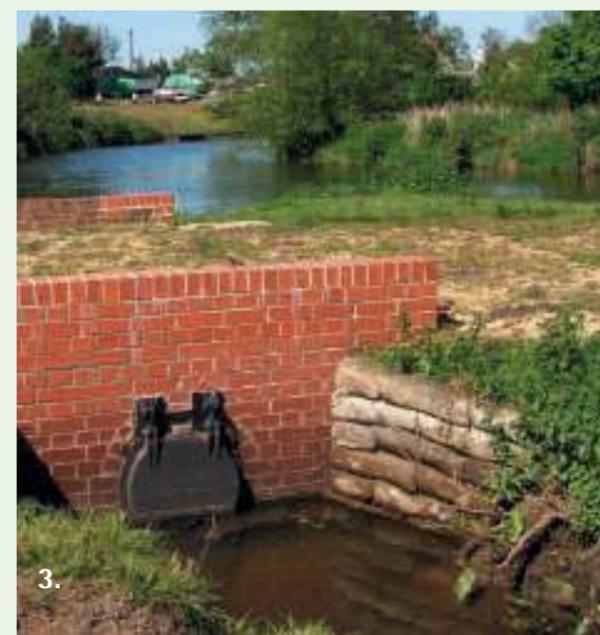
3. Stoke Meadows, Guildford

A perfect example of Living Landscapes in action is the Stoke Meadows restoration project on the River Wey at Guildford, which has resulted in 11 hectares of floodplain grazing marsh, a significant contribution to regional priority habitat targets in the South East Plan. Floodplain grazing marsh is seasonally inundated pasture with plant-rich drainage ditches that regulate water levels. The habitat is important for its breeding wading birds, particularly snipe, redshank and lapwing, as well as wintering wildfowl. Prior to their restoration however, Stoke Meadows were largely neglected and their biodiversity value had consequently suffered; ditches had been infilled or become overgrown and the grassland degraded.

The project began in 2002, partnered by the Environment Agency and Guildford Borough Council who own the site. Initial works included ditch restoration and the

management of overhanging trees and shrubs. Later, a flap valve was installed adjacent to the Wey, which enables the ditches to retain more water on the site for longer periods and hence support diverse aquatic plant and invertebrate communities. Shallow scrapes also help retain water and provide soft expanses of mud for feeding waders. Since these works local birdwatchers have noted a particularly sharp rise in the number of overwintering snipe. In summer, the meadows are grazed by a small herd of cattle for the optimum maintenance of the grassland as a tussocky sward providing cover for breeding birds and invertebrates.

Stoke Meadows are an important strategic link along the River Wey corridor, which snakes through much of west Surrey but narrows significantly where it cuts through the North Downs here at Guildford. To the northeast is the Riverside Local Nature Reserve while an adjacent meadow to the west will be next in line for similar habitat restoration. During the heavy rains of 2007 when there was widespread localised flooding along the Wey, the meadows also proved their worth as flood storage capacity benefiting the nearby city – much to the relief of the Environment Agency.



Glossary

Ancient woodland	Broadleaved woodland in continuous existence since c.1600, and recommended for specific planning protection in PPS9 (Biodiversity & Geological Conservation).
Biodiversity	The diversity of all life forms on planet Earth (effectively syn. with 'nature', 'wildlife', etc.); entering common usage after the UN Conference on Environment and Development (the 'Rio Summit') in 1992.
Buffer zone	A land-use zone designated immediately beyond a site protected principally for wildlife conservation (see Foundation site), to cushion impacts to that site and where the aspiration is for the zone itself to be managed similarly.
Calcareous	Containing significant amounts of Calcium Carbonate and of relatively high pH, as found in the chalky soils of the North Downs.
Core Area	A group or cluster of near-adjacent and therefore ecologically related Foundation sites (see below). In the South East England region, these are now known as Biodiversity Opportunity Areas (BOAs).
Ecosystem	A community of life forms together with their physical environment (such as rocks and soil) viewed as a system of interacting and interdependent relationships, including such processes as the through-flow of energy and the cycling of chemicals through both living and nonliving components of the system.
Ecosystem services	Humankind benefits from a multitude of resources and processes supplied by natural ecosystems. Collectively, these benefits are known as ecosystem services and include products like clean drinking water and processes such as the decomposition of wastes. These services were formally defined by the UN Millennium Ecosystem Assessment, which categorises them into four broad types: Provisioning , such as the production of food and water; Regulating , such as the control of climate and disease; Supporting , such as nutrient cycles and crop pollination; and Cultural , such as spiritual and recreational benefits.
Foundation site	All sites formally identified and protected to various degrees for supporting important/valued/priority wildlife (habitats and/or species populations). Examples include statutory Sites of Special Scientific Interest (SSSI) and non-statutory Local Wildlife Sites (known in Surrey as Sites of Nature Conservation Importance or SNCI).
Infrastructure	The technical structures that support society, such as transport networks, sewers, water supply and waste management systems, power grids, telecommunications, and regional health, education and recreational services. 'Green infrastructure' is a more recent term applied to the non-built structures and land uses that also support society through their essential ecosystem services.
Metapopulation	A group of spatially separate populations of the same species which interact at some level; a theory of population dynamics that is usually applied to species distributed across fragmented habitats. Although individual populations have finite life-spans, the metapopulation as a whole is often stable because immigrants from one population (which may, for example, be experiencing a population boom) are likely to re-colonise habitat made available by the extinction of another population. These could also rescue a declining population from impending extinction. Metapopulation theory emphasises the importance of connectivity between seemingly isolated populations. Although no single population may be able to guarantee the long-term survival of a given species, the combined effect of many populations may achieve this.
Water Framework Directive	The European Water Framework Directive became UK law in December 2003. It provides an opportunity to plan for a better water environment in a more ecologically focused way. The Directive will help to protect and enhance the quality of surface freshwaters (lakes, streams and rivers), groundwaters and dependant ecosystems, estuaries and coastal waters. The Directive will be implemented in England by the Environment Agency.
Wildlife (also "Green") corridor	A chain or series of physically connected wildlife habitats/sites, offering a potential conduit for colonisation and dispersal of species populations through an otherwise hostile landscape. Most wildlife corridors will vary considerably in their effectiveness for different species or species groups.

Appendix

LANDSCAPE SCALE PROJECTS IN SURREY					
Project	BOAs	LPAs	Lead Agency	Key BAP habitats	Key species
1. West Weald Landscape Project	LW01	Waverley	Sussex Wildlife Trust	Lowland mixed deciduous woodland Wet woodland Lowland meadows	Barbastelle & Bechstein's bats Dormouse Rare woodland butterflies
2. Hedgerows for Dormice	TBL02-ND02	Guildford Mole Valley	Peoples Trust for Endangered Species	Hedgerows	Dormouse
• Woodland enhancement for BAP priority species in Surrey	LW02-04 WG04-LW01	Waverley	Surrey Wildlife Trust	Lowland mixed deciduous woodland	-
3. Wey Valley Project	R04	Guildford Woking Elmbridge Waverley	Farming & Wildlife Advisory Group	Floodplain grassland Wet woodland Fen/Standing water	Otter Water vole - -
4. Blackwater Valley Project	R03	Surrey Heath Guildford Waverley	Blackwater Valley Countryside Partnership	Floodplain grassland Wet woodland Fen/Standing water	Otter - -
5. Nutfield Marsh	ND06-WG11	Reigate & Banstead Tandridge	Surrey County Council/Surrey Wildlife Trust	Standing water Wet woodland Floodplain grassland Reedbed	Breeding/wintering birds - - -
6. Lower Mole Project	R05 ND2-4	Mole Valley Epsom & Ewell Elmbridge	Surrey County Council	Rivers Calcareous grassland Floodplain grassland	- -
Surrey Hills AONB					
7. • Mid Surrey Downs	ND02	Guildford Mole Valley	Surrey Hills AONB	Calcareous grassland	-
8. Downlands CM Project	ND03-07	Epsom & Ewell Reigate & Banstead Tandridge	Surrey County Council	Calcareous grassland Lowland beech & yew woodland	Small blue
• Old Surrey Downs	ND06-07	-	-	-	-
9. West Surrey Heathland Arc	TBH01-05 WG03-04	Surrey Heath Guildford Woking Runnymede	Surrey Wildlife Trust	Lowland heathland	Nightjar Dartford warbler Woodlark
• Surrey Heathland Project	-	Waverley	Surrey County Council	Acid grassland	Reptiles
• Grazing Project	-	-	Surrey Wildlife Trust/Ministry of Defence	-	-
10. Gatwick Greenspace Project	R05	Lower Mole Reigate & Banstead Horley	Sussex Wildlife Trust	-	-
11. Basingstoke Canal	TBH03-4	Surrey Heath Woking	Basingstoke Canal Authority/ Surrey County Council	Standing Water	-
12. Hindhead Together	WG04	Waverley	National Trust/Highways Agency/Surrey Hills AONB	Lowland heathland	Nightjar Dartford warbler Woodlark
13. Surrey Greenspace Project	-	Woking Guildford Reigate & Banstead	Surrey Wildlife Trust	-	-

Figure 1: Urban land-use in Surrey (shaded)

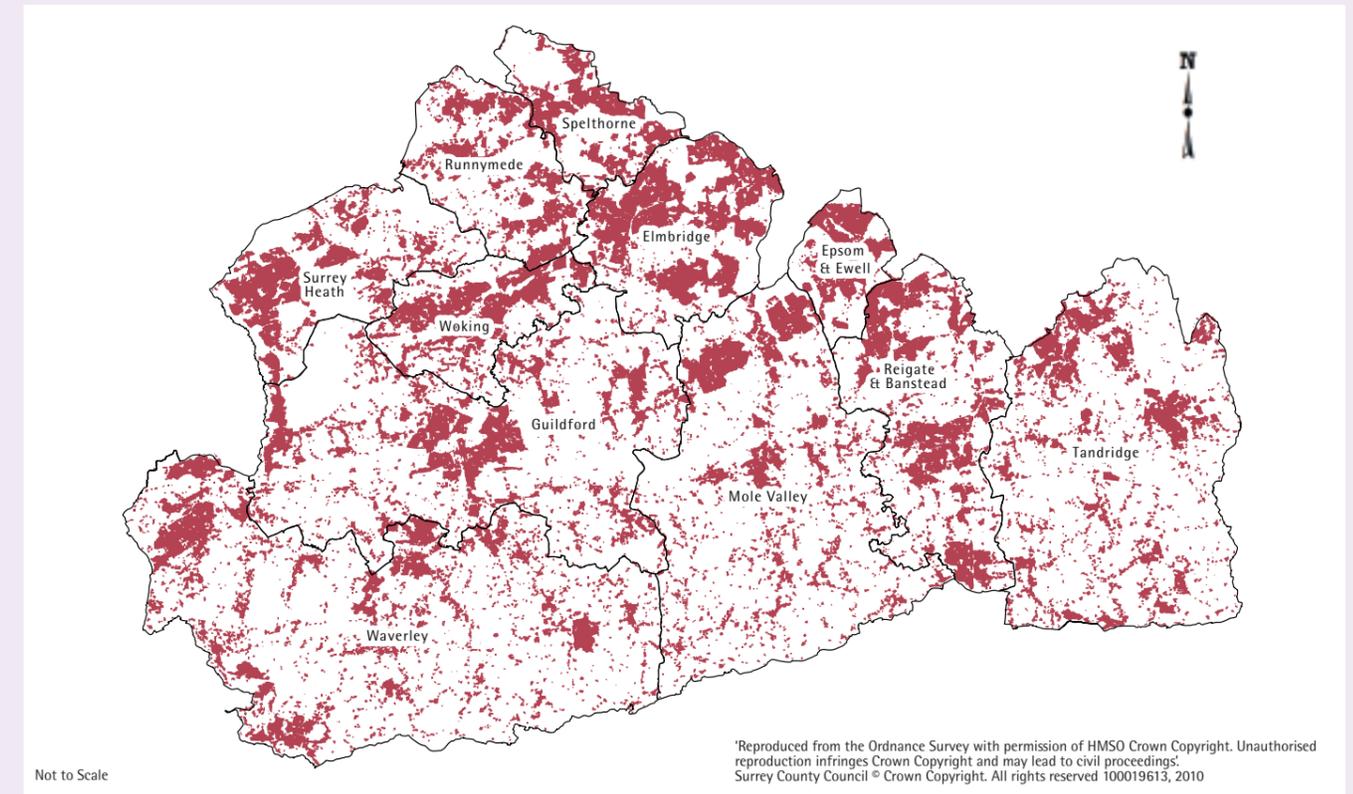
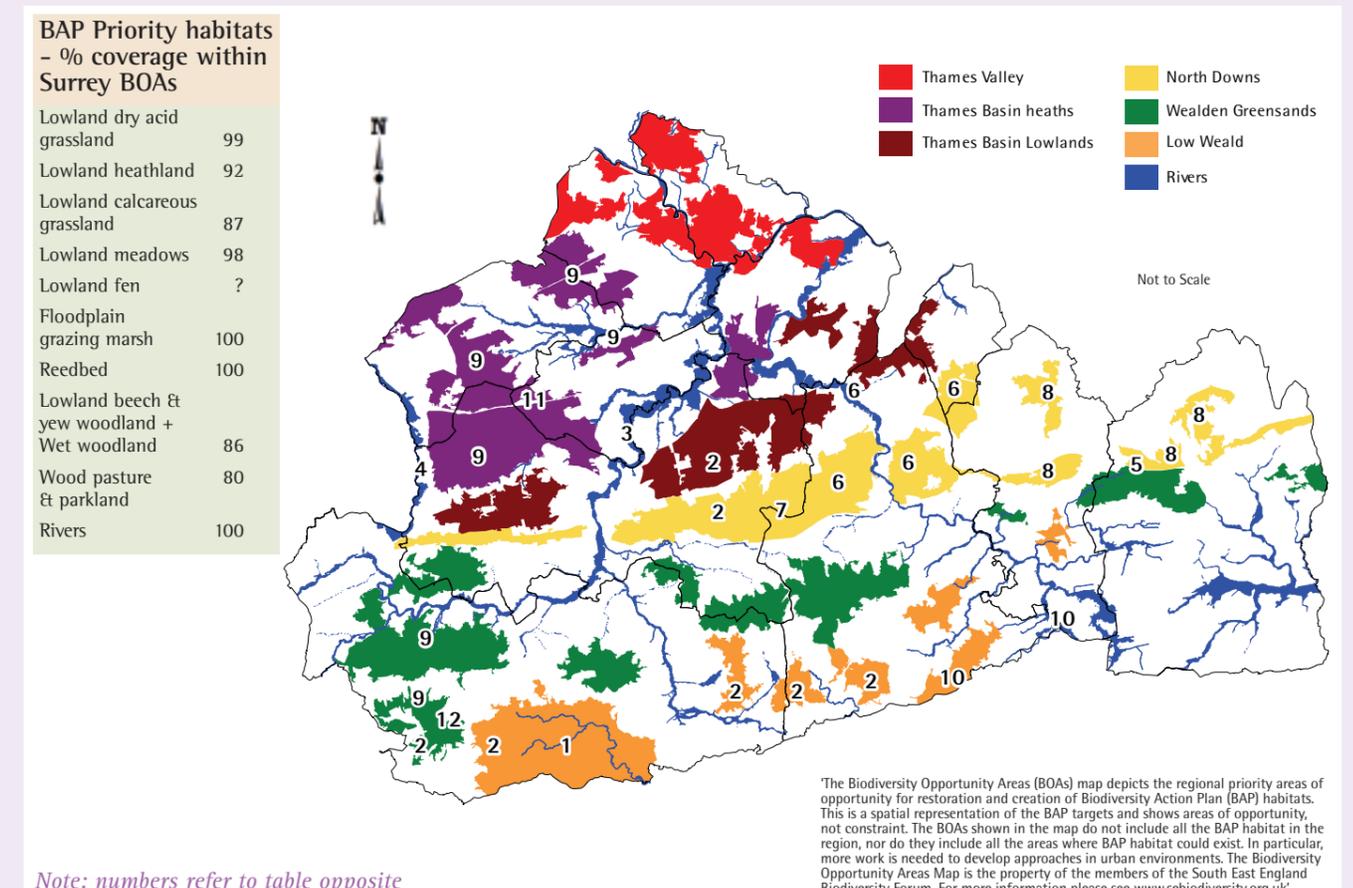


Figure 2: Biodiversity Opportunity Areas & landscape scale projects active in Surrey



Note: numbers refer to table opposite

Further information



Living Landscapes

Surrey Wildlife Trust

www.surreywildlifetrust.org.uk

Tel. 01483 795440

The Wildlife Trusts

www.wildlifetrusts.org

Tel. 01636 677711

Biodiversity Opportunity Areas

Surrey Biodiversity Partnership

www.surreybiodiversitypartnership.org

South East England Biodiversity Forum

www.sebiodiversity.org.uk

Green Infrastructure

South East Green

Infrastructure Framework

[www.gos.gov.uk/497648/docs/171301/](http://www.gos.gov.uk/497648/docs/171301/SEGIFramework.finaljul09.pdf)

[SEGIFramework.finaljul09.pdf](http://www.gos.gov.uk/497648/docs/171301/SEGIFramework.finaljul09.pdf)



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