



Forward to 2020

Buckinghamshire and Milton Keynes Biodiversity Action Plan



The NEP's *Forward to 2020: Biodiversity Action Plan* has now been rolled forward to Summer 2021, to allow for the Buckinghamshire pilot Local Nature Recovery Strategy to be released. The new NEP BAP, due in Summer 2021, will be revised to cover the actions required to deliver the biodiversity strategic priorities of Buckinghamshire as set out in the pilot Local Nature Recovery Strategy, and will set out both the strategic priorities and the actions required to deliver them for the Milton Keynes area. The NEP's new BAP will therefore bring together actions across the entire NEP area that the partnership will focus on delivering collaboratively.

Acknowledgements

This plan has been a full year in the making. Whilst it has taken longer than expected to produce, as the momentum for this endeavour grew, it brought together a wider cross-section of the local conservation community. During our sessions, we have enjoyed some robust debates and faced difficult choices about the direction of travel and the targets we set ourselves. We have always sought to embrace the wider agenda of the Natural Environmental Partnership (NEP) whilst also being clear about our focus on the state of biodiversity in Buckinghamshire and Milton Keynes.

Many people are owed thanks for their contribution towards this plan. Firstly, it must be recognised that this is a re-draft of an earlier plan, so those involved in the production of the previous version should be acknowledged. Thanks go to members of the BAP Task and Finish group (listed below) who have collectively spent many hours compiling the content of this plan.

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Note:

Hereafter, the terms *Buckinghamshire*, *Bucks* or *county* are deemed to mean jointly, the county of Buckinghamshire and the Unitary Authority of Milton Keynes

*Photo credit front cover: Chalkhill blue (*Polyommatus coridon*) Jim Higham

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Foreword

This Biodiversity Action Plan has been put together by partners representing a range of organisations from Buckinghamshire, Milton Keynes and beyond. On behalf of the Natural Environment Partnership (NEP), I would like to express my sincere thanks to everyone who has contributed to the process.

The NEP has agreed 4 priority themes which provide a framework for our remit.

The NEP's priority themes:

1. *Partnership development – collective voice & coordinated working*
2. *Promoting the environment as an economic asset and driver of environmental growth*
3. *Developing frameworks to support Landscape scale projects*
4. *Connecting people & Nature – highlighting the health and wellbeing benefits of the natural environment*

While this Plan is mostly concerned with the third priority theme, *Developing frameworks to support Landscape scale projects*, in reality it cuts across all the themes identified.

We know that the only way to secure our natural capital, is to make our network of sites bigger, better and more joined up (Natural Environment White Paper 2011). Our ambition is to restore and connect habitats across the whole county, making our wildlife populations more resilient and allowing wildlife to adapt to climate change and other pressures.

To achieve this ambition will require a response from beyond the local nature conservation sector. Our economy and society depends on us having a healthy environment and naturally-functioning ecosystems. Organisations from all sectors, businesses and farmers, families and individuals all have so much to gain from our natural heritage, but they also have much to contribute. This Plan provides a summary of the current state of biodiversity in the county. Importantly, it identifies how everyone can play their part.

I urge everyone in Buckinghamshire and Milton Keynes to consider how they can help achieve our shared goals outlined within this Plan.

Sir Henry Aubrey Fletcher

Natural Environment Partnership Chairman

1 Introduction

1. Biodiversity is all around us; in our woodlands and hedgerows, our fields and rivers, and our gardens. Countless varieties of birds, plants, insects and other animals live out their lives in a complex interconnected natural system. This is biodiversity – the rich variety of life on earth.



2. We have a unique responsibility as a species, because we have the power to affect entire ecosystems and the populations they support through our own actions. All living things and the physical environment (the geology, soil, air and water etc.) which support them, are part of the stock of natural capital. This natural capital underpins essential ecosystem services such as crop pollination, flood defence and water and air quality upon which our civilization's health and prosperity depends. There is a clear moral, social and economic imperative to ensure that we protect, look after and where possible enhance the prospects for biodiversity now and in the future, for its sake and ours.
3. We have many species of plants and animals in Buckinghamshire which are amongst the rarest and most important in the country. They may be important because they are nationally uncommon, but relatively abundant locally, such as the Chiltern Gentian. They may have a small population in Buckinghamshire, which is sensitive to changes in the way their habitat is managed, such as Water Vole.

4. There are also many species in the county which, though once common, are now in steep local and national decline, for example the Skylark. We have a responsibility to ensure that these species have a sustainable future in Buckinghamshire. This Biodiversity Action Plan describes how we can meet that responsibility in Buckinghamshire and Milton Keynes.

2 The Biodiversity of Buckinghamshire

5. The varied geology and topography of Buckinghamshire gives rise to a countryside rich in landscape and wildlife value. Many of the habitats and associated species in Buckinghamshire are of national or even international importance.
6. In the very north of the county, wide, meandering alluvial floodplains lie interspersed with harder limestone outcrops. The remains of historic hunting forests, networks of hedgerows, flood meadows and wet pastures along river corridors and the enigmatic patterns of ancient ridge and furrow, combine to provide a variety of important and wildlife-rich natural habitats. Brown and black hairstreak butterflies, barn owls and green-winged orchids may be found where suitable conditions persist.
7. In the Brickhills area on the Bedfordshire border, the acidic soils of the greensands, with its many springs, relics of heathland vegetation and pockets of marshy ground, support unusual species such as marsh fern and bog bush cricket.
8. The clay vales immediately to the north of the Chilterns are characterised by pasture, the damper grasslands being occasionally carpeted with great burnet, meadow sweet and ragged robin. Slow flowing brooks are lined with willow pollards and black poplars, the latter being found in greater numbers in Buckinghamshire than anywhere else in the UK. Regular winter flooding provides good feeding grounds for wetland birds such as snipe and curlew.
9. Rising from the vale is the chalky backbone of Buckinghamshire, the Chiltern Hills. Here, the now familiar red kites soar above the steep scarp and valleys. In many areas, the scarp is cloaked by species-rich grassland where Chalkhill blue butterflies, glow worms and Roman snails are found amongst aromatic swards of thyme and marjoram. Luxuriant stands of orchids and other specialities such as the Chiltern gentian are a vital component of the distinctiveness of this part of the county.
10. Scrub also plays its part in the biodiversity of the Chilterns. Three valleys in the hills at Ellesborough are covered in rare box woodland. Elsewhere along the

escarpment, stands of juniper still remain. Cathedral-like beech hangers, heathy wooded commons and the more elusive chalk heaths are a feature of the clay-capped hills with fast flowing chalk streams running through the valleys below.

11. To the south, the chalky dip slope gives way to the acid drift gravels, where the largest extent of heathlands in the county are found. These heathlands frequently include pockets of acid grassland, bare ground and birch woodland, which offer valuable niches to invertebrates and reptiles. Notable bird species of our heathlands include nightjar, woodlark and hobby. The wetter areas are home to some of our more unusual plants, like the insectivorous bladderwort and sundews, whilst in tiny bog pools and ditches, patches of sphagnum mosses are found. These bodies of standing water are also readily utilised by resident populations of darting bejewelled dragonflies and beetles. Scattered clumps of hilltop and valleyside woodland may host wild service tree, early purple orchid and white admiral butterfly.
12. Burnham Beeches, a tract of ancient wood-pasture, is found in the south of the county, where majestic pollards stand and support a wide variety of fungi and insects. They are found within a diverse area of habitats and species, including woodland, grassland, heath, bog, ponds and ditches. Notable species include marsh violet and the black darter dragonfly. Over 60 Red Data Book species have been recorded for Burnham Beeches, most of which are rare flies and beetles.



Curlew (*Numenius arquata*)
Steve Mendham

2.1 Protection and designation

13. A sample of the best sites for biodiversity or geology, are protected under the Countryside and Rights of Way Act 2000 and are classified as Sites of Special Scientific Interest (SSSIs). In some instances, sites are designated for their international importance, such as Burnham Beeches which is a Special Area of Conservation (SAC). Such sites are protected under the European Habitats Directive.
14. It is important to recognise that there are hundreds of other sites which can be equally important as our SSSIs or SACs, but which do not have the same level of protection. Many of these sites have been identified in Buckinghamshire and are classified as Local Wildlife Sites (LWS). Other potentially important sites have also been listed as Biological Notification Sites (BNS).
15. Rivers, lakes and groundwater in Buckinghamshire and Milton Keynes are protected under the Water Framework Directive (WFD). WFD requires that all EU member states work to have their waterbodies in 'good ecological status' (or 'good ecological potential' for heavily modified waterbodies) by 2015. In addition to improving the status, there must be no deterioration.

2.2 How does Buckinghamshire compare with other counties?

16. Much of Buckinghamshire may look green and pleasant, but compared with other English counties it is not well served in terms of its biodiversity resources. Buckinghamshire in fact has a very low percentage area of land designated as SSSI. SSSIs only account for 1.4% of Buckinghamshire, compared to a national figure of 7.7% (England). Even Greater London has a higher proportion of land designated as SSSI at 2.4%.
17. Buckinghamshire also has significantly less priority habitat than the average English county. Natural England's national habitat inventory maps show 13% of England as BAP priority habitat, but only 9.7% of Buckinghamshire is designated as priority habitat.
18. A recent national report by Plantlife entitled "Our Vanishing Flora" ranked Buckinghamshire and Milton Keynes 39th out of 52 counties in terms of the rate of plant extinctions. Buckinghamshire and Milton Keynes are losing plant species at a rate of 0.59 species per year. If that rate continues then by 2020 there will be 4 less plant species living in Buckinghamshire and Milton Keynes.
19. There are 73 Water Framework Directive watercourses and waterbodies in Buckinghamshire and Milton Keynes; 65 rivers, 6 canals and 2 lakes. As of the last assessment in 2009, 14 of these are in 'good ecological status', 38 are 'moderate', 19 are 'poor', 1 is 'bad' and one of the lakes has not been

assessed. When compared to the national figures, Buckinghamshire and Milton Keynes are achieving a slightly higher percentage of waterbodies in good status and fewer which are 'poor' or 'bad'. Although the figures compare favourably to the national figures, Buckinghamshire and Milton Keynes have 80% of waterbodies failing to achieve good status.

3 Significant biodiversity issues in Buckinghamshire

3.1 Ecosystems under pressure

20. In common with other parts of the country and particularly the developed South East, Buckinghamshire has severely damaged ecosystems.
21. Our rivers have been straightened, and thereby shortened so that they no longer flow and flood naturally. Rivers have also been deepened, through dredging and re-profiling, in order to get water off the land as quickly as possible with much of the removed material being deposited on the banks. As a result, many rivers are disconnected from their floodplains and we have lost natural areas of wetland and reedbed as well as significantly reducing the area of lowland wet meadows (nationally) by 97% since the 1930s.
22. Our woodlands have lost the larger animals; wolves, bears, beavers, wild cattle and boar which historically would have controlled deer or created open spaces, dams and shallow scrapes and influenced rivers and wetland habitats. A decline in woodland management along with many introduced species such as grey squirrel and tree diseases have put excessive pressure on the functioning ecology of our native woods.
23. Our grassland and heathlands have suffered declines from developmental pressure or change of use (e.g. from cattle to horse/pony grazing). Many important grassland sites have been under-grazed leading them to scrub over, reducing the overall biological value.
24. Changes in farming practice since 1945 has seen a decline in a number of groups including farmland birds and arable weed species. Many kilometres of hedgerows have been removed to enlarge fields or left unmanaged leading to their gradual loss or reduced value through poorer structure or connectivity.

3.2 Habitat fragmentation

25. The division of a single habitat parcel into multiple smaller fragments creates more isolated ecological communities that are increasingly disconnected from each other. Major, as well as minor, developments and infrastructure projects threaten to compound habitat fragmentation within Buckinghamshire by

causing habitat loss and becoming obstacles to successful species dispersal. As a consequence of habitat fragmentation, ecological communities are less resilient to deterministic processes like climate change and stochastic events such as pollution.

3.3 Pollinators

26. The transfer of pollen from one flower to another is essential for plant sexual reproduction. Honey, social and solitary bees are key pollinators. However, the process is also carried out by hoverflies, beetles, butterflies and moths during their feeding activities. A number of crop species e.g. oilseed rape, rely on insect pollination (some are wind-pollinated) as do many wild plants, which in turn support a complex network of animal and plant life. However, pollinating insects face a multitude of threats. These include pests, disease, invasive species, land-use intensification, habitat loss and fragmentation and climate change. In the last 40 years we have seen a significant decline in honeybee abundance (most estimates are above 50%). The National Pollinator Strategy (DEFRA 2014) recognises the critical importance of the enhancement of urban biodiversity in supporting pollinators and sets out a strategy to address pollinator declines.

3.4 Pollution

27. Pollution of waterbodies from isolated incidents, agricultural run-off, poor water treatment or direct source from industry directly impacts the watercourses themselves and connected habitats. On flood meadows, for example, this has the effect of giving competitive advantage to coarse grasses and other plants which displace less competitive flora. The effects can be wide ranging from catastrophic fish kills, sedimentation of gravels and an increase in nutrients which can cause eutrophication. The flow of water means that the impact of pollution can sometimes be seen for kilometres downstream.
28. In Buckinghamshire and Milton Keynes, the main reason for waterbodies not reaching 'good ecological status' under WFD has been identified as high phosphate levels. Along some reaches this is seen in algae blooms and loss of in-channel plant species diversity.

3.5 Disconnection of rivers and floodplains

29. Creating land drains, dredging channels and raising bank height have meant that in time of high flow, river water is constrained to the channel rather than flowing into the floodplain. This has led to the drying out of some habitats and a change in water regimes for others. Traditional floodplain meadows rely on seasonal water inundation to maintain conditions for characteristic plants and

animals. When the water is prevented from flowing onto the land, the site conditions can become unfavourable resulting in a complete change in species composition. The drying out of floodplain habitats in some areas has led to a decline in wading birds.

30. In addition, the increase in volume of water within a river channel can result in an increase in erosion power causing banks to become undermined and collapse. The collapse of the bank will increase the amount of sediment in the river and can lead landowners to 'protect' their banks by installing hard revetment which fragments natural marginal and bank habitat.

3.6 Alien species

31. There are now believed to be over 1,500 species of non-native plants and animals established in the wild in Britain and many of these pose a substantial threat to our native species. For example, introduced Signal Crayfish carry a plague which is fatal to our native White-clawed Crayfish and has caused a massive decline in this species, as well as having a major impact on freshwater invertebrates and fish populations. In our area, American Mink are also widely established and have decimated our water vole population whereas other mammalian aliens such as Grey Squirrel and Muntjac deer are long established.
32. Among the invasive plant species are New Zealand pygmyweed – a serious pest in freshwater habitats, Japanese knotweed, Himalayan balsam and Giant Hogweed. In many cases, the long term effects of these species on our native flora and fauna are as yet unknown but clearly the ever increasing number of alien species is of great concern as so many of them directly impact on natives. And some species, such as Oak Processionary Moth, can damage not only other species but also change whole landscapes.

3.7 Climate change

33. As well as direct local impacts, increased stress on our priority habitats and ecosystems has come, and is likely to come, from climate change. The UK has lower levels of projected climate change than many parts of the world, yet if greenhouse gas emissions are not dramatically reduced, almost half of our land area is expected, by the 2050s, to have a bioclimate unlike any currently found here.
34. While there is uncertainty around the predicted impacts, it is important to aid the ability for habitats and species to cope with climate change, which is likely to bring profound changes to wildlife. While there are likely to be some positives, with new species arriving from continental Europe, most of the

impacts are thought likely to be negative, particularly given the speed of climate change which leaves little time for natural adaptation.

35. In addition, it is thought that our weather will be more erratic, with an increased number of extreme weather events, such as excessive rainfall, drought and storms. Seasonal timings are likely to alter, the composition of ecological communities is likely to change, and invasive species and disease are likely to increase. Species which cannot adapt quickly, or which cannot disperse are likely to suffer significant and increasing declines or even local or complete extinction.
36. To aid the ability for habitats and species to cope with climate change, sites need to achieve the Lawton principles of better, bigger and more connected. Further adaptation plans should be developed to tackle the risks climate change brings (see Natural England and RSPB, 2014. Climate Change Adaptation Manual).

3.8 Ways to respond to these challenges

Wider Land management

37. Our society and economy needs the land resource of Buckinghamshire to provide a diverse range of utility including food production, space for recreation as well as our entire private, commercial and public infrastructure.
38. A sustainable Buckinghamshire economy will require our land resource to be more ecologically robust on a landscape-scale and be one which can provide the fullest spectrum of ecosystem services. Our ecosystems not only provide the needs of all life, they underpin economic and social necessities such as clean water, productive soil, pollination, flood defence, control of diseases, clean air etc.
39. Biodiversity can benefit from a change in approach in our thinking and application. For example, recreating areas of permanent woodland and grassland provide important re-connected habitats for a range of specialist species and they can also provide natural buffers to flood events which erode soils, lower water quality, flood our homes and damage our economy.
40. For biodiversity in Buckinghamshire to be supported sustainably, its needs must be meaningfully integrated into land management beyond protected sites and sites managed for wildlife. It is no longer sufficient to rely upon small, fragmented and disconnected wildlife-rich sites such as protected sites and nature reserves.

41. Bio-diverse areas are often rich in landscape features such as ponds, woods and textural pasturelands. House values are directly affected by the perceived quality of the surrounding green spaces. It is therefore in the interest of developers to factor-in features which will support a wider range of wildlife. New initiative such as biodiversity off-setting, could also provide opportunities for habitat creation on the back of development. The Natural Environment Partnership (NEP) can help create and broker a positive and informed dialogue between the respective parties which could make a significant difference for the prospects of our biodiversity.
42. We need Buckinghamshire's farmers and land managers to engage positively with the biodiversity agenda and take up effective options through agri-environment schemes. The conservation community will have a key role to play in helping to achieve positive gain for wildlife through such initiatives, by providing advice to farmers and land managers.
43. To be most effective, effort should be focused on, but not exclusive to Biodiversity Opportunity Areas (BOAs) and priority water catchments.

Built environments

44. Open Mosaic Habitats can be found mainly in urban and formerly industrial areas and can have high biodiversity value. This value includes rare plants, mosses, lichens and a large number of rare invertebrates, especially bees, wasps and beetles. This habitat was identified as a UK BAP Priority Habitat in 2007. Such sites can be threatened by redevelopment (due to their common status as brownfield sites), inappropriate 'restoration', inappropriate management or natural succession.
45. Around 20% of Buckinghamshire is classified as urban. Urban environments have a disproportionately important role in providing benefits for physical health and mental wellbeing.
46. Public land (e.g. road verges, school grounds, parks, cemeteries etc.) and corporate estates etc. all have the potential to provide for wildlife if managed sensitively. Simply changing grass and hedgerow cutting regimes can have significant positive effects for a range of species. On an individual level, even small gardens can support wildlife-rich habitats such as ponds. New research shows that gardens could be more significant for pollinating insects than we have realised.
47. The NEP should do its best to encourage and facilitate actions which will maximise biodiversity and ecosystems services benefits. For example, local

friends of groups and parish councils can be encouraged to take more ownership of green spaces by learning more about site management plans.

48. Corporate actions could include the NEP helping to channel corporate responsibility programmes into helping community groups, environmental sustainable start-up businesses or sponsoring targeted land management that would help a specific habitat or species, such as creating orchards which could help a bespoke business and or public amenity space.
49. The National Planning Policy Framework (NPPF) provides a lead for local planning authorities to recognise the wider benefits of ecosystems services, provide net gains for biodiversity and to establish coherent ecological networks. Local planning authorities have the opportunity therefore to embrace a range of actions, from whole-area wildlife corridor protection and enhancements to simple gains in built development aimed at a single or family of species such as the provision of swift and bat boxes. Local guidance is available in the form of the Biodiversity and Planning in Buckinghamshire document produced by several NEP partner organisations. Worryingly, local government is currently experiencing a substantial restructuring and in this process is losing ecological expertise regarding its land management and planning functions.

Data resource and advice

50. In Buckinghamshire, we rely upon the Buckinghamshire and Milton Keynes Environmental Records Centre (BMERC) to hold up to date records of our biological resource. These records not only provide vital data to help inform decisions such as development proposals, they provide a historic thread enabling us to identify trends and thereby inform decision making about management of sites.
51. There is considerable work to be done in Buckinghamshire regarding its Local Wildlife Sites (LWSs) and Biological Notification Sites (BNSs). Other counties have active habitat and species monitoring and management advice is given to landowners of LWSs. It would be preferable for all local planning Authorities and developers if the BNSs in the county were assessed so that they could then each be, as appropriate, either classified as LWSs or dropped from the system.
52. Since the loss of the Farming and Wildlife Advisory Group (FWAG) and the reduction in the staffing resource available from Natural England, there is a lack of direct advice and support available for farmers and landowners. The NEP could provide a sign-posting service through its website to encourage and enable those in search of advice to find it where it is available (e.g. where there are active landscape schemes and projects).

Championing change

53. The NEP can act as a reference point to help anyone achieve effective and sustainable results within the context of Biodiversity Opportunity Areas and our BAP targets. The NEP could reward the positive actions by individuals, groups and organisations through celebrations and awards.
54. Many impacts upon our biodiversity are caused by mechanisms and collective decisions which are far removed from the effect.
55. For example, changes in demand from consumers towards organic produce, will have a direct positive impact on water quality by reducing the phosphate levels in our water courses. The NEP can champion positive behaviours which will help support, or at least reduce harm, to the prospects of our biodiversity.
56. Public perceptions about key biodiversity issues (e.g. the need to control deer) can be positively challenged by the NEP through its communication channels and its champions on the NEP Board and Delivery groups.

Partnership at local level

57. To achieve our aspirations within this Plan, we will need involvement and support from a wider range of sectors than are traditionally engaged with the biodiversity agenda. These are described in section 7 of this plan.



4 Biodiversity Action Plans

58. In 1992 the UK Government signed the Convention on Biodiversity at the Earth Summit in Rio. This was an agreement between countries about how to protect the diversity of species and habitats in the world. Virtually all the world leaders signed up to this Convention which required the drawing up of a National Action Plan. The UK's first Action Plan was published in January 1994, with the expectation that regional and local Biodiversity Action Plans (BAPs) would be produced.
59. In December 1993, Buckinghamshire County Council, in consultation with 60 organisations produced a Nature Conservation Strategy for Buckinghamshire.
60. One of the policies within the Strategy was to deliver effective communication and collaboration between all organisations involved in nature conservation. One of the main ways of delivering this was the formation of the Buckinghamshire Nature Conservation Forum (BNCF) which was established in 1994.
61. In 1997 a BAP Working Group was set up under the BNCF to further the production of the county BAP.
62. In 2006 the Buckinghamshire & Milton Keynes Biodiversity Partnership was formed. This enabled the creation of the post of Biodiversity Project Officer to take forward the delivery of the BAP. In 2006/7 the Habitat Action Plan (HAP) targets were reviewed and revised in consultation with the organisations that had been involved in the BNCF along with other relevant partner organisations.
63. In 2013, the NEP was formed for Buckinghamshire and Milton Keynes as the county's version of a Local Nature Partnership (LNP). The NEP took on the brief of the Buckinghamshire & Milton Keynes Biodiversity Partnership.
64. In December 2013, a BAP Task and Finish group was established under the authority of the NEP, to revisit BAP work in the county and produce a way forward in line with local aspirations and national targets.

4.1 Wider benefits of the BAP

65. This BAP focuses on work that is needed to safeguard and enhance the biodiversity of Buckinghamshire. Wildlife has its own intrinsic value, irrespective of humans, however the benefits to people of a healthy environment with rich biodiversity are immense and just a few are mentioned below:
 - i. contributing to a beautiful and inspiring countryside that encourages people and businesses to locate in/visit Buckinghamshire, thus boosting the county's economy;

- ii. providing spaces in both rural and urban areas where people can exercise and be inspired by nature, gaining mental and physical refreshment with positive benefits for health and well-being.
- iii. holding up the flow of water so as to reduce the risk of flooding, and buffering waterways so as to reduce the inflow of nutrients, pesticides and silt into rivers, thus reducing the economic costs of water purification;
- iv. providing a habitat for insects that pollinate crops;
- v. long-term storage of carbon in soil and vegetation for climate change mitigation;
- vi. green spaces and trees within urban areas help to reduce temperatures on hot days and nights, and reduce levels of air pollution;
- vii. good woodland management for wildlife is also often good economically, with tree felling and replanting where appropriate contributing to the wood fuel and wood products economy;
- viii. the work needed to maintain and enhance biodiversity will support employment, and also encourage people to volunteer and gain exercise, for example with Green Gyms.



Greater burnet (*Sanguisorba officinalis*)
Colin Williams

66. This value that we draw from the natural environment is often taken for granted, and is not always well recognised in decision making, despite the fact it underpins our economy. We need to work to develop new ways of assessing our impact on natural resources that include what are currently considered to be “intangible” benefits. Recent work on ecosystem services and natural capital at scales from international to local level are helping to quantify the value of biodiversity, over and above its intrinsic value.

5 BAP targets 2010 – 2020

5.1 National BAP Targets

67. In 2011, the Department for Environment, Food and Rural Affairs (Defra) published Biodiversity 2020: A Strategy for England’s wildlife and ecosystem services. Outcome 1b states: *‘More, bigger and less fragmented areas for wildlife, with no net loss of priority habitat and an increase in overall extent of priority habitats by at least 200,000 ha.’*
68. Habitats and species identified as requiring action in the UK Biodiversity Action Plan continue to be regarded as conservation priorities in the UK Post-2010 Biodiversity Framework. In total, 56 habitats and 943 species are now listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

5.2 Buckinghamshire Priority Habitat creation targets

69. In order to turn into reality, the Biodiversity 2020 aspiration of *‘an increase in overall extent of priority habitats by at least 200,000 ha.’*, it is valuable to split the figure down at a local level, in our case for Buckinghamshire. The targets described in Table 1 show the area of land in Buckinghamshire and Milton Keynes identified for the creation of each priority habitat between the years 2010 and 2020. Creation in this case includes restoration, which is bringing habitat that no longer meets the standards for priority habitat back into a system of management such that it does meet those standards.
70. The targets differ for each habitat. The figures have been informed by the national targets for each priority habitat determined as part of the Biodiversity 2020 Strategy. Partner organisations in Buckinghamshire have determined the targets as a challenging but realistic contribution that the county can make towards the national targets, the perceived relative importance of those habitats within the county and achievability given local conditions (e.g. dependent geology etc.) and likely resources available. Their achievement is

vitally important in order to safeguard and enhance the wildlife of the county, and the many benefits that wildlife and the environment provide to people.

71. The overall headline figure is 20%. We aim to promote this figure to organisations, landowners, businesses, community groups and the general public so that people can all “do their bit” whether at a garden scale or field scale to making Buckinghamshire a better place for wildlife and people.
72. A simple headline figure of 20% can inspire people to set 20% of their garden or business premises aside for wildlife, and say *"I've done my 20% for wildlife, have you?"*

Table 1. Priority habitat creation and restoration targets for Buckinghamshire and Milton Keynes from 2010 – 2020

No.	Priority habitat	Current area (hectares)	Target for priority habitat creation and restoration (hectares) (percentage increase on existing habitat in brackets)	
			2010 - 2020	Per year
1	Lowland Wood Pastures and parkland	536	100 (19%)	10
2	Traditional Orchards	365	50 (14%)	5
3	Hedgerows (2 m wide)	unknown	100 km	10 km
4	Ponds (assumes average size of 0.05 ha)	unknown	500 ponds	50 ponds
5	Lowland Heathland	77	20 (26%)	2
6	Lowland Dry Acid Grassland	317	50 (16%)	5
7	Lowland Meadows	382	125 (33%)	12.5
8	Lowland Calcareous Grassland	344	100 (29%)	10
9	Purple Moorgrass & Rush pastures	18	5 (28%)	0.5
10	Lowland Fens	67	5 (7%)	0.5
11	Reedbed	25	15 (60%)	1.5
12	Coastal & Floodplain Grazing Marsh	337	200 (59%)	20
13	Native Woodland	2,906 ++	400 (14%)	40
14	Water Framework Directive (WFD) watercourses			
Total	All habitats (excluding hedgerows and ponds)	5, 374	1,070 (20%)	107

Notes:

+ Current habitat area from BMERC 2012 Core and Local Output Indicators for Biodiversity report

++ Native woodland comprises Lowland mixed deciduous woodland (1,682 ha), lowland beech and yew woodland (1,191 ha) and Wet woodland (33 ha).

6 A spatial approach

73. As a rule, we will take a spatial approach to achieving our targets in the county and as often as possible, adopt a landscape-scale approach to our work. We will therefore target our efforts in the areas of the county already identified as being of high value for biodiversity.
74. Such a spatial, or landscape-scale, approach is widely accepted across the UK and supported by government policy. The "Lawton Report" or "Making Space for Nature" provided clear support for such an approach and was subsequently quoted in the Natural Environment White Paper:

'2.12 Making Space for Nature set out a practical vision for addressing the fragmentation of our natural environment by restoring ecological networks across the country. The approach is based on five components, to be implemented at a landscape scale working with existing land uses and economic activities: core areas of high nature conservation value...; corridors and 'stepping stones'....; restoration areas...; buffer zones....; and sustainable use areas.'

75. In Buckinghamshire, the Biodiversity Opportunity Areas (BOAs - see below) are the key focus areas for the creation of such ecological networks. The creation of Nature Improvement Areas, as proposed by the Natural Environment White Paper, is also a potential way of taking forward ecological networks, working alongside BOAs. Areas suggested as potential NIAs in the county include the Bernwood Forest/Ray Valley area, and the Chilterns.

6.1 Biodiversity Opportunity Areas

76. Biodiversity Opportunity Areas (BOAs) are the most important areas for biodiversity in the county. BOAs represent a targeted landscape-scale approach to conserving biodiversity and the basis for an ecological network.
77. The identification of Buckinghamshire's BOAs was a detailed assessment process. It took into account existing concentrations of UK BAP habitat, important areas for UK BAP and other rare species, land with potential for habitat restoration and several other factors (including geology, topography and hydrology). Many of the areas identified are well known in the county for their nature conservation importance and they all contain BAP habitat. BOAs have been identified throughout the South East of England.
78. BOAs therefore identify where the greatest opportunities for habitat creation lie, enabling the efficient focusing of resources to where they will have the greatest positive conservation impact.

79. The map also highlights local BOAs which have importance at the county scale but which have not been mapped to the same criteria as those for the regional scale BOAs.

80. Priority habitat creation work in Buckinghamshire and Milton Keynes will be focused in the BOAs:

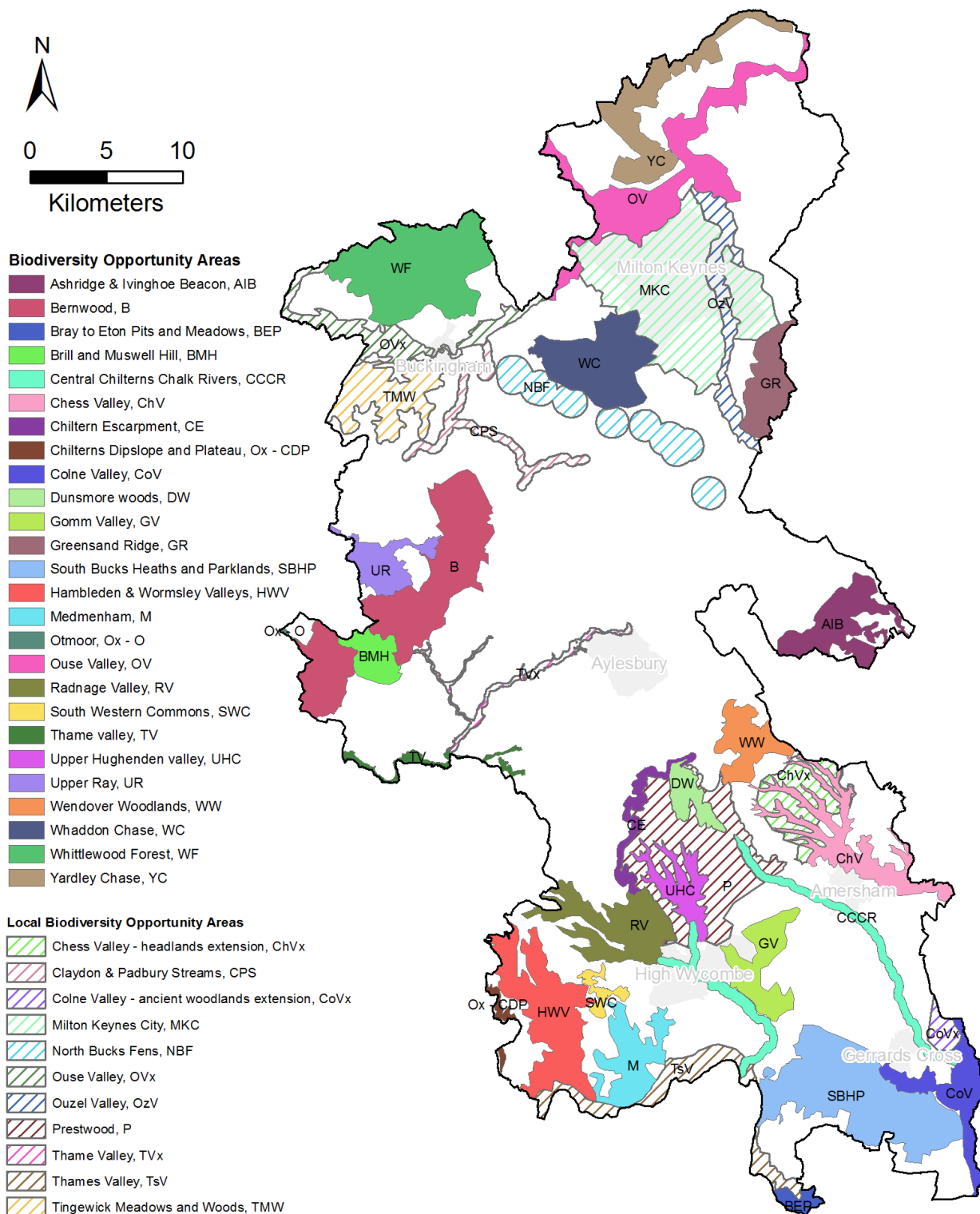
1. Ashridge & Ivinghoe Beacon
2. Bernwood
3. Brill & Muswell Hill
4. Central Chiltern Chalk Rivers
5. Chess Valley
6. Chiltern Escarpment
7. Colne Valley
8. Dunsmore Woodlands
9. Gomm Valley
10. Greensand Ridge
11. Hambleden & Wormsley Valleys
12. Medmenham
13. Ouse Valley
14. Radnage Valley
15. South Bucks Heaths & Parklands
16. South Western Commons
17. Thame Valley
18. Upper Hughenden Valley

19. Upper Ray
20. Wendover Woods
21. Whaddon Chase
22. Whittlewood Forest
23. Yardley Chase

Local BOAs:

1. Chess Valley – headlands extension
2. Claydon & Padbury Streams
3. Colne Valley - ancient woodlands extension
4. Milton Keynes City
5. North Bucks Fens
6. Ouse Valley
7. Ouzel Valley
8. Prestwood
9. Thame Valley
10. Thames Valley
11. Tingewick Meadows and Woods

Figure 2 Biodiversity Opportunity Areas in Buckinghamshire



Map produced by the Buckinghamshire and Milton Keynes Environmental Records Centre (BMERC, 2014)
 © Crown Copyright. All rights reserved. Buckinghamshire County Council OS Licence No. 100021529 2014
 n.b. This map is only an example - for up to date information contact BMERC:
 (<http://www.buckinghamshirepartnership.gov.uk/environmental-records/>)

6.2 Habitat creation outside of BOAs

81. There will be opportunities to create priority habitat in areas which fall outside of the BOAs. These will largely occur through agri-environment schemes, the planning process e.g. on-site mitigation or off-site compensation for habitat lost to development, and through using legislation to drive specific projects e.g. WFD objectives.
82. Local planning authorities will need to work towards adopting at least current 'best in the county practice' regarding planning and habitat creation, including local planning policy realising the opportunities for biodiversity enhancement and wildlife corridor development as set out in the National Planning Policy Framework.
83. Significant opportunities could also accrue from large-scale developments such as High Speed Two and from increasing the habitat quality of sustainable drainage schemes, highway verges and public open spaces including parks and recreation areas that will need to be managed appropriately.
84. Many landowners, managers and communities wish to enhance their land for wildlife as part of a farming system, or as an end in its self. Good quality advice and guidance will need to be available so that individual actions will be able to contribute to wider landscape habitat and wildlife corridor creation in the most beneficial way.
85. Habitat creation should also include small-scale actions that can be specific to a single species, such as the placement of swift boxes on buildings, thereby giving a BAP species greater nesting opportunities.

6.3 Local Wildlife Sites and Biological Notification Sites

86. Local Sites (Wildlife and Geological) are non-statutory areas of local importance for nature conservation that complement nationally and internationally designated geological and wildlife sites.
87. Local Wildlife Sites (LWS) within Buckinghamshire have been selected by the local authorities, BBOWT and other local wildlife conservation groups. They support both locally and nationally threatened wildlife, and many sites will contain habitats and species that are priorities under the UK or Buckinghamshire and Milton Keynes BAP. Biological Notification Sites (BNS) are sites with the potential to meet the criteria to be designated as an LWS.
88. The identification of LWSs is an ongoing process including monitoring and review. Both LWS and BNS are considered with equal weight during the planning process.

6.4 Species-specific work

89. We believe taking a spatial and habitat approach to nature conservation will bring the best results over time. There are species which occur in Buckinghamshire which deserve special attention due to their protected status or rarity (locally, nationally or internationally).
90. Appendix 1 List of Priority, protected and other “notable” species in Buckinghamshire and Milton Keynes.

7 Implementation of the BAP



Buttercups (*Ranunculus spp.*)
Colin Williams

91. Table 2 summarises the key activities and the individuals, groups or organisations and their role in the implementation of this Plan.

Table 2. Key activities, responsibilities and roles for BAP implementation

Major project activity	Accountable	Responsible	Consult	Inform	Notes / Deadline
Implementation of NEP business plan	NEP board	NEP Partnership Manager	NEP Delivery group		
Co-ordination of NEP Biodiversity Group activity	NEP Delivery group	NEP Partnership Manager	NEP Biodiversity Group	Orgs. listed in section 7.2	Reporting of success / delivery against BAP is reported back to orgs. listed in section 7.2
Management of NEP Biodiversity Group meetings	Chair of NEP Biodiversity Group	Chair of NEP Biodiversity Group	NEP Partnership Manager NEP Delivery group	NEP board	
Establish appropriate individuals as effective BOA leads	Chair of NEP Biodiversity Group	Chair of NEP Biodiversity Group	NEP Biodiversity Group	NEP board	
Delivery of individual BOA plans	Chair of NEP Biodiversity Group	BOA leads	Orgs. listed in section 7.2, as appropriate to BOA	NEP board	Orgs. listed in section 7.2 These report to the BOA lead as requested.
Compile progress table from results provided by BOA leads. Prepare Annual report Report results into BARS 2	NEP Partnership Manager	NEP Partnership Manager	Chair of NEP Biodiversity Group / BOA leads	NEP board NEP Delivery group	Work outside BOAs collated by Bucks CC
BAP input into NEP Conference	NEP Partnership Manager	NEP Partnership Manager	NEP Delivery group NEP Biodiversity Group	NEP board	
Manage Bucks Biodiversity and Planning Forum	Bucks CC	Bucks CC	NEP Biodiversity Group		
Prepare Terms of Reference for NEP Biodiversity Group	Chair of NEP Biodiversity Group	Chair of NEP Biodiversity Group	NEP Delivery group	NEP board	

7.1 The Natural Environment Partnership (NEP)

92. The NEP brings together and provides a forum for collaboration and partnership between organisations involved in biodiversity work in Buckinghamshire and Milton Keynes. Most member organisations have some current commitment to and interest in BAP work in the county. The role of the NEP Board is to, where it can, help remove barriers to progress and help provide the resources needed to fulfil this plan. The reporting relationship is described in section 7. Monitoring and reporting.

NEP Partnership Manager

93. The NEP Partnership Manager has a key role to play supporting BAP work in the county:
- i. Signposting advice, support and funding for BAP work at local level
 - ii. Manage NEP website including BAP information
 - iii. E-bulletin including BAP issues
 - iv. Organise annual event for the wider NEP Forum to celebrate achievements and stimulate further action for biodiversity
 - v. Enable work with other sectors (e.g. business, health, schools etc.)

BAP Task and Finish group / NEP Biodiversity Group

94. This group was convened in December 2013 to consider how BAP work could be re-focused and rejuvenated in the county. Its work is completed with the publication of this plan. The BAP Task and Finish group have recognised the need for an on-going partnership to manage the implementation of the BAP. A new NEP Biodiversity Group will be formed from the Task and Finish group and others involved in BAP work (e.g. BOA leads).

BOA leads and BOA Delivery groups

95. The formation and activation of BOA leads and BOA Delivery groups is a key new development for the county which will drive much of the work described in this Plan. The BOAs leads will play a key role in helping to co-ordinate BAP activity within BOAs and to act as a contact point within the county.
96. We must recognise that some BOAs will have more project activity and resource than others. In some cases, there may be dedicated project staff whilst others will have little or no identified human or capital resource. We should therefore expect there to be a significant difference in the level of pro-active delivery across each of the BOAs over any given period.

Some suggested ways for BOA leads to operate include the following:

- i. Act as contact point for a BOA.
 - ii. Attend NEP Biodiversity Group meetings to report known activity within the BOA.
 - iii. Establish a Vision for the BOA, using the BOA statement and maps of the BOA to assist this. The Vision could include both habitat and species work but the restoration and creation of BAP habitat where possible should be a key element.
 - iv. Identify organisations, community groups, landowners/farmers and individuals who are particularly interested in biodiversity work in the BOA and keep abreast of activity through informal channels such as an e-mail list.
 - v. Invite the above interested parties to form a local BOA Delivery Group which meets once or twice a year to co-ordinate activity or promote local action.
 - vi. Encourage biodiversity delivery within BOAs: delivery of wildlife habitat by farmers and landowners, local authorities including Parish Councils, conservation organisations, community groups and businesses.
 - vii. Provide brief 6 monthly written updates to the NEP Biodiversity Group as to biodiversity action in the BOA, particularly in relation to progress towards the BAP habitat creation targets.
 - viii. Maintain a simple quantitative record of progress towards BAP targets e.g. area, location and habitat for creation of priority habitats.
 - ix. Identify potential biodiversity work that could happen in the BOA but needs funding or support. Provide this information to the BOA Leads Group so that if and when funding or support arises then potential recipients are already known about.
97. Membership of each BOA Delivery Group is flexible, but could include:
- i. Statutory Agencies - Natural England, Environment Agency, Forestry Commission
 - ii. Local Authorities – County, District and Unitary
 - iii. NGOs - Wildlife Trust, RSPB, Woodland Trust, National Trust, Parks Trust etc.
 - iv. Local Organisations - Conservation groups, Natural History societies, Parishes
 - v. Landowners and businesses
98. It is important to recognise that some of the above may wish to be involved but may not have the capacity to attend meetings. For example with statutory agencies it is useful to have a contact who can keep the BOA Lead updated with respect to their work in the BOA but they may only have limited time to input.



Black hairstreak (*Satyrium pruni*)
Tim Read

Bucks Biodiversity and Planning Forum

99. Paragraph 9 of the National Planning Policy Framework states that for development to be sustainable it 'includes seeking positive improvements in quality of the built, natural and historic environment...Moving from a net loss of biodiversity to achieving net gains for nature.'
100. In achieving biodiversity net gain through the planning system there is a clear opportunity for local authorities to make a significant contribution towards the targets set out in this document. Conversely, an ill-informed decision-making process can have a marked and often irreversible impact upon our biodiversity resources.
101. The Bucks Biodiversity and Planning Forum is a new initiative which will bring together biodiversity officers from Local Authorities and Non-Governmental Organisations with a statutory or advisory role in development control. In so doing, the sharing and discussion of knowledge and ideas, successes and failures, will promote best practice throughout the county and result in more coherent and consistent decision making and ultimately, the enhancement of our natural environment.

7.2 The role of the different sectors and organisations

Non-Governmental Organisations (NGOs)

102. NGOs, including large local and national conservation charities, often own, or manage areas of high biodiversity value. In recent decades, these organisations have grown to become the key driving force for conservation action at a time when Local Authorities and Statutory Agencies have tended to reduce their commitment in line with more restricted budgets.
103. Importantly, the NGOs can influence large numbers of local people through their membership, educational outreach work and volunteering opportunities. They can also have significant political influence and will often actively lobby government on issues relevant to BAP work, e.g. Common Agricultural Policy settlement or Planning legislation.

Local Conservation groups

104. Local conservation groups, sometimes part of or affiliated to one of the Conservation Charities, can have a key role in the implementation of the Plan, and can have an influence on the decisions taken by those in positions of authority.

Local Authorities and Parish Councils

105. Local authorities have a key role to play in conserving the biodiversity of the county and many are already engaged in a range of activities in their area. All levels of local authorities, whether county councils, district councils or parish councils have a statutory duty to consider biodiversity while undertaking all of their functions. This duty is set out in Section 40 of the Natural Environment and Rural Communities Act (NERC) 2006 and states:

'Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, in the purpose of conserving biodiversity'.

106. Through the statutory planning process, the framework provided by international and national legislation and government, biodiversity conservation is given high priority in land-use planning. They will also promote nature conservation within the wider countryside and urban areas.
107. Local Authorities should seek to manage their land in a sustainable way, with biodiversity given priority where appropriate. They will continue to support initiatives which conserve, or raise awareness of biodiversity through their own projects and support for the Buckinghamshire and Milton Keynes Environmental Records Centre (BMERC). They also have a major role to play in integrating

biodiversity issues into formal education. Parish and Neighbourhood councils have a role in promoting awareness and encouraging local people to participate in local community initiatives.

Statutory Agencies

108. Statutory Agencies have national responsibilities regarding biodiversity, including advising on national policies, designating and managing land which is of national importance for its biodiversity, research, regulatory work and protecting species and habitats, as well as being involved locally. They will continue to support biodiversity initiatives through specific projects and partnerships, and through their day to day functions. Statutory Agencies are also important sources of agri-environmental schemes which can provide funding to ensure many habitats and species are protected and managed appropriately.

Farmers, Landowners and land managers

109. Farmers, landowners and land managers, both public and private, have a vital part to play in the implementation of the Plan. The land they own or manage may support important habitats and species. The stewardship such people provide to biodiversity benefits us all. Farmers and landowners can apply for funding through agri-environment schemes such as Countryside Stewardship.
110. Easy access to information, advice and support is essential in order to encourage sensitive stewardship. Landowners can be encouraged to consider the impacts of their activities upon wildlife and habitats.

Business and industry

111. As well as strengthening existing partnerships, the Plan seeks to forge new ones. Business and industry can play a major part in the Plan, through sponsorship of a habitat or species, funding a project, creating and managing wildlife areas on their land, or taking part at grass roots level, through voluntary conservation work. Every business should be encouraged to consider the effects of its activities on biodiversity, perhaps by undertaking an environmental audit, seeking to reduce any harmful impacts and encourage sustainable practices. Simple activities like recycling all the office paper, using recycled products where possible, efficient energy use and wise-use of water will make a difference by reducing pressure on the environment and could save a business money.

Health sector

112. Various studies show that access to wildlife-rich green space can have a positive effect on the physical and mental wellbeing of local communities.

Engaging directly in conservation management can also help individuals gain exercise and connection with nature which may be beneficial to their health. Health professionals therefore have a direct role to play to support the objectives of this Plan and to shape its implementation within their sphere of influence. Hospitals and Health Care centres also manage large areas of land which if managed well, can provide a natural health recovery resource and support a wide range of plants and animals.

Education sector

113. Nurseries, Schools, Colleges and Universities can help people of all ages gain a greater appreciation and understanding of our natural world which will be increasingly vital if biodiversity is to prosper in decades to come. Educational establishments also manage large areas of land which if managed well, can provide a great learning resource (e.g. a pond for dipping) and support a wide range of plants and animals.

Individuals

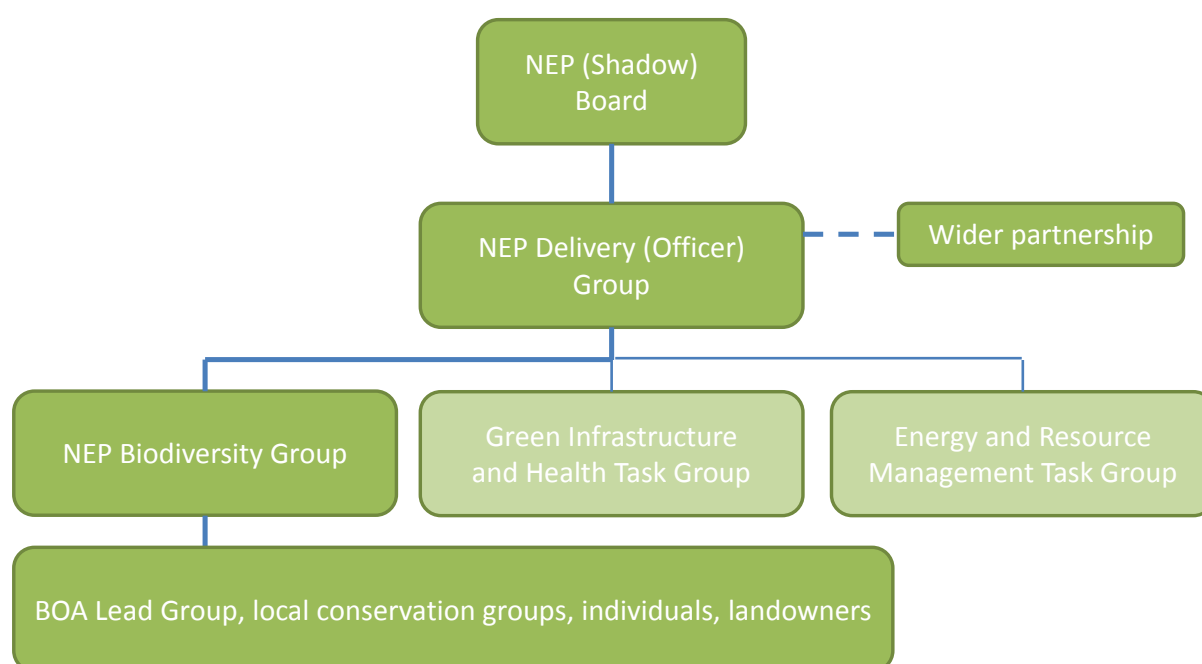
114. Whether biodiversity continues to decline, depends largely on the actions and commitment of each individual within our community. Decisions taken by those in positions of authority are key to the future of biodiversity, but the community is a powerful force in influencing these decisions.



8 Monitoring and reporting

The BOA Lead Group will manage the monitoring and reporting of work towards fulfilment of this plan and will report through the existing NEP structure (Figure 1):

Figure 1 Reporting structure of the NEP



8.1 Reporting process

115. BOA leads will be responsible for collecting information on projects, progress and opportunities within each BOA and will submit reports of progress for the BOA leads' meetings. The BOA leads' reports will detail the size (hectares) of creation and of restoration for each of the relevant BAP habitats.
116. The information from the BOA leads will be compiled into a simple table to show progress for all of Buckinghamshire's BAP habitats and BOAs. This table will be colour coded (as indicated in the table below) to allow easy assessment of progress across the habitats and across the BOAs.
117. The tables compiled for each BOA leads' meeting, will be used as part of a simple report which will be compiled annually by the NEP partnership manager. In addition to work inside BOAs, work outside BOAs will also be compiled.
118. In addition to the above reporting, the NEP partnership manager, working with the BOA leads, will enter the information into BARS2.

9 Conclusion

119. This Biodiversity Action Plan has been put together by partners representing a range of organisations from Buckinghamshire, Milton Keynes and beyond. It reflects the significant challenges ahead to arrest and reverse the declines we have experienced in our biological resource in recent decades.
120. Targets have been set and a clear direction of travel described which will involve a much wider spectrum of organisations and people hitherto involved in the nature conservation field.
121. This plan is a call to action for the community of Buckinghamshire to come together for a common cause which will bring wide-reaching benefits across virtually the whole remit of the NEP
122. The ambition is to restore and connect habitats across the whole county, thereby making wildlife populations more resilient and able to adapt to climate change and other pressures.



Wood pasture at Burnham Beeches
Ian Thornhill

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(all links valid as of October 2014)

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Appendix 1: List of Priority, protected and other “notable” species in Buckinghamshire and Milton Keynes

Please see separate document also downloadable from the NEP website

Our thanks go to the Buckinghamshire and Milton Keynes Environmental Records Centre (BMERC) for the production of this list