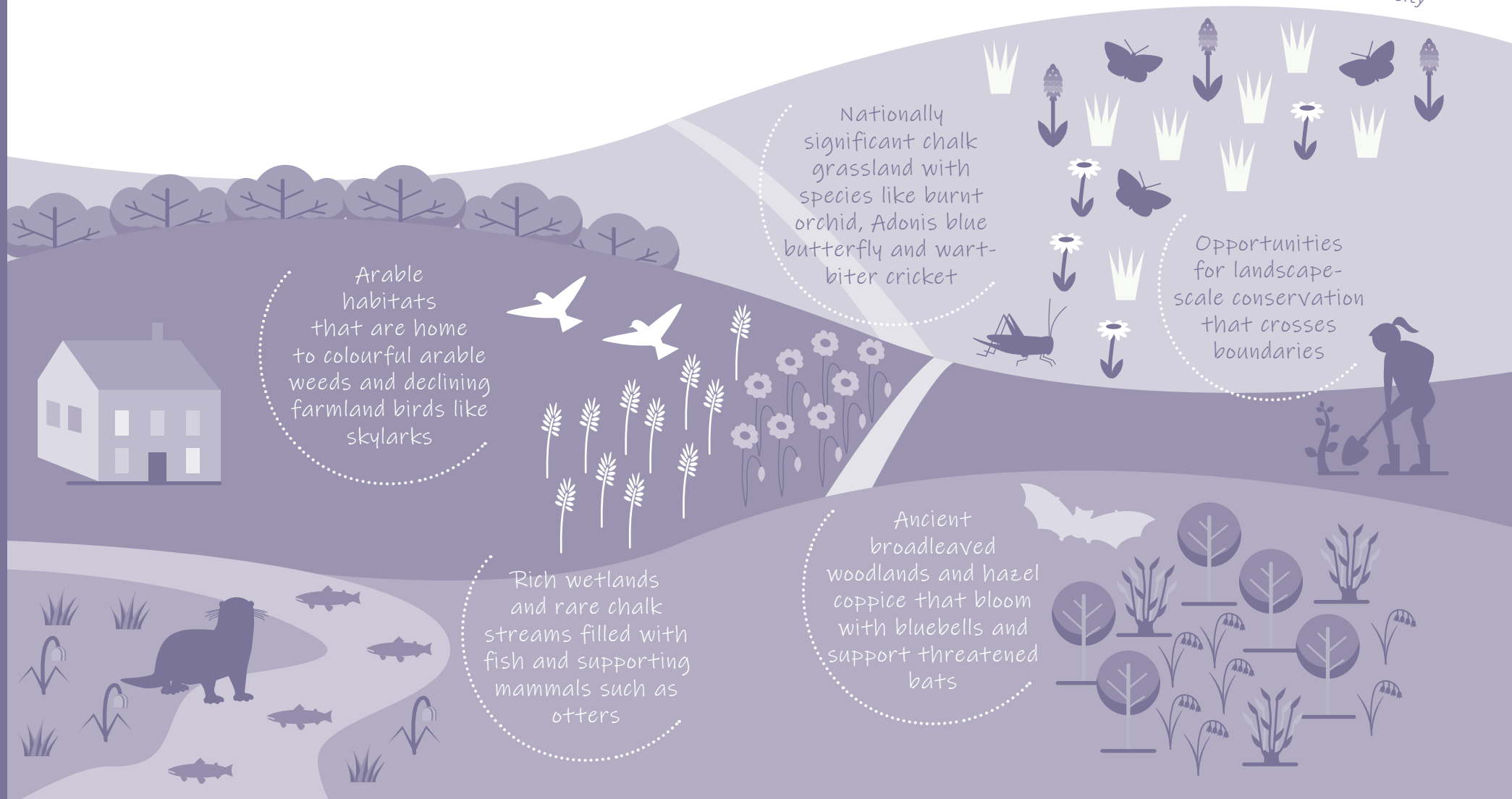
theme 3
Biodiversity

AONB Special Qualities: Biodiversity



"At length the snow ceases and the wind drops to a whisper; then over the hill-top the lapwings start up again and wheel in phantom flight, shrieking their weird night call."

Edward Thomas (1878-1917)

There are 66 Sites of Special Scientific Interest (SSSIs), covering 3,330 ha, in the North Wessex Downs

29 SSSIs in the AONB contain chalk grassland, totalling 1,421 ha – just under half the total SSSI area

A Landscape Full of Life

The breadth of ecological diversity in the North Wessex Downs AONB reflects its landscape character and is the product of centuries of human influence

4.1 The breadth of ecological diversity reflects the varied landscape character of the North Wessex Downs. It is the product of centuries of human influence and active management. Within the area, there are seven Special Areas of Conservation (SACs), part of the 'Natura 2000' ecological network of sites established under the EU Habitats Directive and designed to safeguard habitats and species threatened at a European level. Both the Pewsey Downs SAC and Fyfield Downs Site of Special Scientific Interest (SSSI) are also National Nature Reserves. They have an outstanding chalk grassland flora and fauna, including nationally important populations of rare species, such as the endemic early gentian. The North Wessex Downs AONB contains 66 SSSIs covering 3,330 ha (2% of the area).

4.2 The most important habitats for nature conservation in the North Wessex Downs are the remnant areas of chalk grasslands, semi-natural broadleaf woodlands and wood pasture, chalk rivers, streams and associated wetlands, and arable farmland managed for conservation.

4.3 Other habitats of particular significance within the AONB range from remnant heathlands on river gravel deposits in the east, such as areas of semi-natural acidic grassland around Inkpen, to the wide grassy verges of the droveways crossing the downs. At a local level, the hedgerow network, springs, remnant water cress beds, road verges and dew ponds also provide important refuges and habitats. Chalk cuttings have magnificent displays of primroses and cowslips each year. This mosaic of habitats is especially important for bats, some species of which are known to commute 20 to 30 kilometres from their roosts in old trees or outbuildings to forage over a range of insect-rich habitats including wetlands, farmland, wood pasture and grassland.

Chalk grassland is one of the most biologically rich and diverse habitats in the UK

Chalk Grassland

4.4 Chalk grassland is one of the most biologically rich and diverse habitats in the UK. Over 40 species of flowering plants are found in a single square metre of the best quality turf. Around 9% of chalk grassland in the UK lies within the North Wessex Downs. Traditionally grazed by sheep, cattle and rabbits, the area's chalk grassland supports important populations of the early gentian, a scheduled protected species and one of Britain's few endemic plants. Unimproved chalk grassland is also important for the survival of many scarce invertebrate species such as the wart-biter cricket and the internationally threatened marsh fritillary butterfly. Other scarce chalk grassland butterflies include the Adonis blue, Duke of Burgundy, chalkhill blue and small blue; the habitat also supports good populations of skylarks.

4.5 Twenty-nine SSSIs in the North Wessex Downs contain chalk grassland, totalling 1,421 hectares – just under half the total SSSI area (and 0.8% of the AONB). A further suite of 249 Local Wildlife Sites (LWS) have a chalk grassland component. These sites total 2,163 hectares (1.3% of the AONB), but the precise area of chalk grassland habitat within the LWS network is not known.

4.6 Nationally, areas of chalk grassland are a shadow of their extent in the 1900s. In the North Wessex Downs the area of chalk grassland declined by 32% between 1968 and 1998. The remaining areas are suffering increasing fragmentation. Today small isolated blocks of chalk grassland are largely restricted to the steep scarp slopes, dry valleys and areas maintained as pasture around archaeological sites. The total area of chalk grassland in the North Wessex Downs now is not known, but it is estimated that the Berkshire and Marlborough Downs Natural Area – which covers roughly two-thirds of the AONB – supports at least 1,250 hectares (about 3-5% of the total area of chalk grassland in England).

Woodland

4.7 According to the Woodland Trust, the North Wessex Downs

contain two nationally important 'major concentrations' of ancient woodland, centred on the Berkshire and Marlborough Downs and the Hampshire Downs; and areas of forest such as Savernake.

4.8 In the AONB:

- less than 0.1% of the total woodland area is designated as a National Nature Reserve;
- 0.5% is designated as Special Areas of Conservation[i];
- 7.5% is designated as Site of Special Scientific Interest; and
- 42.3% is designated as a Local Wildlife Site.

4.9 The diverse woodland types that make up these ancient woodlands include significant areas of wood pasture. They support a wide range of species, including important roosting sites for a number of bat species. Of particular importance are the calcareous woodlands that support a range of rare plants including herb-paris and green hellebore and provide home to substantial populations of native bluebells (for which Britain has a global responsibility, supporting about half the world's bluebell population)[ii].

Chalk Rivers and Streams

4.10 The spring-fed streams and rivers of the North Wessex Downs AONB support an extremely diverse range of plant and animal communities. Pea mussels, freshwater white-clawed crayfish and internationally rare floating vegetation of river water-dropwort can be found along their reaches. In turn, the rivers irrigate adjacent areas creating the distinctive valley landscape with its remnant fens and water meadows. The summer snowflake, a Red Data Book species, survives in seasonally flooded sites along the River Kennet. In recognition of their outstanding nature conservation value, the Lambourn, Kennet and Hampshire Avon rivers are all designated SSSIs, while the River Lambourn, the Hampshire Avon, and the Kennet and Lambourn Floodplain – a series of discrete sites supporting the globally vulnerable Desmoulin's whorl snail – are SACs.

Page 41 Lapwing flock, David Kjaer
Page 42 Marbled white butterfly, Natural England/Chris Gomersall
Page 43 Brown hares boxing, Natural England/Allan Drewitt

Enclosed Farmland

4.11 Arable cultivation is the dominant land management activity in the area. The North Wessex Downs supports a wide range of nationally and regionally important species associated with arable farmland and adapted to colonise land disturbed through tillage. They include farmland birds such as stone-curlew and tree sparrow; rare arable plants such as corn buttercup and shepherd's needle; and mammals such as brown hare and harvest mouse. Many of these species are listed as 'Species of Priority Importance' under Section 41 of the Natural Environment and Rural Communities Act 2006 and are targets for the Government's 'Biodiversity 2020'

i SACs, originally designated to meet obligations under the EU Habitats Directive are defined in the new National Planning Policy Framework as falling "within the definition at regulation 8 of the Conservation of Habitats and Species Regulations 2017" (NPPF 2018, Glossary page 67).
ii G. Vines (ed.) 2004 'Bluebells for Britain' Plantlife, Salisbury.

strategy to implement commitments under the global Convention on Biological Diversity. An Arable Strategy was prepared for the AONB in 2008 to help protect and enhance the nationally important arable biodiversity found within the North Wessex Downs.

4.12 Although the downlands are essentially a large-scale landscape, traditional areas of mixed farming, responding to the underlying geology, have resulted in a range of habitats (grassland, scrub and arable lands) co-existing in close proximity. This complex of interlinked habitats provides some of the most favourable conditions for the characteristic birds and mammals of the North Wessex Downs, including brown hares, skylarks, lapwings, tree sparrows, corn buntings, linnets and grey partridges. Increased cover, nesting opportunities and a wider abundance of food supply occur where arable margins meet up with wildflower- and insect-rich downland and scrub. This supports an important community of ground-nesting birds and other species typical of arable and unimproved grassland which has been lost from many areas of arable farmland. The North Wessex Downs Farmland Bird Project has helped to target agri-environment resources to benefit these communities and species.

4.13 Changes to climate will alter the composition of the natural communities that are characteristic of chalk downland, woodland, streams and arable fields. Diverse natural communities of plants and animals are most likely to survive on soils and in streams with low nutrient status and in large patches of habitat. Given the pressures of climate change and the need for species migration, habitat corridors along rights of way and habitat networks are of increasing value.

Nature Conservation

4.14 A pivotal review of England's wildlife sites and its ecological network published in 2010 identified Areas of Outstanding Natural Beauty as having great potential "*to establish a coherent and resilient ecological network*". The key message from this report, which was adopted into policy through the 2011 'Natural Environment White Paper', was that to safeguard the country's wildlife habitats and species it was essential to "*make space for nature*". It advocated that this could be most readily achieved by making existing sites that are important for wildlife "*bigger, better,*

and joined up" and by creating more such sites. The aim of this is to create a sustainable, resilient and more effective ecological network for England.

4.15 The North Wessex Downs Partnership encourages activities that:

- improve the quality of current sites by better habitat management;
- increase the size of current wildlife sites;
- enhance connections between or join up sites, either through physical corridors or through 'stepping stones';
- create new sites;
- reduce the pressures on wildlife by improving the wider environment, including through buffering wildlife sites.

4.16 These actions will help to establish an ecological network that meets the needs of wildlife and people today, and one that is more resilient to the future pressures, including climate change. There are trade-offs between these actions: the more we do to improve the quality of existing sites or to enhance the wider environment, the less we will need to do to create new sites. Our actions need to be adaptive, adjusting to what works as we progress.

Our actions will help to establish an ecological network that meets the needs of wildlife and people

4.17 'Biodiversity 2020: A strategy for England's wildlife and ecosystem services' sets out the strategic direction for biodiversity policy for a decade on land (including rivers and lakes) and at sea. Biodiversity 2020 Objectives are to be delivered through a more integrated, large-scale approach to conservation on land and at sea, putting people at the heart of biodiversity policy, reducing environmental pressures, and improving knowledge. Defra's 25 Year Environment Plan proposes to learn lessons from this existing strategy, to build on it with the stated aims to "*achieve a growing and resilient network of land, water and sea that is richer in plants and animals*"[iii].

4.18 The National Planning Policy Framework (NPPF) sets out measures to conserve and enhance the natural environment, including protecting and enhancing sites for biodiversity, minimising impacts on and providing net gains for biodiversity including by establishing coherent ecological networks. Further, it makes clear that Local Plans should "*take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries*"[iv]. Green Infrastructure is a "*network of multifunctional green space, urban and rural, which is capable of delivering a wide range of environmental and quality of life benefits for local communities*"[v]. It provides for recreation, biodiversity, health and wellbeing, and helps to address and mitigate the impacts of climate change.

4.19 Initiatives at local and regional levels have been taken to identify the areas which offer the best opportunities for habitat creation, connectivity and biodiversity enhancements. An initiative to define an ecological network of 'Biodiversity Opportunity Areas' (BOAs) in South East England was based on mapping key habitats and nature conservation sites identified at international, national and local levels. This identified 33 BOAs or equivalent sites in, or partly within, the North Wessex Downs boundary; they are considered to provide the best opportunities for targeted biodiversity enhancements and habitat creation at the landscape scale. Some local authorities have developed and embedded this concept into planning measures, such as the 'Conservation Target Areas' in Oxfordshire. The North Wessex Downs Partnership is contributing to a more joined up approach through its involvement in and support for local landscape scale conservation projects. The Marlborough Downs Nature Improvement Area is an example of such initiatives. This successful pilot project continues as the Marlborough Downs 'Space for Nature' farmer group, facilitated through the Countryside Stewardship Facilitation Fund[vi].

iii Defra 25 Year Environment Plan; pages 26 & 58.
iv NPPF (2018) paragraphs 170 & 171.
v NPPF (2018) Glossary, page 67.
vi https://www.gov.uk/government/news/countryside-stewardship-facilitation-fund-provides-conservation-boost

Page 44 Skylark nest and chicks, Natural England/P.N. Watts
Page 45 Roe deer in farmland, David White; Blue tit nesting box, Norman Smith; Marlborough Downs Space for Nature, David White

Chalk grassland in the AONB supports rare plants like field fleawort, musk orchid and Chiltern gentian

Arable habitats in the AONB provide feeding and breeding grounds for rare farmland birds like skylarks

AONB Special Qualities: Biodiversity

4.20 Designated wildlife sites that are home to rare habitats and species, including:

- A nationally significant area of **chalk grassland** including rare flora such as field fleawort, bastard toadflax, musk orchid and burnt orchid, early gentian, chalk eyebright, Chiltern gentian, dwarf mouse-ear, tuberous thistle and round-headed rampion; invertebrates such as the wart-biter cricket and important butterfly populations including Adonis blue, silver-studded blue, marsh fritillary, chalkhill blue, small blue, silver-spotted skipper and Duke of Burgundy fritillary.
- Substantial areas of **broadleaved woodland and wood pasture**, including a significant concentration of ancient woodlands, which provide roosting and/or feeding sites for bat species including Bechstein's, barbastelle, greater horseshoe and noctule; long rotation hazel coppice that provides important habitat for mammals such as dormice; concentrations of calcareous bluebell woods; and a number of nationally scarce moss species.
- Rare **chalk streams and rivers** with a high diversity of aquatic plants and invertebrate species including those that are nationally scarce, such as the white-clawed crayfish, supporting nationally and locally scarce bird species, mammals including otters and nationally declining water voles, and healthy fish populations including brown trout, salmon, grayling, perch, chub and dace.
- **Arable habitats** which are home to rare and colourful arable weeds, such as dense flowered-fumitory, slender tare and shepherd's needle, which are dependent on a regular cropping regime. Arable land use also provides feeding and breeding habitat for a number of rare and declining farmland birds including skylarks and stone-curlews.
- A rich mosaic of associated **wetland habitats** creating distinctive valley landscapes including fens, floodplains, water meadows, carr and wet woodland. As an example, the Red Data Book plant summer snowflake survives in seasonally flooded woodlands along the Kennet Valley.

4.21 Opportunities for landscape-scale conservation projects, working across a significant area and administrative boundaries.

Biodiversity: Key Issues, AONB Strategic Objectives and Policies

Biodiversity in the North Wessex Downs AONB faces a range of challenges which this Plan will address through the implementation of key objectives and policies

4.22 Key Issues

Key issues with the potential to have significant influence on the AONB's Biodiversity Special Qualities:

a) General lack of knowledge about the full biological resource of the North Wessex Downs and how to manage it most effectively for biodiversity, including the management of sites that may support habitats and species of principal importance and other wildlife features of local significance.

b) Habitat fragmentation degrading ecosystem functionality (dispersal and colonisation potential of wildlife populations is constrained, leading to loss of genetic diversity and risk of local extinctions).

c) Impacts of climate change on habitats and species with both losses and gains. In addition to direct impacts on habitats (e.g. drying out of wetlands) there are likely to be indirect effects such as those caused through colonisation by non-natives responding to climatic change. The resilience and response of species to climate change, such as shifts in distribution, will be strongly influenced by habitat availability and connectivity.

d) Uncertainties over future land use and land management patterns following the UK's expected withdrawal from the EU, in particular the impact on opportunities to deliver significant biodiversity improvements across the farmed landscape, and retention of improvements secured through past land management support schemes.

e) Direct and indirect effects of agricultural intensification and land management changes having continued negative impacts on farmland wildlife.

Page 46 Adonis blue butterfly and hazel dormouse, both David Kjaer
Page 47 Water vole, Mark Bridger/ Shutterstock.com

f) Continued decline of species, in particular those with narrow habitat requirements that have responded negatively to changes in land management practices.

g) Nesting success and productivity is often insufficient to reverse declines or even to sustain current populations of many ground-nesting birds.

h) Loss of once-common species of chalk streams and rivers such as the water vole and the white-clawed crayfish (both priority target species).

i) Negative impacts of invasive non-native species on native wildlife.

j) Economic fragility of low input/extensive farming systems and cost of replacement infrastructure (fencing, water supplies, etc.) leading to loss or deterioration of semi-natural habitats through both undergrazing and overgrazing.

Fragmentation of habitats is a key issue, causing the degradation of ecosystem functionality

Poor habitat management and changing practices are resulting in declines in biodiversity

k) Bovine tuberculosis testing and movement regulations reducing the availability of cattle for conservation grazing.

l) Lack of grazing livestock to manage remaining areas of semi-natural chalk grassland.

m) Problems, where grazing is still practised, from recreational pressures including dog worrying and trespass.

n) Increasing erosion of remnant areas of chalk grassland as a result of recreational activities.

o) Degradation and loss of river and wetland habitats through inappropriate management, development, increasing water demand, pollution, eutrophication and climate change.

p) Lack of or poor management of much ancient woodland, causing a decline in biodiversity.

q) Lack of resources to maintain biodiversity and secure enhancements of the existing Green Infrastructure network, including road verges.

r) Erosion of lane and byway verges by increased traffic use and larger vehicles.

s) Change from the use of grass gallops (some of which retain remnant areas of chalk grassland) to artificial surfaces in the racing industry.

t) The need for access restrictions to areas supporting vulnerable ground-nesting species, such as stone-curlew.

u) The effect of development within the AONB setting on its species, habitats and wildlife sites.

Page 48 Common poppies, Helen Walsh

4.23 AONB Strategic Objectives for 2019-2024: Biodiversity

S.07 Identify and promote action to safeguard and to enhance habitats and species which are characteristic of the North Wessex Downs and are not at a favourable conservation status, in particular chalk downland, chalk rivers and streams, broadleaved woodlands, and populations of farmland birds and plants.

S.08 Explore opportunities to promote the 'net gain to biodiversity' principles as elaborated in the revised NPPF and Defra's 25 Year Environment Plan across the AONB and its setting, taking account of lessons learned from the benefits arising from the Biodiversity 2020 strategy in the local area.

4.24 AONB Policies: Biodiversity	
B 01	Resist proposals which have a likely significant effect (either alone or in combination with other plans and projects) upon a European-designated site unless it can be ascertained following an appropriate assessment that they will have no significant adverse effect on the integrity of the site concerned.
B 02	Support the delivery of Biodiversity 2020 objectives, and Defra's 25 Year Environment Plan along with landscape-scale strategies, catchment management and forestry plans to ensure effective management of all priority habitats and species in the AONB landscape.
B 03	Encourage a co-ordinated and consistent approach to biodiversity conservation across the AONB and its setting.
B 04	Support and encourage work to conserve and enhance the biodiversity of the North Wessex Downs through support for landscape-scale projects for habitat management, restoration and creation, particularly where they deliver identified priorities within areas identified as offering the best opportunities for investment in biodiversity, including through management of existing wildlife sites and valuable habitat to the highest standards.
B 05	Support land managers in restoring, creating and maintaining habitats for key species, including threatened arable plants, invertebrates and farmland birds.
B 06	Support the development of initiatives to safeguard and develop habitat corridors and ecological networks throughout the AONB, and in particular to enhance the ecological value of road verges and similar linear features such as public rights of way and National Trails.
B 07	Support partnerships with key stakeholders to promote and deliver projects that contribute to the achievement of good ecological status for water bodies in the AONB.
B 08	Encourage the improvement of connections between people and the natural environment and promote access to nature throughout the AONB.
B 09	Support efforts to communicate the benefits of the local natural environment and its value to society.
B 10	Encourage innovative use of initiatives such as Environmental Land Management schemes to deliver biodiversity benefits and the provision and protection of ecosystem goods and services.
B 11	Support research into causes of declines in ground nesting birds and support appropriate projects that aim to rebuild populations.
B 12	Encourage and support efforts to identify the extent of spread and damage caused by invasive non-native species, to eradicate or contain their spread, and to restore habitats and wildlife populations damaged by them.
B 13	Seek to secure readily accessible baseline biodiversity data across the North Wessex Downs.
B 14	Support the County Biological Record Centres and Historic Environment Records Centres serving the North Wessex Downs as the main repositories for information on the biodiversity and cultural heritage of the AONB and support initiatives to engage the public in biological recording/monitoring.
B 15	Support and encourage measures to enable grazing on all the main grassland areas of the AONB.
B 16	Support and encourage implementation measures to deliver net gain to nature to minimise the effects of development and to address key issues affecting biodiversity resources in the AONB and its setting.