



Chilterns Area of Outstanding Natural Beauty Management Plan 2014-2019

A Framework for Action





This Management Plan complies with the following legislation and guidance:

- The Countryside and Rights of Way Act 2000, Part 4 Section 89
- The Strategic Environmental Assessment Regulations (SI 1633) 2004
- The Conservation (Natural Habitats etc.) Regulations 1994 (as amended by The Conservation (Natural Habitats etc.) (Amendment) Regulations 2007)
- Guidance for the Review of AONB Management Plans published by The Countryside Agency 2006

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Cover image: *Sheep at Aston Rowant National Nature Reserve, Oxon*

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Chilterns Area of Outstanding Natural Beauty Management Plan 2014 - 2019

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Ministerial Foreword

Areas of Outstanding Natural Beauty (AONBs) are some of our finest landscapes. They are cherished by residents and visitors alike and allow millions of people from all walks of life to understand and connect with nature.

I am pleased to see that this management plan demonstrates how AONB Partnerships and Conservation Boards can continue to protect these precious environments despite the significant challenges they face. With a changing climate, the increasing demands of a growing population and in difficult economic times, I believe AONBs represent just the sort of community driven, collaborative approach needed to ensure our natural environment is maintained for generations to come.

AONB Partnerships and Conservation Boards have been the architects of a landscape-scale approach to land management. This approach is a key feature of the Government's Natural Environment White Paper and emphasises the need to manage ecosystems in an integrated fashion, linking goals on wildlife, water, soil and landscape, and working at a scale that respects natural systems.

This management plan also makes the important connection between people and nature. I am pleased to hear that local communities have been central to the development of the plan, and will be at the heart of its delivery. From volunteers on nature conservation projects, to businesses working to promote sustainable tourism, it's great to hear of the enthusiasm and commitment of the local people who hold their AONBs so dear.



AONBs are, and will continue to be, landscapes of change. Management plans such as this are vital in ensuring these changes are for the better. I would like to thank all those who were involved in bringing this plan together and I wish you every success in bringing it to fruition.



Lord de Mauley

Minister for Natural Environment and Science



Department
for Environment
Food & Rural Affairs

Foreword

The Chilterns Area of Outstanding Natural Beauty (AONB) is nationally-protected as one of the finest areas of countryside in the UK. It is a living landscape, shaped by nature and the activities of man. The future well-being of the Chilterns is dependent on everyone working together to conserve and enhance this special area.

This Management Plan provides the framework to enable us to, collectively, maximise our effectiveness in managing the Chilterns AONB. It sets out the special qualities of the area, presents a vision of the AONB, identifies the challenges and identifies policies and actions to guide the work of all of those who care for the area over the next five years (2014-19).

The law requires that AONBs have a management plan in place. Even without this statutory requirement there are good reasons to produce one. The Plan is a collective expression of the interests and wishes of many individuals and organisations and it is only with this input that it can truly be a plan for the whole AONB.

There are many challenges ahead in the period this Plan covers including: the uncertainties of climate change; the spread of pests and diseases; the need for more houses; the demand for new development and the continuing aspiration to get more people to enjoy and appreciate the great outdoors. Should Parliament give the go ahead for High Speed 2, it is essential that everything is done to minimise the damage and disruption, ideally by putting the railway in a full length tunnel under the AONB.



We are fortunate to live and work in such a wonderful part of England. This Plan will help us all to care for it better on behalf of future generations.



Mike Fox Chairman

Chilterns Conservation Board

A Vision for the Chilterns Area of Outstanding Natural Beauty

The Management Plan is based on a vision for the Chilterns AONB in which:



Conserve and enhance the natural beauty

- Its special and unique character is conserved, cared for and cherished for future generations to enjoy.
- The importance of taking a landscape-wide approach to its management is accepted, which combines an understanding of its natural, historical, cultural, social and economic characteristics.
- The setting of the Chilterns is valued and protected by ensuring development adjacent to the AONB also respects its national importance.
- The historic and cultural environment of the Chilterns is conserved and appreciated widely.



Increase understanding and enjoyment

- Opportunities to expand, enhance and enjoy natural beauty are created and taken.
- Local people and visitors can easily appreciate and enjoy its special qualities.
- Those who live, work, visit and enjoy the area also want to be its custodians and stewards.
- The knowledge, skills and resources needed to manage the AONB as a nationally important landscape are readily available.
- The potentially adverse impacts of pests, diseases and climate change are avoided or minimised.



Foster social and economic well-being

- The health and well-being of local people and visitors is enhanced by their enjoyment of the area.
- The potential of a high quality natural environment to provide a high quality living environment for local communities and businesses is realised.
- There is a thriving market for environmentally-sustainable local produce which contributes to the viability of land management and enterprises.

The Chilterns Area of Outstanding Natural Beauty should be an area where:



Natural beauty

- Chalk grassland is more extensive, creating more open downland with thriving populations of its special wildlife.
- Woodland is well-managed and productive, growing high quality timber as well as providing natural spaces for recreation and a home for wildlife.
- Chalk streams have enhanced flows along their natural river beds and provide a healthy environment for their specialised wildlife.
- Local farms are thriving businesses which help to maintain landscapes and wildlife habitats.
- The historic environment, including the numerous hillforts, is conserved, enjoyed and appreciated.
- Common land is valued, enjoyed and well-managed with larger areas of open landscape and better conserved heritage features.
- New buildings, utilities and transport infrastructure are designed and built to high environmental standards that respect the character of the built environment and the character, setting and tranquillity of the landscape.
- More new buildings are constructed using traditional materials and vernacular architectural styles.
- There is a place for modern and innovative building and structural design which respects the setting and wider landscape.

Understanding and enjoyment

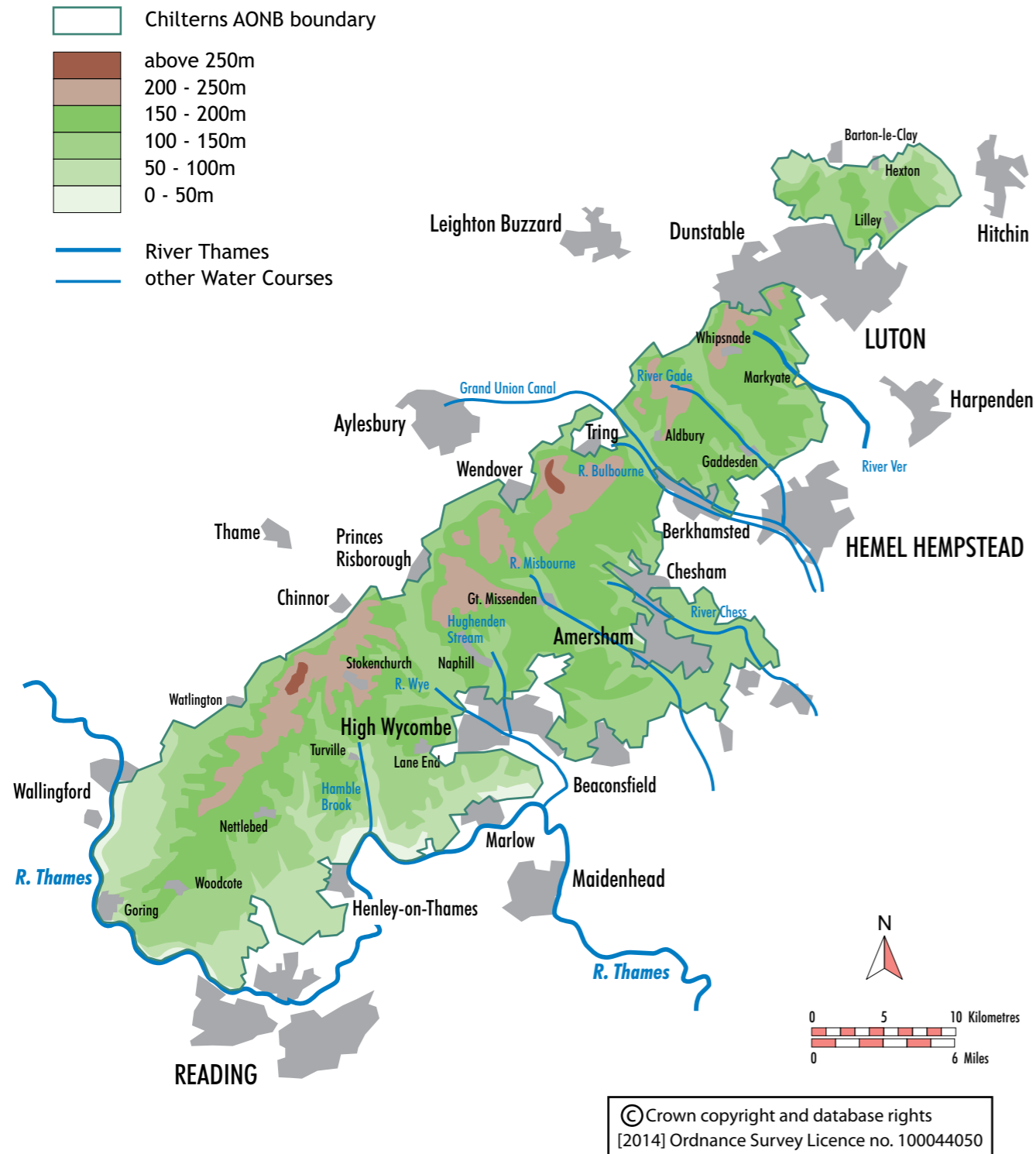
- The River Thames and its valley provide attractive landscape, recreational opportunities and enhanced wildlife habitat.
- The public rights of way, including the Ridgeway and Thames Path National Trails, are well-managed and easily used providing attractive networks of routes popular with walkers, cyclists and horse-riders.



- High quality visitor information and environmental education programmes are widely available.
- More local people and visitors become active volunteers to help care for all parts of the Chilterns Area of Outstanding Natural Beauty.
- Tranquillity is conserved and where noise is a problem, peace and quiet is restored, in particular by reducing noise generated by road traffic, over-flying aircraft and trains.
- The impact of transport infrastructure and traffic is reduced, with more people walking, cycling and using public transport.



The Chilterns Area of Outstanding Natural Beauty



Introduction

The special qualities of the Chilterns AONB



*Kingwood Common
Oxfordshire*

1. In 1965 an area of 800 sq kms of the Chiltern Hills was designated as an Area of Outstanding Natural Beauty (AONB). Later, following a review of the boundary the AONB was enlarged to 833 sq kms in 1990. Natural England has recently lifted its de facto moratorium of the review of boundaries of AONBs and there may well be an opportunity during the lifetime of this Plan to consider proposals to change the existing boundary.
2. The Chilterns AONB was designated for the natural beauty of its landscape and its natural and cultural heritage. In particular, it was designated to protect its special qualities which include the steep chalk escarpment with areas of flower-rich downland, woodlands, commons, tranquil valleys, the network of ancient routes, villages with their brick and flint houses, chalk streams and a rich historic environment of hillforts and chalk figures.
3. There is an extensive network of protected sites within the AONB, including 63 Sites of Special Scientific Interest (SSSI), three National Nature Reserves and three European-designated Special Areas of Conservation. In 2012 98.7% of the Chilterns' SSSIs were in favourable or recovering condition.
4. The Chilterns is one of the most densely wooded parts of the UK with nearly 22% woodland cover of which two thirds is ancient woodland - the highest proportion in the country. The AONB also has a nationally-important concentration of high quality chalk grassland with over 700 ha.
5. Commons are amongst the most characteristic features of the AONB – part of its social and cultural heritage – accessible green places for recreation and public enjoyment and home to a wide diversity of wildlife. Today there are

- 2016 ha of registered common land in the AONB – around 2.4% of the total area.
- Some of the Chilterns' most distinctive natural features are its chalk rivers and streams, fed by groundwater from the chalk aquifer. A globally scarce habitat, chalk rivers support a range of specialised wildlife and in the Chilterns provide a home for the threatened water vole. Another significant water feature of the area, the River Thames, forms much of the southern boundary of the AONB.
 - The Chilterns is possibly the most heavily-visited landscape in the UK with 55 million leisure visits a year¹. Visitors come to enjoy over 2000 km of public rights of way, the Ridgeway and the Thames Path National Trails, the Chiltern Way and the recently opened Chilterns Cycleway and many more special routes.
 - The area is rich in history with ancient man-made features scattered through the countryside and a legacy of grand houses and designed landscapes from the 17th and 18th centuries. There are 122 Scheduled Ancient Monuments in the AONB and 15 parks and gardens on English Heritage's register. There are 2,149 listed buildings, of which 140 are Grade I and II*, and 94 Conservation Areas.

The Chilterns Conservation Board

- The Chilterns Conservation Board was established by Parliamentary Order in 2004. It is one of the first two Conservation Boards (the other is for the Cotswolds) set up under the Countryside and Rights Of Way (CROW) Act 2000 which enabled the establishment of independent statutory bodies to manage AONBs.
- The Board has two statutory purposes:
 - to conserve and enhance the natural beauty of the AONB; and
 - to increase the understanding and enjoyment of the special qualities of the AONB.

- In fulfilling these purposes, the Board has a duty to seek to foster the economic and social well-being of local communities within the AONB, without incurring significant expenditure.
- In practice, where there is a conflict between conserving the special qualities of the Chilterns and its use or enjoyment, the Board will give greater weight to its conservation.
- There are 27 members of the Board: 13 are appointed by the 13 local authorities in the Chilterns AONB, eight are appointed by the Secretary of State for Environment, Food and Rural Affairs and six are elected by parish and town councils in the AONB.
- The Board has a small staff team based in Chinnor in Oxfordshire. It is also assisted by volunteers who lead guided walks, give talks, help at events and carry out project work.

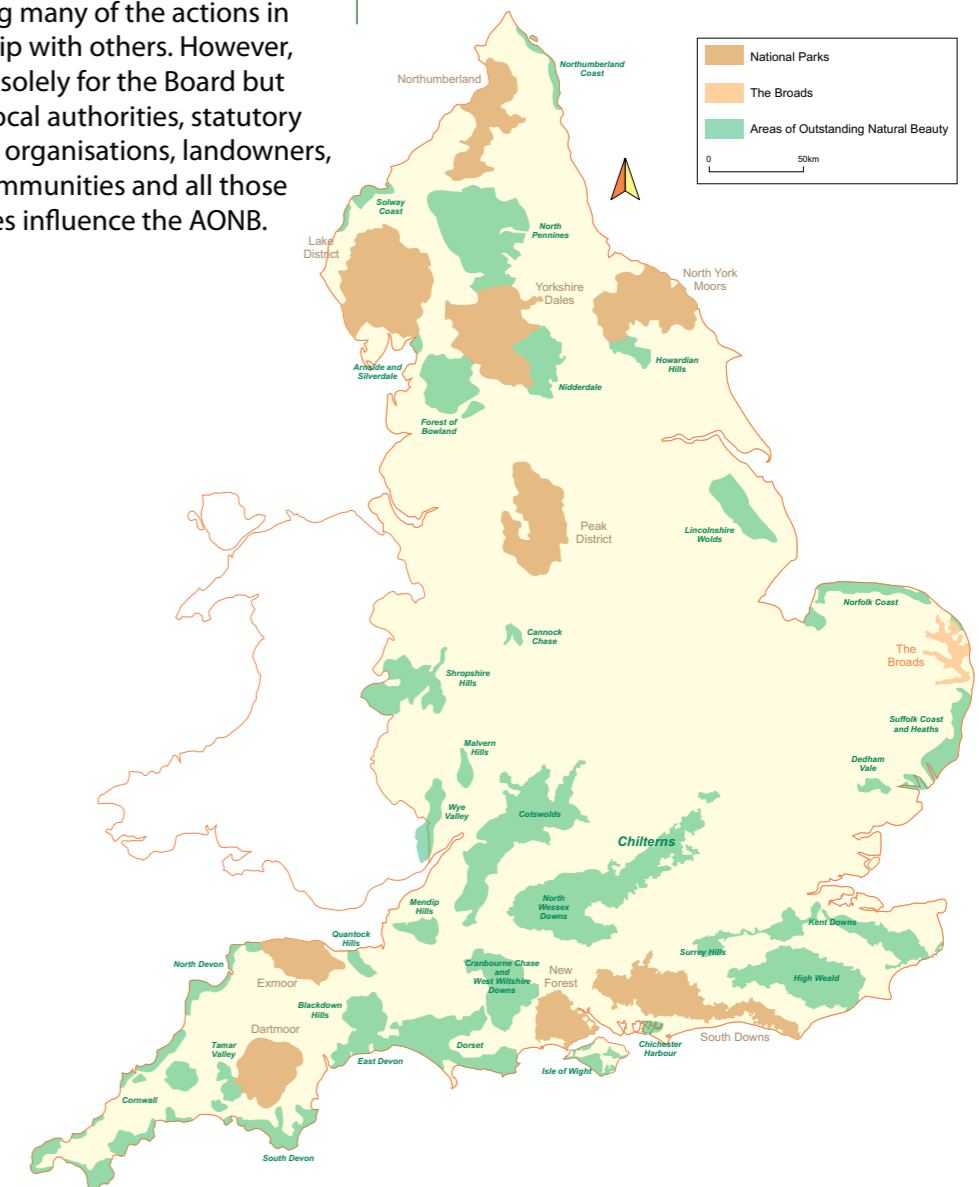
Chilterns AONB Management Plan

- The CROW Act places a duty on all local authorities which include an AONB, and Conservation Boards, where they exist, to produce a plan which outlines their policies for the management of the AONB and how they will carry out their functions in relation to it. Management plans must be reviewed at least every five years. The previous Plan covered the period 2008-13.
- An ongoing difficulty is monitoring the actual changes to the landscape and how they affect its quality. The Conservation Board prepares an annual State of the Environment Report based on a number of locally selected indicators and using the best available information. Ideally such a report would be based on a combination of local and national indicators to enable comparisons with other areas using up to date information. It is an objective of the new Plan to

¹ 2007 Chilterns Leisure Visitor Survey

- increase the amount of environmental data on the AONB which will be published in the annual State of the Environment Report and will contribute to monitoring of the Plan's progress.
- The Management Plan for the AONB for 2014-2019 contains a number of broad aims for the management of the Chilterns AONB. The more detailed policies and actions in the Plan outline how these aims will be achieved by the Board and all other parties with an interest in the AONB.
 - The aims, policies and actions in the Plan have been formulated by the Board in consultation with a wide range of organisations and individuals. During the Plan's lifetime the Board will guide its implementation and will be responsible for undertaking many of the actions in it, in partnership with others. However, the Plan is not solely for the Board but is a guide for local authorities, statutory agencies, local organisations, landowners, businesses, communities and all those whose activities influence the AONB.

- For clarification, the implementation of the actions identified in the Plan for the AONB will require the collaboration of many organisations - it is not a work programme for the Chilterns Conservation Board alone. Inevitably, the programme will be affected by the priorities of each partner and availability of resources. In recent years many of those bodies which will take a major role have less public funding available, a trend likely to continue for some time. This shortage of resource combined with an increased political emphasis on economic growth rather than environmental conservation will, inevitably, restrict the level of ambition and delivery that can be achieved in practice.



Global, national and regional context of the AONB

1. The Chilterns AONB is one of 46 AONBs in the UK, which together cover 18% of the countryside. The AONB designation was created by the National Parks and Access to the Countryside Act of 1949, which also established the National Park designation. The aim was that the two designations would protect the finest countryside in England and Wales. In June 2000 the Government confirmed that AONBs and National Parks have the same level of landscape quality and share the same level of protection.
2. AONBs are part of the global network of protected landscapes. The International Union for the Conservation of Nature and Natural Resources (IUCN) has six management categories covering all types of protected areas. AONBs (and National Parks) fall into Category V – landscapes managed mainly for conservation and recreation.
3. The Chilterns Conservation Board is a member of Europarc, the umbrella organisation for Europe's protected areas. As a protected landscape the Chilterns AONB, along with other AONBs, is playing a key role in the implementation of the European Landscape Convention, ratified by the UK in 2006. The Convention aims to improve the protection and management of important landscapes and to increase co-operation across Europe.
4. The Board is an active member of the National Association for AONBs which represents the interests of the designation and those bodies responsible for them at a national level.
5. The Board also participates in the South East Protected Landscapes group to develop collaborative initiatives across the region and to develop working relationships with a range of regional partners. There is further scope for collaborative working in the East of England.

Influences on the natural beauty of the Chilterns AONB

Development

1. There has long been pressure on the Chiltern Hills for development and for changes in land use which would have a deleterious effect on the quality of the landscape. It was partly these pressures which led to the designation of the area as an AONB in 1965. In more recent times the pressures have grown, leading to a greater-than-ever need for a comprehensive and widely-implemented Management Plan.
2. The recent introduction of the new National Planning Policy Framework to encourage more development is intended to relax planning policies and controls to stimulate house building in particular. Great care will be needed to ensure that this does not lead to a proliferation of designs which do not reflect the traditional Chilterns styles and use of materials. A return to the universal design prevalent during much of the 20th century would be greatly damaging to the AONB. The national policies highlight the need to ensure AONBs are given suitable protection, which will need vigilance and persistence on the part of local planning authorities.
3. The pressures for development and the long urban fringe along the AONB boundary means there will be continuing pressure which may lead to urbanisation, illegal activities such as fly tipping and problems for landowners especially those who wish to continue commercial farming. This pressure may also lead to loss of tranquillity due to increases in noise from roads, railways, aircraft and the general background noise created in built up areas.
4. The specific impact of High Speed 2 on the Misbourne Valley and communities of Great Missenden, Hyde Heath, South Heath and Wendover will be severe. The current proposed alignment and design are far from the best available. If Parliament decides the railway should go

ahead a full-length bored tunnel would be the least damaging option.

5. The threat of a significantly greater number of overflying aircraft is growing as a result of the plan by the operators of Luton airport to double the number of passengers using the airport from 10 million per annum to nearly 20 million.
6. Currently there are no plans to locate wind farms in the Chilterns or for 'fracking'. However that may change and such activities may be sited immediately adjacent to the AONB. Any proposal should be assessed in terms of its impact on the AONB and unless it can be proven that the environmental impacts are acceptable there should be a presumption in favour of refusal.

Visitor pressure

7. Sitting on London's doorstep, and immediately adjacent to several large towns, the Chilterns provides highly valued landscapes and places to escape to. It is a place which has to cope with growing populations and increasing traffic levels as well as pressures for development which come right up to the boundary. Luton, Aylesbury and the Thames Corridor have been identified as part of growth areas by the Government and will see population increases in the coming years, which will result in a greater number of people travelling through the AONB and using it for recreation. The consequent demand for road improvements and greater infrastructure at countryside sites could have a damaging effect on the AONB so needs to be appropriately managed.

Use of water

8. Greater development close to the Chilterns, and some inevitable development within the area, will lead to more consumption of scarce water resources. Abstraction of water for domestic use already has an impact on Chilterns streams and rivers and it is vital that public demand for water is managed sustainably.

Changes in farming

9. The landscape of the Chilterns is dominated by farmland and woodland, and changes in these land uses have a major influence on the natural beauty of the area. The reform of the EU Common Agricultural Policy and the introduction of new agri-environment schemes in the UK are affecting farming. The vagaries of the climate are proving an ever increasing challenge with extremes of weather becoming more frequent with potentially significant consequences. Experience has shown that when farming is more profitable there is greater investment in environmental conservation. The pressure on profit margins together with a relative decline in grant-aid is likely to have a negative impact on some aspects of the farmed environment.
10. Loss of traditional management practices - in particular grazing - and the almost total cessation of 'commoning' (the exercise of common rights) have affected the open habitats often associated with common land.

Changes in forestry

11. The long term decline in the market for UK timber has had a pronounced effect on the Chiltern woodlands, with many suffering from a lack of management. The ageing beech woodlands no longer produce significant volumes of timber and are more valuable as places for recreation than as a part of the rural economy. However, the growing demand for wood as a renewable fuel has stimulated the improved management of some woodlands.

Pests and diseases

12. The number of potentially damaging pests and diseases threatening woodlands, in particular, has grown significantly. The long standing problem of damage by grey squirrels and deer is now compounded by the threat from a number of diseases including ash dieback, acute oak decline and sudden oak death. These diseases will dramatically change the tree species composition of local woods and will result in other species being planted which are likely to be less vulnerable to damage and also may cope better with changes in climate. The aim is to create more resilience against the effects of pests and diseases through the choice of species and management prescriptions. For example this might mean more planting of lime, walnut and douglas fir.

Chenies Manor near Amersham



Cross-cutting themes of the Management Plan

A number of important themes, which will have a significant influence on the management of the AONB over the next five years, cut across all the chapters of the Plan. They are:

- climate change
- social inclusion
- health and well-being
- lifelong learning
- ecosystem services
- environmental sustainability

Many of these themes are integrated in the concept of green infrastructure (GI), which aims to provide a high quality environment which contributes to the well-being of local communities.

1. Climate change

A changing global climate, principally caused by human activities, is now regarded as an indisputable fact by the Intergovernmental Panel on Climate Change (IPCC)². How much global temperatures will rise and how quickly are still under debate, but there is a broad consensus of opinion on the likely changes to the climate of southern England, and therefore the Chilterns AONB, over the next few decades. The likely long term changes are:

- summers will become warmer and drier
- winters will become milder and wetter
- storm events will become more frequent
- weather generally will become more unpredictable

Even short to medium term climatic cycles may be uncertain but there is consensus on the likely long term trends.

² IPCC Fourth Assessment Report: Climate Change (2007)

These changes have the potential to affect the landscape, wildlife and communities of the Chilterns in many ways. For example, in future the Chilterns woods may well have less beech and ash (if any) and more lime, sycamore and even walnut.

The range of crops grown by farmers will change and there may be more growing of biofuels, although concerns over the security of food supplies may affect that market. Flows in rivers and streams could become more erratic and there will be changes in the fauna and flora of all habitats. The impact of tourism is particularly unpredictable. People may decide to holiday in the UK rather than to go abroad if the summer weather becomes warmer and sunnier but, as in recent years, poor weather may lead to fewer holidays taken in the UK.

2. Social inclusion

The Chilterns AONB is a national treasure, protected for all to enjoy and it receives millions of visits every year. Despite this, there are many who could benefit from the area and yet remain unaware of what it has to offer, or who face obstacles in accessing it. Ensuring that as wide an audience as possible understands the special qualities of the AONB and takes an active part in enjoying and caring for it is essential to the future of the area. The Management Plan seeks to achieve this in a variety of ways including reaching out to those in urban areas close to the Chilterns, improving public participation in conservation activities and increasing awareness of the AONB and its special qualities amongst those who are not regular visitors at the moment.

3. Health and well-being

Rising obesity levels and the ever-increasing costs of healthcare have prompted a much greater emphasis on preventative health solutions. There is an increasing perception of the countryside, and green space in general, as a place which offers tangible benefits to health and well-being. The value of protected countryside, like AONBs, in providing walking, cycling and riding routes and a tranquil rural escape from stressful lives is increasingly being seen in economic and social terms as well as environmental.

4. Lifelong learning

Lifelong learning is the concept of providing people with learning opportunities at all ages and in many different contexts: at work, at home and during leisure pursuits as well as through more formal channels such as adult education. It is a Government priority and one which ties in with the Conservation Board's primary purpose of increasing understanding and enjoyment of the Chilterns AONB. With greater understanding comes a sense of ownership and of stewardship. The popularity of the natural environment amongst the public combined with the resources that the AONB offers such as wildlife, special habitats, history and built heritage creates many opportunities to stimulate understanding, develop skills and encourage creative responses.

5. Ecosystem services

The environment provides many services in the form of wildlife, water, minerals, public enjoyment, flood protection, food, timber and other natural resources. This wide ranging and interlinked array of services is now being given better and more formal recognition in national environmental policies. A primary purpose of this increased emphasis is to ensure that any proposal which has an environmental impact results in the assessment of those impacts on the full range of ecosystem services and a full value thereby being accorded to those services.

6. Environmental sustainability

The Earth's resources, in simple terms, fall into those which can be renewed and those which cannot and will be exhausted unless their use ceases. The favoured approach is to give priority to minimising use of non-renewable resources and increasing reliance in those which are renewable. The most obvious examples are in the field of energy with more energy conservation, reduced reliance on fossil fuels and greater generation of solar power. It is not anticipated that wind turbines will be located in the AONB. Much greater use will be made of wood fuel, not least as very large volumes are likely to be available if, and when, the area is affected by ash dieback.

Section 1

Conserving and enhancing natural beauty



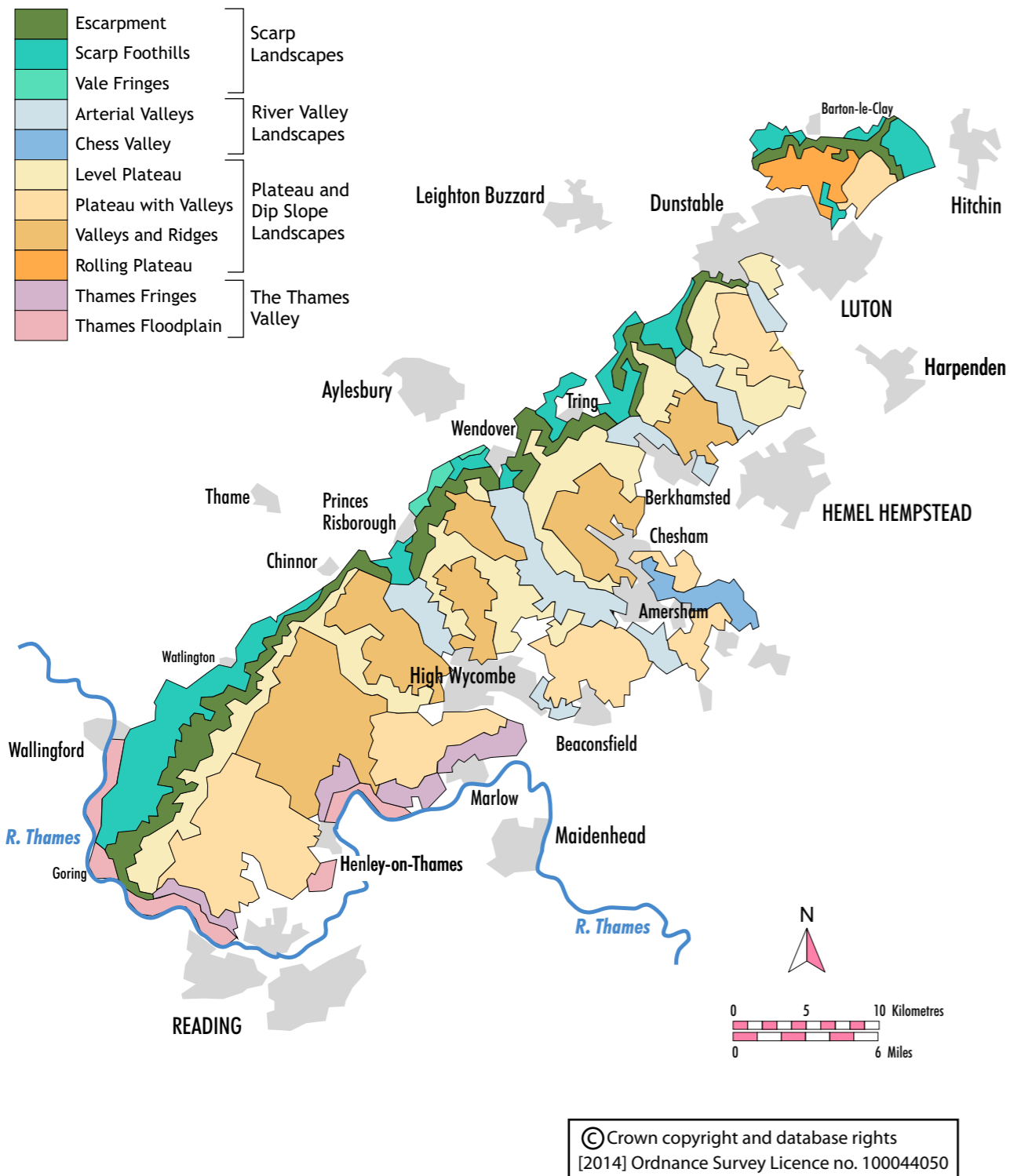
The primary purpose of designating an area of countryside as an AONB is to conserve and enhance the natural beauty of its landscape. In this sense, the term 'natural beauty' refers not only to the scenic qualities of the landscape but to all those other elements which together produce the special character of the AONB. These elements include wildlife and man-made features such as its archaeological and built heritage.

This section seeks to unpick the special qualities of the Chilterns AONB and to define the key issues which are affecting them. It is divided into chapters reflecting all the components which combined create the unique sense of place of the Chilterns, namely:

- Landscape
- Farming, forestry and other land management
- Biodiversity
- Water environment
- Historic environment
- Development

Dunstable Downs

Landscape character



Landscape

Introduction



1. The landscape of the Chiltern Hills is defined by the chalk escarpment which runs from Goring-on-Thames north-eastwards to Hitchin - a distance of 50 miles. At its highest point, near Wendover, it reaches nearly 900 feet. The steep scarp slope faces to the north west; the dipslope appears more like a plateau, gently shelving to the south east, incised by shallow valleys, some with chalk streams flowing to the River Colne and River Thames.¹ To the south and west it is the Thames Valley which provides a natural boundary.
2. Whilst all of the Chiltern Hills are within a single National Character Area (No.110)² as defined by Natural England, not all of the Chiltern Hills have been designated as an Area of Outstanding Natural Beauty. A central core deemed to contain the finest landscape and which best exhibits

the Chilterns landscape character is currently within the AONB. However, in several places the Chilterns landscape extends beyond the area currently designated as AONB and there may be a case for re-considering whether some of this landscape should also be designated.

3. On a global scale chalk is a rare form of geology, laid down during the Cretaceous Era (65 - 100 million years ago), and is most commonly found in the south and east of England and north-west France, but almost nowhere else. The Chilterns shares many characteristics with other chalk landscapes in the Surrey Hills, North and South Downs, North Wessex Downs, Wiltshire and beyond into Dorset. A large proportion of these special landscapes have been designated as either Areas of Outstanding Natural Beauty or National Parks.

¹ *The Chilterns Landscape: Countryside Commission CCP392 1992*

² *National Character Area Profile: 110 Chilterns (Natural England 2013)*

4. Chalk is an unseen geology with few natural outcrops and is generally only exposed in quarries, now largely redundant. It was little used for construction, except in the manufacture of cement, and only the relatively hard forms of chalk known as Totternhoe Stone and Clunch were used in local buildings.
5. The landscape is a combination of the landform created by underlying chalk and the land uses and buildings on its surface, which owe more to the clay and flint which overlie it. The heavy clay soils support extensive woodland cover and mixed farming on mostly medium quality (Grade 3) land. There are also deposits of fire clay, suitable for commercial brickmaking, and flint which lends such distinction to all forms of building from churches to cottages.
6. The landscape has largely been shaped by farmers and foresters and remains an ancient landscape with features from many ages. Even today, field and hedgerow patterns can be traced back many centuries as can most of the lanes, woodland banks and parish boundaries.
7. It is a landscape of many hidden quarters, of enclosures and surprise views, of dark beech woods and open downland. It is its variety and timelessness which give it such charm and places such a premium on maintaining those special qualities.
8. Climate change will result in some significant changes to the landscape by changing habitats and land uses, but over a relatively long timescale with few noticeable changes in the short term. Over a period of 50 years or more the most noticeable changes are likely to be an altered species composition of woodland with less beech and a greater variety of arable crops better suited to warmer conditions. Those qualities which make the Chilterns a landscape of national importance today will almost certainly persist.

9. The attractiveness of the Chilterns landscape, the proximity of London and several large towns and the high level of accessibility of the countryside have made the Chilterns one of the most visited areas in the UK, possibly Europe. And yet the intimate enclosed nature of much of the landscape and the large number of places with public access have spread the visitor pressure, enabling it to absorb that level of use without suffering from the problems of degradation and erosion that other well-visited landscapes commonly suffer from.
10. There is no single Landscape Character Assessment (LCA) for the Chilterns AONB. The whole of the AONB is covered by a number of county- and district-based LCAs which have been undertaken over a period of 15 years, using a similar specification, but not always identical.

Broad Aims

- Conserve and enhance the outstanding qualities of the Area of Outstanding Natural Beauty as part of the national landscape heritage.
- Maintain those features which make a significant contribution to the character and quality of the area and to regional and local distinctiveness.
- Enhance and restore those parts of the landscape which are degraded or in decline.
- Enhance the level of awareness of what makes the Chilterns landscape special and the desire to care for it.

Special Qualities

1. A dramatic chalk escarpment rising to nearly 900 feet (272 metres) with flower-rich downland and panoramic views. Once extensive, the downland survives in

- smaller fragments and now only covers 1% of the AONB, of which less than half is considered high quality calcareous grassland important for its biodiversity.
2. The main ridge of the escarpment provides fine long views across the lower lying vales to the north and west. To the south, views are more restricted by dense woodland and low-lying ridges.
3. The underlying chalk ridge is covered by several feet of clay with flints, but along the ridge the chalk lies near the surface and is peppered with quarries, small and large, now largely redundant.
4. The landscape of the Chilterns is given unity by its escarpment but there are notable local variations. The northern Chilterns are generally more open with larger fields and less woodland, also a characteristic of the southern tip in the area known as the Ipsden prairie. The central and southern Chilterns are dominated by heavily wooded countryside with mixed farming and a large number of scattered villages and hamlets. Along the southern boundary the hills come down to the Thames Valley and the River Thames itself which forms a long and sinuous boundary.
5. Woodlands, notably beech, cover over 18,000 hectares, nearly 22% of the AONB, making it one of the most wooded landscapes in England. Once the woods were home to bodgers and other woodland workers but today are mainly valued for their amenity, wildlife and as places to visit.
6. Farmland covers approximately 60% of the Chilterns³, creating a mosaic of fields with arable crops and livestock, bordered by ancient hedgerows and trees. A mix of crops, dairy cattle, sheep and pigs was once commonplace, but grazing of livestock is less prominent now and more land is given over to arable farming.
7. Chalk landscapes are dry landscapes, but in a few shallow valleys can be found gently-flowing streams, often bordered by pollarded willows and remnants of meadows and former watercress beds, once a common sight and thriving local industry.
8. The folds of the landscape hide many small dry valleys or coombs with no springs or streams. These places provide hidden 'secret' landscapes and unspoilt countryside.
9. Commons, heaths and greens are a defining characteristic of the Chilterns landscape covering 2.4% of the landscape (2,016 ha). However, they were once more extensive, and many have been lost to a combination of enclosure, urbanisation and woodland encroachment. Whilst open landscapes tend to be associated with common land, a significant number of Chiltern commons would originally have been woodland or wood pasture.
10. Over 191 areas of registered common land still provide special landscapes largely untouched by development and modern agriculture. Much of the common land in the Chilterns is in close proximity to towns and villages, providing valued, easily accessible green spaces for local communities. Nearly 10% of the remaining common land in the AONB is ancient woodland.
11. The Chilterns has an extensive network of ancient routes, roadside hedges and sunken lanes. The Ridgeway (Icknield Way), reputedly the oldest road in the country, is elevated along the entire length of the Chilterns, linking Wessex with East Anglia.
12. Villages and farmsteads with brick and flint cottages, churches and timber barns are scattered throughout the area. The more ancient settlements tend to nestle alongside streams and rivers or springs at the foot of the escarpment. More recent settlements sprung up on the higher ground, strung along the edge of commons and beside droving routes.
13. The area boasts a wealth of great houses, follies, parkland and designed

³ Chilterns Land Use Survey 2010, CCB

landscapes. Often built and embellished by statesmen and businessmen making their fortune in London, it is a trend which continues to this day. Foremost is the Prime Minister's rural retreat at Chequers near Wendover.

14. The Chilterns is a long settled landscape with relics of many different eras: Bronze Age barrows and fields, Iron Age hillforts, medieval deer enclosures, eighteenth century sawyer pits and chalk figures carved in unknown times.

Key Issues

There are many factors affecting the landscape and how it is managed. Often the causes of change are complex and the trends uncertain. The scale and variety of the Chilterns landscape means that trends and issues affect different parts in different ways. Perhaps as much as at any other time, global factors and trends are influencing the Chilterns as, for example, farmers respond to world prices for grain and landowners from overseas invest funds in newly acquired estates. Increasing numbers of pests and diseases, many new to the UK, are now posing a serious and long term threat to wildlife, farming and forestry.

Changes to farming

1. The growth of arable farming in response to the world price of cereals is likely to be a factor for several years as concerns about food security grow and demand increases from China, India and other countries. Traditional growers of grain may be affected increasingly by weather extremes and climate change and as prices rise above recent lows, farmers in the Chilterns will grow crops for which they anticipate a steady if not increasing market price. This is unlikely to lead to ploughing up of grassland important for its wildlife, as it once did, as these sites are largely protected, but it will change the landscape, as has been seen, for example, where short term grass leys have been converted to grow cereals

and oil seed rape. In general, it can be anticipated that many farmers will increase their area of actively farmed land and the relative attraction of agri-environment options will reduce.

2. At the time of writing the reform of the Common Agricultural Policy (CAP) is ongoing. Already announced by the UK Government is a new environmental land management scheme to come into effect in January 2015, which combines environmental and forestry grants. It will be targeted instead of being available universally. At the time of writing it is not known if all of the Chilterns AONB will be a target area.
3. The decline of livestock farming, of all types, is leading to problems for the management of sites which need grazing in order to retain their biodiversity and landscape qualities. There is little likelihood of a reversal of this trend as farmers give up livestock and increasingly choose to concentrate on growing cereals or leave farming altogether.
4. Although the number of full-time farmers is declining there are many more small agricultural holdings reflecting the relative popularity of hobby and part-time farming. In some places this is leading to a fragmentation of the landscape with smaller fields, new buildings and a greater diversity of activity in a smaller area. Inevitably not all of these new holdings are well managed and some detract from landscape quality.

Climate change

5. The changing climate with its extremes of weather may alter the landscape but predicting the nature of that shift is difficult. Examples of possible effects include a reduction in the extent of beech woodland, effects on the flows of chalk streams and the introduction of new crops in response to different growing conditions.
6. The increasing variability of the climate with the associated difficulties of predicting the weather from one season

to the next is affecting yields and, in most cases, profitability. Such uncertainty, together with the availability of grant support, will have an impact on related environmental management and the resources available for such activities.

7. The potential for scrub to spread across open grassland landscapes is increasing due to a combination of the problem of grazing sites and the potential for more rapid growth of scrub in those years when the weather is mild and growing season is longer.
8. For the foreseeable future the landscape will still be dominated by farming and forestry and the spatial pattern of land use is unlikely to alter directly as a consequence of climate change. It is more likely that, for example, the species composition of woodlands may change - the general appearance will be similar to the woodlands of today but will become more varied over time.

Attitude of owners

9. There is evidence of the amalgamation of farm units to create bigger businesses with an increasing use of contractors. One consequence is that those who make the main decisions have less time, and sometimes knowledge, of the environmental options available to them.
10. As new owners buy land they often place higher priority on leisure and amenity than production. This is partly behind the expansion of the area covered by pony paddocks, extension of gardens and newly landscaped grounds. Often it is accompanied by the spread of fencing, screening of all kinds and inappropriate clutter such as lights and temporary buildings.
11. The general growth of leisure uses, notably equestrian, has resulted in a significant number of horses, new pony paddocks and associated buildings and equipment. Also prominent in the landscape are new and expanded golf courses. Whilst they can provide high quality habitat this is dependent upon

extensive sympathetic management. Such land uses are often most prevalent on the outskirts of towns and villages, a perspective seen by large numbers of people for whom such a landscape may become the norm.

12. Many Chilterns commons are affected by the increasing demands for access and recreation and changing public attitudes, for example towards grazing livestock close to towns and villages.
13. A continuing and largely unnoticed trend has been the loss, usually partial, of unregistered parks and gardens, for example around large houses now used for institutions or businesses.

Decline of cherry orchards

14. The once large number of cherry orchards continues to decline to the point they are now a fast vanishing feature of the landscape. There is a growing interest in conserving and restoring some of the best examples to ensure this element of the traditional Chilterns rural scene is not lost and forgotten. Recently there has been a welcome small increase in the area of apple orchards.

Fragmentation of land ownership

15. The continuing fragmentation of the landscape by transfer to smaller holdings is affecting the scale and nature of management of land. Such fragmentation also highlights the nature of intervening land, for example between fragments of chalk grassland or ancient woodland. The links are important to allow wildlife to move around a larger network of suitable habitat.

Under-management of woodland

16. Many types of woodland, especially small woodlands, are under-managed, even neglected. The long term decline of timber prices, notably for beech, has depressed the market and is unlikely to change in the near future. However prices for fuel wood are increasing and helping

to stimulate management of woodland. A decline of skills and the availability of skilled contractors with the necessary machinery and transport is a concern, as is the loss of knowledge and experience of timber production.

Pests and diseases

17. The impact of pests and disease on trees, woodlands and forestry will be profound. The recent spread of ash dieback (*Chalara fraxinea*) may have severe and widespread impacts. It is likely that many, but not all, of the several million ash trees in the Chilterns will be affected in the next 20 years. It should not lead to the loss of woodland cover if other species naturally regenerate or are planted, however a very severe loss will be the larger mature ash trees in hedgerows and along most roads. Its likely impact is still uncertain and whilst many trees may die others may survive. A positive programme of replacing those lost trees will be needed otherwise the landscape, particularly farmland, will be bereft of mature trees for many years. Acute Oak Decline, Oak Processionary Moth and *Phytophthora* are also of particular concern for Chiltern woodlands. It is essential that a considered approach, based on the best available scientific advice, is taken and quick responses are avoided.
18. The widespread damage caused by excessive numbers of grey squirrels, deer (muntjac, fallow and increasingly roe) together with localised problems caused by the edible dormouse (*Glis glis*) continues to hamper efforts to establish and grow trees, especially for timber.

Removal of conifers

19. Government policy to remove plantations, especially of conifers, from ancient and semi-natural woods (PAWS) will help restore their natural qualities. Where existing conifers are important for their amenity, for example by providing winter greenery, a careful and phased removal is advocated.

Ageing beech woodlands

20. The changes to the many mature beech woods may result in long term changes in the woodland landscape. They will be barely discernible in the short term, but already ash, which regenerated in the gaps left by beech trees blown down in the early 1990s, has changed the landscape by altering the colours and timing of flushing and leaf-fall.
21. It is likely that beech will persist in smaller pockets even through significant changes in climate, but it will no longer be as dominant. The balance of woodland cover needs to slowly change to reflect the tolerance of species to more extreme weather. If the Chilterns is to be a timber-producing area in the long term unfamiliar species may have to be introduced.

Renewable energy

22. Although it cannot be ruled out, it is unlikely there will be many applications to erect wind turbines in the AONB due to low wind speeds generally and the unacceptability of siting them along the skyline where wind speeds are higher. There may be places where relatively small turbines could be accommodated without unacceptable intrusion in the landscape.
23. With growing pressure to increase generation of renewable energy there are likely to be more proposals for solar farms, anaerobic digesters and wood-fired systems. Providing they are on an appropriate scale in non-sensitive locations it is possible these forms of energy generation can be accommodated in the Chilterns landscape, but these are important caveats.

Setting of the AONB

24. The potential impact of development in the area surrounding the AONB needs to be given greater weight as inappropriate and poorly designed development can significantly affect the AONB and its

enjoyment. This plan places considerable emphasis on the need to value the setting of the AONB as an integral part of the efforts to conserve the landscape of the AONB itself and should be reflected in neighbouring Local Plans.

Development pressure

25. Large numbers of new houses are planned in surrounding towns and construction will affect the land adjacent to, and visible from, the Chilterns. Land scheduled for development may be less well managed, even abandoned in anticipation of new development in the relatively near future. Once created there may be a harder, more defined edge between town and country. The view from the ridge of the escarpment will be significantly affected in some places, although green infrastructure provision is an intrinsic part of the growth area strategies. The provision and long term management of green infrastructure should be an integral component of planning any new development, both enhancing the new development itself and the way it is integrated with the surrounding area.
26. A more immediate, but less obvious change in the landscape is the impact of building new houses on infill sites and gardens in villages. Usually the resulting houses have small gardens and there is less scope for trees to grow to maturity and provide highly value amenity and screening. In some cases the infilling itself and unsympathetic design of the new development changes the character of the settlement.
27. As the Chilterns landscape is a mosaic of the natural and built environment it is important that the design of new buildings complements the existing character of the landscape and settlement, especially where it is based on vernacular architecture. New designs must also exhibit the highest environmental standards in terms of energy and water conservation.

Landscape clutter

28. There is a tendency for clutter of all types (e.g. signs, masts, barriers and fences) to accumulate along roadsides, around settlements and along the skyline. It is an insidious problem which is difficult but not impossible to reverse. The co-operation of the highways authorities is essential as they are often responsible for much of the clutter.

Loss of tranquillity

29. According to national surveys, half of all visitors to the countryside say that peace and quiet is a primary reason for their visit. The enjoyment of the landscape is being increasingly eroded by a loss of tranquillity - peace and quiet is harder to find largely due to traffic noise, notably the M40 and several of the trunk roads, and the increase in over-flying by aircraft of all types using Luton, Heathrow and local airfields. The loss will intensify if the proposal by Luton airport to double its capacity goes ahead. The expansion of Heathrow would also mean more over-flying aircraft at low altitudes.
30. The darkness of the night sky and the absence of visual intrusiveness of structures and buildings all add to a sense of tranquillity; these are attributes which are over-looked and are being continuously and insidiously lost. If High Speed 2 is built the corridor through which it passes will lose most of its remaining tranquillity in all senses - it would be largely protected if the railway is in a continuous bored tunnel.

High Speed Two

31. The impact of High Speed 2 on the Misbourne Valley will be severe and permanent. At the time of writing the impact of the current design with a long section on the surface crossing two viaducts cannot be adequately mitigated. The proposal to provide screening by using spoil from the cuttings to create line-side embankments is not an appropriate design solution in an AONB. The loss of ancient woodland

cannot be replaced by the proposed tree planting, much of which will be planted on farmland which should be kept in agricultural use.

32. The Conservation Board opposes High Speed 2 because it is not convinced that an adequate case has been made that it is in the national interest. The Board also believes that it is possible to avoid the AONB with changes to the design specification, notably the line speed. The Board believes that if the railway is finally given the go ahead by Parliament, it should be in a full length bored tunnel as it passes through the Chilterns.

Policies

L1 The overall identity and character of the Chilterns should be recognised and managed positively.

The main characteristics of the Chilterns landscape have been created by human intervention. In most cases they need to be managed actively in order to retain those qualities or restore natural characteristics which are in decline e.g. chalk downland, hedgerows, ancient woodlands, chalk streams, traditional cherry and apple orchards.

L2 There should be greater understanding and awareness of local landscape character which contributes to local distinctiveness.

The main landscape types such as woodland, farmland, river valleys and downland are large in scale, but are owned by large numbers of individuals, who often own small plots. The challenge is to help all owners and managers to be aware of the character of the wider landscape and the context for their own activities. It also highlights the importance of managing boundary features well and where possible, ensuring there are no intrusive boundaries such as close board fencing in open countryside. This policy aims to help current stewards of the land to

ensure that future generations benefit from an equally high quality landscape.

L3 Local pride in the landscape and special sense of place should be encouraged to promote concern for their conservation.

The Chilterns is fortunate in that so many people and organisations are concerned about its environmental quality. The Chiltern Society alone has over 6,500 members and the Wildlife Trusts, National Trust and RSPB amongst others are well supported. Together with local authorities, including 117 town and parish councils and voluntary and community groups, there are many organisations with powers, resources and a willingness to work to conserve what is special about the Chilterns and to act as stewards of the landscape. These organisations and individuals all need support to maintain their active roles.

L4 The distinctive character of buildings, rural settlements and their landscape setting should be conserved and enhanced.

A primary characteristic of the Chilterns landscape is the large number of attractive towns and villages, buildings, farms, barns and churches. It is the combination of their charm and setting in the landscape that contributes so much to the special qualities of the Chilterns and reinforces what is distinctive about the area.

L5 Developments which detract from the Chilterns' special character should be resisted.

There are significant pressures to change the use of land, erect new buildings and structures, improve transport infrastructure or expand economic and leisure activities. They can often be satisfactorily accommodated without detriment to the landscape, but not always. The town and country planning system and other regulatory and advisory processes need to be in place and applied to ensure that damaging changes are prevented. A great deal of

information and advice is available to help ensure proposed changes are in keeping with the special character of the AONB and its setting.

L6 Degraded aspects of the landscape should be enhanced including the removal or mitigation of intrusive development and features

In some senses the Chilterns is a busy landscape with a large number of buildings, structures and, what some might call, clutter. Such clutter comes in many forms and can include: masts, signs, fences, utilities infrastructure and highways structures. It tends to accumulate rather than be removed even after its useful life has ended. Sometimes concerted effort is needed to bring about its removal by planning conditions, regulations, advice, practical assistance or incentives. There is also scope to mitigate, or even screen, less attractive structures and features where they are still in active use or are unlikely to be removed.

Similarly what was once regarded as an acceptable design is now considered out of place. The utilitarian and universal designs used by national utility companies is a good example of when a more sensitive and tailored approach would have been more appropriate for an AONB.

Some developments have been constructed which, over time, now look out of place by virtue of their location, scale or design. Whilst removal remains unlikely or impossible greater consideration should be given to mitigation to diminish those negative impacts.

L7 The quality of the setting of the AONB should be conserved by ensuring the impact of adjacent development is sympathetic to the character of the Chilterns.

The Chilterns is surrounded by many market towns and the larger settlements of Reading, Hemel Hempstead, High

Wycombe, Luton, Dunstable and Aylesbury where large numbers of new houses and other developments will be built during the next 20 years. The design and location of these buildings need to be sensitive to the AONB, for example by not having excessively high or reflective roofs. The impact of development adjacent to the AONB will be significant in many ways including its visibility from many popular sites. It is important that appropriate landscape and visual assessments are undertaken.

L8 Landscapes close to existing and new areas of development should be maintained and enhanced to conserve, enhance and extend: natural capital; green infrastructure; character and amenity; biodiversity; and opportunities for recreation.

The boundary of the AONB is long and sinuous, curling around many towns and villages. The interface between the AONB and these communities is important and the quality of landscape in this belt is often under pressure. Such problems may be compounded where new development is planned, resulting in less intensive management and additional pressures placed by new residents seeking to use adjacent countryside for leisure and recreation. These places create what is being called green infrastructure and need to be identified in advance and appropriate management and investment put in place. The countryside close to home is often the most important, which means creating green spaces within the development zones as well as adjacent to it. It is essential there is no reliance on sensitive sites, for example along the scarp ridge, to provide green space in lieu of sites closer to new development.

L9 Multiple ecosystem services should be provided through landscape-scale activity.

In a small country it is essential that land provides as many benefits as possible. In the Chilterns this means ensuring that in addition to any productive capacity land may have it is part of a high quality landscape, supports biodiversity, locks up carbon, helps ensure clean supplies of water as well as providing places for leisure and recreation. This may seem very demanding but much of the Chilterns is capable of providing such multiple benefits. This has long been the case but as demands on a limited area of land continue to grow such multiple benefits (ecosystem services) need to be generated and may be a requirement in return for public funding.

L10 The cumulative impact of development and land use change should not adversely affect landscape quality and character.

Often approval for new development is given on its own merits and the cumulative impact it represents is given a much lower level of consideration. The effect over time can be negative by creating a more crowded landscape with an array of associated, often unplanned or even unforeseen, features and structures.

Some forms of development, in particular housing, can have an impact on the use of surrounding land, for example, making it harder to farm or manage woodland because of the public pressure. This effect is particularly prevalent in the urban fringe where valued rural character can quickly be lost.

L11 The design and management of transport infrastructure and services should reduce their harmful impacts, including greenhouse gases, and not damage the natural beauty of the Chilterns.

Transport infrastructure has a major impact on the landscape of the Chilterns. Over 300 roads cross the AONB boundary and four railways including the west coast mainline. Many of the roads are ancient in origin and are part of the environmental and cultural heritage. Many roadsides are rich in wildlife and sunken lanes and milestones add to the landscape. In recent years the design and management of roads and other transport infrastructure has been unsympathetic to the environment which has changed the landscape. Inevitably the use of this infrastructure is a major source of greenhouse gas emissions and speeding traffic in villages and in open countryside adds to the negative impacts.

L12 The construction of High Speed 2, as proposed in April 2014, is opposed because of the likely negative impacts on the special qualities and character of the AONB.

a) Should HS2 be constructed it should be in a full-length bored tunnel under the AONB in order to minimise the impacts.

b) Should HS2 not be constructed in a full length bored tunnel, then the negative impacts of the design should be mitigated to reflect fully the Chilterns' status as an AONB – a nationally protected landscape.

The advice by the Conservation Board to Government has been that High Speed 2 will have a severe and permanently negative impact on the special qualities of the Chilterns Area of Outstanding Natural Beauty; and its enjoyment by both local people and visitors. Whilst it is understood that national infrastructure has to be built in the national interest, the case for HS2 is not compelling and less damaging alternatives are available.

At the time of writing (March 2014) the Second Reading of the High Speed 2 Bill has not taken place by Parliament. If it is Parliament's decision that HS2 should be built, the best way of protecting

the AONB is for the railway to be in a bored tunnel for its full length under the Chilterns. In particular the current proposal to deposit up to 12 million tonnes of spoil in the AONB on farmland is wholly unacceptable.

Whilst it is known that a full length bored tunnel (possibly with an intervention gap) is technically feasible and desired by local people, it is possible that the Government will decide to retain the, largely, surface route through the Chilterns in order to reduce the cost to itself. In which case, every effort should be made to avoid and mitigate the negative impacts. This has to be done in such a way that the mitigation itself does not create unacceptable negative environmental impacts. This is desirable both for the conservation of the special qualities of the Chilterns AONB, and to demonstrate that significant weight is given by the Government to the protection of nationally-designated landscapes with their heritage assets, ancient woodland and other sites and features of importance.

L13 The management of the landscape to enable it to adapt to climate change and to help mitigate the causes should be promoted.

The landscape of the Chilterns is dynamic and one of the factors causing this is the changing climate. For example, the low flows in chalk streams were, until recently, due to prolonged periods of winter drought. The relative strength of climate change as a driver of change is likely to increase and be persistent over a long time. It is unlikely there will be rapid changes in the landscape and some changes are barely discernible.

However more extreme weather events will become more commonplace requiring short term changes in management of the landscape, for example by coping with frequent heavy downpours and minimising run off. Longer term changes may affect the ability of beech to survive on many sites



A farmland landscape in the Stonor Valley

where it is now found. Foresters will need to consider how to manage woods to make them more resilient to climate change. For example, by making stands of trees less prone to wind throw, or planning for a modification of species composition to those more tolerant of predicted climate changes – for example it is suggested that walnut might fare better as a timber tree than beech. In general, natural regeneration is to be encouraged as these systems cope best with climate change. These adaptations will also help build resilience to the threat from pests and diseases.

To halt the damaging effects of climate change it is essential that long term measures are put in place. For example, ensuring that carbon dioxide is fixed in soils by maintaining and enhancing the organic matter content. Other measures may include the use of trees to provide shade to reduce the need for air conditioning of buildings. Farming systems which minimise the loss of water from soil will be encouraged.

L14 Tranquillity should be conserved and restored when all development and major landscape management is planned.

Everyone values peace and quiet and attractive, unspoilt scenery. These are the key characteristics of tranquillity, a quality which is much valued but being constantly lost. Experience shows that once lost it is very difficult to restore, thus the need to prize it highly and conserve it whenever possible. The noise pollution and visual intrusion that will be created, for example, by High Speed 2 will significantly diminish any sense of tranquillity currently enjoyed by residents and visitors along that part of the Misbourne Valley through which the line will pass.

L15 The understanding and importance of how geology and soils contribute to the special character of the Chilterns should be enhanced.

The long term care and stewardship of the AONB depends upon a deep understanding of what makes it special. An understanding of how the geology of the Chilterns and associated soils form both the topography of the Chiltern Hills and sustain the various land uses, even buildings, which make it so special is essential. In practice knowledge of the geology and soils of the area is extremely limited.

L16 Sites of geological importance should be conserved and actively managed.

Because chalk is a soft rock it is almost never visible at the surface through outcrops and cliffs. Instead it erodes easily and is quickly covered by vegetation. This, in part, explains why there is so little general appreciation of the geology of the Chilterns. And yet there are a small number of sites (Regionally Important Geological Sites – RIGS) where it is possible to appreciate and learn about the special geology of the area. Most are man-made - cliffs

created by quarrying which has exposed the various layers of chalk laid down in the Cretaceous Period (65- 100 millions years ago).

L17 All land management should conserve soil quality.

It is important for many reasons to maintain and enhance soil quality. It is a very large store of carbon and water. If its organic content is reduced it stores less of both. Inevitably that also reduces its productive potential for farming. Where the soil structure and fertility has been diminished farming yields can only be maintained by adding fertilisers and other inputs, which is less sustainable, more expensive and often results in environmental problems such as run off - much of which ends up in rivers and the aquifer where it can affect drinking water supplies.

L18 The impacts of pests and diseases (notably grey squirrels, deer and ash dieback) on the landscape should be prevented, minimised and mitigated.

The impact of pests and diseases will be severe and unless there is more concerted effort to prevent specific species from assuming pest status, it will be more difficult to maintain landscape quality, conserve wildlife and maintain the productive potential of woodland and farmland. Prevention is by far the best strategy and it will require new ways of managing land. For example, the age and species diversity of woodlands will have to change, possibly with more use of non-native species (in accordance with Forestry Commission advice), otherwise the ongoing ravages of pests and diseases will increase.

Farming, forestry and other land management

Introduction



Barley in the Radnage Valley

Farming and forestry have shaped the Chilterns landscape but it is important to recognise that many other forms of rural land use now exist. The wide range of diverse uses includes golf courses, private parkland and nature reserves. This chapter describes issues common to all and encourages positive engagement with farmers, woodland owners, other land owners and advisers alike.

Farming

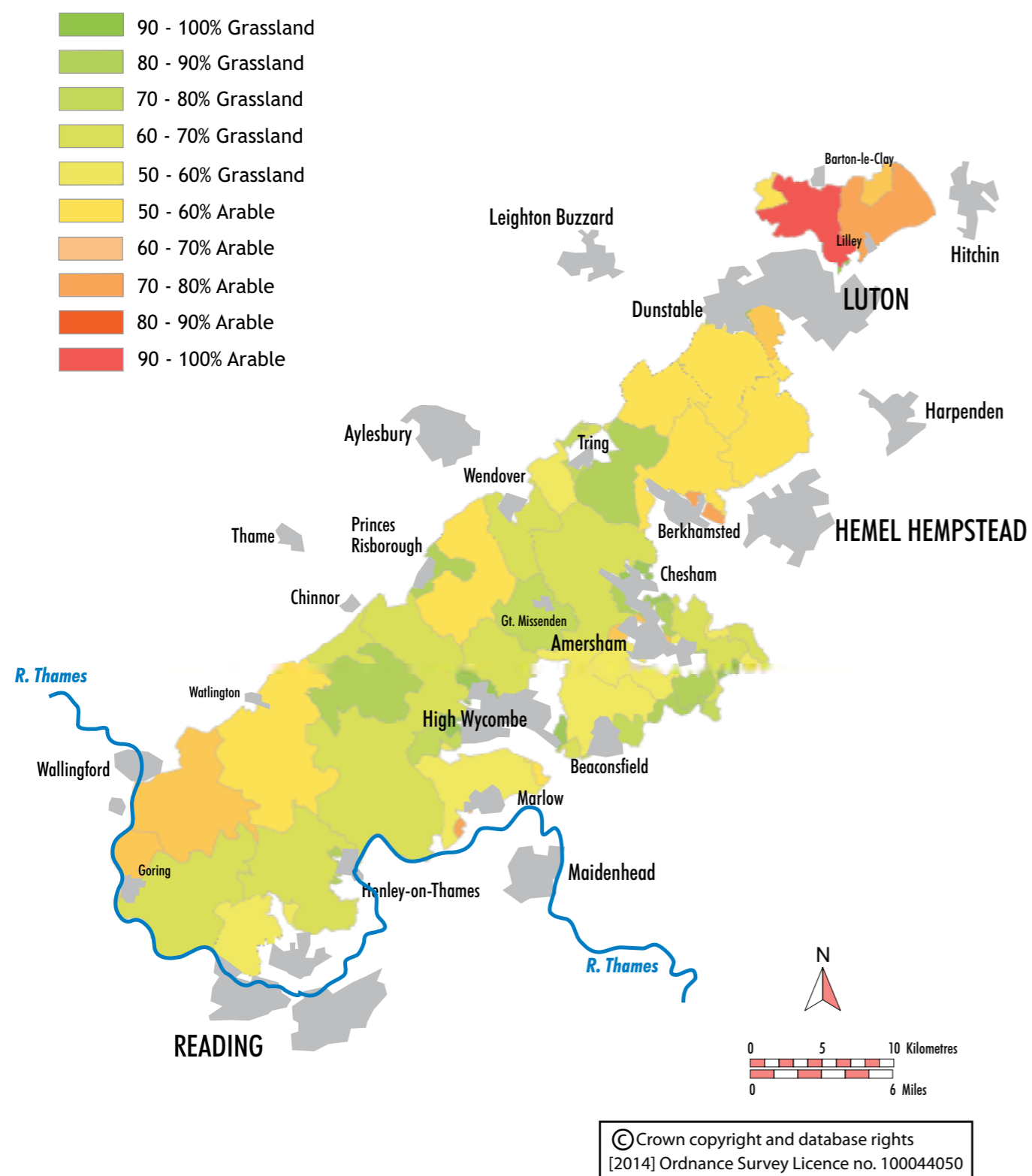
1. Farmland covers approximately 60% of the Chilterns¹, creating a mosaic of landscape and habitats: small and large fields, ancient hedgerows, woodland, chalk downland and ponds. This figure does not include land used for equines, which makes up approximately 5% of the AONB land area. Farming also created the farmhouses and barns which dot the landscape, often form the heart

¹ Chilterns Land Use Survey 2010

of villages and hamlets and make a significant contribution to landscape character.

2. Since the advent of farming in Neolithic times, the Chilterns landscape has been incrementally altered and moulded. Each period in history has contributed to the piecemeal enclosure of the land for cultivation and livestock management. Examples of periods of agricultural change, the remnants of which can still be seen in the landscape, include the creation of coaxial fields in the Bronze Age, the clearance of woodland for open fields from the Middle Ages and the creation of parliamentary enclosure fields in the 19th century. The cumulative result is the familiar landscape we see today - a diverse patchwork of different shaped fields of arable crops and grassland, enclosed by hedgerows interspersed with woodland, common land and downland.

Agricultural land use



3. In terms of its agricultural classification, much of the land is grade three, largely based on poor clay and flint soils which overlay the chalk. Traditionally farming was mixed with both arable and livestock found on every farm. Now farms specialise and increasingly grow cereals and other crops rather than keep dairy cattle, pigs and other livestock.
4. About 60% of Chilterns farmland is devoted to arable crops, the balance is grassland. Sheep and cattle make up the bulk of livestock in the Chilterns but, despite some minor fluctuations, numbers declined between 2000 and 2010, particularly the case for dairy cattle (the number of commercial dairy farms falling from 29 to 8 during this period²). This was due to declining profitability.
5. In 2010, Defra recorded 602 commercial holdings in the Chilterns. This large reduction from previous numbers is due, in part, to the exclusion of holdings less than 5 ha². However, we continue to see commercial holdings increasing in size, with contract farming responsible for a greater hectareage, as medium sized farms struggle to remain economically viable. Lifestyle or hobby farming still remains popular.
6. The character of the Chilterns needs viable farming to maintain landscape features and habitats. Reducing livestock numbers raise concerns over long term management of specie rich grassland (both the chalk grassland of the escarpment and steep valley sides and acid grassland often associated with commons). Well managed horse grazing can help to maintain such grassland but currently numbers are declining while, at the same time, equine use is intensifying³. Often the associated equine infrastructure can be detrimental to landscape character and contribute to increased urbanisation of the countryside around towns and villages.
7. EU policies and global markets are the main influences on farming in the Chilterns. The formal abolition of set-aside in 2008 combined with rising cereal prices has led to a decrease in uncropped land and an increase in the area of arable. Revisions to the Common Agricultural Policy will be agreed during the period of this management plan. At the time of writing, a greater emphasis is being placed on "greening measures" as requirements for many farms before they qualify for a percentage of CAP subsidy. Such measures are likely to include crop diversification, maintenance of grassland areas and the creation of Ecological Focus Areas on holdings over 15ha.

Forestry

1. The Chilterns is perhaps best known for its woodlands which dominate the landscape, covering 21.5% (17,888 ha) of the AONB.⁴ The Chilterns is one of the most heavily wooded parts of the country. Over 60% of this woodland is ancient (11,058 ha) making the Chilterns one of the most important ancient woodland landscapes in England⁵.
2. For many centuries the Chilterns provided significant quantities of fuel and timber to London, helping to make Henley and other towns thriving Thames-side ports. Then, at the time of the industrial revolution, the dominant beech woodlands supported the evolution from cottage based furniture-making to chair making factories in and around High Wycombe. Today the industry has declined but not disappeared, however local beech is no longer the favoured timber as quality has suffered largely due to grey squirrel damage.
3. The decline in traditional woodland management has also affected commons, many of which would in the past have been managed through the exercise of common rights. 50% (by

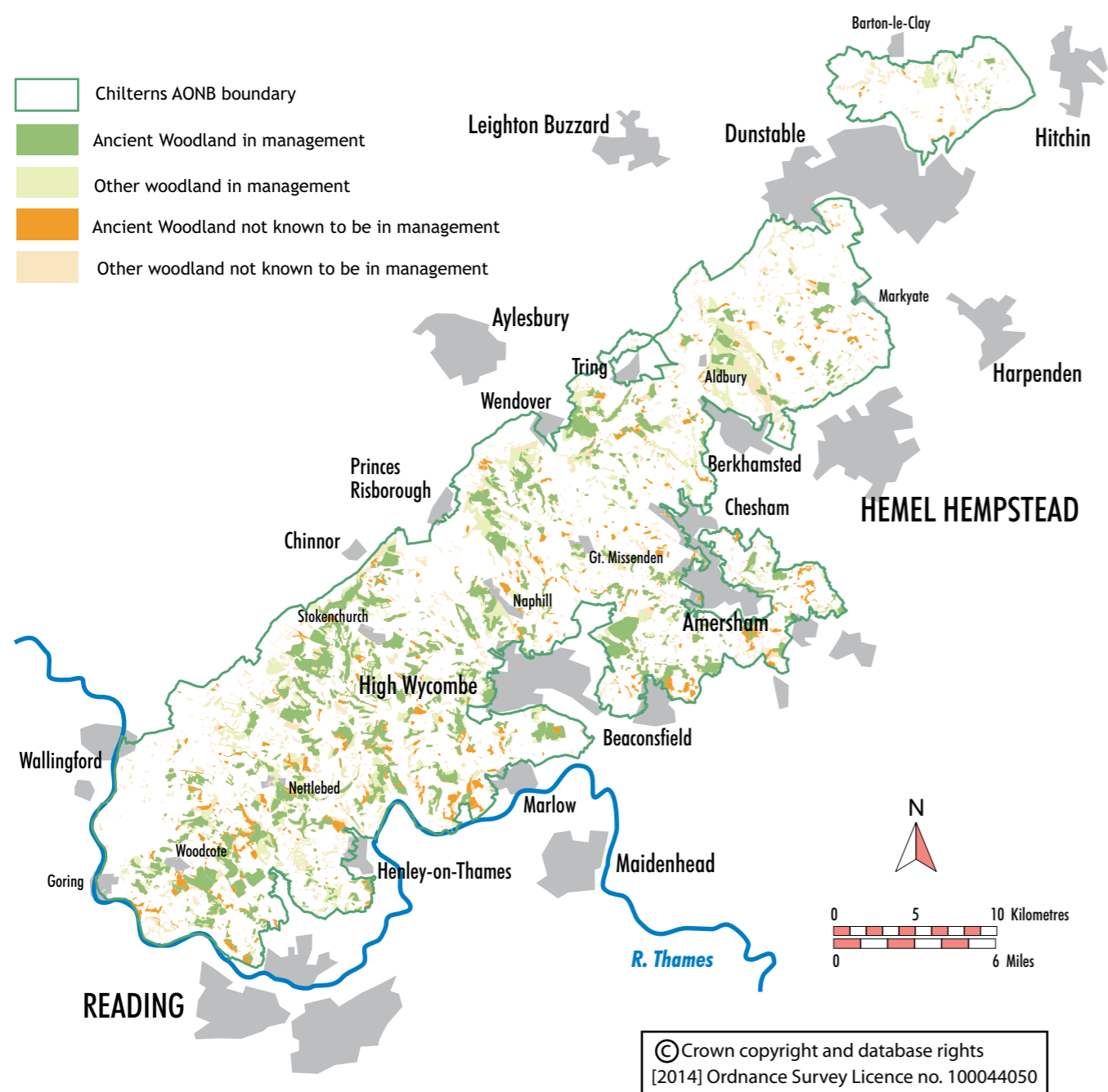
² Defra Farm Statistics 2010

³ Chilterns Land Use Survey 2010

⁴ Forestry Commission Woodland Inventory 2011

⁵ Ancient Woodland Inventory for the Chilterns, July 2012

Woodland cover



area) of Chiltern commons over 5 ha are known to have management plans⁶. The Chilterns Commons Project (2011-2015) aims to provide support for increased volunteer activity, increased numbers of commons with current management plans, and additional uptake of Environmental Stewardship and English Woodland Grant Schemes.

4. In the 20th century, following increased war time harvesting, many native woods were inter-planted with conifers, creating plantations on ancient woodland sites (PAWS) which cover 3,943 ha. Restoration to more natural conditions is a priority⁷.
5. About 75% of woods in the AONB are privately owned. 9% (1,560 ha) are managed by the Forestry Commission. The National Trust, Woodland Trust, local authorities and other charities own over 10%.
6. The woods are now highly valued for their amenity, recreation, scenery and heritage. Most communities live within walking distance of a wood with open access or rights of way. They are full of largely un-surveyed remnants of past activity, especially of the sawyers, charcoal makers and bodgers who worked in the woods until the early 20th century.
8. Much of the beech is over-mature and young beech face serious pressures – including grey squirrel, Glis glis and deer). Forestry Commission forecasts suggest that beech will decline but will not disappear so we should expect to see a gradual change of our characteristic Chilterns beech woodlands. Instead the woods will become more mixed, perhaps as they once were with more oak and birch.

⁶ State of the Chilterns Environment 2012

⁷ UK Forestry Strategy 2012

⁸ UK Forestry Standard (UKFS) 2013

⁹ The Government's Forestry and Woodlands Policy Statement

¹⁰ Chilterns Hedgerow Survey 2006 and 2007

9. Tree health concerns (both pests and diseases) are increasing and future planting strategies will need to be examined. Current thinking suggests increasing planting diversity, from the limited number of species planted at the present time, to increase woodland resilience.^{8 9}

Broad Aims

- Productive forestry and farming remain the dominant land uses in the AONB.
- Natural beauty and biodiversity are maintained by viable and environmentally sustainable farming, forestry and other forms of land management.
- Resilience of woodland to threats - including pests, diseases and extreme weather events - is increased.
- The public acquire a broad level of understanding and appreciation of farming and forestry and how they shape the natural beauty of the Chilterns landscape, influence wildlife habitats and contribute to the local economy.

Special Qualities

1. Farming and forestry shaped a landscape of national importance and continue to represent the main influencing forces on its present quality.
2. Small and medium-scale historic field patterns defined by hedges are visible in the Chilterns. Many of the hedges are species-rich. The estimated length of hedgerow in the Chilterns is 4,045km (2528 miles) and there are approximately 44,000 hedgerow trees many of which are veterans.¹⁰

3. Surviving areas of open chalk downland along the scarp ridge are one of the AONB's most valuable habitats.
4. Well maintained farm buildings and sensitively managed farmland enhance the area.
5. An increasing number of farmers are diversifying into quality local food production and selling direct to the public. Such a direct interface between farmers and the public provides opportunities to promote greater awareness of food production and land management among both residents and visitors to the AONB.
6. The famed Chilterns beech woods provide extensive high quality landscape and amenity, much of it close to local towns and villages.
7. Public access to woodlands is extensive and amongst the best in the country.
8. Ancient woodland is a particularly rich, distinctive and prominent feature. Some of this woodland, especially the beech yew woods, are important for their biodiversity and included within the Chilterns Beech Wood Special Area of Conservation, a European designation recognising their importance.
9. Parkland is a feature of the area, including wood pasture, often associated with the larger estates, with a significant number of veteran trees.
10. Chilterns woodlands are capable of providing a sustained annual yield of 60-80,000 tonnes of renewable wood fuel per annum¹¹.
11. Remnants of woodland heritage are extensive including sawpits, charcoal hearths and wood banks. There is a considerable amount of archaeology in woodlands as yet unsurveyed.

Key Issues

1. Increasing global demand for food, future 'food security' and buoyant prices may see more land cropped under arable production and decrease areas managed under agri-environment schemes.
2. The continued contraction of the livestock sector is likely to result in the area of managed grassland declining and make it more difficult to secure favourable management of wildlife sites that require grazing.
3. The lack of infrastructure, particularly abattoirs and knackers yards, causes difficulties for the livestock sector, particularly small producers and graziers. Increased transport distances add to production costs and are detrimental to animal welfare.



Large ash tree at Dundry near Wendover

¹¹ Mike Render Ph.D thesis

4. The decline in small and medium sized mixed farms is leading to a homogenisation in land use and landscape character.
5. As farm units amalgamate, use of contractors and contract farming increases with larger and faster machinery being used. Overall the numbers of farm workers are also declining. This means that the pool of skilled people with time available for traditional land management such as hedge-laying is also reducing, such activities increasingly being taken on by specialist contractors or volunteer groups.
6. The average age of farmers and other rural workers is increasing. This trend might lead to changes in land ownership patterns and management systems with a reduced number of skilled farmers in the future. This might further exacerbate concerns expressed in issue 5 above.
7. Training course providers have reduced and the number and variety of training courses has declined.
8. The high cost of housing makes it more difficult to recruit and retain skilled workers – particularly relevant for livestock farming where workers need to be on hand to tend stock.
9. Commercial shoots can provide important additional income for landowners and, when sensitively managed to avoid damaging impacts on biodiversity and landscape, they can also potentially provide food and habitat for wild birds.
10. Farm diversification, often away from traditional farm enterprises, including non-farming use of buildings and houses, can provide an important source of income and occupation for farming communities.
11. The rising demand for local food could help viability of farming and help generate income to pay for management of the countryside.
12. Fewer local authorities now hold rural estates that offer farm and small holding tenancies. This pathway for new entrants into the farming industry is, therefore, very limited.
13. The Chilterns, situated as it is in the busy south east, continues to be attractive to lifestyle and hobby farmers. Land ownership may be seen as a means of providing a personal buffered environment with personal recreation and enjoyment the main priority. Owners may not have the skills and resources to manage land (e.g. grazing and hedgerow management) and maintain landscape quality.
14. Infrastructure associated with intensive equine use (subdivision of fields into small paddocks, permanent exercise arenas, stabling, jumps, horse shelters) can lead to increasing urbanisation.
15. Traditional orchards with local fruit varieties (including cherry, prune and apple) were once common but many have now disappeared. Recent establishment of new commercial and community orchards and increased interest in fruit juicing is encouraging.
16. Few common rights, particularly grazing rights, are now regularly exercised by commoners on Chiltern commons, allowing the establishment of bracken, scrub and secondary woodland. Whilst habitat diversity may have increased in some areas, these changes have led to a considerable loss of open landscape.
17. Rising numbers of people visiting the countryside as a recreational resource can present pressures on sites and can cause erosion and lead to disturbance of wildlife. At the same time, however, visitors provide opportunities for local businesses (including farm shops and cycle hire) and developing tourist attractions which can help support the local economy. Also, visitors 'connecting with nature' can learn to appreciate the importance of our landscape and wildlife which, in turn, can help to build long-term support for work to conserve and enhance the Chilterns AONB.

18. Increased variability and extreme weather conditions associated with climate change are presenting challenges to farming and forestry alike. Periods of both drought and heavy rains affect for example agricultural operations and tree growth.
19. The threats posed by pests and diseases and non-native invasive species affecting livestock, crops and trees, spreading from continental Europe and further afield are increasing. These present considerable challenges to both farmers and landowners, the increasing cost of which may threaten economic viability for some.
20. Management of woodland is made more difficult by increasing numbers of deer, including fallow, muntjac and roe, which can prevent regeneration. Damage by grey squirrels and, increasingly, the fat or edible dormouse (*Glis glis*) provides a disincentive to growing beech and other trees.
21. The low prices for timber from the Chilterns have resulted in a relative lack of management of woodland, particularly small woodlands under 20 hectares. However, the growing demand for woodfuel is creating an expanding market for low grade timber from the Chilterns and has seen the reintroduction of management in some woodland. Woodfuel is most efficiently used to generate heat rather than electricity.
22. In 2010, 70% of farmland within the AONB was included within an agri-environment scheme, dropping to 64% by 2012. The LEADER programme (2008-2013) has been particularly successful in securing investment for the forestry sector. However, delay over CAP reform has led to uncertainty over the form future European support may take. This may limit investment in both the farming and forestry sectors over the early years of this management plan.
23. Inappropriate management, especially by new owners of ancient woods,

could lead to loss of both woodland biodiversity and historical interest, including banks and buried archaeology.

Policies

FF1 Greater understanding and appreciation of Chilterns landscape character should be encouraged among farm, woodland and other landowners, managers and advisors.

The natural beauty of the Chilterns was created by farmers, foresters and other landowners and the management of the landscape largely remains in their hands. It is important that managers can recognise the importance of their land in the context of the wider landscape.

FF2 The work of farm and woodland owners and other land managers to conserve and enhance the landscape, biodiversity, traditional farm buildings and archaeology found on their land should be supported.

The task of managing farmland, woodland and other land uses is complex, not least as society places demands for a wider range of benefits and ecosystem services, especially in return for public funding.

FF3 Developments in agricultural and forestry practices which improve resilience, assist adaptation to climate change and mitigate damaging impacts on the environment should be supported.

Climate change and extreme weather events are likely to be significant long term factors affecting farming and forestry in the Chilterns and the health of the wider environment. The challenge is to enable management practices not only to adapt to these changes but also help mitigate climate change itself. For

example, changes in management that lead to reduced fuel use should benefit farm profitability and reduce greenhouse gas emissions. Other measures might include improved infrastructure, use of appropriate renewable energy sources and precision farming techniques that reduce damage to soils and artificial fertiliser use. Best practice guidance and current advice should be readily available and disseminated widely, e.g. the Code of Good Agricultural Practice for farmers (CoGAP)¹².

FF4 Long term sustainable management of woodland and farmland, to maintain soil quality and provide multiple environmental benefits (an 'ecosystem services' approach¹³), should be supported.

Having created the Chilterns landscape, it will be important to support productive and sustainable management that benefits the landscape and wider environment. This will include promoting best practice, to farmers and foresters, aiming to reduce diffuse source pollution into the internationally rare chalk streams and the chalk aquifer underlying the AONB.

FF5 Awareness should be raised among both land managers and the wider public of the need to prevent and control the threats posed by pests, diseases and invasive, non-native species.

Both international trade and climate change have contributed to increasing numbers of pests, diseases and invasive, non-native species. Managers need to be aware of the threats and take action to prevent potentially damaging impacts to their businesses and the environment.

FF6 Initiatives to secure sensitive grazing of ecologically important grasslands should be encouraged.

With the livestock farming sector continuing to contract, securing suitable and sustainable levels of grazing on many sites is becoming challenging. Initiatives to encourage appropriate levels of grazing with suitable stock and mechanisms to assist movement of conservation grazing stock are needed. BCN Wildlife Trust's 'Cut and Chew' web site¹⁴ provides a good model for matching available stock with sites requiring grazing.

FF7 The AONB should remain a predominantly, actively farmed landscape.

The mosaic of farmed and forested land and field patterns needs to be maintained and land abandonment and urbanisation resisted.

FF8 Landscape-scale coordination of initiatives enhancing and linking fragmented woodland and farmed habitats should be promoted.¹⁵

Many of the ecologically rich habitats (both wooded and farmed) are often small in size and may be separated from similar habitat by land of far lower biodiversity value. The 'Lawton' principles¹⁶ (more, bigger, better and joined) highlight the importance of creating a greater number of these rich habitat areas, expanding their size, improving management of existing sites and linking them. Such aims depend upon landscape scale activity, which will require a large number of owners to work towards a common goal. Increasing the number and area of sites in positive beneficial

¹² *Protecting our Water, Soil and Air - A Code of good Agricultural practice for farmers, growers and land managers.* Defra, 2009

¹³ *UK National Ecosystem Assessment 2011*

¹⁴ www.cutandchew.org.uk

¹⁵ *Natural Environment White Paper 2012*

¹⁶ *Making Space for Nature, September 2010*

management (whether they are chalk grassland, ancient woodland or another important habitat) will improve both biodiversity and landscape within the AONB.

FF9 The negative impacts of fragmentation of farmland and woodland into smaller units should be resisted.

The character of the landscape can be affected by sub-division into small plots which often results in a variety of land uses and new, sometimes discordant, features. In some cases division can enable people to afford to become new and caring landowners. In general very small parcels of land are harder to manage in a way which maintains and enhances natural beauty.

FF10 The economic viability of farming, forestry and other new business ventures which contribute to the conservation, enhancement and enjoyment of the AONB should be supported.

Whilst the strategic primary importance of sustainable food and timber production is recognised, increasingly farmers and foresters are seeking to diversify into other forms of economic activity. This provides opportunities to develop ventures which contribute directly to the environmental well-being of the area.

FF11 The active management of commons should be encouraged.

Both landowners and local groups have an important role to play in protecting this important historic resource.

FF12 Initiatives to maintain, restore and expand traditional orchards should be encouraged.

With poor economic viability, aging traditional orchards remain under threat. New community and

commercial initiatives supporting traditional orchards are to be encouraged.

FF13 Equine management sensitive to both habitat and landscape features should be encouraged and the potentially detrimental landscape and soil quality impacts associated with intensive equestrian use should be resisted.

With reducing numbers and availability of sheep and cattle, careful horse grazing may gain increasing importance in maintaining grassland. However, intensive equestrian use may lead to the erection of ranch style and tape fences, new buildings and access tracks. Maintaining hedges and in-field trees are rarely a priority and in some cases such features are removed as it is not thought they are compatible with keeping horses in the same field. If the wider importance of these landscape features is recognised, equine businesses may provide a valuable contribution to protecting the AONB.

FF14 Broad public awareness of the importance of active farming and forestry industries in maintaining the Chilterns landscape should be promoted.

The public places a high value on the amenity of the countryside and opportunities to enjoy it. There is widespread lack of awareness of farming and forestry, within rural and urban communities. It is essential that there is a better understanding of how the countryside has been, is currently and will be managed in the future.

FF15 The national importance of Chilterns box woodland should be promoted and initiatives to conserve and enhance this resource encouraged.

As home to the largest box woodland in the UK, the Chilterns provides an ideal location to explore this forgotten habitat.

Biodiversity





Introduction



Orangetip butterfly on coralroot

1. The Chilterns landscape supports a rich mosaic of distinctive habitats, species and features, reflecting past land management practices and underlying geology.
2. Of particular note are the ancient woodlands, chalk downland and scrub communities including juniper and box, chalk streams and associated river valley habitats, farmland habitats, remnant heathland, acid grassland and wood pasture.
3. The Chilterns chalk escarpment represents a potentially important stepping stone for specialist chalk species moving between the southern central chalk landscapes and suitable habitats further north-east. Enhancing ecological networks in the Chilterns is likely to prove of more than local importance in the face of climate change.
4. The Chilterns AONB has a substantial network of statutory and non-statutory designated sites, between them covering a total of 9,507 ha or 11.4 % of the AONB. These include three Special Areas of Conservation - part of the Natura 2000 suite of sites of European importance and 64 Sites of Special Scientific Interest – of national importance. A further 494 local sites do not have statutory protection but are recognised locally as important sites for wildlife or geology. The Chilterns is also identified by Plantlife as an Important Plant Area for its internationally important plant populations.
5. Recent studies, including in the State of Nature UK (2013) report, have shown that nationally, biodiversity has continued to decline over the long term, despite conservation efforts. The Natural Environment White Paper (2011), and the

Designated sites

-  Special Area of Conservation
-  National Nature Reserves
-  Site of Special Scientific Interest
-  AONB Boundary



Lawton Report - Making Space for Nature (2010) make plain that conservation efforts need to move beyond a site-based approach, to look at ecological networks and how wildlife uses the wider countryside.

6. Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services (2011) includes national targets for condition and extent of priority habitats and protected species, as well as national and European sites.
7. Priority habitats and species referred to in this plan are embedded in law through Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). Section 41 lists 943 species and 56 priority habitats of principle importance for conservation in England. These are the same habitats and species which have historically been addressed by UK Biodiversity Action Plan work.
8. Protected Landscapes are in a good position to contribute to such targets, with their track record of working with broad partnerships at a landscape scale.
9. In the Chilterns, local biodiversity partnerships have established a strong basis for this approach through the Biodiversity Opportunity Areas / Conservation Target Areas projects which seek to target conservation efforts in particular areas. There are also good examples across the Chilterns of individual landowners or organisations such as the National Trust initiating landscape scale conservation through working with neighbours.

¹ Ancient Woodland Inventory for the Chilterns – Report and Inventory Maps (2012)

Broad Aims

- Conserve and enhance the wildlife value of all habitats.
- Enhance ecological networks so that they are bigger, better, more resilient, joined up and dynamic.
- Ensure that the wider benefits of the natural environment are understood and recognised.
- Encourage more people to develop a greater understanding of and involvement in wildlife conservation.

Special Qualities

Woodland

1. The Chilterns is known for its extensive beech woods and ancient woodlands, with over 13.2% of the AONB (11,058 ha) now known to be ancient¹ woodland.
2. Many rare and unusual species are associated with the beech 'hangers' on the thin chalk soils of the steep scarp slopes - for example, shade-tolerant orchids such as birds nest orchid, ghost orchid, red helleborine and rare fungi such as Devil's bolete. Also found on the thin chalk soils are nationally-important yew woods and box woods.
3. On the deeper, more nutrient-rich soils of the plateau the woodlands tend to have relatively open canopies and ground flora characterised by brambles, bracken and bluebells as well as rarer species such as violet helleborine and coralroot.
4. The Chilterns has a rich heritage of parkland, wood pasture and commons. Many of these sites contain important or veteran trees and associated deadwood invertebrates and fungi.
5. Habitats of Principle Importance in the AONB include: lowland beech and yew, lowland mixed deciduous woodland, wood-pasture and parkland.

Commons

- 13. There are around 2,000 ha of registered common land in the AONB and a far greater area of former common.
- 14. Common land is not in itself a habitat but is associated with a number of Habitats of Principle Importance in the AONB – in particular lowland dry acid grassland, lowland heathland, wood-pasture and parkland and ponds. Being largely uncultivated and generally on the less fertile soils many commons have retained a rich biodiversity.
- 15. Significant species groups are associated with the commons: dead wood invertebrates, epiphytic lichens, lepidoptera, fungi.

River and wetland habitats are covered in the Water Environment chapter

European Protected Species

- 16. European Protected Species occurring in the AONB include the following:

Species	Associated habitat
Bats (various species)	Undisturbed old farm buildings or hollow trees close to good foraging habitat are commonly used for roost sites. Foraging habitats– woodland/ wetland. Specific requirements vary between species.
Common or hazel dormouse	Deciduous woodland or scrub and species rich hedgerows connected to woodland. Hazel is an important provider of food (insects and hazel nuts).
Great crested newt	Field ponds in arable or pastoral settings are preferred breeding ponds. The species may also be found in a range of other pond types, the largest populations being recorded from ponds formed in abandoned workings, such as chalk or clay pits. On land, great crested newts can be found in a range of habitats, including ancient woodland, scrub and rough grassland where there are suitable ponds nearby.
Early gentian	High quality calcareous grassland ideally with a sward height of no more than 5cm and low level disturbance.

Key Issues

- 1. Declines in extent and condition of semi- natural habitats over past decades have increased habitat fragmentation and added to the difficulty of sustaining appropriate management of sites.
- 2. There has been progress over the past five years in bringing the majority of Sites of Special Scientific Interest into favourable (65% by area) or unfavourable recovering (34% by area) condition. Monitoring and management support needs to be sustained, particularly to see that management proposals to achieve favourable condition are implemented.
- 3. Information about the condition of local sites or habitat outside of SSSIs is very patchy, with only 47% of local sites known to be in positive conservation management⁴.
- 4. More frequent extreme weather events and greater climatic variability are anticipated due to climate change.
- 5. Healthy, robust ecological networks are important to support adaptation to climate change. Conservation efforts need to support this through a focus on landscape scale action. Expansion and recreation of fragmented habitats such as chalk grassland, orchards, wood pasture heathland and riverine habitats need to be part of the overall approach.
- 6. Well-managed roadside verges can provide valuable habitats for wildlife and contribute to enhanced ecological connectivity. Greater promotion is needed of existing guidelines.⁵
- 7. The livestock sector has continued to decline over recent years, with fewer grazing animals in the Chilterns as a result. Alongside this are associated declines in relevant skills and knowledge base as well as infrastructure. Increasing difficulties are anticipated securing appropriate grazing on those conservation sites which require it.
- 8. Environmental schemes (agri-environment and woodland grant schemes) are a major tool for management and re-creation of wildlife habitats both within designated sites and in the wider countryside. Take up in the Chilterns has been relatively high over recent years, however the area within Environmental Stewardship has started to reduce, thought to be due in part to uncertainty over Common Agricultural Policy reform. There is a need to work closely with the farming community to sustain the biodiversity achievements and to promote effective use of future schemes.
- 9. Introduced pest species, diseases and non-native invasive species are an increasing concern within the AONB as elsewhere. Of particular concern are the impacts or potential impacts of deer, grey squirrel, Chalara dieback of Ash, Acute Oak Decline, Oak Processionary Moth, *Phytophthora*, Himalayan balsam and Japanese knotweed.
- 10. With 750,000 people living in or within 3 kilometres of the AONB, and 55 million visits per year, the Chilterns is one of the most-visited AONBs in the country. Whilst much of the area is able to absorb relatively high numbers of visitors, there are local areas of concern which need to be carefully managed and key sites need to be buffered and protected. Sustaining grazing on grassland wildlife sites in the urban fringe is a particular concern due to impacts of people and dogs.

⁴ State of the Chilterns Environment Report (2012)

⁵ Environmental Guidelines for the Management of Highways in the Chilterns (2009)

11. Former chalk quarries can provide important habitat, however, appropriate long term plans are required as these sites tend to be under threat of substantial decline in biodiversity through scrub encroachment, erosion or development pressures.
12. Planning policy changes, in particular the introduction of the National Planning Policy Framework and the presumption in favour of sustainable development is affecting the degree of influence that local planning authorities can have on development. The development and growth agenda is giving rise to increasing pressures within and adjacent to the AONB, with direct and indirect impacts including habitat loss, suburbanisation, air, noise and light pollution.
13. There is a renewed focus on green infrastructure planning within some local authority areas and partnerships, one element of this being development of initiatives to target developer contributions so that they achieve the greatest benefit. This is to be encouraged and supported.
14. Biodiversity offsetting is under consideration by the government as an approach to compensate for unavoidable residual impacts of development. It will be important to engage with this issue and the potential risks and opportunities it brings. Offsetting should not be used as a way of facilitating development in circumstances where existing statutory protection – for example in relation to AONBs - would preclude it. More attention needs to be paid to consideration of avoidance of impacts.
15. Local Nature Partnerships (LNPs) have been established across the AONB, and will seek to contribute to delivery of Biodiversity 2020 targets. The LNPs are expected to work closely with the Local Economic Partnerships to raise awareness of the fundamental role of the natural environment in underpinning the economy and other sectors.

16. Further work is needed to improve understanding of the biodiversity resource in the AONB, in particular priority habitat condition and trend data for characteristic species. State of the Chilterns Environment monitoring has been underway on an annual basis since 2009.⁶

Section 6 outlines proposals for future monitoring.

17. A significant shift is underway from the public sector to the voluntary and community sectors with a range of conservation related activities, including site management being transferred. Initiatives such as the Chilterns Commons project demonstrate the enormous scope that exists to involve local groups and volunteers in custodianship of their local environment.

Policies

B1 Delivery of Biodiversity 2020 Strategy outcomes within the AONB and its setting should be supported.

Biodiversity 2020 sets out four outcome areas relating to 1) Habitats and ecosystems on land 2) marine habitats, ecosystems and fisheries 3) species; and 4) people. These outcomes and targets are in the process of being translated to the local level, and provisional habitat targets have been proposed for National Character Areas. These targets will need to be driven forward within the AONB through a range of mechanisms including land management schemes, landscape-scale conservation initiatives and public awareness and engagement programmes.

⁶ www.chilternsaonb.org/state-of-the-environment

B2 Action to conserve and enhance the condition of priority habitats and protected sites (statutory and non-statutory) within the AONB and its setting should be supported.

The extensive network of designated sites in the Chilterns includes most but not all of the area's important habitats. Achieving good condition of all priority habitats requires landscape scale conservation action beyond the boundaries of protected sites as well as effective management action at a site level. Local sites (non-statutory) make up 8% of the AONB and are an important biodiversity resource - management advice and support is needed for these sites.

B3 Delivery of Biodiversity 2020 habitat creation and restoration targets should be assisted.

The Chilterns is considered to have particularly high potential for creation/ restoration of lowland wood pasture and parkland (indicative target 4% of the national total, joint highest with the High Weald), lowland calcareous grassland (indicative target 4% of national target) arable field margins (indicative target 2% of national total) and ponds (indicative target 2% of national total). Priority should be given to habitat creation and restoration within Biodiversity Opportunity Areas or equivalent areas.

B4 Action to conserve European protected species and priority species should be promoted.

Advice to land managers is needed to make sure that they are aware of The Conservation of Habitats and Species Regulations (2010) (as amended in 2012) and National statutory protection for priority species including the Natural Environment and Rural Communities Act (2006) and the Wildlife and Countryside Act 1981 (as amended). Support is also needed to ensure that land managers know what activities they can undertake to protected species.

B5 Awareness of the impacts of pests, diseases and non-native invasive species on the wildlife of the Chilterns should be raised and effective action to control those impacts encouraged.

Improved public awareness and understanding - alongside effective control strategies - is crucial to help prevent the new release of non-native invasive species and to prevent/ reduce the spread of existing populations. Guidance for land managers will be important to address issues such as species choice and provenance.

B6 More local communities and volunteers should be encouraged to become actively involved in wildlife recording and conservation in the Chilterns.

There are many opportunities to engage and involve local communities in recording and conservation, and the Commons Project has demonstrated that there is a real demand for volunteer support and training. Continued and increasing local involvement will be key to achieving the biodiversity objectives set out in this section. The potential for 'citizen science' combined with modern technology to contribute to recording and conservation efforts should be fully explored.

B7 Ecological networks should be conserved and enhanced through landscape scale initiatives.

It is important to continue to support and develop landscape scale initiatives to link and buffer existing habitats and facilitate movement of species through the landscape. Increased ecological connectivity is key to achieving biodiversity gains. Priority should be given to enhancing ecological connectivity in those areas identified as the most important areas for biodiversity at a county level including Biodiversity Opportunity Areas and Conservation Target Areas, and to ensuring that Local Nature Partnerships are fully engaged in this work.

B8 An improved understanding of the biological resource of the Chilterns should be developed, sufficient to guide the successful conservation of characteristic habitats and species.

Having an up-to-date picture of the biodiversity resource of the AONB is a vital part of the area's management and monitoring. It is proposed to strengthen State of the Environment reporting in relation to species, for example incorporating population trend data for key species groups.

The role of Environmental Record Centres in relation to collating, verifying and disseminating information is crucial.

B9 Recognition and understanding of the ecosystem services provided by the natural environment of the Chilterns and the benefits they provide for people and the economy should be promoted.

The natural environment provides many benefits for people and the economy which need to be articulated to a wider audience. It will be important to work closely with Local Nature Partnerships and Local Economic Partnerships on this.

B10 Improved management of commons, veteran trees, infield and hedgerow trees and ancient woodlands should be promoted and supported.

Trees, woods and common land are important and characteristic features of the Chilterns landscape which need appropriate management.

B11 Management to help Chilterns wildlife adapt to threats from adverse impacts of climate change, pests and diseases should be promoted.

Ecological networks and permeable landscapes/ habitats are important to support more resilience to the impacts of climate change and pests and diseases. Large-scale strategic conservation action will be key to creating more robust ecological networks.

B12 An appropriate balance between nature conservation and recreation should be sought. Where conflicts between the two are irreconcilable, nature conservation should take priority.

Most of the time good management will enable an appropriate balance to be struck between different interests on a given site. However, it is important to re-state the principle that where this is not possible then priority should be given to nature conservation in line with the Sandford Principle⁷.

B13 Grazing should be supported and promoted on those sites which need it to achieve good conservation status.

Ensuring that semi-natural habitats which need grazing are appropriately managed has long been a concern and ongoing declines in livestock numbers only serve to underline this. It may be that conservation grazing herds (e.g. Wildlife Trust owned herds, community herds) will need to be increasingly relied upon. A substantial proportion of the semi-natural grassland in the AONB is horse grazed. Whilst carefully managed horse grazing can play a valuable role in conservation grazing, detrimental impacts on biodiversity can arise where this is not the case. Best practice guidance has been produced on horse pasture management and should be promoted.

⁷ National Parks Policy Committee Review, 1974

B14 a) Biodiversity Offsetting should only be used to secure net biodiversity gain where harm cannot be avoided or mitigated, and should not be used as a means to justify destruction of irreplaceable habitat.

Biodiversity is not a single exchangeable commodity which can simply be recreated elsewhere and there is a risk that Biodiversity Offsetting may be used to facilitate inappropriate development.

On the other hand there is a real need to take proper account of development impacts on biodiversity and on wider ecological networks, and to find ways of ensuring that compensation land is properly managed for biodiversity over the long term. Effective approaches which deliver more for biodiversity are needed and it may be that Biodiversity Offsetting could play a useful part in this.

Biodiversity Offsetting must only be used as a measure of last resort where harm cannot be avoided or mitigated, and must deliver net biodiversity gain.

Any scheme must also take full account of the wider environmental and community impacts of the biodiversity loss and must give a clear commitment to ensuring the protection of irreplaceable habitats such as Ancient Woodland.

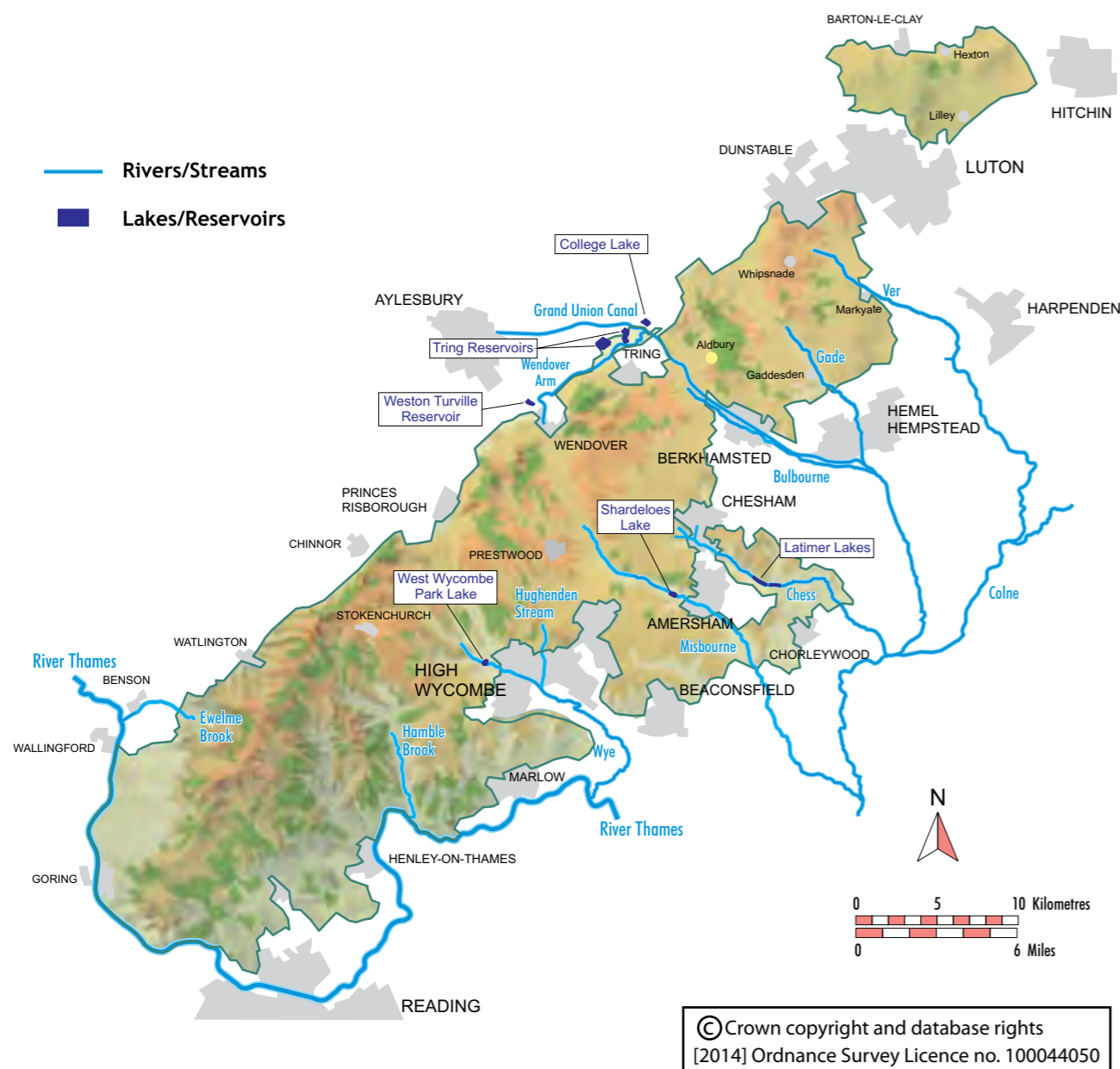
b) The biodiversity offset should be close to where the initial loss occurs.

Any new habitat needs to be 'in the right place', taking account of factors such as impacts on ecological connectivity, landscape character and natural green space. Proximity to the initial loss will be an important factor.



Bluebells at Ashridge

Chilterns water bodies



Water environment

Introduction



River Chess at Latimer
(Allen Beechey)

1. As a consequence of its geology, the Chilterns is a relatively dry landscape, with wetland habitats sparsely distributed throughout the AONB. However, water has played an important role in the formation of the Chilterns and remains a key feature of the landscape today.
2. Chalk is the most significant aquifer of south east England. The Chilterns' chalk is part of this aquifer, which is of regional and national importance, both in terms of the water bodies it supports and for the amount of water that is abstracted from it for public supply.
3. The chalk aquifer provides a clean, mineral-rich and reliable supply of water on which much of the Chilterns' water environment relies on for its existence. As a consequence, the rivers and streams of the area, in particular, have special characteristics and have played a major part in the location and development of settlements and industry.
4. The major river of the Chilterns is the River Thames, which cuts through the chalk escarpment forming a long and sinuous boundary between the North Wessex Downs and Chilterns AONBs. It is also the boundary between counties and was once the boundary between Mercia and Wessex.
5. A key component of the Chilterns' water environment is the area's chalk streams. There are eight main chalk streams, which flow mainly in a south easterly direction down the dip slope of the Chilterns escarpment into the River Colne and River Thames. Chilterns chalk streams are naturally variable in flow as a result of seasonal climatic changes but have been adversely affected since the 1950s by increased incidence of drought and environmentally unsustainable levels of abstraction for public water supply.
6. In addition to the dip slope chalk streams, there are numerous chalk springs located at the foot of the northern face of the

escarpment that feed small streams such as the Barton Brook, Chalgrove Stream and Ewelme Brook. These streams are important tributaries of rivers such as the Thame, Ivel, Ouzel and Great Ouse and were key to the historical location of towns and villages along the foot of the scarp.

1. The Chilterns supports a number of other aquatic habitats and features including lakes, gravel and mineral extraction pits, reservoirs, canals and ponds. They are important for a range of nationally important species. Small areas of marsh, calcareous fen, wet flushes, wet meadow, wet woodland, alder carr and reed bed still occur.

Broad Aims

- Conserve and enhance the river valley and wetland landscapes characteristic of the AONB.
- Conserve and enhance river and wetland habitats and the biodiversity they support.
- Support opportunities for new wetland habitat creation.
- Protect and improve the quality of the Chilterns' water resource.
- Increase public awareness and enjoyment of the water environment.
- Increase local community involvement in caring for the water environment.

Special Qualities

Chalk streams

1. Chalk streams are a globally scarce habitat, and a key landscape feature of the AONB.
2. There are eight main chalk streams that flow down the dip slope of the Chilterns: the Ver, Gade, Bulbourne, Chess, Misbourne, Hughenden Stream, Wye and

Hamble Brook. There is a total of 49km of chalk stream habitat within the AONB.

3. They are groundwater-fed, shallow, fast flowing water courses with a gravel bed and low banks. They typically have high water quality which is alkaline (pH 8-9), clear, mineral-rich and stable in temperature.
4. Flows are dependent on groundwater levels in the underlying aquifer.
5. Chalk streams are considered by many organisations including the Environment Agency as a priority habitat for protection. They frequently have associated valuable habitats such as reed beds and wet woodland/carr habitats.
6. Chalk streams support high biodiversity and are home to some of the UK's most endangered species. Associated UK BAP priority species include: otter, water vole, reed bunting and brown trout.
7. There are two SSSIs and 30 Local Wildlife Sites that incorporate sections of chalk stream within the AONB.
8. Winterbourne sections of dip slope streams are an important habitat of chalk streams. Winterbournes are the ephemeral upper reaches of dip slope chalk streams which dry seasonally in response to changing groundwater levels. They support a unique assemblage of plants and animals, specifically adapted to ephemeral flow conditions.
9. The numerous chalk springs that occur all along the base of the north west-facing escarpment are an important but largely overlooked part of the Chilterns' water environment. They are important tributaries of major rivers, providing a reliable contribution to flow in these mainly surface water-fed rivers throughout the year.
10. Chalk springs are also historically important having been a key factor in the location of settlements along escarpment. Villages and towns such as Ewelme, Watlington, Chinnor, Wendover

and Tring are all located close to chalk springs.

River Thames

11. The River Thames is a dramatic landscape feature with a wide valley and many valuable associated habitats. Its role as a major navigable waterway has led to extensive modifications and the creation of an extensive range of facilities for leisure and recreation. The Thames Path National Trail follows its entire length as it passes through the Chilterns.
12. Along the banks of the Thames are some of the region's finest houses with associated parkland and ornamental landscapes.
13. Ecologically significant features along the main river and its backwaters include nationally-important species such as loddon lily, black poplar, club-tailed dragonfly and Daubenton's bat.

Canals and stillwaters

14. The Grand Union Canal is an important and distinctive component of the Chilterns' water environment. The main canal route passes through Tring, Northchurch and Berkhamsted whilst the Wendover Arm winds along the base of the escarpment from Wendover to the main canal at Tring. The canal is an attractive and popular feature of the area, used extensively for various recreational purposes such as boating, walking and fishing. It is also an important wildlife corridor and is home to species such as kingfisher and water vole.
15. The lakes of the AONB are exclusively man-made, created for a variety of purposes such as water storage, ornamental landscaping or as a consequence of mineral or gravel extraction. They are, however, important features contributing greatly to landscape character and biodiversity.

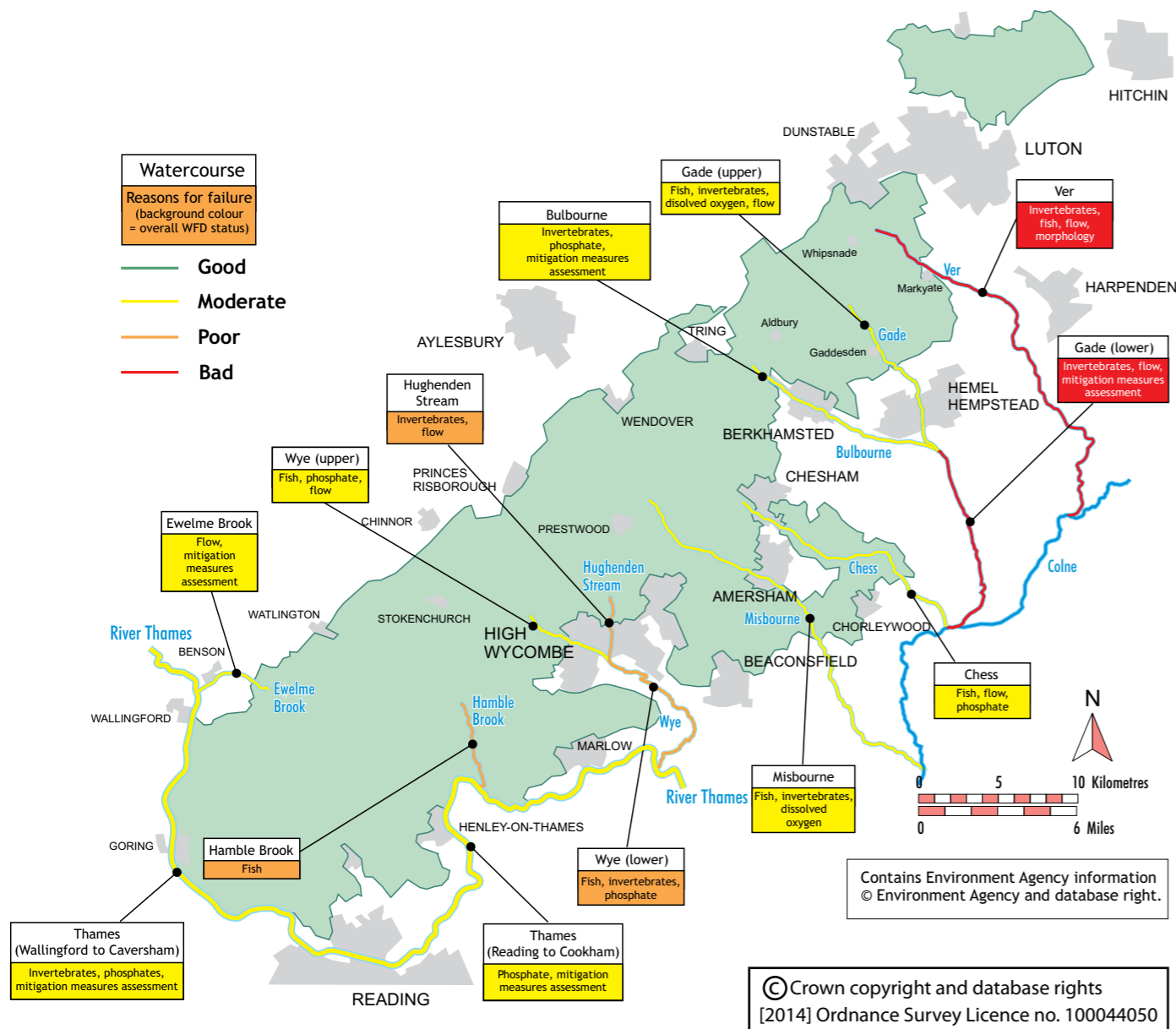
16. There are many ponds, especially on farmland and common land, created to water livestock or sometimes resulting from extraction of soil or clay. They provide habitat for a variety of specialist flora and fauna including great crested newt and the nationally rare starfruit *Damasonium alisma*. One survey¹ found 932 ponds marked on the 1:25,000 OS maps. This is thought to be an underestimate.
17. Rivers and wetlands are a major educational resource and add significantly to the landscape. Locations such as the Ewelme Watercress Beds, College Lake Nature Reserve and the River and Rowing Museum in Henley provide excellent educational facilities to learn about the Chilterns water environment.

Key Issues

1. According to the 2009 baseline assessment of water bodies under the EU Water Framework Directive (WFD) all nine chalk streams, which flow through the AONB currently fail to attain Good Ecological Status or Potential (GES/P).
2. The single most common reason given for the Chilterns' streams failing to reach WFD objectives by 2015 is low flows. Abstraction has either been identified, or is currently being investigated as a causal factor for low flows in seven of these streams.
3. Of the other water bodies assessed under WFD, only the Grand Union Canal south of Tring Summit is currently assessed as achieving either GES or GEP.
4. The 2009 baseline assessment also showed that the status of the Chilterns' groundwater resource is 'Poor' in quantitative terms and that only the Chilterns Chalk Scarp groundwater unit is assessed as achieving 'Good' chemical status. All groundwater units are subject to rising trends in groundwater pollution.

¹ Chiltern Hills Pond Survey 1996 (The Chiltern Society)

2009 baseline Water Framework Directive status for Chilterns surface water bodies



- Abstraction from the underlying aquifer for public water supply is a major issue. The Chilterns is designated as an area of serious water stress. With demand for public supply predicted to increase over the next 25 years, in part due to plans for new development, the Chilterns' aquifer remains under severe and increasing pressure.
- Increased climatic variation and, in particular, increased variability of rainfall during October to March, the period essential for aquifer recharge, has increased both the frequency of droughts and high groundwater events in the last 40 years. There have been five severe droughts since 1975 and two 1 in 150 year winter rainfall events in the last 13 years. Heavy, persistent summer rainfall has also led to two rare summer groundwater recharge events in the last ten years.
- Severe droughts combined with environmentally unsustainable levels of abstraction combine to reduce the functioning length of chalk streams and severely degrade their ecology. In the severe drought of 2011/12, 57% of the total length of chalk stream in the AONB was dry by March 2012. It may take ten or more years of continuous flow for the ecology of drought-impacted reaches to be restored.
- Heavy, persistent rainfall can lead to both surface and groundwater flooding particularly in river valleys and urban areas. Urbanisation of catchments has reduced the effective land area available to contribute to groundwater recharge and has also increased the incidence of surface water flooding.
- Improved drainage of roads in river catchments has increased flood risk in river valley settlements by increasing both the amount of surface water that reaches watercourses and also the speed at which it is conveyed. Flow rates are consequently more variable and rivers increasingly prone to flooding as a result.
- There is pollution from a wide range of sources including industry, agriculture, sewage effluent, and urban drainage. Pollution from urban and sewage effluent have the greatest impact on the quality of the area's chalk streams but diffuse agricultural pollution is an important factor affecting groundwater quality and silt loading of rivers.
- All chalk streams have been heavily modified through a wide variety of activities such as milling, agriculture, urban development and landscaping. These activities have fragmented habitats, degraded the natural channel and created barriers for fish and invertebrates. Some modified sections - watercress beds for example - can provide the specific habitat requirements for particular species such as the water shrew (*Neomys fodiens*).
- The spread of non-native species such as Himalayan balsam, Japanese knotweed, signal crayfish and North American mink have had an impact on the ecological structure of the AONB's chalk streams. The introduction of the American signal crayfish, for example, has led to the extinction of the native white-clawed crayfish in the AONB and is affecting the base of the aquatic food chain. The North American mink has also been partly responsible for the dramatic decline in water vole numbers within the AONB².
- Disturbance and loss of wildlife habitats can result if the river and its banks are insensitively managed for recreational purposes. Riparian land in urban areas can become degraded through heavy recreational use or mismanagement of banks and vegetation.
- In common with the national trend, the number of ponds in the AONB has declined significantly since the Second World War. Intensification of agriculture and changes in land use have been the major factors driving this decline.

² R. Chess water vole surveys 2001 and 2003 (Chilterns Chalk Streams Project)

15. Many of the Chilterns' ponds have low biodiversity caused either through many years of neglect or, conversely, through over-management.

Policies

WE1 The restoration of chalk stream river flows through the reduction of abstraction to environmentally-sustainable levels should be sought.

Low flows are the key issue affecting the rivers as a major landscape feature and the quality of chalk stream habitat. The Chilterns groundwater resource, on which these streams rely, has been increasingly overexploited over recent decades. The reduction of abstraction to environmentally sustainable levels through the Environment Agency's Restoring Sustainable Abstraction programme and a new abstraction licensing regime which provides adequate protection of the water environment is essential for the long-term health of the area's chalk streams.

WE2 a) Public awareness of the link between water demand and abstraction and their impact on flows and the environmental quality of chalk streams should be increased.

b) Awareness of how the actions of owners and occupiers can affect the quality of the water environment should be increased.

There is generally poor understanding of how actions in the home and by businesses such as water use and waste disposal can impact on the quality of the water environment. High water use can lead to environmentally unsustainable levels of abstraction and resultant low flows in the area's chalk streams. The disposal of fats and oils down drains and misconnection of wastewater services can lead to chronic pollution of watercourses. Commercial activities such as vehicle washing, incorrect storage of materials and disposal of waste can also

have a potentially significant impact on the water environment. Increasing public awareness of these issues and what role they can play in reducing the impact of their actions is key to improving the quality of the area's water environment.

WE3 Water efficiency measures to reduce per capita demand should be promoted.

A major driving force behind environmentally unsustainable abstraction of the chalk aquifer is high domestic water consumption in the Chilterns and surrounding area. Hertfordshire, for example has the highest per capita demand in the UK of 176 litres per person per day (unmetered consumption) which is significantly above the Government's per capita use target of 130 litres per person per day. In addition, less than 50% of households in the area have a water meter. With demand for water is projected to increase in the future, there is an urgent need for greater uptake of water efficiency measures such as water metering, to maximise available water resources for both public supply and for the aquatic environment.

WE4 Improvements to the water environment through implementation of the Water Framework Directive should be sought.

Currently, no water bodies in the AONB meet the ecological standards set out in the European Union Water Framework Directive (WFD). All water bodies must attain these standards by 2027. River Basin Management Planning is the delivery mechanism through which WFD objectives will be obtained. The second cycle of River Basin Management Plans (RBMP), covering the period 2015 - 2021, is currently being developed. There is a need for the next cycle of RBMPs to be more ambitious in their objectives to ensure significant improvement of the Chilterns' water environment by 2027.



River Thames at Marlow

WE5 A catchment-based approach to the enhancement and sustainable management of the Chilterns' water environment should be supported.

The catchment-based approach is a new way of working which brings stakeholders together to identify shared aspirations for their local water environment, to form partnerships and to work in new ways to bring them to fruition. The development of catchment plans through Defra's catchment-based approach will be key to identifying and addressing the issues affecting the water environment at a local scale and will feed into the development of the next cycle of River Basin Management Plans, driving significant improvement to the water environment.

WE6 Best practice in management of rivers and their valley landscapes should be promoted.

Chalk streams and their valley landscapes are characteristic features of the AONB. Best practice management of both river and the wider valley environment is key to maintaining the quality of these features and the habitats they support. Habitat degradation is a key factor in many of the AONB's rivers currently

failing to reach Good Ecological Status or Potential. Working with partners to promote and deliver best practice riparian management methods such as invasive non-native species control will be key to enhancing the quality of rivers and their valley landscapes.

WE7 Long-term sustainable management of rivers and their catchments, to reduce flooding and secure aquifer recharge, should be supported.

The long-term management of water resources is best achieved at a catchment scale. Appropriate management of the wider river catchment can have significant beneficial impacts in reducing downstream flood risk. Opportunities to reduce flood risk, where appropriate, should be identified and implemented. Proposed schemes should be sympathetically designed and seek to work with water and natural fluvial processes.

WE8 Development and long-term management of sustainable drainage systems should be promoted.

Urbanisation of river catchments leads to increased runoff, flood risk, and pollution. Further development in river

catchments must be sensitive to these issues and seek to minimise their impact. The incorporation of sustainable drainage systems in all new development from the outset, as set out in the Flood and Water Management Act 2010, will be essential in minimising flooding and pollution as well as maximising groundwater recharge and enhancing biodiversity. Targeted promotion of SuDs to homeowners, developers and farmers/landowners will be important in stimulating greater uptake.

WE9 Priority habitats, including chalk streams, ponds and other wetlands, and species such as water voles, water crowfoot and water shrews should be maintained, enhanced, protected and monitored.

Water bodies are relatively sparse in their distribution within the Chilterns. Their continued health is essential for sustaining a diverse range of plants and animals. Many of the water bodies in the Chilterns are home to UK priority species. Protection of these species is important both from a local and national perspective.

WE10 Restoration of natural flow conditions and improved connectivity of rivers and their riparian corridors should be promoted.

The River Thames and the Chilterns chalk streams have a long history of management and modification by man. This has led to degradation and fragmentation of habitat. Schemes which 'naturalise' river channels and improve flow continuity through techniques such as daylighting or removal or modification of impoundment structures, will enhance habitat, restore natural drainage regimes and create more sustainable river systems.

WE11 Appropriate management on all sites designated for nature conservation (statutory and non-statutory) should be safeguarded and promoted, and the need for greater protection of chalk streams promoted.

The conservation of sites which possess quality habitat is essential to prevent further degradation of the AONB's rivers. Despite their global rarity, none of the Chilterns chalk streams have any statutory designation. Without such protection, these rivers remain vulnerable to environmentally unsustainable abstraction, pollution and habitat degradation.

WE12 Public awareness of the impact of climate change on the environmental quality of the water environment should be increased.

The influence of increased climatic volatility on chalk stream flows and environmental quality is generally poorly understood. Increased public awareness will assist in introducing appropriate management to reduce low flows and cope with flooding.

WE13 The involvement of local communities in the conservation and enhancement of the water environment should be increased.

The public is particularly interested in rivers and water quality. A sense of community ownership and responsibility is important in the protection of the AONB's rivers, particularly in urban areas where they often flow through land in public ownership and close to residential areas.

WE14 Greater public enjoyment of the water environment of the AONB should be encouraged and sustainable access to it promoted.

Chalk rivers are an important and beautiful part of the Chilterns' landscape. It is important to enable the public to experience and interact with them. Encouraging the public to engage with chalk streams is key to instilling a sense of value of these important and beautiful components of the Chilterns' landscape.

Historic environment

Introduction



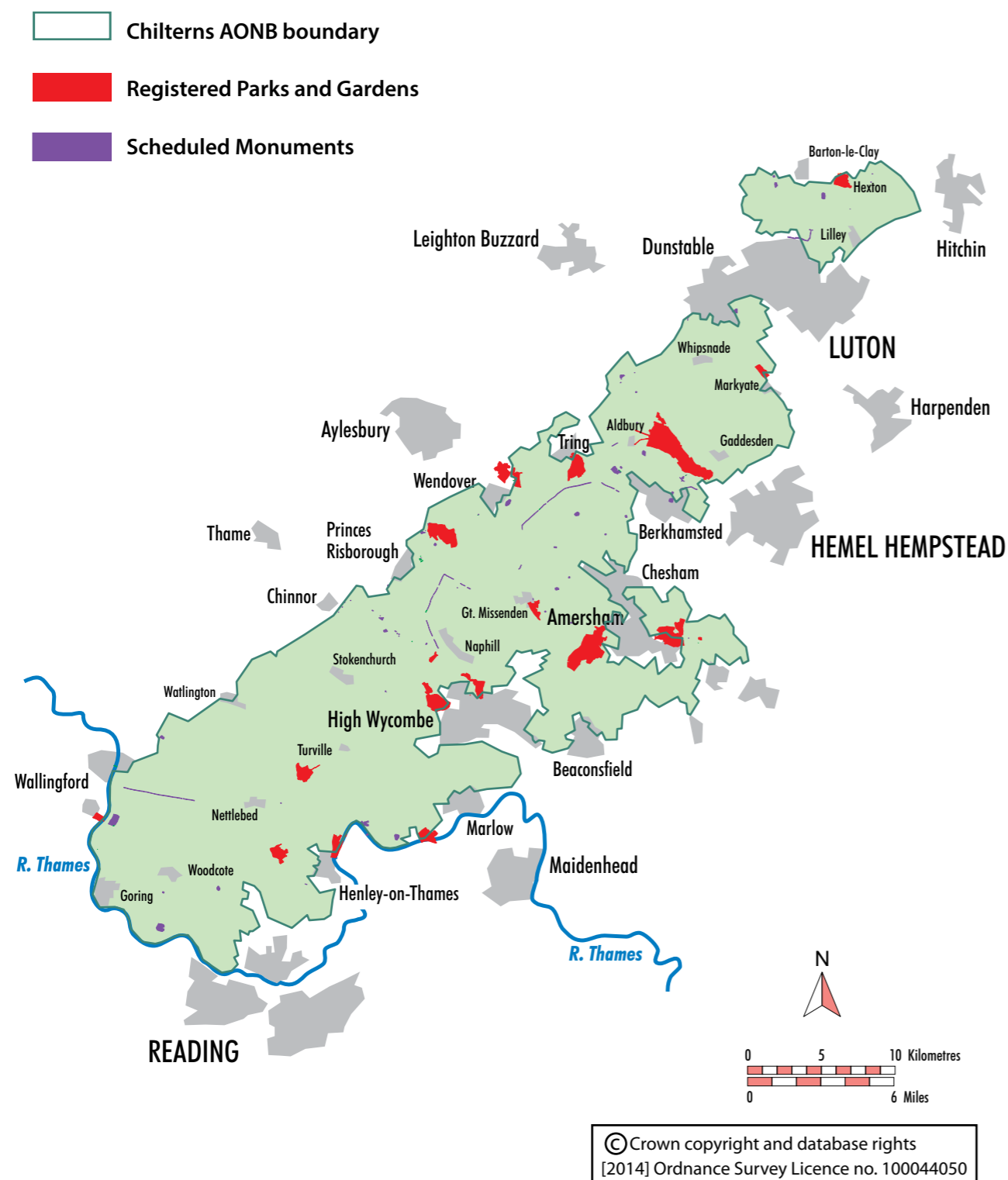
*Nuffield Place,
Oxfordshire
(Colin Dobson)*

1. The landscape of the Chilterns is above all a 'cultural landscape', the product of a long legacy of human influence. Over 1,400 years ago the tribe that lived in what we now know as the Chilterns gave their name to the area. In the late 7th century a document known as the Tribal Hidage recorded the Ciltenssaetan, 'people of the Chilterns', as a distinct group possessing a nominal 4,000 hides (family units).
2. The Chilterns is an ancient landscape with traces of many eras and previous settlers. The historic environment they created over millennia helps define a sense of place and the strength of local landscape character. The area has many Bronze Age barrows and field systems, Iron Age forts, medieval churches and deer enclosures, 18th century sawyer pits and 20th century military trenches. All create layers of civilisation and settlement which provide a timeline for the evolution of the landscape and help

define what is different and special about the Chilterns.

3. It is because relatively little of the Chilterns has been subject to intensive cultivation that so much survives. The downland and commons, rarely ploughed but grazed for centuries, have helped to conserve much of interest. The commons - mostly dating back to medieval times - and the manorial system are important in their own rights as part of the historic environment, but also for the features which survive on them, many of which are still to be surveyed and identified. The woodlands, so extensive and yet so little surveyed, hide a great deal that is still to be discovered. The farmsteads, churches and many old buildings are both part of the historic environment and a direct link with the modern day, still in every day use providing the core of much-loved villages and towns.

Historic Parks and Gardens and Scheduled Monuments



- The concept of the historic environment is wide ranging and holistic, encompassing all physical manifestations of human activities from earliest prehistory to the present day. It includes buried archaeological remains and palaeo-environmental deposits, relict sites surviving as earthworks or ruins, historic buildings and villages, landscapes still in use such as farms and field boundaries, industrial and military structures, ancient woodlands and commons and country houses with their associated parks and gardens.
- There are strong links between the historic and natural environments as the modern ecology of the Chilterns is determined to a considerable degree by historical patterns of land use. The historic environment helps define a sense of place, can provide a focus for community activities and contributes to the local economy. It also has important cultural associations with topics such as social history, folklore, arts and literature.
- In many ways it is also an industrial landscape with relicts of early iron working, charcoal burning, wood working, furniture making, the railways and canals, brick and tile making, brewing, chalk quarrying and cement manufacture.
- The list of artists and authors who lived and took inspiration from the Chilterns is also long. Milton, Nash, Piper, Disraeli, Blyton, Dahl and Greene are some of the better known.
- Policy and advice on the historic environment is provided at a national level by English Heritage, although there is overlap with the landscape responsibilities of Natural England. Each county council or unitary authority has an archaeological service responsible for maintaining and developing its Historic Environment Record and the provision of planning and conservation advice. To aid understanding of the Chilterns' historic landscape the Chilterns Historic Landscape Characterisation Project

has been undertaken. Greater use should be made of the findings of this and advice can be obtained from the relevant archaeological service. Building conservation advice is the responsibility of conservation officers based in the district councils and unitary authorities. The National Trust is an important landowner in the Chilterns and employs its own conservation and archaeological staff.

- There are many voluntary and community groups working in this field notably the Chiltern Woodlands Project, which undertakes surveys and training in woodland archaeology, and the Chiltern Open Air Museum which houses an important collection of relocated historic buildings.

Broad Aims

- The historic environment of the AONB is conserved and enhanced for the benefit of current and future generations.
- The public have a greater appreciation, understanding and enjoyment of the historic environment of the AONB.
- The public have good access to the historic environment.

Special Qualities

Prehistory

- The chalk ridge of the Chilterns contains many traces of prehistoric occupation and the majority of the monuments which survive as visible earthworks lie along the escarpment.
- Prehistoric settlements, often indicated by scattered flint artefacts on the surface of fields, are common within the Chilterns, as are barrows (burial mounds).
- Neolithic barrows are to be found at Halton, Whiteleaf and at sites around Dunstable, but Bronze Age barrows are

far more common and examples can be seen at Ivinghoe, Wendover and Dunstable.

4. The Ridgeway (the Icknield Way) is an important prehistoric trackway, and may have provided the basis of a major communications and trading network stretching from Wessex to East Anglia.
5. Amongst the earliest surviving elements of the Chilterns landscape are pre-Roman 'co-axial' patterns of parallel trackways and fields.
6. 20 Iron Age hill forts were constructed along the scarp ridge and along the Thames Valley.
7. The Iron Age linear dykes (evidence of extensive land divisions) of which Grim's Ditch is the best known and which stretches for more than 12 miles from Naphill to Berkhamsted.

Roman

8. The Romans roads of Watling Street (now the A5) and Akeman Street (now the A41) run through the Chilterns.
9. There is evidence of Roman iron-smelting in Chiltern woods and villa sites adjacent to Roman roads.

Saxon

10. Anglo-Saxon cemeteries and settlements have been found mainly around the periphery of the Chilterns – for example around Aylesbury, Dorchester, Luton and Dunstable.
11. The Saxon parish structure survives with its distinctive long, narrow strip-parishes running from the Vale up onto the Chiltern scarp to give each Vale settlement a share of the Hills' woodland and pasture resources. Some of these boundaries may have pre-Roman origins.

Medieval

12. A substantial number of buildings survive from this period including churches and chapels (typically built of flint) and timber-framed barns, manor houses and farmhouses.
13. Strip lynchets (cultivation terraces) were created in the late 12th and 13th centuries at a time of a great need for arable land.
14. Medieval field patterns with ancient hedges, boundaries and lanes are significant features. About 40% of hedged field patterns in the Chilterns are thought to have pre-18th century origins.

Post-medieval

15. Many of the archaeological earthworks found in Chiltern woods, such as wood banks and sawpits, reflect the woodland management in this period to supply timber for the furniture industry.
16. The construction of turnpike roads, canals and later railways created new landscape features as well as opening up access to the Chilterns and affecting its economy.
17. The spread of non conformism started early in the Chilterns and there is a particularly rich legacy of 18th and 19th century chapels.
18. The Chilterns is adorned with unusual buildings and structures, which some might think of as follies and others as monuments. Some notable examples include the Bridgewater Monument at Ashridge, the Maharajah's Well at Stoke Row in south Oxfordshire and the Dashwood Mausoleum atop West Wycombe Hill.

The twentieth century

19. The impact of the 20th century was greatest in the southern Chilterns where the London suburbs of Metroland grew up rapidly until the designation of the Metropolitan Greenbelt in 1959.

20. Some modern features, such as the First World War practice trenches at Whiteleaf Hill, Halton and on Marlow Common and relicts of activity from the Second World War and the Cold War are increasingly being recognised as important archaeological monuments.

Settlements and buildings

21. The historic settlement pattern is one of larger nucleated towns and villages along the river valleys and below the Chilterns escarpment, with more dispersed patterns of hamlets and farms on the higher ground with newer settlements on the edge of commons.
22. There are many dwellings, farmsteads and other buildings within the Chilterns which are of architectural or historic importance and which make an essential contribution individually, or in groups within settlements, to the character, and aesthetic qualities of the landscape.
23. The most common building material in the Chilterns is brick, the use of which dates back to the 15th century. During the 18th century it became the universal building material. Bricks were almost always made locally, the variations in quality and colour of local brick earth and clays giving a distinctive character to buildings in different parts of the AONB. Bricks are still being made in the Chilterns.
24. In most areas of the Chilterns flint is also widely used as a building material, commonly in combination with brick. It is particularly common in the central plateau areas of the Chilterns and can be found in farmhouses of the 17th century, cottages in the 18th century and universally in the late 19th century.
25. The local abundance of clay meant that clay tiles became the general roofing material from the 16th century onwards but thatch was still being used on humbler buildings at the end of 18th century. Welsh slate became commonplace in the 19th century, brought in by canals and railways.

Parks and gardens

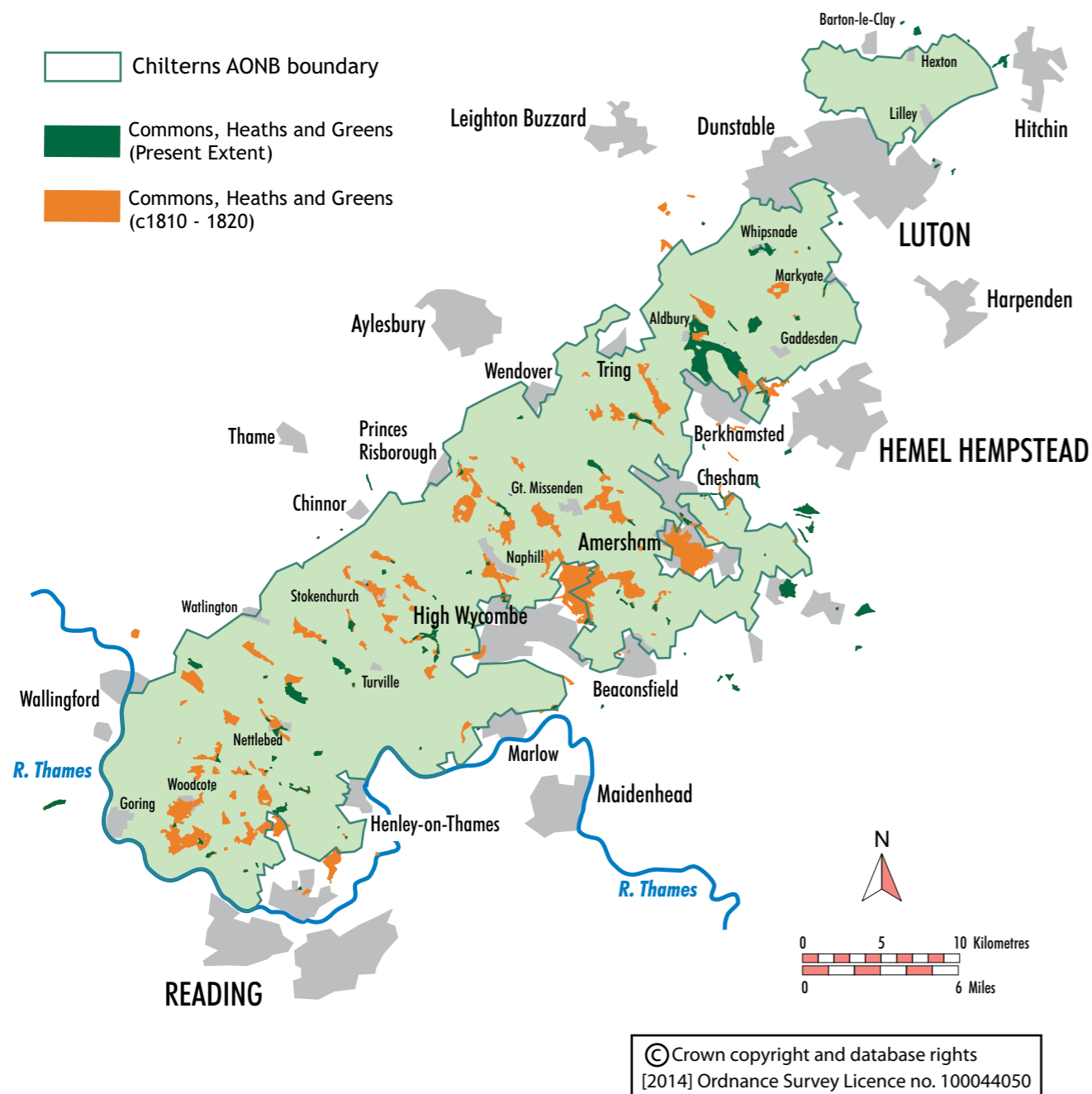
26. The attraction of the Chilterns as a country retreat where the varied topography of the landscape allowed the location of grand houses in prominent positions and within a reasonable distance of London, led to the development of numerous grand country houses and parks, reaching a peak of around 600 parks in 1820, with examples of every period and style between the 17th and late 19th centuries. There are 15 historic parks and gardens on the English Heritage register.
27. The designed parkland landscapes of the 18th century are the best known and include examples of the work of some of the most famous landscape designers of the period, including Charles Bridgeman, 'Capability' Brown and Humphrey Repton.
28. In some places the owners of these estates rebuilt adjacent villages creating a distinctive estate architecture. Most of these country estates and parks have survived to the present day although only a few remain with their original families, many having been turned to other uses such as schools, conference centres and hotels.

Key Issues

Conserving the historic environment

1. In general, the conservation of the special historic, built and cultural heritage of the Chilterns will require greater weight to be attached to it. This is especially important to help protect and conserve those sites and features which do not enjoy legal protection, for example unregistered parks and gardens.
2. It is important that the problems identified by the Heritage at Risk register covering Grade I and II* buildings, Scheduled Monuments, Registered Parks and Gardens and Conservation Areas are responded to.

Historic and current extent of Chilterns commons



The impact of development

3. A great deal of new development is taking place and is planned. There is a need to identify and take appropriate action to ensure new development does not profoundly alter settlement character or damage sites or their setting where that is important. Where development or land use change involves significant and unavoidable impacts, appropriate assessment, mitigation of the impacts by design solutions or recording should be undertaken.
4. The construction of High Speed 2 will result in considerable destruction of features of the historic environment, many of which are not yet known or surveyed. A key challenge will be, as far as is possible, to avoid and not just mitigate the damage to the historic environment. In many cases this will not be possible but restoration should be a primary aim, for example by reinstating the ancient lanes and restoration of earth banks and associated hedgerows. HS2 will also provide opportunities to identify, survey and record aspects of the historic environment which may otherwise have remained unidentified and unknown.
5. The importance of good design, taking account of local characteristics and materials, both in new buildings and extensions and the conversion of historic buildings, is vital to conserve the character of the built environment and its setting in the landscape.
6. Many buildings are being extended and renovated. In the process new materials are used to replace old and some do not match well the existing structure. Common examples are the installation of PVC windows to a brick and flint cottage, replacement of slate with concrete tiles or ill-matching bricks.

Utility blight

7. A wide range of utilities have permitted development rights relating, for example, to the installation of pipelines and cables, although larger schemes may require an Environmental Impact Assessment. Most of these organisations have a duty of care towards the historic environment and have published environmental policies, although their practical interpretation and application of these measures is variable.
 8. Greater consideration needs to be given to the impact of street clutter including utility equipment and infrastructure which can blight the wider historic environment, conservation areas, and the setting of individual buildings and sites. Often this impact is cumulative due to the activities of several different utilities. A more coordinated and proactive approach is needed to both remove existing clutter and to prevent more of it appearing. The commitment by some of the electricity distribution companies to invest in undergrounding power lines is the sort of lead which other utilities should be following.
- Knowledge and understanding**
9. There is a need to promote a wider understanding of the historic environment to ensure its sustainable management. More use should be made of the Historic Environment Records (HERs) held by local authorities, which record the historic buildings, landscapes and archaeological sites of their area, and of the Chilterns Historic Landscape Characterisation Project.
 10. The knowledge of the historic environment is partial and in some areas, such as archaeology in woodland, under-surveyed. Conservation of the Chilterns heritage in all its forms will need more knowledge, information sharing, better understanding and deeper and more widespread appreciation of what is special and what needs to be done to conserve it.

Recreational use of sites

11. The Chilterns is a popular area for informal recreation which attracts large numbers of visitors. On some sensitive sites there is always the problem of potential conflict between their recreational use and conservation of their special qualities. This is a particular issue along the ridge of the escarpment where there are many popular sites with good public access and which are also important for their historic environment. Examples include Whiteleaf Hill near Princes Risborough, Coombe Hill, Ivinghoe Beacon, Dunstable Downs and Warden and Galley Hills near Luton.

Site management

12. The conservation of the special qualities of the historic environment relies on good management and sustainable use by owners, managers and all users including the general public. There is a need for enhanced provision of information and advice for all these audiences as the long term stewards of this heritage.
13. The interests of nature conservation and the historic environment often coincide but there can sometimes be tensions - for example, burrowing animals or tree planting can damage archaeological remains.

Community involvement

14. Involving local communities in the identification, conservation, protection and celebration of local heritage is essential. The cultural associations of the historic environment should be recognised and local community interest fostered wherever practical.

Common land

15. There is a special need to survey, identify and manage historic environmental features on common land. The commons are often some of the least

disturbed sites, rarely, if ever, having been ploughed. There is also open access across these areas extending to over 2,000 hectares in total providing opportunities for public engagement and outdoor learning, but which also exposes them to potential damage.

Impact of agriculture

16. Intensive agriculture is a potentially serious threat to the historic environment through the loss of historic buildings and field patterns, ploughing up of archaeological sites and the removal of historic features such as ponds and trackways.
17. With gradual decline of grazing and increase of arable farming these trends are likely to continue. Several features such as hedges and ponds are more likely to gradually disappear due to neglect than deliberate removal as their farming function has been lost. In general, however the actual impact of these potential threats is relatively modest.

Woodland management

18. Many archaeological sites survive as earthworks within woodland including historic woodland management features (wood banks, sawpits etc) as well as earlier remains such as prehistoric barrows, hill forts and boundary ditches. The conservation and sustainable management of the Chilterns' woodlands is therefore a high priority from an historic environment perspective. From an archaeological perspective, there is a need to extend the coverage of survey (including laser surveying (LiDAR)) to identify and record features hidden within woodland.

Metal detecting

19. The Treasure Act 1997 requires the reporting of all suspected treasure items. Nevertheless, most 'portable antiquities' found by metal-detectorists fall outside the remit of the Act. A priority should



Cholesbury Camp - an Iron Age hillfort

be to prevent 'treasure hunting' metal detecting on the most important and vulnerable sites.

20. It also needs to be noted that responsible and organised metal-detecting, most often by well organised clubs, has helped to unearth many interesting and important finds that would otherwise have gone undetected. This has helped improve understanding of many aspects of the historic environment significantly. The problem is when detecting is not well organised, responsible or is illegal.

Neglect of designed landscapes

21. Country houses and their associated parks, gardens and other designed landscapes are a particularly distinctive and important feature of the Chilterns' landscape within the AONB and are worthy of conservation. These buildings and landscapes can face particular pressures of neglect and unsympathetic change of use whilst they require sympathetic management and, in many cases, restoration.
22. There is a need to identify important unregistered historic parks and other designed landscapes and to develop

conservation plans for them (especially those which are 'at risk').

Climate change

23. At present the most serious direct impacts of climate change in the Chilterns will be on certain archaeological remains, historic buildings and the natural components of historic landscapes. Specific topics of concern are:
 - increased flood risk affecting historic buildings;
 - increased rainfall and water penetration affecting historic buildings;
 - changes in woodland composition and increased vulnerability to wind-blow (the latter is a particular concern on archaeological monuments);
 - inappropriate siting of renewable energy facilities including solar panels which can affect landscapes and roofscapes.

It is worth noting that the climate has changed before and an understanding of the historical and archaeological record could assist in planning a sustainable future.

Policies

HE1 Conservation plans for designated heritage assets should be encouraged.

The preparation of conservation plans should be encouraged because of the importance of so many sites. Such a plan is the best way of reinforcing the importance of sites, involving appropriate agencies, identifying appropriate action, providing a stimulus to take that action and to provide guidance for others undertaking work which may have an impact on those special areas and sites.

HE2 Where conservation plans are prepared for designated heritage assets the potential impact of climate change and extreme weather events should be addressed.

As the climate changes and extreme weather events become more common, some sites will be vulnerable to the potential impacts such as increased flash flooding and windblown trees. All conservation plans should take potential impacts into account and ensure appropriate management is implemented in response to the site's vulnerability.

HE3 Development, other land use changes and management practices which would harm the significance of nationally important designated and undesignated sites, and locally important historic assets and their settings will be resisted.

The historic environment is irreplaceable and damage must be avoided especially where the site's importance has been identified and protection conferred by some form of designation. Additionally, it is the setting of many sites which adds to their importance and the way they are appreciated. This facet of site management is not always taken into account fully.

HE4 The conservation of the historic environment (including the setting of important sites and features) should be based on best practice.

Relatively few land and buildings managers receive any formal training in conservation of the historic environment, and yet much of what they do has a direct bearing on it. A great deal of experience is available to provide advice and many good examples of best practice are available. Where appropriate historic environment services (usually local authorities or English Heritage but there are many expert trade and conservation bodies) should be consulted for information and advice. Often the most effective training and advice is in the form of learning from what others did successfully when faced with similar issues.

HE5 The design and location of all development should be sympathetic to the character of the historic environment, including the setting of historic assets.

The pressure for development in the Chilterns is high, with potential impacts on the existing settlements and the wider landscape where it is to be situated in more open countryside. Wherever it is to be located it is essential that the design and materials are sympathetic to the setting and historic character of that place. That does not necessarily require a slavish adherence to vernacular architecture but it should nonetheless complement and respect existing character.

HE6 There should be a high level of public understanding and enjoyment of the historic environment.

The Chilterns has an immensely rich and varied historic environment. In the long term its conservation and good stewardship will depend greatly upon public will and often public funds. That will only be forthcoming if they are aware of their historic environment and are able to understand, appreciate and enjoy it. Currently general awareness levels are low but there are many opportunities to improve public understanding and enjoyment.

HE7 The stewardship of the wider historic environment and individual sites and features (including their setting) should be supported by a high level of understanding of the character and management needs.

This is essential to ensure its conservation and appreciation. Currently knowledge levels are partial and, in key fields, less extensive than is desirable. This is particularly true amongst groups who have the capacity to approve or initiate change which may affect the historic environment.

HE8 Local communities should be involved in the conservation and interpretation of the historic environment.

The conservation and interpretation of the historic environment provide a wealth of opportunities for community involvement. In so doing all parts of a community can find a role including volunteers, schools, local businesses as well as local statutory bodies and experts. This type of involvement encourages social activity within the community, can strengthen the local economy and helps link it to its past. Increased understanding should also enhance their willingness to become involved in its care and stewardship.

HE9 The cultural heritage of the Chilterns should be celebrated and promoted to attract visitors and support the tourism economy.

The Chilterns has an extraordinary cultural heritage covering the historic environment and all that makes it special: a wealth of literary and military figures; the aristocracy; poets; religious leaders; politicians; innovators and notable business people all of whom have left their mark on the Chilterns. It is an essential ingredient of what makes a place different and is crucial to develop a sense of identity and local pride. It is also provides a plethora of opportunities to promote the area to attract visitors and tourists.

HE10 The availability of skills needed to conserve the historic environment should be enhanced.

A particular challenge is to ensure those who undertake conservation works of any kind, whether it be to a site, building or other structure, have the necessary knowledge and skills. In general there is a shortage of skilled people in nearly all conservation skills, which results in delays or worse, the work being done by unskilled people. A simplistic example is that repointing a knapped flint stone wall is not the same as laying bricks.

HE11 The historic environment could be used to support sustainable economic and social activity. Where there are irreconcilable differences between the two the conservation of the historic environment should take priority.

The public has a high level of interest in the historic environment, some of which is capable of sustaining social and economic activity. Examples are the development of tourism based on heritage and social activity founded on local culture and folklore, often linked to specific sites. Such activity helps both to strengthen the identity of local communities and foster sustainable economic activity.

Development

Introduction



Bradenham

1. The attractiveness of the Chilterns' landscape is due to its natural, built and cultural environment. It is not a wilderness but countryside adorned by villages, hamlets and scattered buildings. It is surrounded by large towns, though there are few hard urban edges, and is within easy commuting distance of London, all of which increase the pressure for new development. As a result house prices in the Chilterns are amongst the highest in the country and there is a severe shortage of affordable housing.
2. Towns, villages, hamlets and individual buildings all form a vital part of the character of the Chilterns, particularly because of the widespread use of local building materials (bricks, clay tiles and flint) and the locally distinctive

architecture. There are also examples of modern interpretations of the local vernacular which sit happily within the AONB. However, new development, both within the AONB and its setting, should conserve and enhance the natural beauty of the area. There may be instances where architect or design panels could be usefully employed.

3. The Chilterns is very accessible due to the number of roads, railway lines and waterways running through it. Major transport routes link the Chilterns to London and other major cities and towns. With the exception of a single road (the modern successor to the Icknield Way) which follows the foot of the escarpment, very few transport links run south west to north east. The network of ancient routes, railways and canals has added

to the cultural heritage of the Chilterns, but more recent works have often had a negative impact on the landscape.

4. The continued pressures for new development, particularly housing, create demand for aggregates and other minerals for construction. Historically, large quantities of chalk were extracted to manufacture cement, but these quarries are now largely redundant. Two relatively small brick-making enterprises survive using local clay.
5. Local communities generate considerable quantities of waste. This should generally be dealt with in close proximity to where it is produced. However, redundant quarries are not suitable for land filling and, other than on a small and local scale, it is unlikely that there will be suitable sites for new energy from waste plants. County councils and unitary authorities are responsible for waste recovery provision, disposal capacity, quarry reclamation and energy from waste and reference should be made to relevant minerals and waste local plans and core strategies when appropriate.

Broad Aims

- **Ensure that development conserves and enhances the special qualities and characteristics of the Chilterns.**
- **Ensure the distinctive character of the built and natural environment of the Chilterns is improved, especially where it is degraded or subject to any negative impacts of development.**
- **Ensure that local authority development plans, as they affect the AONB, are compatible with the purposes of AONB designation.**

Special Qualities

1. The attractiveness of the Chilterns' landscape is partly due to its settlements and buildings.
2. There are many attractive villages such as Ewelme, Turville, Hambleden and Aldbury which are popular places to live in and visit.
3. The Chilterns has a distinctive vernacular architecture based on the use of local brick, clay roof tiles and flint. Despite this, other architectural styles ('Metroland' for example) have also had an important influence
4. There are many notable individual buildings and follies including stately homes, monuments, mausoleums and windmills. They provide interest in the landscape and support the tourist industry.
5. There is a wealth of medieval churches, many built from flint.
6. There is a strong link between the management of the countryside and the character of old and new development. The vernacular architecture, as so often, was based almost entirely on the use of locally available materials. In the Chilterns this included clay to make bricks and roof tiles, timber, chalk for mortar and flints from fields and quarries. All these materials remain available for new development.
7. Many buildings are of historical importance either in their own right or because of the people with which they are connected.
8. The ancient lanes, canals and railways (including significant Brunel bridges) are important parts of the landscape.

Key Issues

1. The Chilterns and surrounding areas are under considerable pressure to accommodate significant numbers of new houses as well as other forms of development.
2. There is continuing pressure to locate large scale developments in the AONB or its setting. Assessment of the impact of these proposals needs to accord with national policy as set out in the National Planning Policy Framework (paragraphs 113, 115 and 116)¹.
3. The retention of open space and the need to try and restrict the scale of new development are key to conserving the natural beauty of the AONB. Equally, the provision of new green infrastructure (GI) may help alleviate some of the pressures from existing development.
4. New development of all types needs to respect vernacular architecture, settlement character and the local landscape. This will require developers to do more than try to use standard designs. The Board has published guidance on design and the use of building materials and encourages the preparation of Landscape and Visual Impact Assessments where appropriate.
5. There is a need for active promotion of environmentally sensitive construction methods and the necessary skills, particularly in the use of locally produced building materials.
6. All new development needs to accord with the highest environmental standards to minimise impact on the environment and help mitigate the causes of climate change. This means maximising energy efficiency and minimising water use (by the inclusion of rainwater harvesting or grey water recycling for example). In order to help avoid flooding and to encourage aquifer recharge sustainable drainage systems should be encouraged.
7. There is a need for the design of new buildings to show adaptation to climate change, for example to ensure buildings remain cool in the summer without using air conditioning.
8. Society must seek ways of reducing its demand for energy (switching off streetlights is one of many) and reduce its dependency upon fossil fuels by switching to renewable energy sources. The options include solar, wood fuel, ground source, hydro and wind, all of which have some potential in the Chilterns. It is the prospect of wind turbines which would be most controversial. It is highly unlikely that large-scale wind turbines would be appropriate because of the relative lack of wind and the visual intrusion, especially along the ridge of the escarpment but also when located outside the AONB within its setting. However, there is scope for installation of smaller domestic-scale turbines in less intrusive locations where there are suitable wind speeds. The use of wood fuel would be the preferred option because of the extent of the woodland resource which is currently under-utilised.
9. There is a need for a better understanding and awareness of what contributes to local distinctiveness, especially amongst those groups who propose, design and approve new development.
10. In some places the attractiveness of the landscape is diminished by degraded sites, unattractive buildings and other structures and their use. The challenge is to remove, screen or mitigate the visual intrusion.
11. There is an increasing need to guide developments and activities which are exempt from normal planning controls in order to ensure that the cumulative impacts of clutter and inappropriately designed buildings do not lead to further problems of urbanisation.

¹ National Planning Policy Framework (Department for Communities and Local Government, March 2012)

12. The physical impact of transport infrastructure and its use have major environmental impacts. Any assessment of the environmental damage or benefits needs to be given greater weight. This includes ensuring that the design, use and management of transport infrastructure, including maintenance and small works, do not damage environmental quality. The impacts of new schemes and expansion of existing facilities will need very careful consideration to ensure the conservation and enhancement of the natural beauty of the AONB. Roads should be constructed and surfaced to minimise noise pollution, a particular problem along the motorways (M40, M25 and M1) and trunk roads. The Board and highway authorities have published the Environmental Guidelines for the Management of Highways in the Chilterns² which, amongst many issues, seeks reductions in road side clutter and light pollution.
13. The small number of active and redundant quarries within the AONB and its setting require long term plans to be in place once quarrying has ceased. It will be vital to maintain the environmental qualities they now have (e.g. Chinnor Quarry is a geological SSSI). It is unlikely that landfill would be an acceptable use.
14. The Chilterns is a wealthy area and produces a significant amount of waste per capita. It is unacceptable to send waste out of the area in which it was generated. In future, efforts must concentrate on minimising waste and dealing with it in close proximity to where it is produced. The option of energy from waste will no doubt continue to be investigated. The choice of suitable sites will be contentious. It is unlikely that large scale plants could be accommodated within the Chilterns AONB without unacceptable environmental impacts.

Horseshoe Hill House near Wooburn, winner of the 2012 Chilterns Buildings Design Awards



² See www.chilternsaonb.org/board-publications

Policies

D1 The natural beauty of the Chilterns AONB should be conserved and enhanced by encouraging the highest design standards, reinforcing local distinctiveness and respecting the landscape, settlement character and special qualities of the AONB.

The design and location of new development and the extensive use of standardised, suburban designs and non-local materials has in the past resulted in many villages losing some of their special and distinctive character.

There is a need for a greater understanding of the factors that contribute to the visual harmony between built development and the landscape, and to local distinctiveness and the sense of place, so that these qualities can be conserved and enhanced through sensitive and imaginative design, and the character of existing settlements can be positively improved where appropriate.

It is the role of the Local Planning Authorities to firmly apply policies which safeguard the AONB from further detrimental change, while accommodating the small-scale development necessary for the continued economic and social well-being of Chiltern communities.

D2 High standards of development which respect vernacular architectural styles and demonstrate appropriate best practice in the use of traditional materials (flint, brick, roofing materials and timber) should be promoted.

Buildings design guidance can help inform those involved in decision-making as well as helping landowners, developers, designers and local communities to plan for and control change in an appropriate way. The Board has published the Chilterns Buildings Design Guide and Supplementary

Technical Notes on Chilterns building materials³. The Design Guide now addresses additional issues such as climate change, energy and water efficiency, renewable energy, and the development of new agricultural and other rural employment buildings.

When endorsed by the Local Planning Authorities the Design Guide should be taken account of as a significant material consideration in determining planning applications. The Design Guide has also aimed to reduce the impact of some of the works which are 'Permitted Development' and do not require planning permission. If carried out unsympathetically these developments can contribute to the increasing 'suburbanisation' of the countryside.

D3 The sustainable use of local natural resources (timber, clay and flint) for local building purposes should be supported by seeking their use in new developments.

Bricks, tiles and flint are still commonly used in new developments. Local clay is still used for brick making by the remaining local brickworks. The development of other small workings may be possible which would serve a useful purpose by providing a source of locally-made materials for use in the area, ensuring compatibility with the materials traditionally used. Another source of locally produced building materials are the Totternhoe Clunch pits. They are only opened occasionally to provide material for historic building restoration. Although small-scale these activities also provide local employment opportunities.

The Conservation Board actively promotes environmentally sensitive construction methods (primarily the use of locally-produced building materials and lime mortar) through the production and use of its Supplementary Technical Notes on Chilterns building materials – flint, brick and roofing materials (clay tiles in particular).

³ See www.chilternsaonb.org/buildings-design-guidance

When responding to relevant planning applications the Board will seek the use of local building materials because of the positive impacts that their use would have on the landscape and environment. Developments should conserve or enhance the natural beauty of the AONB and planning applications should comply with the Chilterns Buildings Design Guide and Supplementary Technical Notes.

D4 The retention of the local brick-making industry should be supported by seeking the use of locally-made bricks in new developments, consistent with the principles of environmental sustainability and the Chilterns Buildings Design Guide and related Supplementary Technical Notes⁴.

Within the Chilterns there are two remaining brick-makers. They are small in scale and make high quality bricks in traditional ways. The support for the use of such local materials in sensitive ways will not only help to ensure a continued supply of high quality, traditional building materials, but will also help developments to have limited impacts whilst contributing to local distinctiveness. If used locally such building materials will have travelled a limited distance and will emit lower levels of CO₂ in their transport comparative to other materials.

D5 Appropriate development (especially affordable housing) should be encouraged, particularly on previously developed land, if it will improve the economic, social and environmental well-being of the area whilst having regard to the special qualities of the AONB.

Sustainable development involves meeting current needs without compromising the ability of future generations to meet theirs. This entails accommodating change whilst maintaining and, wherever possible, enhancing the quality of the

environment for all. There will also be a need to meet the economic and social needs of the people who live and work in the Chilterns. Improvement of the economic, social and environmental well-being of the area might be achieved through:

- the delivery of affordable housing for local needs (including key workers and those in agriculture);
- improved employment opportunities;
- maintaining the viability of the rural economy;
- addressing the general decline in, and improved access to, key rural services, and
- open space, GI provision and biodiversity enhancements.

D6 Where new housing development is proposed this should only be permitted if its scale, massing and density reflect the local context and have regard to the special qualities of the AONB.

The Board will generally support the provision of smaller residential schemes that lead to the provision of affordable and local needs housing. All housing schemes should be sustainably located and should take particular account of the settlement's and site's contexts and should reflect densities that are prevalent locally. The operation of nationally agreed minimum densities is not always appropriate and in order to deliver wider benefits and the conservation of the special qualities of the AONB it may be better to operate to lower, maximum, density levels.

⁴ See www.chilternsaonb.org/buildings-design-guidance

D7 The retention of agricultural buildings for rural enterprise should be encouraged.

In the past numerous agricultural buildings have become redundant and been converted. In many cases the conversion has been to a residential unit, thus these buildings have been lost from productive use. This has been recognised and it is considered desirable to try and ensure the retention of current agricultural buildings for productive uses, particularly if they are no longer suitable for their current use. Retention of such buildings should help in fostering the economic and social well-being of communities within the AONB. Pressure on this finite resource has increased due to changes in the Permitted Development Rights regime that would allow certain changes to take place without the need for planning permission.

D8 The retention or creation, and long term maintenance, of green infrastructure should be sought when development is proposed in, or adjacent to the AONB.

With significant pressure for housing and employment growth there will be a need to provide green open space (often via developer contributions) in the form of GI (which can take many forms⁵ and have multi-functional benefits for biodiversity, landscape, access and in contributing to sustainable drainage), provided this does not conflict with the purposes of the AONB's designation. In addition, the enhancement or expansion of existing GI resources may help the area cope with pressures from existing development. For new developments that are on the edge of the AONB, there will also be opportunities to improve degraded landscapes and access to the countryside, to improve connectivity of habitats and to try and lessen the impact of development on the setting of the AONB. This may be brought about, if very carefully controlled, through biodiversity offsetting on appropriate sites.

⁵ See glossary

D9 Full account should be taken of the likely impacts of developments on the setting of the AONB.

There is increasing pressure for both large- and small-scale development within the setting of the AONB. Greater appreciation is required of what the likely impacts may be of such development, particularly as the views both out of and back to the AONB are fundamental to the enjoyment of the AONB itself. Similarly, more account needs to be taken of such impacts, and to this end the Board has prepared a position statement on this matter⁶ and encourages the preparation of landscape and visual impact assessments where appropriate.

D10 A reduction in the damaging impacts of utilities and other infrastructure should be sought.

Many telecommunications masts were sited within the AONB in the past resulting in damaging landscape impacts. There has been a slowdown in the roll out of new systems which has meant that there are fewer applications for new masts, though with a desire for more rapid roll out of high speed broadband this may change. Other infrastructure can include overhead electricity lines, associated poles or pylons and ancillary buildings, wind turbines and underground utilities.

A reduction in the damaging impacts may be achieved by the removal of redundant masts, the better design and siting of new masts and other equipment through the application of guidance, the removal of overhead electricity lines and associated poles or pylons, appropriate location and siting of new wind turbines and better landscape treatment of any works associated with any changes to underground utilities.

⁶ See www.chilternsaonb.org/position-statements

D11 Enhancement of the landscape of the AONB should be sought by the removal or mitigation of intrusive developments.

There is a need to ensure that all developments conserve and enhance the natural beauty of the AONB. Actions to improve the quality of the AONB landscape, particularly where it is eroded, should be promoted where possible. This would be particularly valuable in the following contexts:

- around the fringes of urban areas, to soften the often harsh edge of new residential and other developments;
- in locations where it helps to screen or integrate unsightly buildings or structures;
- in strategic locations where it could help to reduce the visibility of intrusive infrastructure, and
- where it would result in the removal or enhancement of unsightly buildings or other eyesores.

Encouragement should also be given to the replacement or improvement of elements which detract from visual harmony, including: domestic features such as inappropriate urban styles of fencing and clutter (such as washing lines and children's play equipment); street and other forms of lighting that lead to light pollution, as well as overhead electricity lines. The cumulative impacts arising from such detracting elements should also be taken account of. Guidance on some of these issues is given in the Chilterns Buildings Design Guide⁷.

⁷ See www.chilternsaonb.org/buildings-design-guidance

D12 Developments should be sought that represent the highest environmental and design standards whilst complementing the character of the AONB.

Developments within the AONB and its setting should achieve the purpose of conserving and enhancing the natural beauty of the AONB, whilst being undertaken to the highest standards. The Board will work with others to promote measures which will help people and buildings to adapt to climate change, subject to the overriding consideration of the need to be compatible with the character of the built and natural environment. Some of the measures that will be considered include: a greater understanding of the embedded energy in any development; the increased use of local building materials; water and energy efficiency; the way that buildings are orientated, and allowing for more comfortable living conditions with increased summer shading.

Flooding is increasingly becoming an issue. In order to try and alleviate this problem, as well as to encourage aquifer recharge, sustainable drainage systems should be incorporated in the design of new development. This may be achieved by requiring the provision of sustainable drainage systems through local plan policies. If well-designed these can also benefit biodiversity. When considering developments in proximity to rivers, local planning authorities should also give due regard to any impacts on the rivers and their riparian ecology.

Various ways of decreasing water usage could be implemented. These include rainwater harvesting, the incorporation of grey water recycling and the installation of water meters in new developments.

D13 The use of renewable energy (particularly wood fuel, solar, hydro-power and ground source heat pumps) should be encouraged in appropriate locations.

There may be pressure for the development of wind power in the Chilterns in the future, and full account should be taken of the potential impacts on the landscape, including the setting of the AONB. Other renewable energy forms that may be developed include solar (hot water and photovoltaics), small-scale hydro schemes and waste from woodland management and timber production. Solar power and ground source heat pumps are more likely to be installed at the domestic-scale and there may be some supply from community based hydro-electric schemes. The use of locally sourced woodfuel from existing woodland could support both domestic-scale and community-based combined heat and power schemes. Encouragement will be given for many of the renewable energy technologies in appropriate locations and in accordance with the Board's Position Statement on Renewable Energy⁸. However, particular care will be needed in order to ensure that the significance of heritage assets is not adversely affected.

D14 The special qualities of the Chilterns should be conserved and enhanced by reducing the noise and other detrimental impacts on tranquillity generated by the development and operation of transport networks and services and other infrastructure.

The tranquillity of the Chilterns AONB is one of the special qualities of the area that attracts many of the tens of thousands of visitors that come each year. This tranquillity is often ruined by the noise and activity associated with the development and operation of some of the numerous transport networks (road, rail and air principally) that run through, near or over the AONB. There are also other infrastructure networks (electricity generation and distribution for example) that cut across the AONB.

Growth in air traffic is continuing and expansion plans for major airports would exacerbate this. Significant numbers of passengers arrive at airports by car and there will therefore need to be much greater provision of public transport in order to allow modal shift. Any proposals to alter flight paths in order to allow more aircraft to fly over the AONB will be strongly opposed and the Board will seek changes to take air traffic away from the AONB.

The detrimental impacts of the networks and other infrastructure can be reduced by various means which may include: using low-noise road surfacing; switching off street lights; providing suitable mitigation measures (appropriate planting or the undergrounding of overhead power lines and removal of poles or pylons for example), and giving greater consideration to the number, direction and height of flight paths associated with airports.

D15 A reduction in the number and frequency of night flights over the AONB and a reconsideration of night flight policies, particularly at Luton Airport, should be sought.

One of the greatest impacts on the tranquillity of the AONB arises from the number and frequency of flights over the area. Many of these occur during the night, though significant impacts also occur at the beginning and end of the night period when people are either trying to go to sleep or close to waking up. Most airports have strictly controlled night flight policies which seek to reduce such impacts on people living close to an airport or below flight paths. However, Luton Airport does not currently have such policies in place and changes will therefore be sought.

⁸ See www.chilternsaonb.org/position-statements

D16 The environmental impacts on the Chilterns (including those arising from through traffic) of quarrying and the operation of landfill sites and other waste management facilities within and adjacent to the AONB should be minimised.

There are few active chalk quarries left within or near the AONB and any landfill operations associated with redundant workings will need to be very closely monitored and managed. Workings for aggregates are generally nearby rather than within the Chilterns AONB. However, deposits in the Thames Valley are known to extend into the AONB. Development pressures will maintain demand for aggregates. The Board will resist proposals for quarrying within the AONB due to the damaging impacts of both extraction and the through traffic associated with transportation.

Of equal concern are the impacts that might arise from the development and operation of other waste management facilities such as energy from waste plants, household waste recycling sites and anaerobic digestion plants.

D17 Whilst conserving and enhancing their biodiversity, geological and archaeological features, the restoration and management of redundant quarries, and their assimilation back into the landscape, should be promoted.

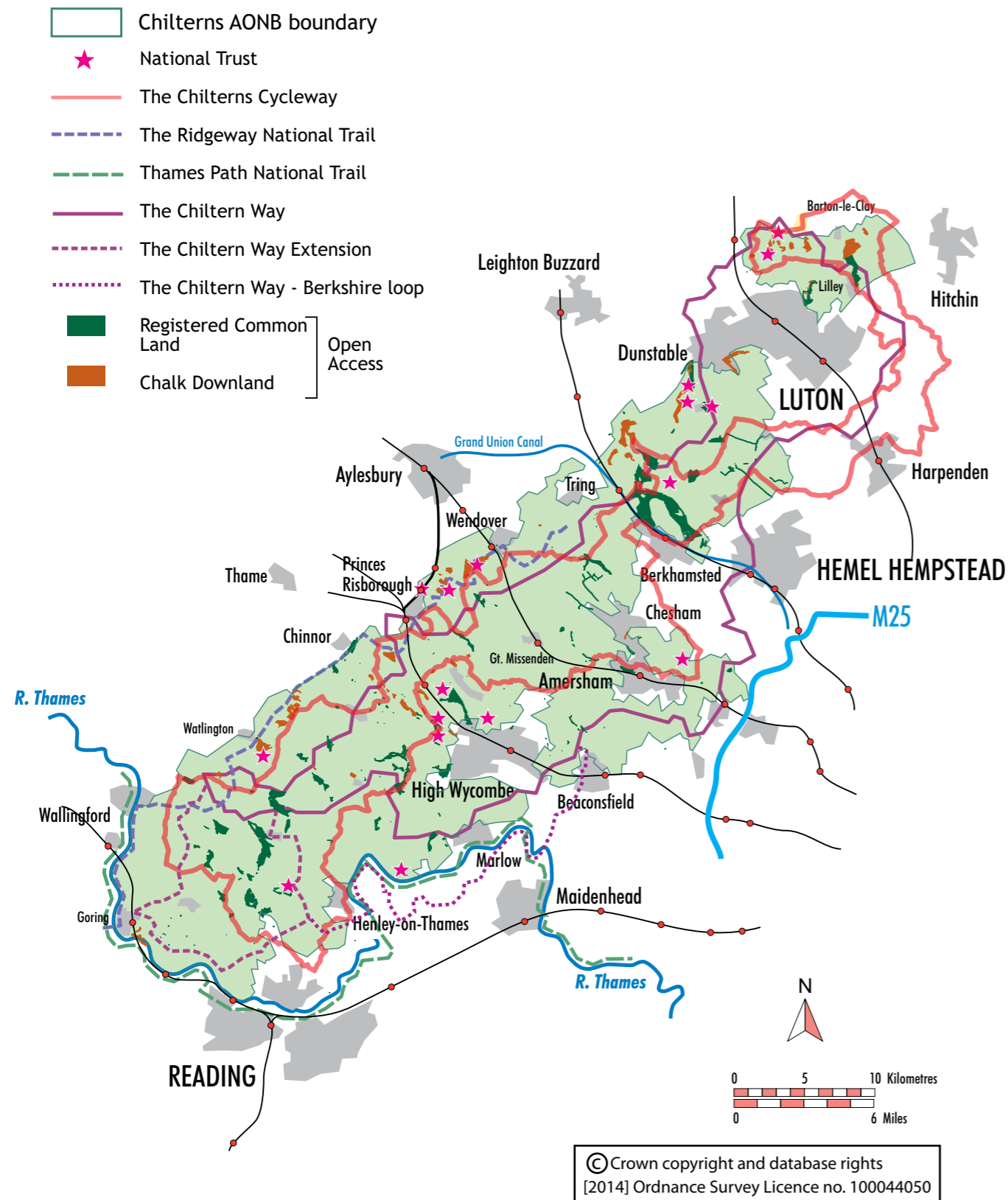
Large chalk quarries had a dramatic impact on the landscape, although only Kensworth in Central Bedfordshire is still active. Any restoration and management plans should ensure that any environmental qualities (including geological or archaeological remains) are maintained, protected and interpreted. In such cases landfill proposals are unlikely to be appropriate. Should landfilling take place in the future in smaller sites, only inert waste should be used and restoration of the site back into the landscape should be achieved using appropriate contouring whilst encouraging biodiversity.

Some quarries may be suitable for the development of both passive and active recreational facilities in conjunction with low-key associated infrastructure (informal car parks, picnic areas and nature trails for example). The development of wildlife habitats, where natural re-vegetation has occurred or wet areas remain, will be encouraged.

D18 The reduction of waste should be promoted by supporting policies which result in re-use, reduction and recycling of waste materials.

In the future there is going to be a greater focus upon 'sustainable waste management'. This will involve moving away from the landfilling of waste. Other methods of waste management may result in demand for sites for waste reduction, waste transfer or energy from waste plants which are likely to prove difficult to accommodate in the AONB. It will be important to ensure that any waste facilities are sensitively sited and located to avoid detrimental impacts on the landscape or settlement character and to avoid disturbance to local amenity.

Recreation and access



Section 2

Understanding and enjoyment

Introduction



Cyclists in Turville

1. There are 55 million leisure visits to the Chilterns every year, making this one of the most popular protected landscapes in the world. Despite the popularity of the honeypot sites it is still easy to find isolation and peace and quiet.
2. The Chilterns' countryside is highly valued for the wide variety of recreational opportunities it offers, everything from walking, cycling and horse riding to gliding, canoeing and bird watching. Above all it is a landscape ideal for walking and informal recreation, with an extensive rights of way network, two National Trails and dozens of sites with open access. 44% of leisure visitors to the Chilterns said that walking was the main purpose of their trip¹.
3. One of the primary functions of the Chilterns Conservation Board is to 'increase the understanding and enjoyment by the public of the special qualities of the area of outstanding natural beauty'. This has the potential to increase respect for, and environmental awareness of, the countryside thereby encouraging people to care for and protect it.

¹ 2007 Chilterns Leisure Visitor Survey

4. The Chilterns countryside should be available for all to enjoy, which means making it accessible to those with limited mobility and ensuring that facilities and information are accessible and relevant to people at different life stages; there should be something for everyone.
5. The countryside and green spaces within settlements offer opportunities for fresh air and exercise, with benefits for physical and mental well-being. The proximity of accessible countryside to all the towns, small and large, on the AONB boundary, and London, means these opportunities are open to urban as well as rural communities.

Broad Aims

- High quality and enjoyable recreation and access opportunities should be available to all.
- Good health and a sense of well-being should be encouraged by promoting activities based on the sustainable enjoyment of the countryside.
- Every resident and visitor should be aware of, and enjoy responsibly, the Chilterns' special qualities.
- More people are interested in and involved with countryside activities and stewardship.

Special Qualities

1. The Chilterns is one of the largest and most popular rural areas for informal recreation in the UK. An estimated 55 million leisure visits are made to the Chilterns annually, with a high proportion of local users.
2. It is a landscape attractive to both local visitors and those from London and surrounding towns because of its accessibility. The Chilterns is served by four rail routes and the London Underground. Visitors are seeking peace

and quiet as part of their visit. Whilst by no means a wilderness the Chilterns does offer relative tranquillity compared to surrounding towns and cities.

3. It has a broad-ranging appeal based on its varied and intimate landscape of beech woodlands, chalk hills, common land, picturesque villages, country houses and parks and gardens. It is also an historic landscape, with hill forts, ancient barrows, medieval churches, and a strong cultural heritage.
4. There is an extensive and well-maintained public rights of way network in the Chilterns (over 2,000km), a wide range of promoted routes, two national trails passing through the area (the Ridgeway and the Thames Path) and some notable regional routes such as the Chiltern Way and the Chilterns Cycleway. There are also many rural lanes suitable for cycling, horse-riding and walking.
5. There are 2,883 ha of Open Access land available for informal recreation (889 ha of chalk downland and 1,994 ha of common land) in addition to the large areas opened to the public by bodies such as the National Trust, Forestry Commission, wildlife trusts and local authorities. There is a particular assemblage of these sites along the ridge of the escarpment on sites of exceptional quality with magnificent views. Much of the common land is in close proximity to towns and villages, making it particularly useful for local recreation and educational purposes.
6. There is a wide variety of sites managed specifically to encourage the public to visit, ranging from small picnic sites to large estates owned by the National Trust and Forestry Commission. Many sites are quiet tucked-away places with no facilities at all but others have car parks, toilets, visitor centres and a year-round programme of events.
7. The range of opportunities for outdoor recreation is extensive. Although walking and cycling are the most popular activities, there are plenty of

opportunities for alternative pursuits such as canoeing, gliding, orienteering, canal and river cruising.

8. There are a large number of organisations involved with managing recreation in the Chilterns. This means that there are plenty of events which appeal to a wide audience. Increasingly this is a year-round programme often with events held during the week as well as weekends.

Key Issues

1. Most of the popular countryside sites in the Chilterns are on environmentally-sensitive sites, especially chalk grassland where there is a need to balance recreation and conservation. Certain sites experience intense recreational pressure and careful visitor management is required to prevent their degradation. Where such conflicts arise, the Board gives primary importance to conserving the environmental quality of the resource over its use for recreation. The creation of buffer areas and other methods of alleviating pressure at sensitive sites should be considered.
2. Sensitive management and guidance is required to ensure visitors behave responsibly and are aware of the need to protect the countryside they enjoy. This means working with partners to agree the key messages, on-going communication with user groups, promoting codes of conduct and through face-to-face communications by rangers or volunteers on the ground.
3. The last few years has seen a sharp increase in cycling, especially on-road cycling, in the Chilterns. There has also been an increase in organised cycling events, some of them on a large scale. Whilst the majority of cyclists and cycle events do not cause problems and provide a wonderful way to enjoy the Chilterns, conflicts with other users are becoming more widespread. There is a need to work with cycle groups and event organisers to promote a code of conduct and make cyclists more aware of the need to respect other users.

4. The rising traffic levels pose challenges for the Chilterns, in particular honeypot sites, with issues such as overflow parking and congestion. The 2007 Chilterns Visitor Survey showed that a third of visitors to the most popular countryside sites had travelled less than 5 miles, yet 94% of visitors came by car. There is clearly scope to encourage more people to walk from home or use public transport.

5. There are gaps in the rights of way network, particularly bridleways, forcing horse-riders, cyclists and walkers on to often busy roads. With the increase in volume and speed of traffic, roads which were once commonly used as link routes to public rights of way are no longer considered safe by many users.

6. Not all communities have access to green spaces close to where they live, with barriers such as roads or railways making it difficult to reach the surrounding countryside by foot or bike². Priority should be given to improving access for those communities with low green space provision. Plans for housing growth in and around the Chilterns need to include additional and accessible green spaces close to where the new homes will be built. It will not be appropriate to assume new residents can use existing, but sensitive and vulnerable, sites as the nearest green space.

7. Given the large number of visitors to the Chilterns, occasional conflicts between different users (e.g. mountain bikers and walkers/horse riders) are inevitable. Noisy activities such as trail biking and quad biking are a particular problem to users seeking peace and tranquillity. Problems are not widespread, but do occur, particularly on shared-use paths. The surfacing used on shared-use paths can cause problems, with different users requiring different types of surfacing. As ever a balance is required to ensure all users are catered for.

² An analysis of accessible natural greenspace provision in the South East 2007

8. New housing developments will exert additional pressure on the countryside, particularly at nearby honeypot sites. For example, the Ashridge Estate, Coombe Hill, College Lake, Tring Reservoirs, Wendover Woods, Dunstable Downs, Pegsdon Hills and Barton Hills will all receive additional visitors because of the nearby growth areas at Aylesbury, Dunstable and Luton.
9. Local authorities and organisations delivering countryside services and green spaces have faced funding cuts and reduced staff resources over the last few years which is exerting pressure on their ability to maintain and develop countryside access. There has been an increased amount of volunteer input to help fill the gaps but unless the funding situation changes, a deterioration in the quality of countryside access, green spaces and facilities is inevitable.
10. The Ridgeway and Thames Path National Trails have suffered from a lack of investment over the last few years due to funding cuts and a freeze on marketing and promotion of the Trails. It is hoped that the culmination of the National Trails review means a new way forward for the National Trails, starting with the development of a Trails Partnership and an increased emphasis on the development and marketing of the Trails for the future.
11. The provision of information and interpretation, in their many forms, is a vital means of increasing understanding and enjoyment of the Chilterns. It can help with the planning and visiting of sites in the Chilterns and should be present at key visitor points. The growth of smart-phone technology and QR codes will continue to provide new and exciting possibilities for presenting information and interpreting the Chilterns in imaginative ways. The growth of electronic media should supplement rather than replace face-to-face interpretation such as guided walks or events, which remain a popular and effective means of engaging visitors.



Walkers at Bison Hill near Whipsnade

12. Volunteers have become more important than ever to countryside organisations and there is a huge variety of opportunities for volunteering in the Chilterns. Volunteering encourages people to learn about and care for the Chilterns countryside. Although the engagement of volunteers requires investment, it can be especially valuable for under-resourced organisations.

13. The tranquillity of the Chilterns is under increasing threat from increased vehicular traffic, aircraft flying over and population growth in and around the area. Whilst localised noisy activities are a feature of larger settlements and along the urban fringe, increasingly traffic noise along busy roads and, in particular, over-flying aircraft of all types are reducing the places and times when peace and quiet can be found.
14. Several new tourism initiatives have sprung up in the Chilterns over the last few years, all aimed at increasing short breaks in the Chilterns: Our Land, Cycle Chilterns and Walkers are Welcome. The Chilterns Tourism Network has been established, a Chilterns tourism website has been developed and 'Choose the Chilterns' branding established. These resources provide a platform for other sustainable tourism initiatives and the economic benefits that these can bring to Chilterns businesses.

Policies

UE1 The management of countryside suitable for recreation should be promoted and supported whilst conserving its environmental quality.

The Conservation Board will continue to work with local authorities, the National Trust, Natural England, community groups, landowners and the many other organisations managing the Chilterns countryside to ensure that recreational opportunities are maintained and promoted. The maintenance, waymarking and promotion of the rights of way network remain a priority. Access must be managed appropriately, taking into account sensitive species and habitats so that the environmental quality of countryside sites is maintained.

UE2 There should be a co-ordinated approach to the delivery of countryside access and services across the Chilterns.

The AONB straddles many local authority boundaries, but there is no unified countryside service. The Conservation Board has an important role to play in bringing together the many different partners on joint projects, co-ordinating access initiatives and encouraging consistency in standards of information and interpretation provision (for example maintaining the successful Chilterns Country brand) and in the quality of countryside services and facilities.

UE3 The use of public rights of way should be promoted and routes improved by covering gaps in the network.

The public rights of way network provides the basic resources for the large numbers of visits to the Chilterns' countryside. They are generally well maintained and waymarked. However there are gaps in the network, particularly the bridleway network which is fragmented, forcing users onto busy roads. This is a particular problem for horse-riders. The challenge is to link up bridleways where gaps exist, preferably by creating new rights of way.

Initiatives such as the Bucks Green Infrastructure Delivery Plan can play an important role in improving the connectivity and accessibility of the rights of way network, and should be strongly supported.

UE4 People should be encouraged to make the most of the countryside on their doorstep.

Research indicates that the average car journey is less than two miles. People should be encouraged to make more use of the countryside close to where they live rather than driving to sites further afield. The CCB will continue to promote the 'Countryside Close to Home' concept, linking in with initiatives such as Cycle Chilterns which encourages people to walk or cycle rather than drive a short distance and to improve cycle links to/from gateway towns in the Chilterns.

UE5 Access links between town and country for walkers, cyclists and other recreational users should be strengthened.

The rights of way network potentially offers many people an opportunity to walk, cycle or ride from their homes to the countryside (or from their village into town). There are many large settlements both within and immediately adjacent to the AONB and the challenge is to create new links where there are gaps and to improve the quality of routes linking town and country. The development of new housing in the Chilterns and associated green infrastructure initiatives offer opportunities to design important new access links.

UE6 Understanding and appreciation of the area's special qualities should be promoted.

Work with partners to provide high quality information and interpretation. This can be done in many different ways, from on-line information and leaflets, to information boards, guided walks and events, use of QR codes and the latest technologies.

UE7 Countryside users should be encouraged to behave responsibly.

The Chilterns is one of the most heavily-visited protected landscapes in the UK, receiving millions of visitors every year. Every opportunity should be taken to make people aware that the Chilterns is a protected landscape and at the same time a working landscape which requires careful management; there is a need to give people an appreciation of what makes it special and why it needs protection.

Sometimes there are conflicts between recreation and conservation/land management or between different types of users, particularly at the most heavily visited countryside sites and honey pot areas. Visitors need to be made aware of their rights and responsibilities when visiting the countryside and the need

to respect other users. Particular effort needs to be directed to the management of dogs in the countryside and to managing the increase in cyclists and cycling events. This requires not only wider communication and education but also countryside staff on the ground undertaking face-to-face engagement with visitors.

UE8 The accessibility of the countryside for all users should be enhanced and, in particular, special needs should be addressed, whilst taking care to conserve environmental character.

The provision of high quality access opportunities and facilities remains a priority. The last few years has seen the removal of hundreds of stiles in the Chilterns and the development of new and improved wheelchair-accessible trails at several countryside sites, creating much more accessible countryside for those with restricted mobility. The Conservation Board will work with partners to ensure this area of work continues as it has potential to benefit such a large sector of the population.

In addition to improving physical access, efforts should also be focused on improving the quality and accessibility of information, the waymarking of rights of way and promoted routes, and encouraging participation through events and guided walks.

UE9 The quality of welcome given to visitors, including the development of new facilities and services where appropriate, should be enhanced.

For many people the provision of visitor facilities such as car parking, toilets, information and waymarked trails is integral to their visit. The last few years have seen considerable improvements at the formal countryside sites, however, in parts of the Chilterns provision is relatively sparse. The Board should promote investment in access and recreation facilities on appropriate sites to improve the quality of visitor experience.

UE10 Visits to the AONB should be made using environmentally sensitive modes of transport and new provision should be encouraged.

Most visitors to the Chilterns arrive by car: visitor surveys at key countryside sites show that over 90% of visitors to the popular countryside sites arrive by car. Visitors should be encouraged to use public transport, and once in the Chilterns, opportunities to explore the area by foot or bike should be promoted. Initiatives such as Cycle Chilterns will improve facilities at railway stations and gateway towns, including the provision of bike hire, bike racks, information boards, leaflets and signage. Walkers are Welcome and Cyclists are Welcome should also be encouraged. New housing and infrastructure developments in the Chilterns also provide the opportunity to seek private developer funding to improve sustainable transport provision, for example new cycle lanes.

Walks and rides from railway stations should be further developed and promoted through initiatives such as Cycle Chilterns and Our Land, capitalising on the excellent rail links which can bring urban visitors directly into the Chilterns countryside.

UE11 Effective management of the highways network should be encouraged, to promote its safer use for walking, cycling and horse riding.

The Chilterns has a large network of quiet lanes which are ideal for walking, cycling and riding. However, many of the busier highways have become less safe for users, due to the increase in volume and speed of vehicular traffic. Highways should be managed to encourage their use for recreational activities, particularly those which have public rights of way along them or are included in promoted routes. This may include the introduction of traffic calming measures, providing safe crossing points and introducing speed restrictions (as done on the Ashridge Estate). In some cases there may be opportunities to make more of road

verges for walkers. On very busy roads, the creation of separate routes for cyclists / riders is the ideal to be encouraged wherever possible.

UE12 The health and other benefits of visiting the countryside and taking part in low impact activities should be promoted.

Inactivity is now recognised as a serious health issue, with increasing levels of obesity, particularly among young people. The countryside offers opportunities for fresh air and exercise, with benefits to peoples' physical and mental well-being. National initiatives have led to a large number of successful healthy walking schemes in the Chilterns, where it is now firmly established. The health benefits of visiting the countryside and the opportunities to participate in healthy walking schemes should be actively promoted by the Board. The Board should also promote the full range of new and niche activities which will appeal to different audiences, such as geocaching, play trails, Nordic walking and other outdoor activities.

UE13 The economic contribution of all types of visitor to the local economy should be enhanced.

Recreation and tourism have the potential to make a substantial contribution to the local economy. The Chilterns is predominantly a day visitor destination but there is scope to develop and promote the short break market which will contribute far more to the local economy. The Chilterns does not have a unified tourism service, however the Chilterns Tourism Network has a key role to play in bringing together tourism businesses and stakeholders. It should be supported in its efforts to promote the Chilterns as a visitor destination and generate more overnight stays, for example through the Visit Chilterns website, 'Choose the Chilterns' branding and other marketing activities.

A number of sustainable tourism itineraries have been developed in the

Chilterns and these should continue to be promoted, for example short breaks based on the Chilterns Cycleway.

UE14 Learning and volunteering opportunities which will develop an understanding of, and caring for, the environment should be encouraged and promoted.

The Chilterns countryside offers people the opportunity to learn through formal education programmes, and informally, thus enhancing both their enjoyment of, and desire to help conserve, its natural beauty. There are numerous opportunities to get involved through volunteering, the Board should promote these and encourage participation in wider learning activities including talks, guided walks, workshops and training events.

UE15 The use of the River Thames corridor and Grand Union Canal for quiet leisure activities, which are consistent with maintenance of environmental character, should be promoted.

The Chilterns waterways are much loved and provide numerous possibilities for quiet leisure activities and water-based activities such as boating and canoeing. Access improvements have been made to many stretches of the River Thames and Grand Union Canal towpaths to make them more accessible to all, but there is still scope to improve access for all; this should be a priority near urban areas. The availability and quality of visitor facilities, waymarking and interpretation is integral to many people's enjoyment and understanding of the waterways and the Board must work with its partners to support this, for example the Canal & River Trust which provides advice to guide developments on canals. The use of the Thames for leisure boating has been in decline for some years and provides potential for growth.

UE16 A regional network of walking routes based on the Ridgeway and Thames Path National Trails and other high quality promoted routes such as the Chiltern Way should be promoted.

The National Trails in the Chilterns provide a spine, linking in with other rights of way and promoted routes to offer numerous opportunities for walking loops. The Board needs to work with partners to ensure routes, signage, interpretation and visitor facilities are maintained to a high standard and that they provide a high quality visitor experience. There needs to be investment in new technologies to draw in broader and younger audiences, for example developing apps, using QR codes on way marker posts and leaflets, making the web site more interactive and enabling users to download route maps onto their smart phones and other mobile devices.

UE17 The use of the Chilterns Cycleway and other cycle routes as part of a regional network should be promoted.

The Chilterns Cycleway links up market towns, attractions and connecting cycle routes across the Chilterns. It provides numerous opportunities for day rides and longer routes and can be used to encourage greater cycle use amongst residents as well as visitors. The Chilterns Cycleway should capitalise on projects such as 'Cycle Chilterns' which will provide better cycle facilities at gateway towns, wider availability of bike hire (including electric bike) and programmes of led rides.

UE18 Tranquillity should be conserved by resisting noisy/damaging activities. A reduction in the level of noise and other forms of pollution caused by development and transport infrastructure should be sought.

Getting out into the country for many people means a search for peace and quiet, a chance to get away from it all for a short while. Occasionally the peace is disturbed by a noisy activity such as quad biking, although the main source of noise pollution is from traffic and, increasingly, aircraft. The Board should work with partners to resist activities which threaten tranquillity, or to minimise their impacts.

UE19 The planning process should protect and enhance the public rights of way and access networks for walkers, cyclists and horse-riders.

There are many development pressures in the Chilterns, some which threaten the accessibility of the rights of way network, in particular new housing and transport infrastructure. It is essential that the connectivity, character and setting of the rights of way network is maintained. In addition to protecting this resource, the planning process can also lever in funding to enhance and upgrade rights of way. For example new housing developments can provide the opportunity to develop new walking and cycling routes through developer funding such as the Community Infrastructure Levy and can lead to better links between town and country and improvements in the accessibility of the network.

UE20 Young people's exploration and understanding of habitats and species in the Chilterns should be facilitated.

Children are naturally inquisitive about the world around them and this should be nurtured to encourage greater exploration and understanding of the Chilterns countryside; if this interest is developed early in life, people are more likely to continue exploring and valuing the Chilterns in the future. This could be done through formal educational activities (such as schools or youth groups) or informally through provision of relevant facilities (natural play areas, play trails) and activities such as orienteering, bushcraft, den-building, geo-caching, as well as participation in initiatives such as Open Farm Sunday. The main countryside sites have done a great deal over the last few years to attract young people, the challenge will be to broaden this to other locations and wider audiences.



*Horse rider
Berkhamsted Common*

Section 3

Social and economic well-being

Introduction



*A wine bar and deli
in Wendover*

1. 80,000 people live within the Chilterns AONB and over 1 million people live close to its boundary, in major towns like High Wycombe, Luton and Reading. Looking wider, approximately 10 million people live within an hour's travelling time of the AONB. It is no surprise that the Chilterns is hugely popular as a place for recreation, with 55 million leisure visits every year. The impact of people, in the past and today, as they live, work and move around, is fundamental to the character of the Chilterns' landscapes.
2. The Chilterns Conservation Board has a statutory duty to foster the social and economic well-being of local communities when pursuing its primary aim of conserving natural beauty. This management plan reflects that, and also recognises that much of the natural beauty of the Chilterns has been created through people's economic and leisure activities, and that in turn those activities have often been stimulated by the environmental assets of the area.
3. Economic and social activities must be environmentally sustainable to create and maintain 'natural' beauty over the long-term. Economic activities such as planting and managing woodlands to produce timber and grazing livestock on the hills have made a profound contribution to the character of the Chilterns. However, if markets decline, as they have done for local timber, meat and wool, the activity decreases and the character of the area is at risk of being lost.
4. Tourism is a major part of the current rural economy of the Chilterns. Leisure visits to the area every year result in a total spend of over £400m. The vast majority of these visitors are seeking to enjoy the countryside, and to indulge in recreation best suited to a rural landscape, such as walking and cycling. The tourism industry both benefits from the Chilterns' natural beauty and has a vested interest in its conservation.

Broad Aims

- The natural beauty of the Chilterns is conserved as a result of sustainable social and economic activity.
- The local economy is based on environmentally sustainable principles.
- People make the link between social and economic well-being and a high quality environment.
- Local people are involved in caring for the local environment.
- The natural beauty of the Chilterns is recognised for the economic benefits it brings to the AONB and its surrounding areas.

Special Qualities

1. The Chilterns has a high quality natural and cultural environment which attracts a large number of leisure visits.
2. Local people benefit from a high quality of life which is partly dependent upon a high quality environment.
3. The accessibility of the countryside provides excellent opportunities for its enjoyment and for physical activity.
4. The close links between local communities and the environment provide opportunities for community-based activity and volunteering.
5. The natural and cultural environment provides a wealth of learning opportunities for all ages.
6. Many local people have valuable skills to help conserve and celebrate natural beauty, and are often willing to volunteer their services to help care for it.
7. The public transport network, especially the railways, is excellent and provides convenient car-free options to visit the countryside. The Chilterns is the only protected landscape accessible by

underground railway (The Metropolitan Line to Amersham and Chesham).

8. The Chilterns is a wealthy area whose local communities have the spending power to generate significant demand for local products and services, the production of which can contribute to sustaining a high quality environment. However, the Chilterns is surrounded by a mixture of smaller market towns which although not in the AONB are Chilterns towns. There are also a number of much larger urban settlements including Luton, Dunstable, Reading, High Wycombe and Hemel Hempstead which are very different in character with a broader mix of communities and pockets of significant economic and social disadvantage.

Key Issues

1. The management of the landscape needs a range of skills, which, until comparatively recently, were supplied by people living in local communities. That is no longer the case and many of the skilled workers needed are in short supply, for example foresters and flint workers.
2. The economic viability of farming and forestry has suffered in recent years, resulting in a relative lack of management of many valued landscape features. Downland and common land is under-grazed, hedge-laying is rare and many small woods are under-managed. Increasingly these features are no longer managed as part of day to day operations and their care depends upon considerate owners using funds earned elsewhere, public subsidy or the help of local volunteers.
3. Diversification of the rural economy has long been underway and for many small to medium sized farms is essential to remain viable. What is approved needs to be sympathetic to its immediate setting and wider landscape.

4. The growing interest in local produce in recent years reflects an increased awareness of where food and other products come from. Not only does this encourage environmentally-sustainable activity, although it does not guarantee it, it also helps support the management of features which contribute to the landscape. For example, demand for local lamb will help to maintain sheep grazing of chalk downland.
5. Much of the local tourism economy is based on visitors seeking a tranquil rural experience and countryside activities such as walking and cycling. There is generally a good balance between visitors and their environmental impact with relatively few examples of unsustainable activity. There is scope for a closer economic relationship between tourism spending and resources to manage the landscape they come to enjoy. An ongoing issue is to ensure that the tranquillity, which is important to local residents and an attraction to visitors, is not spoiled by noisy activities, road traffic and overflying aircraft.
6. Increasingly the management of the environment is dependent upon local people volunteering their services. The work of the Chiltern Society, National Trust, Green Gyms and Wildlife Trusts are good examples of what can be achieved by many thousands of hours of effort by, often experienced and highly skilled, volunteers. Such organisations are now stepping in to take on the management of some sites that used to be in the care of local authorities. This volunteer effort helps to strengthen the link between local communities and their environment.
7. It is now well-proven that physical and mental well-being improves when taking outdoor exercise in the countryside. Nearly all communities in and around the Chilterns enjoy good access to the countryside and many are close to places which are managed to encourage physical activity with way-marked routes, fitness trails, cycle routes and even organised walks and other health programmes.

8. Fast broadband connections are essential to many rural businesses and to those who prefer to work from home rather than commute. High speed rural broadband supports the economic activity of existing businesses and encourages new ones to be established. It can also reduce traffic levels on the roads by enabling people to work from home. At present there is great variability in speeds, depending on location, with some communities suffering very slow connections.

Policies

SE1 The provision and use of public transport by people who live and work in the Chilterns and who visit it should be promoted.

There are many benefits to encouraging local people and visitors to use public transport to travel to, and around, the Chilterns. They include making rural roads safer for other users, such as walkers and cyclists, and helping to combat the cause of climate change by reducing the emission of greenhouse gases.

SE2 Rural diversification which adds value to local products and services which contribute to natural beauty should be supported.

Economic activity which contributes to the conservation and enhancement of the environment should be encouraged, especially those products and activities which helped to create and promote the special qualities of the landscape. The way these products are created also needs to be environmentally sustainable.

SE3 The use of products which contribute to the natural beauty of the AONB should be promoted.

The spending power of the public, public bodies and local businesses can help boost the demand for local products produced in an environmentally-sustainable way. This helps support the rural economy and helps maintain the natural beauty of the Chilterns.

SE4 The sustainable development of the local tourist economy should be promoted, to increase the economic impact of visitors, and their understanding of the Chilterns.

Over 55 million leisure visits are made to the Chilterns each year, with an estimated value of over £460m. However, the per capita spend per trip is low and there is considerable unrealised potential to attract more staying visitors who spend considerably more per visit. There is a strong desire amongst local tourism businesses to raise the profile of the Chilterns as a destination through marketing its special qualities and attractions.

SE5 The special distinctiveness of market towns and villages should be promoted, to help develop their visitor appeal.

The towns and villages of the Chilterns have a distinctive charm and character of their own which contributes considerably to their attractiveness to visitors and the media. Many films and well known TV programmes, such as *Midsomer Murders*, are based in the Chilterns.

SE6 The role of villages and market towns as centres in the rural economy should be promoted.

The role of market towns as vibrant centres of the rural economy is being promoted, by organisations as diverse as groups of local traders and parish councils to larger local authorities and tourism networks, to help retain those economic functions and to strengthen community identity and spirit.

Boats on the Thames at Henley



SE7 The health and well-being benefits of enjoying the countryside and through volunteering should be promoted.

Although people are living longer, obesity and other illnesses related to lack of exercise are on the increase. The population of the Chilterns has almost unrivalled easy access to countryside close to where they live. This is largely based on an excellent public rights of way network and the large number of sites with open access, promoted for public use. Many studies have shown the benefits to physical and mental well-being of spending time in a natural environment and taking exercise. Health Walks programmes have become very popular as a way of preventing ill-health. There are also many opportunities for physical voluntary work, such as provided by the Green Gyms and bodies including the Chiltern Society and the National Trust.

SE8 The provision of training in traditional and modern rural skills should be supported.

Skills such as hedge-laying are no longer wide-spread but still have an important role in maintaining the health of local habitats and the character of the AONB. It is very important that a reservoir of rural skills is maintained and expanded.

SE9 The impact of major development and infrastructure schemes on the economy and social well-being of local communities should be minimised.

Economic activity and the quality of life of local residents can be severely disrupted by major development projects, as they are built and then when they are operating. Impacts on local roads, on the tourism industry and other local businesses and on people's ability to carry out their daily lives all have serious consequences for the economic and social well-being of affected communities. If development schemes are approved these impacts must be accounted for and avoided or minimised as much as possible, for example, by including high quality green infrastructure in the scheme.

SE10 The provision of high speed broadband in the AONB should be encouraged.

High speed broadband brings economic and environmental benefits to rural communities.

SE11 Local Enterprise Partnerships should be encouraged to support activities that enhance the natural beauty of the AONB.

Local Enterprise Partnerships are encouraging economic recovery and growth in their areas by supporting businesses and providing skills training.

Children at Swyncombe Downs



Section 4

Integration of cross-cutting themes with Management Plan policies



1. A number of important themes which will have a significant influence on the management of the AONB over the next five years cut across all the chapters of the Plan. They are:
 - Climate change
 - Social inclusion
 - Health and well-being
 - Lifelong learning
 - Ecosystem services
 - Environmental sustainability
2. The wealth of natural and cultural resources available in the Chilterns offers great potential to address these issues and this is reflected in the policies that have been formulated for this Plan. This table shows which policies address each of the cross-cutting themes.

Canal festival at Tring

Chapters	Cross-cutting themes					
	Climate change	Social inclusion	Health and well-being	Lifelong learning	Ecosystem services	Environmental sustainability
Landscape	L11 L13	L2 L3	L3 L8	L2 L15	L8 L9	L11
Farming, forestry and other land management	FF3	FF14	FF11	FF1 FF5 FF11 FF14	FF2 FF3 FF4 FF6 FF8 FF13 FF15	FF2 FF3 FF4 FF5 FF6 FF8 FF13 FF15
Biodiversity	B11	B6	B6	B1 B5 B6	B2 B3 B4 B7 B8 B9 B10 B13	B11 B13
Water environment	WE12	WE13 WE14	WE13 WE14	WE2 WE12	WE1 WE4 WE6 WE7 WE8 WE9 WE10 WE11	WE1 WE2 WE3 WE5 WE8
Historic environment	HE2	HE6 HE8 HE9	HE6 HE8	HE4 HE6 HE7 HE8 HE9 HE10		HE4 HE5
Development	D2 D12 D13	D5 D6 D7	D8 D14 D15 D16 D17		D8 D14 D17	D2 D3 D4 D8 D12 D13 D18
Understanding and enjoyment	UE10	UE5 UE7 UE8 UE9 UE14 UE20	UE1 UE3 UE4 UE8 UE12 UE15 UE16 UE18	UE6 UE7 UE12 UE14 UE20		UE4 UE10 UE13
Social and economic well-being	SE1	SE10	SE7	SE8		SE2 SE3

Section 5

Engagement Plan



View from Sharpenhoe Clappers, Beds

The Chilterns Area of Outstanding Natural Beauty (AONB) Management Plan 2014 - 2019 has a number of closely interrelated functions.

It is the statutory plan which sets out the Chilterns Conservation Board's policies for the management of the Chilterns AONB and for the carrying out of its functions in relation to it. The actions the Board itself will take to deliver the Plan's objectives are set out in the Board's annual business plan.

The Management Plan informs public bodies of the means by which they can demonstrate compliance with their statutory duty to 'have regard to' the purpose of designation of the AONB when undertaking their functions.

It also guides the engagement of public bodies, landowners, businesses and individuals in the management of the AONB. It includes information regarding available and potential delivery mechanisms. The actions the Board would encourage others to take individually or in partnership with others, including the Board, to deliver the Plan, are set out in this Engagement Plan.

Whilst not all suggested actions may currently be possible, the Board considers that taking them would:

- better deliver the purpose of designation of the AONB;
- assist the Board in delivering its own purposes; and
- deliver the objectives of this Management Plan.

	Landscape actions
1.	Should the AONB boundary be reviewed, consider the case for inclusion of suitable landscape character areas adjacent to the AONB.
2.	Promote and support green infrastructure planning for new areas of development and to better link existing settlements with surrounding countryside.
3.	Undertake a five yearly survey of public perception and views on changes in the landscape.
4.	Publish good practice guidance for land managers, and target new owners of land and those involved in equestrianism and other non-traditional uses of land.
5.	Assess planning applications and development proposals for their impact on the landscape.
6.	Promote the Chilterns Buildings Design Guide and other relevant guidance to ensure all new development respects and enhances the landscape.
7.	Support provision of training in the skills needed by land managers to conserve and enhance the landscape.
8.	Support initiatives which help local people and visitors understand and enjoy the landscape.
9.	Develop a better understanding of the likely impacts of climate change on the landscape and support mitigating and adaptive action.
10.	Campaign actively to prevent fragmentation of the countryside (e.g. by division into small plots) where this results in unacceptable impacts on the landscape and other forms of natural beauty.
11.	Promote targeting and uptake of environmental stewardship schemes generally and actively lobby for provision of options most appropriate to the AONB.
12.	Support management of trees, woodlands, chalk grassland, commons, hedges, chalk streams and other characteristic landscape features.
13.	Develop a strategy and work programme to conserve and enhance the River Thames and its landscape corridor.
14.	Encourage the use of the Chilterns Historic Landscape Characterisation.
15.	Develop a programme to raise awareness of hill forts and a site management programme.

	Farming, forestry and other land management actions
1.	Organise regular fora on farming and forestry issues.
2.	Provide advice and training for both land managers and contractors that encourage sustainable land management. This will include both traditional skills, such as hedge laying, and modern resource efficient techniques, such as precision farming - where agricultural operations and inputs (fertilisers and pesticides) are carefully matched to crop requirements.
3.	Provide advice and training to promote sustainable management of woodlands, production and marketing of timber and other woodland products.

4.	Use European funding programmes to develop appropriate infrastructure that supports traditional land management practices, for example processing and marketing of local farm produce and woodland products (particularly wood fuel).
5.	Publish guidance and provide training on the survey, identification and conservation of archaeology in woodland for owners, land managers and the wider public.
6.	Publish regular articles that promote the heritage value of special trees and woods within the Chilterns and their continued care.
7.	Survey and identify remaining areas of box woodland and support projects to conserve and extend these areas.
8.	Disseminate knowledge and promote best practise concerning current and developing plant and animal health issues.
9.	Provide advice and training on woodland planting and management that creates greater resilience to pests, diseases and weather extremes. This might include training on venison marketing as a means to support management of wild deer populations.
10.	Encourage landowners and managers to enter new agri-environment and woodland management schemes particularly where these contribute to landscape and biodiversity gain.
11.	Engage with landowners – in particular horse owners and equine businesses - to encourage good pasture and hedgerow management and use of infrastructure that complements the Chilterns landscape.
12.	Encourage farmers, landowners and communities to undertake appropriate management of landscape features and habitats, in particular chalk grassland, chalk streams, ponds, traditional orchards, ancient and semi natural woodlands and hedgerows. Survey existing hedgerow trees, support their management and planting of new hedgerow and in-field trees to help replace those lost through disease or old age.
13.	Develop new landscape scale initiatives which will engage with farm and woodland owners and others to deliver measurable biodiversity improvements across the AONB. Local Nature Partnerships have a particular role in identifying Nature Improvement Areas which aim to secure habitat improvements on a landscape scale.
14.	Undertake and publish a regular survey of land use and analysis of land use change.
15.	Engage with local planning authorities, farming communities and other land owners to support viable rural businesses and diversification which maintain landscape character and the sustainable use of traditional farm buildings.
16.	Support the Commons Network, landowners and community groups to secure practical management of commons and identify appropriate funding to support future management.
17.	Organise, support and coordinate activities which help local politicians, communities, new landowners and the wider public to better understand and appreciate the importance and value of farming and forestry.
18.	Work with landowners and user groups to develop sustainable, enjoyable and considerate leisure use of appropriate sites and recreational routes across the AONB.

	Biodiversity actions
1.	Review and agree provisional Biodiversity 2020 targets for the AONB with partners.
2.	Support the development of new and existing landscape scale initiatives including Biodiversity Opportunity Areas/Conservation Target Areas and Nature Improvement Areas, and prioritise habitat creation and restoration within these areas.
3.	Provide management advice and support for Local Site owners and managers, and raise awareness of their importance as part of wider ecological networks.
4.	Promote uptake of appropriate environmental management scheme options and appropriate management of farmland wildlife.
5.	Research the distribution of rare or notable early successional species for example associated with cultivated land, old quarries, chalk pits and trackways.
6.	Carry out practical management of habitats and features on commons e.g. veteran trees, ponds and grassland habitats.
7.	Deliver a wildlife conservation training programme for volunteers, local groups and land managers..
8.	Carry out a Chilterns biodiversity audit to extend understanding of the requirements for conservation of rare and notable species for which the Chilterns is important.
9.	Establish a Chilterns Ecology Group to support State of the Chilterns Environment reporting on the status of species for which the Chilterns is important. Increase involvement of research institutes.
10.	Monitor the spread of pests, diseases and invasive non-native species through updates to the annual State of the Chilterns Environment report. Provide advice and guidance to land managers and the public on appropriate control strategies and biosecurity measures.
11.	Provide advice and guidance on biodiversity in the built environment of the AONB, including appropriate species selection for planting schemes.
12.	Ensure that initiatives to promote access and regulation take account of habitat/species sensitivity to visitors and dogs.
13.	Ensure that Green Infrastructure plans emphasise the need for good quality well-managed habitat, including within and adjacent to developments.
14.	Develop a programme of awareness raising events, activities and publications to increase public awareness, understanding and involvement in wildlife conservation and recording in the Chilterns.
15.	Work with the Local Nature Partnerships to promote greater awareness and understanding of the ecosystems approach and the benefits that the natural environment of the Chilterns provides for people and the economy.
16.	Develop a Chilterns Historic Land Use study to influence current thinking and practice in habitat restoration.
17.	Promote awareness, management and restoration of infield and hedgerow trees, wood pasture, roadside verges and orchards.
18.	Identify sites requiring improved grazing management to secure nature conservation objectives and promote schemes which help to achieve this.
19.	Develop principles and guidance regarding the application of Biodiversity Offsetting in the AONB.

	Water environment actions
1.	Support the delivery of environmentally sustainable abstraction, through the Environment Agency's Restoring Sustainable Abstraction programme.
2.	Work with partners to promote and deliver measures to increase water efficiency and reduce water demand.
3.	Work with partners to improve the ecological status of Chilterns' water bodies through development of the catchment-based approach in the Chilterns. Work with partners to develop and deliver catchment management plans.
4.	Provide site-specific advice and support for management of the water environment, particularly targeting areas with priority species such as water voles.
5.	Work with partners to deliver improved water quality through catchment sensitive farming.
6.	Work with partners to identify and report pollution issues where they occur and raise public awareness through targeted pollution prevention schemes.
7.	Work with partners to raise public awareness of the impact of invasive non-native species, map their distribution and develop and implement strategies for their control.
8.	Work with partners to identify and implement river restoration schemes.
9.	Work with partners to build an evidence base for the statutory designation of chalk streams and identify and designate Local Wildlife Sites.
10.	Promote education and interpretation programmes to enhance understanding of chalk streams and to raise awareness of the need for greater water efficiency.
11.	Encourage the management of existing ponds – particularly those on farmland and commons - to enhance their biodiversity and support the creation of new ponds.
12.	Encourage and support the involvement of local communities in managing and improving the quality of their local water environment.
13.	Support measures to promote environmentally-sustainable recreation and tourism initiatives based on the water environment.
14.	Work with partners to maintain and promote riverside walks.
15.	Promote the aims and objectives of the Riverfly Monitoring Initiative and support the development of a Chilterns-wide network of riverfly monitoring groups.
16.	Collate existing data on ponds in the AONB and support further pond survey initiatives.
17.	Oppose proposals that reduce the environmental quality of the water environment and seek improvements through new development proposals.
18.	Encourage Local Planning Authorities to include a requirement for Sustainable Drainage systems with biodiversity benefits within the AONB in their Local Plan policies.

	Historic environment actions
1.	Develop an ongoing programme of practical advice and skills training to meet the management needs of heritage assets and the wider historic environment.
2.	Implement the Environmental Guidelines for the Management of Highways in the Chilterns, to help protect the historic character of highways and adjacent land.
3.	Identify and promote opportunities to improve the management of registered and non-registered parks and gardens.
4.	Undertake research and survey work to improve knowledge and understanding of the historic environment in particular: <ul style="list-style-type: none"> • farmsteads • hill forts and associated structures • holloways and ancient trackways.
5.	Promote the use of the Chilterns Historic Landscape Characterisation Project by: <ul style="list-style-type: none"> • Organising training workshops • Publishing web pages and advice note.
6.	Implement a programme to raise public awareness of the historic environment including provision of information, holding of events and improving physical access to suitable sites.
7.	Deliver a programme to develop visitor appeal based on the historic environment.
8.	Develop a special initiative to celebrate and perpetuate the Chilterns cherry (and apple) orchards.
9.	Develop a strategy and work programme to celebrate and conserve the historic Thames including ancient crossings, ferries and bridges.
10.	Develop a special initiative to celebrate the history of the Chilterns furniture and wood working industries and their relationship with woodlands and local villages.
11.	Develop a special initiative to commemorate the Chilterns' role during the Great War.
12.	Develop a special initiative to survey historic farmsteads.
13.	Develop a special initiative to record the influence of religion on the historic landscape of the Chilterns.
14.	Develop a special initiative to record the influence of transport and trading routes on the landscape and settlements of the Chilterns.
15.	Develop a special initiative to identify and promote the follies, monuments and memorials of the Chilterns.
16.	In the event of major developments or infrastructure schemes ensure there is a full programme to record, rescue, catalogue, archive and present all special historic and archaeological finds.

	Development actions
1.	Comment on significant planning applications which would affect natural beauty or its enjoyment, or which might foster economic and social well-being.
2.	Review and comment on all relevant development plans and policies which would affect the Chilterns.

3.	Promote the Chilterns Buildings Design Guide and Supplementary Technical Notes on Chilterns Building Materials (flint, brick and roofing materials) and review, as appropriate.
4.	Develop a monitoring system for the built environment to enable an assessment of changes in character.
5.	Produce position statements, in connection with certain forms of development, that seek to ensure that full account is taken of the need to conserve and enhance the natural beauty of the AONB.
6.	Seek the undergrounding of overhead powerlines wherever possible, and particularly in the Misbourne Valley and Risborough Gap.
7.	Support the local planning authorities in their efforts to bring about the provision and enhancement of green infrastructure in cases where development is within, or in close proximity to, the AONB.
8.	In conjunction with others publish and promote advice on how building design should reflect the need to adapt to climate change and how developments should demonstrate energy and water efficiency.
9.	Promote the use of the Environmental Guidelines for the Management of Highways in the Chilterns.
10.	Contribute to and promote studies undertaken to assess tranquillity in the AONB.
11.	Seek a reduction in noise pollution from all transport networks and services and infrastructure schemes.
12.	Encourage the use of low noise surfacing in connection with all new roads and any re-surfacing work.
13.	Encourage highway authorities to switch off street lights in appropriate circumstances.

	Understanding and enjoyment actions
1.	Support and promote 'Access for All' initiatives including Miles without Stiles, especially in locations where provision is poor. This includes both physical improvements and information. Design new accessible circular walks and promote their use.
2.	Promote investment in access and recreation facilities on appropriate sites to improve the quality of visitor experience.
3.	Promote investment in on-site interpretation including the use of QR codes and mobile technologies.
4.	Promote enjoyment of common land for recreation, access, healthy lifestyles and education.
5.	Identify and bridge gaps in the public rights of way network, especially the bridleway network and town/countryside links.
6.	Promote the Countryside Close to Home initiative to increase awareness of, and encourage use of, countryside on the doorstep as an alternative to driving to more distant locations.
7.	Promote and continue to develop the Chilterns Cycleway with a linked network of shorter routes, promoted day rides and short break itineraries.
8.	Actively promote the health and well-being benefits of visiting the countryside by encouraging participation in the health walks programme and other countryside activities.

9.	Facilitate and promote a programme of guided walks, rides and events with broad appeal.
10.	Promote the Ridgeway and Thames Path National Trails, the Chiltern Way and other promoted walking routes, including the Chilterns Country series, as part of a network of linked routes.
11.	Maintain and develop the Chilterns AONB website incorporating information on the Chilterns for all types of visitor and all types of visit.
12.	Provide a range of information to assist visitors to plan and enjoy their visits. This will include electronic information, leaflets, Apps, use of QR codes and information suitable for mobile devices.
13.	Provide information on the many opportunities for countryside access, including the rights of way network, open access land and countryside sites. Raise awareness of user rights and responsibilities by promoting the countryside code and promoting the need to respect other users through awareness campaigns.
14.	Promote the Electric Bike Network(s) in the Chilterns and support the spread of the network to suitable new locations.
15.	Undertake the 2017 Chilterns Leisure Visitor Survey.
16.	Deliver the Countryside Access Management Plans (previously known as Rights of Way Improvements Plans).
17.	Develop the Chilterns Tourism Network and promote the Visit Chilterns brand and Visit Chilterns website, with a focus on staying visitors and short break tourism.
18.	Support and promote tourism initiatives such as Our Land and Cycle Chilterns which aim to increase sustainable tourism in the Chilterns, with a special focus on walking and cycling short breaks.
19.	Promote the Chilterns market towns as gateways to the countryside, promote Walkers are Welcome and Cyclists Welcome.

	Social and economic well-being actions
1.	Provide support and advice to national and EU grant programmes enabling sensitive diversification of the rural economy.
2.	Actively promote local products which benefit the local environment.
3.	Promote the Chilterns as a visitor destination to local people and potential tourists from further afield, for example through the Chilterns Tourism Network and Our Land project.
4.	Assist local businesses to develop marketing and activities sensitive to the local environment.
5.	Publicise volunteering opportunities through an up-to-date volunteering directory, developed in conjunction with local partners.
6.	Promote health walks and Green Gyms and work with local Clinical Commissioning Groups and Strategic Health and Well-Being Boards to promote countryside activities.
7.	Organise and support training courses in rural skills.
8.	Seek mitigation of the negative impacts of major development on the economy and well-being of communities within the AONB and its setting.
9.	Publicise the importance of providing high speed broadband to rural communities.
10.	Have active involvement with local LEPs to influence their activities.

Section 6

Implementation and monitoring



Harvest near West Wycombe
(Bryan Edgley)

Implementation

1. This plan sets out an ambitious vision for the Chilterns which could be realised by the application of the policies proposed by the Chilterns Conservation Board and many others, especially those able to manage and influence land use change and development. Many actions are proposed and they too will require the direction of resources from many organisations, businesses and individuals as they are beyond the direct resources available to the Conservation Board.
2. The Board will contribute by directing its own resources including Board members, staff, expertise and funds. It will provide leadership in its role as a champion for the AONB. There are many others with skills and resources and the Board will endeavour to co-ordinate their activity and encourage collaboration.
3. The owners and managers of land and the communities of the Chilterns are the most important players in conserving and enhancing natural beauty. There is a long history of local people caring for the Chilterns who volunteer in large numbers often with organisations such as the Chiltern Society, the National Trust, local authorities and wildlife trusts. The Conservation Board is also fortunate to be able to call on many skilled and enthusiastic volunteers to help with its work and, in particular, to work with the public.

4. There are many other public bodies which aim to care for the environment, several of which have considerable resources and legal powers. The Board aims to work with them all and to seek their support for the aims of this Plan for the Chilterns. Many of these bodies are subject to the Countryside and Rights of Way Act 2000 Section 4 which states:
5. Grant schemes including Environment Stewardship managed by Natural England, the England Woodland Grant Scheme offered by the Forestry Commission and the LEADER programme for the Chilterns have in previous years provided considerable incentives for environmentally sensitive management. With these schemes under review as part of Common Agricultural Policy reform it is unclear exactly what form successor schemes will take, however the availability or otherwise of such grants is likely to have an important influence on future land management decisions. All three funds are supported by the Rural Development Programme for England (RDPE) which is provided with funding by the EU and UK government.
6. This Plan is specific to the Chilterns Area of Outstanding Natural Beauty. It is a requirement of the Countryside and Rights of Way Act 2000 that it is produced and published by the Conservation Board. There are many other plans which are a statutory responsibility on a wide range of organisations. It is important that they are consistent insofar as they also support the aims of this Plan. Such plans include Local Development Frameworks and Local Plans produced by local planning authorities, Local Transport Plans produced by highway authorities, Neighbourhood Development Plans produced by local communities and Sustainable Community Strategies produced by Local Strategic Partnerships.

General duty of public bodies etc:

85. -

(1) In exercising or performing any functions in relation to, or so as to affect, land in an area of outstanding natural beauty, a relevant authority shall have regard to the purpose of conserving and enhancing the natural beauty of the area of outstanding natural beauty.

(2) The following are relevant authorities for the purpose of this section-

- (a) any Minister of the Crown,
- (b) any public body,
- (c) any statutory undertaker,
- (d) any person holding public office.

(3) In subsection (2)-

“public body” includes -

(a) a county council, county borough council, district council, parish council or community council;

(b) a joint planning board within the meaning of section 2 of the Town and Country Planning Act 1990;

(c) a joint committee appointed under section 102(1)(b) of the Local Government Act 1972;

“public office” means -

- (a) an office under Her Majesty;
- (b) an office created or continued in existence by a public general Act; or
- (c) an office the remuneration in respect of which is paid out of money provided by Parliament.

Business Plan

7. The Conservation Board publishes an annual business plan with budget and work programme. All its activities are directed to delivering the aims of this Plan and to encouraging others to do so. The Board's operating costs are largely met from grant aid provided by Defra and the local authorities in which the AONB lies. The Board aims to attract additional funding for special projects,

many of which are outlined in this Plan as actions. There is considerable competition for funds from, for example, sponsors, the Lottery and the EU, and it is difficult to predict from one year to the next how successful those bids will be.

8. The Conservation Board realises fully the value of skilled and hard working volunteers and will be helping to develop the volunteering resource in the Chilterns. The value of this support is hard to estimate and often does not appear in financial statements but it is worth tens, even hundreds, of thousands of pounds every year.

Monitoring

9. The overriding aim of this plan and the Conservation Board is to conserve, and where possible enhance, the natural beauty of the Chilterns. It also aims to enhance the levels of understanding and enjoyment of its special qualities. Monitoring the effectiveness of the plan with its aims, policies and actions requires a baseline on the condition of the Chilterns against which progress can be monitored.
10. In the 2008 – 2013 Management Plan a commitment was made to develop a baseline on the condition of the Chilterns against which progress could be monitored. In 2009 the first State of the Chilterns Environment Report was published, providing baseline reporting across 20 condition monitoring indicators. Annual updates have been published ever since.
11. Ideally for each key attribute of the Chilterns an indicator would be identified and information gathered on a regular basis to enable its condition to be assessed. The reality is that some characteristics and features change in time and indicators should be reviewed to reflect this.
12. The State of the Chilterns Environment Report is produced using best available

data – in some cases drawing on national data sets such as agri-environment scheme data, in other cases based on local survey. That such a baseline has been produced is thanks to the co-operation and assistance of many organisations and individuals who have provided data and helped to interpret it. Inevitably the quality and quantity of data is variable, and financial constraints are having an impact with less funding available for monitoring in recent years.

13. Nonetheless, the State of the Environment reporting has produced a useful baseline which will prove increasingly meaningful as trends emerge.

Headline condition indicators for 2014-2019

The majority have been carried over from the previous plan; others are new because of changes in available data. Indicators used will be reviewed on an annual basis and will continue to be refined and adapted as appropriate.

Landscape and Biodiversity

1. Environmental Land Management Schemes – take up and coverage of current and future agri-environment and woodland grant scheme options
2. a) Sites of Special Scientific Interest – area in favourable condition
b) Priority habitat – extent, area in favourable condition and area of habitat creation / restoration
3. Local sites – percentage in positive conservation management
4. Commons – percentage in positive conservation management
5. Livestock numbers and numbers of conservation grazing herds/ flocks
6. Species – population trends for key species

7. Chalk streams –
a) Water Framework Directive status
b) River Fly monitoring trend data as an indicator of chalk stream quality.
8. Hedges – length in good condition using DEFRA condition criteria
9. Equestrian land use – area of land managed for equestrian purposes

Historic Environment

10. Listed buildings (Grade 1 / 11*) – total number/ number at risk
11. Registered Historic Parks and Gardens – total number/ number at risk
12. Scheduled Monuments – total number/ number at risk
13. Conservation Areas – total number/ number at risk

Social and Economic

14. Community facilities:
a) Loss of recognised community facilities e.g. pubs
b) Number of farm shops and farmers' markets
15. Number of members of Chilterns Tourism Network

Understanding and Enjoyment

16. Participation in health walks
17. Area of open access land
18. Visitor satisfaction on rights of way and use of the countryside

Development

19. Number of appropriately designed and sustainably constructed affordable rural needs houses provided
20. Length of overhead power lines put underground

Cricket at Greys Green near Henley (Clive Ormonde)



Abbreviations

AONB	Area of Outstanding Natural Beauty	HER	Historical Environment Record
BAP	Biodiversity Action Plan	HLS	Higher Level Stewardship
BMERC	Buckinghamshire and Milton Keynes Environmental Records Centre	LiDAR	Light Detection and Ranging
CAP	Common Agricultural Policy	LNR	Local Nature Reserve
CCB	Chilterns Conservation Board	LWS	Local Wildlife Site
CRoW	Countryside and Rights of Way Act 2000	NAAONB	National Association for AONBs
Defra	Department for Environment, Food and Rural Affairs	NATS	National Air Traffic Service
EGWS	English Woodland Grant Scheme	NNR	National Nature Reserve
ELS	Entry Level Stewardship	PAWS	Plantations on Ancient Woodland Sites
ESS	Environmental Stewardship Scheme	SAC	Special Area of Conservation
EU	European Union	SSSI	Site of Special Scientific Interest
GI	Green Infrastructure	WFD	Water Framework Directive

Glossary

Agricultural land classification

The method of grading agricultural land devised by MAFF (now Defra) to indicate the quality of farmland. Agricultural land is graded according to the degree to which its physical characteristics (particularly climate, relief and soil) impose long-term limitations on the agricultural use of the land. The best and most versatile land is classified Grades 1, 2 and 3a.

Agri-environment schemes

A range of schemes operated by Defra which are designed to encourage environmentally-friendly farming and public enjoyment of the countryside.

Biodiversity

Biodiversity means 'biological diversity' and includes the whole variety of life on earth in all its forms, or any part of it and its interaction.

Green Infrastructure

A network of multi-functional green space, urban and rural, which is capable of delivering a wide range of environmental and quality of life benefits for local communities.

Habitat

The place in which a particular animal lives, or the wider interaction of plants and animals that are found together.

Habitats Regulations Assessment

Habitats Regulations Assessment is required by the Birds and Habitats Directives of the European Union to assess the effects of a plan on a nature conservation site of European importance to enable a judgement to be made as to whether there will be an adverse effect on the site's integrity.

Local Transport Plans

These define five-year strategies for transport provision. County councils and unitary authorities prepare them for their areas.

Natural beauty

Natural beauty includes the landscape, flora and fauna, geological or physiographical features and heritage, including archaeology, historic environment and settlement character.

National Planning Policy Framework

The Government's national guidance for land use planning. There is also a series of Minerals Planning Guidance notes (MPGs).

Strategic Environmental Assessment

Strategic Environmental Assessment is based on a European Directive intended to promote sustainable development, by ensuring that an environmental assessment is carried out for certain plans and programmes that are likely to have significant impacts upon the environment.

Sustainability

Sustainability has been defined by the World Commission on Environment and Development as 'development that meets the needs of the present, without compromising the ability of future generations to meet their own needs.'

