

BS 8583:2015



BSI Standards Publication

# Biodiversity – Guidance for businesses on managing the risks and opportunities

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### Summary of pages

This document comprises a front cover, an inside front cover, pages i to ii, pages 1 to 78, an inside back cover and a back cover.

## Foreword

### Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 28 February 2015. It was prepared by Technical Committee BDY/1, *Biodiversity management*. A list of organizations represented on this committee can be obtained on request to its secretary.

### Use of this document

As a guide, this British Standard takes the form of guidance and recommendations. It should not be quoted as if it were a specification or a code of practice and claims of compliance cannot be made to it.

### Presentational conventions

The guidance in this standard is presented in roman (i.e. upright) type. Any recommendations are expressed in sentences in which the principal auxiliary verb is “should”.

*Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.*

### Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

**Compliance with a British Standard cannot confer immunity from legal obligations.**

## Introduction

The sustainability of a business depends on the natural resources that support it, many of which are underpinned, directly or indirectly, by biodiversity (the variety of life on earth, i.e. the different animals, plants and micro-organisms, their genes and the ecosystems of which they are part).

Biodiversity in the UK and globally faces a wide range of threats, which can present challenges to businesses, for example in ensuring the security of their supply chains. However, there are also many opportunities for businesses to enhance biodiversity which can, in turn, benefit them, for example by enhancing their reputation. Early consideration of biodiversity can bring unforeseen business rewards.

There are already guides in existence that address mechanisms for indirectly benefiting biodiversity such as by addressing climate change and carbon emissions. There are also numerous guides specifically directed towards development or redevelopment of land and the steps that have to be undertaken to protect and, where possible, enhance biodiversity as a result of new developments and planning permissions.

This British Standard, however, aims to give guidance to businesses of all types and sizes on how they can incorporate biodiversity considerations into their day-to-day management systems to protect and enhance biodiversity through their regular operations in a way that contributes to business continuity.

## 1 Scope

This British Standard gives guidance for businesses on managing business risks and realizing opportunities in relation to biodiversity. It provides advice for businesses on how to co-exist with biodiversity in a mutually beneficial way, which can constitute one of the environmental aspects identified in their environmental management system, or can be addressed within their wider management systems or processes.

The standard gives guidance on biodiversity in relation to the following three areas:

- management of premises and facilities;
- management of day-to-day business operations;
- management of the supply chain.

The standard is applicable to businesses of all types and sizes. It is primarily intended for UK businesses, including those with an international supply chain, but can also be used by businesses outside the UK.

The standard sets out a four-step process for businesses to follow to enable them to make biodiversity improvements.

The standard does not give detailed advice regarding protected species and sites and it does not give detailed guidance on the information that has to be provided in a planning application. The standard also does not give detailed guidance for businesses heavily involved in land management or development, although some guidance is given in Clause 4.

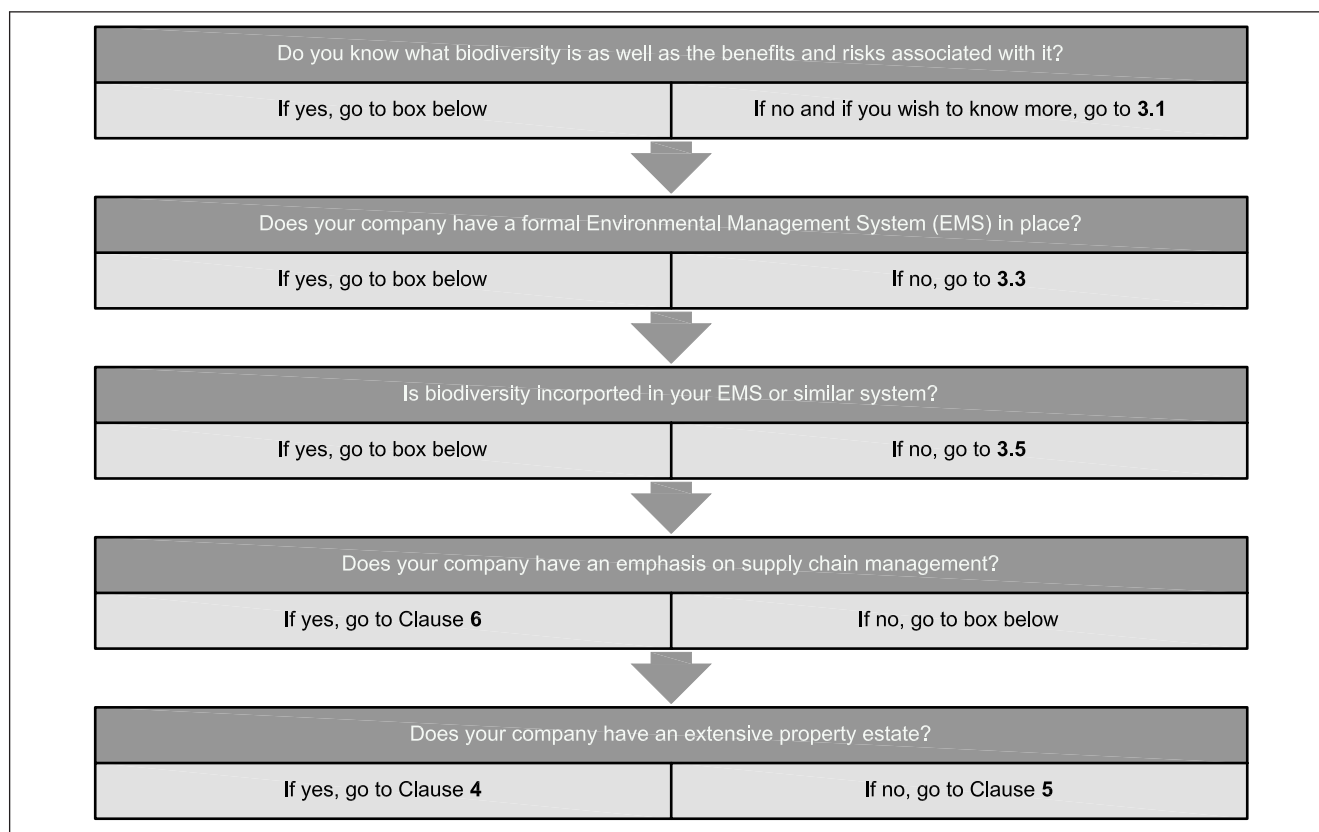
*NOTE 1 Detailed information on biodiversity in relation to planning applications is given in BS 42020.*

**NOTE 2** It is recognized that, for many businesses (e.g. retail and wholesale), their supply-chain might be the only aspect of normal business operations that could affect biodiversity. For these businesses, Clause 5 on incorporation of biodiversity considerations into management of standard operations is likely to be of less relevance than it might be for other types of business such as those concerned with financial investment, property/development, engineering and construction or rail. Clause 4 on incorporation of biodiversity into land and premises management systems, is likely to be of relevance to any business that operates from premises and this Clause also provides advice on landscape-scale biodiversity improvements that can be delivered by businesses in partnership with other organizations.

**NOTE 3** A list of conservation organizations is given in Annex A.

A flow chart giving guidance on the use of the standard is given in Figure 1.

Figure 1 Guidance on use of BS 8583



## 2 Terms and definitions

For the purposes of this British Standard, the following terms and definitions apply.

### 2.1 biodiversity

variability among living organisms, including terrestrial, marine and other aquatic ecosystems and ecological complexes of which they are a part

[SOURCE: UN Convention on biological diversity [1], modified]

**NOTE** This includes diversity within species, between species and of ecosystems.

**2.2 biodiversity action plan**

plan setting out how a country, business, operation or organization intends to act to preserve and enhance biodiversity

*NOTE In the UK many local authorities or counties have produced biodiversity action plans, as have a number of businesses.*

**2.3 biodiversity audit**

assessment of the effectiveness of the actions set out in the biodiversity action plan in reducing the impact of the business on biodiversity

**2.4 biodiversity review**

assessment and measurement of the impact the business has on biodiversity and the steps it could take to reduce its impact and enhance biodiversity

**2.5 ecologist**

person who has relevant training, skills and experience to undertake surveys of, and provide advice regarding, habitats, species and the environment

**2.6 ecosystem**

natural system consisting of all interacting plants, animals and other organisms and all the physical factors in the environment

**2.7 ecosystem services**

benefits to people, including businesses, provided by ecosystems

[UN Millennium ecosystem assessment 2005 [2] , modified]

**2.8 ecological impact assessment**

process of identifying, quantifying and evaluating the potential impacts of defined actions on ecosystems or their components, and usually performed as one element of environmental impact assessment

[SOURCE: BS 42020:2013, 3.11]

**2.9 environmental management system**

part of the management system used to manage environmental aspects, conform to compliance obligations and address risk associated with threats and opportunities

[SOURCE: BS EN ISO 14001:2004, 3.8]

**2.10 habitat**

natural home or environment of an animal, plant or other living organism

**2.11 hard estate**

those parts of an organization's landholdings which are not vegetated, such as buildings and paved ground

**2.12 high conservation value area (HCVA)**

natural area with environmental, socioeconomic, biodiversity or landscape value

*NOTE This is an internationally recognized term.*

**2.13 invasive species**

plants or animals, which can be native species but are often non-native to the UK, which have adverse impacts on the environment

**EXAMPLE** Invasive species can be poisonous, affect water flows or physically damage buildings, infrastructure, waterways or other species of commercial or natural interest.

*NOTE* Many (although not all) invasive species are listed in Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) [3].

**2.14 natural capital**

elements of nature that produce value (directly and indirectly) to people, such as the stock of forests, rivers, land, minerals and oceans

*NOTE* Natural capital underpins all other types of capital (man-made, human and social) and is the foundation on which our economy, society and prosperity is built.

**2.15 soft estate**

those parts of an organization's landholdings which are vegetated, such as a pond or meadow

**2.16 species**

group of living organisms consisting of similar individuals capable of exchanging genes or interbreeding

**2.17 sustainability**

achievement of an enduring social, environmental and economic balance

**2.18 sustainable sourcing**

sourcing materials or services in a way that achieves an enduring social, environmental and economic balance

## 3 Biodiversity and its relevance to business

### 3.1 Biodiversity background

Biodiversity underpins the functioning of ecosystems which are complex and dynamic assemblies of the living environment (e.g. plants, animals, microscopic communities) and the non-living environment (e.g. soil, air, water). Very often, the more diverse an ecosystem, the more resilient it is and the more services it can provide. If an ecosystem is altered or reduced (i.e. by altering its biodiversity components) then the dynamic of this ecosystem will be changed and the services it provides can be changed or cease altogether. As such, ecosystem services are considered in this standard as part of the services offered by biodiversity (see Box 1), however the valuation of ecosystem services (or natural capital evaluation) is not covered.

Several studies were conducted worldwide to assess trends in biodiversity and ecosystem services. The results showed that:

- the majority of ecosystem services have been degraded whilst the pressures humans place on them have increased (Millennium Ecosystem Assessment [2] 2005 and TEEB 2010 [4]); and,
- it is estimated that the cost of this loss is likely to be 7% of the world gross domestic product (GDP) by 2015 (ACCA, Fauna and Flora international, and KPMG 2012 [5]).

The UK is a signatory of the Convention of Biodiversity and following the recommendations of the Lawton report [6], the government published the Natural Environment White Paper [7] and Biodiversity 2020 [8]. Biodiversity 2020 sets out how European and national biodiversity commitment will be implemented.

Conservation of biodiversity not only requires the protection and enhancement of scarce species and habitats, but also those more common habitats and species, in order to maintain the delivery of ecosystem services. A business that maximizes the extent to which it safeguards biodiversity resources in the present is likely to be more resilient to future changes.

#### **Box 1: Ecosystem services and natural capital evaluation**

The following environmental evaluation tools are of particular business relevance in relation to ecosystem services. The methods and tools required to allow businesses to adopt natural capital accounting and to develop Payments for Ecosystem Services (PES) schemes are still developing, although progress is being made.

**Natural capital accounting.** Tools are currently being developed that allow governments and businesses to measure both stocks of natural capital (e.g. areas of woodland) and the flows from that capital (e.g. the ecosystem services obtained from woodlands) and how their actions can affect these stocks and flows positively or negatively. Natural capital accounting can help secure business operations by increasing their short and long term sustainability and reduce future risks to supply chains. If properly measured and managed the living aspects of natural capital can continue to provide ecosystem services and benefits indefinitely.

**Payments for ecosystem services.** The basic idea behind PES schemes is that those who provide ecosystem services should be paid for doing so, just as if they were being paid for any other service. PES schemes involve payments to the managers of land or other natural resources (the sellers) in exchange for the provision of specified ecosystem services, either to maintain existing services or to go above and beyond what would normally occur. Payments are made by the beneficiaries of the services in question (e.g. reduced flood risk, clean water, recreational access), by individuals, communities, businesses or governments (the buyers). PES schemes offer the potential to deliver sustained ecosystem services to a wide range of business sectors and provide an opportunity for those businesses that control land or other natural resources to receive payments for increases in ecosystem services.

Information on tools and resources for businesses to assess ecosystem services are given in the following publications:

National Ecosystem Assessment and National Ecosystem Assessment follow on: The UK National Ecosystem Assessment (UK NEA) [9] was the first analysis of the UK's natural environment in terms of the benefits it provides to society and continuing economic prosperity. The NEA-Follow-On (NEAFO) [9] provides further details of the cultural and economic value of nature and a variety of accounting and decision support tools for use by government, business and the voluntary sector seeking to understand the value of the natural environment and the impacts of their decisions.

BSR (Business for Social Responsibility) Measuring and Managing Corporate Performance on Ecosystem Services [10]: This report has been developed to assist business people who want to know more about ecosystem services and is intended to help corporate decision-makers understand and assess the current ecosystem services tools available. It offers a view of the full suite of current tools, and highlights the opportunities and challenges for their use in the private sector.

Eco4Biz. This report [11] provides a structured overview of existing ecosystem service and biodiversity tools and approaches that are publicly available for use by businesses. The aim is to help companies make better-informed decisions about which tool they could apply when assessing and managing their ecosystem impacts and dependencies in order to ultimately lower risk and enable companies to be more competitive over time.

Guide to Corporate Ecosystem Valuation [12]. This guide is to help companies in the process of valuing ecosystems and their services.

The Corporate Ecosystem Services Review (ESR) [13]: The ESR is a structured methodology for corporate managers to proactively develop strategies for managing business risks and opportunities arising from their company's dependence and impact on ecosystems. It sets out the five steps for performing a review, an analytical framework, case examples, and helpful suggestions for each step.

### 3.2 Biodiversity and business opportunities

All businesses are in some way reliant on the services provided by the environment and ecosystems. Business reliance on biodiversity can be direct (e.g. food production, the pharmaceutical and the cosmetics industries which rely directly on naturally sourced products) or indirect (e.g. the financial investment sector which benefits from investing in land that is managed to enhanced biodiversity and delivers returns in the long term). For many businesses their principal interaction with biodiversity is through their premises and their supply chain. All businesses also rely on more general ecosystem services (e.g. clean water supply and decomposition of waste), the disruption of which can have a disproportionately large impact on the quality and resilience of the supply chain.

Improving consideration of biodiversity in one's business management could provide unexpected direct and indirect company benefits such as the following.

- **Supply of resources.** Natural resources derived from ecosystems provide the basis for a wide range of commercial products including food, paper, textiles and colorants. The services provided by ecosystems, such as water and nutrient cycling, are also often essential for production and processing. For example, as reported in the 2020 Challenge for Scotland's Biodiversity [14], the value of insect pollination services in Scotland is estimated at £43 million per year. Improving consideration of biodiversity can preserve the diversity of resources and ensure a continuing supply, avoiding the need to develop replacement resources as each is exhaustively exploited, and maintaining the continuity of the business.
- **Access to markets.** Some consumers are showing increased preference for products that are created using sustainably and ethically sourced materials and methods. For example, according the 2010 TEEB for Business report [4] global sales of Forest Stewardship Council certified "sustainable" forest products quadrupled between 2005 and 2007, whilst between 2008 and 2009 the global market for certified "sustainable" fish products grew by over 50%, achieving a retail value of US\$1,500,000,000. According to a 2010 UNEP-WCMC report [15] the potential size of global markets for agricultural and fisheries products that are certified environmentally sustainable is estimated at US\$200,000 million by 2050.
- **New markets.** New sectors are also emerging to address unavoidable impacts on biodiversity (e.g. offsetting and conservation banking), whilst lucrative opportunities might also be found in sectors as diverse as bio-prospecting (the search for new compounds, genes and organisms in the wild) and ecotourism.

- **Access to finance and insurance.** Financial institutions are making greater demands on businesses to reduce their environmental impact, including on biodiversity. For instance the International Finance Corporation (IFC) Performance Standard 6 [16] required client projects to “maintain the benefits from ecosystem services” in late 2012. Also, as of October 2013, 78 financial institutions have adopted the Equator Climate change mitigation and climate change adaptation principles [17], a risk management framework, adopted by financial institutions, for determining, assessing and managing environmental and social risk in projects.
- **Cost savings.** Taking steps to conserve and enhance biodiversity can result in cost savings to businesses; for example managing farmland in a manner that benefits biodiversity can also result in reduced usage of fertilizer and pesticides and an associated reduction in costs.
- **Brand and reputation.** With increased access to information on the products they purchase, consumers are able to keep informed of the activities of companies more easily than ever before. This has resulted in increased scrutiny of company activities, with bad publicity leading to declining sales and reduced shareholder confidence. The 2010 report from UNEP-WCMC [15] notes that investors appear to reward companies with long-term visions, with green companies on the Dow Jones Sustainability Index emerging in a stronger position from the recent financial crisis than their peers. A track record of caring for the environment, including biodiversity, can also help to give an edge to businesses seeking to attract and retain talent. This is considered to be particularly the case in competitive graduate markets where candidates might actively screen out companies with poor environmental records.
- **Licence to operate.** A company’s ability to access land and other natural resources is increasingly affected by its track record of environmental issues. By adopting best practices on biodiversity and wider environmental and social issues companies are more likely to establish good relationships with governments and local communities, thus improving their chances of being granted a licence to operate in a particular area.
- **Attraction and retention of quality staff.** Businesses which demonstrably care for the environment are more likely to attract and retain high quality staff. This increases competitive advantage and reduces the costs associated with staff turnover. In the Tees Valley, a highly industrialized area which is also recognized as being internationally important for migratory birds and other wildlife, the Industry & Nature Conservation Association (INCA) was established to balance the needs of economic development and environmental conservation.
- **Climate change mitigation, adaptation and resilience.** Businesses’ ability to produce goods or services might be challenged by climate change impacts on their supply chain. To protect and enhance biodiversity is to protect and enhance ecosystem services and the more resilient an ecosystem is, the more likely it is that it will be able to cope with climate change and thus continue to provide services required by a business supply chain. As it is highly likely that climate change will impact on businesses, a business with a supply chain which has invested in mitigation and/or adaptation measures (which can include biodiversity protection and enhancement) is more competitive than one which is not prepared.
- **Green Infrastructure (GI).** GI is a network of important green and blue spaces and other environmental features. When GI is well managed, it brings environmental benefits and can act as a catalyst to economic growth by attracting business investment, tourism, improving environmental services capacities which in turn provide employment, health benefits and food production.

In addition to benefits and opportunities of considering biodiversity, there are also the risks of not doing so. Whilst the services provided by ecosystem have often been considered to be free according to traditional thinking, this is changing in the face of growing threats to biodiversity. Increasingly, individuals, communities, governments and businesses are realising that the current high rate of biodiversity loss poses a threat to both the economy and wider human wellbeing. A business impact on biodiversity might not always be direct and/or immediate. One example would be the formation of acid rain as a result of emissions into the atmosphere, which crosses borders, causing impacts on biodiversity. Impacts might range from the loss of trees and forests to the acidification of water bodies, which in turn impacts businesses through the loss of revenue from forestry, fisheries and tourism.

By assessing dependencies and impacts on biodiversity, businesses can identify currently hidden risks and opportunities and react to them appropriately.

### 3.3 What is meant by “businesses” in the context of this British Standard?

The reference to businesses in this standard is deliberately inclusive. This standard is aimed as much at businesses without a formal environmental management system (such as in accordance with BS EN ISO 14001) or company biodiversity action plan as those that have these tools. In this standard businesses are grouped into a series of typologies and the guidance given is divided according to which of the business typologies it is most applicable to. The typologies are as follows:

- food, drink and horticultural production businesses (e.g. agriculture; fisheries and plant importation and propagation);
- extractive businesses (e.g. oil, gas, mining and minerals, forestry);
- utilities (e.g. water companies, power companies);
- environmental businesses (e.g. recycling and waste management);
- manufacturing businesses (e.g. heavy industry, lighter industry such as chemical manufacture, food processors);
- development and construction businesses (including infrastructure construction e.g. roads);
- transport operation businesses (e.g. distribution, rail and shipping);
- retail and service focused businesses (including tourism and finance).

Different types of business can encounter various types of biodiversity risks and opportunities which might not necessarily be obvious. Examples are given in Annex B. These are not intended to be comprehensive lists.

### 3.4 What is meant by a “management system”?

For the purposes of this standard, management systems are defined broadly as: the structure, processes and resources needed to establish an organization’s policy and objectives, and to achieve those objectives. In its broadest terms a management system is a series of procedures and protocols that are employed to deliver a business outcome. This could be specific to a particular area of a business’s operation, such human resources, or it could be a more general centralized decision making, review and monitoring process.

### 3.5 Incorporation of biodiversity considerations into management systems

There are three broad management system streams into which consideration of biodiversity can be incorporated, either as part of a business's formal environmental management system (if they have one) or as part of other less formal management systems. These three streams are as follows.

- *Management of premises and facilities.* There are risks to biodiversity in premises and facilities management if due regard is not given to habitats on the site, to wildlife that might be using them and to the impacts that the presence and use of the site have on habitats, wildlife and ecosystems on the site and in the wider landscape. There can also be opportunities for businesses to benefit biodiversity by:
  - changing premises management practices (although the decision to do this needs to be carefully weighed against the long-term risks of encouraging protected species onto the site);
  - incorporating a mechanism within the management system to recognise when opportunities exist for the protection and/or enhancement of biodiversity, including habitats and wildlife;
  - becoming involved in biodiversity improvements throughout their wider community even when the potential of their own premises and facilities for biodiversity enhancement is limited.
  - consulting with all stakeholders on all biodiversity initiatives.
- *Management of day-to-day business operations, other than the supply chain.* Depending on the nature of the business, the day-to-day operations of that business might raise both potential risks to biodiversity and also opportunities to enhance biodiversity (examples of these are given in Annex B). Company management systems can be used to ensure that consideration of biodiversity is built into those operations.
- *Management of the supply chain.* While the business might not have a direct impact on biodiversity, the supply chain on which that business depends might have a considerable impact. Also there might be considerable opportunities for the business to take positive steps in supporting businesses with a positive biodiversity focus through the management of supply chain procurement.

*NOTE Information on statutory designated sites and non-statutory designated sites is given in Annex C.*

This British Standard is divided into separate clauses covering each of those three broad sections. Clause 4 covers management of premises and facilities, Clause 5 covers day-to-day operations, and Clause 6 covers the supply chain.

## 4 Incorporation of biodiversity into land and premises management systems

### 4.1 General

Most businesses have premises that are either owned or leased, and these premises are likely to be governed by a management system. Premises management presents opportunities to seek to improve biodiversity on a local scale through a wide range of measures from the simple to the elaborate. This Clause is applicable to all business typologies.

Many companies with large landholdings, particularly substantial soft estates, are likely to be familiar with the potential biodiversity interest of their land and how to manage it effectively. However, an equal number might focus on maintaining a tidy estate (for example, closely mown lawns or use of pesticides/insecticides/fertilizers to maintain a highly manicured appearance) at the expense of some easily delivered positive outcomes for biodiversity. Other businesses not associated with development, the extractive or construction industries or businesses whose green estate consists essentially of formal landscaping, might not be aware of the biodiversity enhancement possibilities available. If biodiversity consideration can be incorporated into formal estate/premises management, the delivery of biodiversity benefits can become second nature to the company.

## 4.2 Estate management systems and biodiversity

An increasing number of businesses are seeking formal certification of their environmental management systems for conformity to BS EN ISO 14001 or the European Eco-Management and Audit Scheme (EMAS). While many components of environmental delivery are incorporated in this certification system, biodiversity improvements are often not included, not least because many organizations do not recognize the opportunities to protect and enhance biodiversity available to them, assuming that this is only achievable where large landholdings are involved. The ability of a company to show that it has a formal system to identify opportunities for biodiversity protection and enhancement alongside the other aspects of its environmental management system, and to deliver such protection and enhancements effectively, could aid certification.

The ideal position would be for biodiversity to become so enshrined in the estate/premises management process that all major decisions about estate management, or reviews of estate management protocols, would include consideration of the question "have opportunities to enhance biodiversity been considered?". The recommended situation would be for estate management protocols to be reviewed on an annual basis to identify any measures that might be limiting biodiversity or opportunities for including improvements.

It is possible for companies to seek certification for their biodiversity protection, restoration and enhancement work. The Wildlife Trusts offer their Biodiversity Benchmark for a Living Landscape System which essentially applies the environmental management system audit principles to biodiversity management.

Changes in land management do not need to be extensive in order to achieve a positive benefit to biodiversity. Relatively minor changes can have a substantial effect; for example, replanting gaps in hedgerows can be of considerable value in creating dispersal routes for small animals.

## 4.3 Devising a biodiversity action plan

Another efficient and focused way to enable the incorporation of biodiversity into facilities/estates management is to develop a biodiversity action plan. This can then be updated and monitored on a regular basis to track progress. The action plan could be site-specific (i.e. a separate plan for every site the company owns or leases) or could be general to the businesses premises as a whole. This latter approach would be particularly appropriate where premises are very similar across the company and are managed in a very similar manner. The business could also devise a nested approach with an overarching biodiversity strategy setting out overall policy, leading into "daughter" biodiversity action plans for each site or area.

A company biodiversity action plan does not need to be elaborate or lengthy. However, there are certain basic requirements that should be met, which are as follows.

- It should summarize the existing biodiversity of one or more parcels of land.

- It should identify conservation priorities (for example, drawing upon species lists in the county biodiversity action plan or upon the site's geographic context).
- It should identify measures that can be implemented to either minimize any existing harm that might unwittingly be occurring or enhance the biodiversity of the site for a reasonable cost.
- It should set out a reasonable management protocol that can be easily followed by the estate's management team, including the identification of responsibilities. It should identify appropriate monitoring protocols and frequencies at which effectiveness can be evaluated. This last point is crucial and would tie in to regular (5 to 10 year) updates of the plan.

There are three considerations in devising a company biodiversity action plan that are particularly important to successful delivery, as follows.

- The objectives being set have to be achievable and not so aspirational that they are unrealistic.
- The management prescriptions have to be set out with sufficient clarity that a non-ecologist can follow them without difficulty (even if they do not fully appreciate the science behind the requirements).
- It is important to understand the implications a particular habitat feature might have in the long-run for the business and the constraints it might itself pose on the business. For example, if a business is enhancing its premises and attracts a European protected species (such as the great crested newt) this could place constraints on some future operations. Forward planning is required to avoid any future conflicts. The two most well-known European protected species are great crested newts and bats. The full list and relevant legislation are available on the websites of the Statutory Nature Conservation Organizations (SNCO)s.

Some land management recommendations aimed at improving biodiversity can be complex (for example, the cutting of certain land parcels in certain phases at certain times). The plan should aim to set out explicitly a step-by-step process to be followed and should, wherever possible, use illustrations to maximize clarity.

#### 4.4 Step one: The biodiversity review

In deciding which opportunities exist to incorporate enhancements to biodiversity into landholdings, the first stage is to undertake a biodiversity review of the landholdings. The process of doing this review should be similar to that outlined in 5.3 concerning incorporation of biodiversity considerations into day-to-day company operations. There are many ways to enhance the biodiversity of a building or site aside from specifically targeting protected species.

The recommended structure for the report is as follows:

- scope of commission and purpose of report;
- methodology used in the assessment;
- results of the extended phase 1 habitat survey (see 5.9.3) including potential for protected species; and
- discussion of any parts of the site(s) where current management measures are potentially damaging to biodiversity and any parts where biodiversity value can be improved.

#### 4.5 Step two: Identifying biodiversity opportunities

Following the biodiversity review, the ecologist should formulate an initial suite of recommendations for alterations to existing management practices, or any enhancements that could be delivered. These should be sufficiently detailed that they can be adequately costed. For example, rather than stating “install bat boxes” they should specify the number and model of bat boxes in addition to providing information on the potential sources from which such boxes can be purchased. For some sites, the range of potential biodiversity improvements that can be delivered will be inherently limited. However, in situations where a wider range of options could be available, it might be useful for the facilities manager to provide the ecologist with a guideline budget available for delivering any enhancements. The ecologist can then base his or her recommendations on that budget.

It should be noted that habitats and species do not have to be scarce in order to have biodiversity value. Relatively widespread habitats such as hedgerows, scrub, arable land managed with relatively little fertilizer or pesticide, and lightly-mown or grazed grassland can all have considerable biodiversity value and are perfectly valid targets for conservation.

For any landholding there is likely to be a range of measures that can be delivered simply and with low financial investment, and others that could ultimately achieve a greater benefit but which are more involved and can be considered more long-term higher investment wins for biodiversity. These latter would be more appropriate incorporated as part of an overall large-scale redevelopment of a premises or overhaul of management, rather than providing improvements to a few small sites. Examples are given in Annex D.

Companies do not need to own extensive landholdings in order to take biodiversity into consideration on their premises. Even premises that consist entirely of hard estate in the town centre, or city centre buildings with no obvious greenery, can be adapted to provide ecological value. Key species for which buildings can be enhanced include bats, nesting birds and insects. Buildings can also be used as a basis to think laterally about creating areas of habitat that might be small in themselves but if replicated on many buildings across a larger area could make an appreciable cumulative contribution. Examples of these include green walls and green roofs.

Even in built up areas with few parks or similar open spaces nearby, activity of bat species which have partially adapted to an urban environment, such as soprano pipistrelle (*Pipistrellus pygmaeus*), can be important as they travel between good quality sites. A building in such an area can be improved for wildlife simply through ensuring that places are provided for bats to roost during the day. This can be achieved as simply as by erecting bat boxes. Examples of possible enhancements to a company’s hard estate are given in Annex D.

#### 4.6 Step three: Selecting appropriate biodiversity opportunities

The selection of appropriate opportunities for delivery of biodiversity enhancements will be dictated by a range of considerations, such as:

- relative ease and feasibility of creation of the enhancement;
- cost;
- relative ecological rarity or value of the habitats or species that would benefit;
- appropriateness within a landscape context.

Obtaining accurate costings is an essential stage in a biodiversity action plan. It is strongly recommended that costings for the implementation of the plan incorporate the whole-life cost of any enhancements. The whole-life cost involves not only the cost of creating the enhancement, but also the annual cost of maintaining it and, if it is a feature that will decay over time – such as a bird box – the cost of replacing it.

There are grants available for land managers and farmers (for example via the Natural England website at <http://www.naturalengland.org.uk/ourwork/farming/csf/default.aspx> [viewed 2015-02-09] or the Scottish Natural Heritage website at <http://www.snh.gov.uk/funding/our-grants/> [viewed 2015-02-09]) to assist with the delivery of particular biodiversity enhancements. Available schemes and initiatives include the following.

- *Catchment sensitive farming*. This encourages best practices for tackling diffuse water pollution from agriculture. It is delivered by a partnership between Natural England, the Environment Agency and Defra.
- *Conservation and enhancement scheme*. Under this scheme discretionary payments are available to fund the costs of management for nature conservation on land of outstanding scientific interest, and to ensure that the land is in a favourable condition.
- *Environmental stewardship*. There are different agri-environment schemes for each part of the UK.
- *Soils for profit (S4P) project*. The soils for profit project provides farmers in the South West of the UK with advice and access to grants to improve the efficiency of their soil, manure and nutrient management.
- *Local biodiversity initiatives and partnerships*. There are 48 Local Voluntary Nature Partnerships in England, which include a wide range of businesses aiming to help bring about improvements in their local natural environment, whilst also benefiting the local economy and the people who live in the local area. The opportunity to input into such partnerships is likely to be particularly valuable to businesses which have limited opportunities to directly enhance biodiversity on their land holdings, by enabling them to contribute to the bigger picture in their area for instance in joining up fragmented habitats or providing important wildlife corridors. Such partnerships can also provide advice regarding the enhancement of biodiversity which businesses can draw upon to determine the best way for them to contribute to biodiversity. In England, the overall purpose of a Local Nature Partnership is to:
  - drive positive change in the local natural environment, taking a strategic view of the challenges and opportunities involved, and identifying ways to manage it as a system for the benefit of nature, people and the economy;
  - contribute to achieving the government's national environmental objectives locally, including the identification of local ecological networks, alongside addressing local priorities;
  - become local champions influencing decision-making relating to the natural environment and its value to social and economic outcomes, in particular, through working closely with health and wellbeing boards and local authorities.

It is important that the landholding is not considered in isolation. Opportunities available to enhance biodiversity can be identified best through the consideration of a site in its geographical context. In recent years improvements to enhance biodiversity have increasingly been targeted at landscape-scale conservation, recognizing that many wildlife habitats are on a landscape scale, particularly those of highly mobile species such as birds, insects and bats. Factoring biodiversity considerations into land and estate management systems should therefore focus on providing improved corridors and connections for the movement of these highly mobile species across the landscape, which can produce a large ecological benefit despite the relatively modest nature of the enhancements on site. For example, replanting gaps in hedgerows or planting double rows of hedgerows separated by a few metres can provide wildlife corridors across the landscape at a relatively low cost, particularly if those hedgerows are allowed to grow thick and tall. An example is given in Case study 10 (see Annex E).

#### 4.7 Step four: Implementing the biodiversity action plan

Once a suite of costed recommendations has been devised that are clearly understood by the facilities management department of the company, it is important that these are placed within a clear management framework for delivery. Failure to accomplish this can result in the recommendations simply being filed for future reference. The management framework for delivery needs to include an explicit programme detailing what activities are to be delivered, where and when, and what is to trigger their implementation. The management burden associated with delivering biodiversity enhancements does not need to be large and could result in a reduction in land management costs.

Technical decisions regarding extensive changes to estate management should be made in conjunction with an ecologist.

Many businesses do not have the resources to contract an ecologist regularly. One low cost, or no net-cost, way to accommodate this could be to identify local partners and stakeholder organizations with the time and resources to assist, with whom the work can be undertaken. This would be beneficial to local community relationships and encourage local groups to work collaboratively with the business. In the longer term it would also be possible to derive educational benefits from this through association with local schools. The local stakeholders should involve a mixture of willing and available local wildlife groups (such as the local Wildlife Trust, Local Nature Partnership or conservation volunteers) who might also be able to assist the company with identifying suitable local conservation priorities from the local biodiversity action plan. The participating groups could also involve local residents assisting with implementation, management and monitoring. Company employees might also be willing to be involved in implementing and maintaining the biodiversity initiatives, which can in turn assist with corporate social responsibility, team building and employee awareness raising regarding the value and benefits of biodiversity.

#### 4.8 Step five: Monitoring delivery of the biodiversity action plan

There should preferably also be a framework for monitoring delivery of the biodiversity action plan. Companies often start out applying more biodiversity-friendly management measures with the best intentions but, owing to a lack of monitoring of delivery and effectiveness, the measures are either not implemented correctly or not implemented at all.

The monitoring strategy does not need to be elaborate or very time consuming but needs to be targeted at identifying the progress of biodiversity development against a set of measurable criteria that meet the SMART requirements (Specific, Measurable, Attainable, Relevant and Time-bound). Examples of such criteria include:

- monitoring of the development of a newly sown wildflower meadow to record the establishment and survival of desirable species over a specified period. Some measure of the abundance of key species that would indicate either positive or negative meadow development could also be devised;
- extent of control of invasive species over a five year period;
- extent of native tree survival over a five year period;
- evidence of colonization of log piles and refuges by target wildlife, assessed annually;
- extent of use of bat boxes, bird boxes and insect boxes. For bat boxes this would include consideration of both the number of species of bat and the number of individuals using the box.

*NOTE As soon a bat box is occupied by bats it becomes a roost and as such it is protected under the Conservation of Habitat and Species Regulations 2010 as amended [18], and this bat box can only be checked by a licenced bat worker. However, monitoring of bat emergence or signs of bat box use, such as droppings below the box, can be undertaken by anybody.*

The delivery and monitoring of the biodiversity action plan could in turn link to annual biodiversity reporting into the company environmental management system. Clearly, monitoring of this type would have to be undertaken by ecologist but could be undertaken at relatively infrequent intervals, such as once every five years, or could be undertaken more frequently for the first few years following the change of management practice, with monitoring at less frequent intervals as time progresses.

Resources might not allow for the regular appointment of an ecologist to carry out checks and monitoring, in which case a simpler monitoring regime undertaken by the facilities management department itself might be more appropriate. This would relate simply to at least annual checks that the management prescriptions were being followed and that any specific features installed as part of the change in management practices were in good condition. Alternatively, a well-established partnership with a local wildlife group would enable a valuable monitoring regime to be established without the company itself taking on the duty.

## 4.9 Case studies

Case studies 11 to 14 (see Annex E) give examples of businesses that have incorporated biodiversity considerations into their estate and premises management, or encouraged employees to participate actively in wider biodiversity conservation initiatives in their local community.

# 5 Delivering biodiversity benefits through management of day-to-day operations

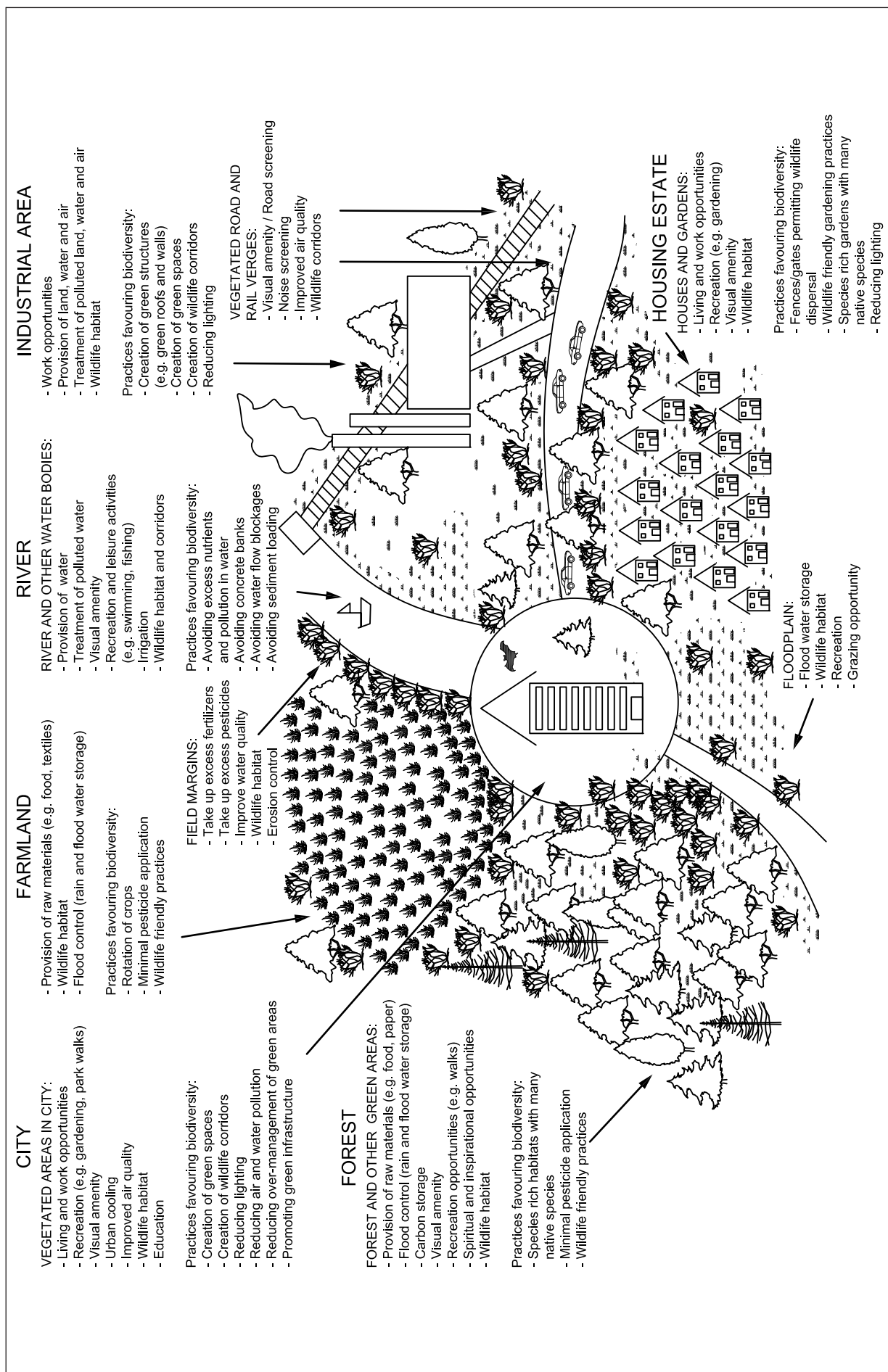
## 5.1 General

A key mechanism through which businesses can incorporate biodiversity into their management systems is through ensuring that the potential impact on, and awareness of benefits from, biodiversity are factored into day-to-day operations. This Clause covers how businesses can evaluate the extent to which their decision making and general operations already take account of biodiversity and how that can be improved through incorporation into existing management systems.

Many business typologies might already accommodate this where their business directly affects the land and natural environment. For those businesses it is recommended that they ensure that the simple four step approach discussed in this Clause is utilized and that any further opportunities to factor biodiversity considerations into company management systems are identified and realized.

Figure 2 illustrates examples of some possible biodiversity benefits and enhancement measures according to the habitats that businesses are likely to be located in proximity to.

Figure 2 Examples of possible biodiversity benefits and enhancement measures



## 5.2 The five step process

The five step process described below is based on the BS EN ISO 14001 management cycle “Plan-Do-Check-Act” with the additional initial assessment when implementing the process for the first time. It has been designed to provide businesses with and without an Environmental Management System (EMS) with the tools necessary to assess their relationship with biodiversity, which possible opportunities biodiversity presents, and identify how biodiversity opportunities can be integrated and managed in day-to-day activities. For businesses with an EMS, the five step process should be easy to integrate into the main body of the EMS while for a business without an EMS, the five step process can be undertaken on its own and integrated into an EMS at a later stage if the business chooses to do so.

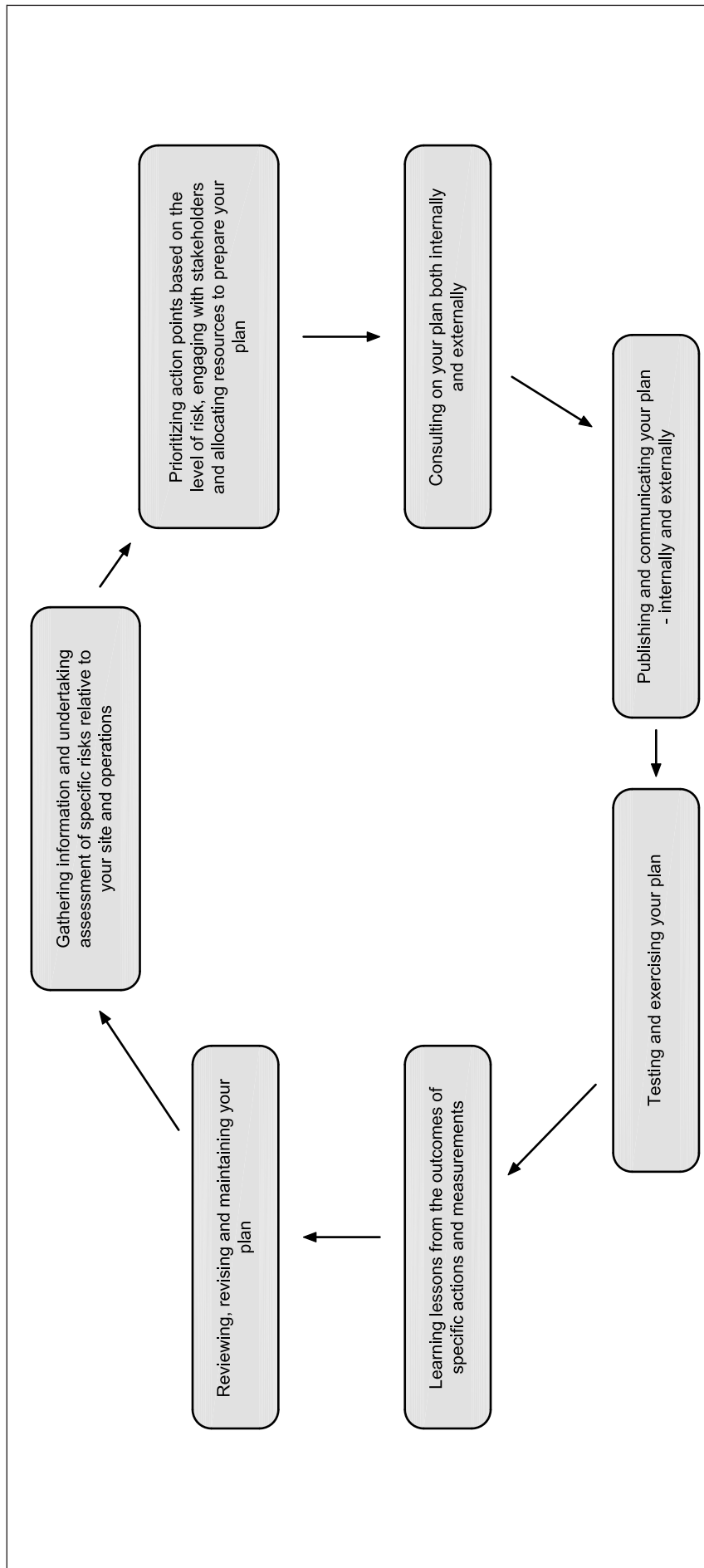
This process is a core process that can be followed by any business no matter its typology, size or location. The five step process is a general tool. Businesses are encouraged to implement it keeping in mind the particular nature of their own business. Examples of how some businesses have incorporated the process are presented in Annex E, and Defra guidance on biodiversity (2007) [4] can also be consulted for more information on why and how the public authority was advised to implement their biodiversity duty.

The five steps are as follows.

- Step 1: Assess the opportunities.
- Step 2: Plan (prioritize opportunities).
- Step 3: Do [implement a biodiversity action plan (BAP)].
- Step 4: Check (monitor and report on the BAP).
- Step 5: Act (carry out further actions as required).

This is illustrated in Figure 3.

Figure 3 The planning cycle



### 5.3 Step one: Assess the opportunities

Businesses should establish the current status of the organization and how it currently manages its biodiversity risks and opportunities. This baseline review should include:

- an examination of the business's current practice and capacity which includes reviewing its activities, location and existing connection to biodiversity;
- assessing how each sector of the business is working in relation to other sectors in the business;
- determining if there have been any initiatives in the business to promote biodiversity in the past; and
- determining the level of technical expertise available within the business to understand and deliver on biodiversity related opportunities.

Gaps in knowledge should be identified and where possible rectified (e.g. by bringing someone into the business to help with the process or by training someone in the business).

Based on the information obtained from the baseline condition assessment above, the business should identify areas of opportunity to enhance biodiversity. Biodiversity enhancement could be targeted at sectors where improving biodiversity also benefits the business, for example through changes in practices, implementing new practices or strengthening existing practices.

This assessment is also an opportunity for the business to uncover previously overlooked opportunities, and can also help to highlight possible business continuity risks and help in reducing those risks.

Many types of businesses could have an opportunity to enhance biodiversity in the course of their day-to-day operations even through interacting with biodiversity is not necessarily an obvious part of their operations. Both direct and indirect impacts on biodiversity and risks and opportunities for businesses should be considered.

Opportunities for businesses can be found at any point of the life-cycle of a product or service. To ascertain these, the following questions should be asked where relevant.

- *Extraction stage.* Is the sourcing of raw material impacting on biodiversity? In what way? Is there an opportunity for the business to be more efficient in its extraction process to benefit biodiversity and benefit its stakeholders?
- *Packaging of raw materials.* How are the raw materials packed? Is re-usable or bio-degradable packaging being used? What happens to the packaging after use? Is there an opportunity for the business to reduce/change its packaging in a way that would be beneficial to biodiversity and provide cost savings to the business?
- *Transport of raw materials.* How far and how is the raw material transported? Would changing the mode of transport or source of material help the business to reach some of its climate change targets and also benefit biodiversity?
- *Production process.* How efficient is the production process in terms of energy, water and materials? Could it be made more efficient to reduce costs and benefit biodiversity?
- *Packaging of product.* How is the product packed? Is re-usable or biodegradable packaging being used? What happens to the packaging after

use? Is there an opportunity for the business to reduce/change its packaging in a way that would be beneficial to biodiversity and provide cost savings to the business?

- *Transport of product.* How far is the product being transported? Would changing the mode of transport or source of material help the business reach some of its climate change targets and also benefit biodiversity?
- *Marketing/selling of product.* Does the marketing/selling of the product have an effect on biodiversity? Could marketing which shows the changes the business has made to improve biodiversity help the business reach new markets?
- *Management of premises.* How does the management of the premises, including use of energy, water, etc. and the disposal of waste, affect biodiversity? Could management of premises be made greener to help the business reduce costs and also benefit biodiversity?
- *Employee training.* Are employees aware of biodiversity and the effects the business can have on it? Does the employee induction package mention the environment and biodiversity? Are employees taking part in training/team building exercises to increase their environmental awareness? Would implementing those activities help the business to retain/motivate/attract employees to work for the business?
- *Business environmental schemes.* Is the business involved in “green” or carbon reduction schemes such as the cycle-to-work scheme? If so, are the schemes being advertised and are they successful with the employees?

The need to involve an ecologist, environmental scientist, environmental or sustainability manager, wildlife charity or any other person with an environmental background at this stage will depend on the type, size, location, complexity and ecological/environmental knowledge of the business and employees. Many types of businesses could have an impact in the course of their day to day operation even though interacting with biodiversity is not necessarily an obvious part of their operations. Both direct and indirect impacts on biodiversity and risks and opportunities for businesses should be considered.

## 5.4 Step two: Plan (prioritize opportunities)

Step two is based on the information collected in step one. Once a business has established opportunities to benefit biodiversity and possibly itself in the process, it will need to prioritize opportunities. Prioritization of opportunities should consider the following.

- **Biodiversity enhancements.** Biodiversity enhancement measures are any measures taken to improve a habitat quality or size and/or the numbers of a species. Quick-wins for biodiversity enhancement can be very easy to implement as an early stage demonstration, but should be considered as a first step towards more long-term commitment (e.g. by installing a bird, bat, insect or bug box on a tree or building in a suitable location). Every measure taken to enhance biodiversity (such as enhancing potential for use by protected species) needs to include long-term consideration and planning to avoid later conflict in use. Those measures should also be well thought out and take into consideration the requirements of the habitats/species at which they are aimed, or they are unlikely to bring the desired results (e.g. a bird or bat box might never be used if the box is put in an unfavourable environment, for example too close to the ground or in a location that is too cold or too hot).
- **Mitigation hierarchy.** There are several versions of the mitigation hierarchy, which is a tool to manage impacts on biodiversity. According to the mitigation hierarchy, when a biodiversity risk or impact has been identified, efforts should be made to do the following, in the order shown.

- a) Prevent or avoid risks or impacts. This is done by taking measures to avoid creating impacts from the start of a project, through the careful spatial and/or temporal placement of the project (e.g. by installing security lights that do not shine on bat feeding habitats, or commuting routes or roost entry points). Avoiding potential negative biodiversity impacts requires biodiversity to be considered at an early stage in the lifetime of a project and could be the easiest, cheapest and most effective way of reducing impacts.
- b) Reduce, mitigate or minimise the risk or impact. This is done by taking measures to reduce the duration, intensity and/or extent of impacts that cannot be completely avoided. Project designs or methods used to carry out the projects can also be amended to reduce negative impact.
- c) *Repair, reinstate or restore biodiversity, following the end of the project, to compensate for the adverse effects the project, product or operation has had on biodiversity.* This is done when it is not possible to completely avoid or reduce impacts. This should compensate for what has been lost/degraded by re-creating it on site. Repair, reinstate and restore are sometimes under the umbrella of mitigation.
- d) *Compensate for the loss of or permanent damage to biodiversity.* Any residual impacts should then be either compensated onsite or offsite. The latest compensation mechanism introduced in the UK is biodiversity offsetting, which aims to achieve no net loss of biodiversity. This last step is relatively new in the UK but has been developed for several years in some other countries. Biodiversity offsetting should only be considered when avoiding, minimizing and restoring are not enough to secure no net loss of biodiversity and some residual impacts are still happening. Biodiversity offsetting measures should be designed and implemented to achieve measurable conservation outcomes and achieve a net positive biodiversity impact. Biodiversity offsetting is based on the concept that loss of habitats should be compensated for by creating new ones off site or by helping to restore deteriorating habitats. In both cases, the amount of land that needs to be set aside to compensate for the residual impacts is generally larger than that on the original site as there is a risk associated with the creation of new habitats. Natural England has developed an offsetting matrix which can be used to estimate the type and amount of land required to offset residual impacts on the site. Biodiversity offsetting schemes should aim to create better quality habitats than those that are being lost and those new habitats should be safeguarded forever. Creation of offsets should be additional to current biodiversity management practices. Losses and gains to biodiversity through offsetting should be quantified in such a way that they are comparable so positive gains can be measured clearly.

*NOTE If offsetting is not sufficient, other forms of compensation might be needed.*

- **Level and timing of impact.** Examine the business's impact on biodiversity. Consideration of the level of impact should include which habitats and species are impacted (rarity, conservation status etc.) and the timing of the impact (based on the life-cycle of the species/habitats and their susceptibility to impact).
- **Level of risk.** Which biodiversity impact poses the highest risk to the business? For example, there might be large operational risks posed by disruptions to the supply of a particular product or service or there might be sectors of the business that particularly expose it to reputational risk.
- **Potential opportunities.** The following actions should be taken.