



# Our Roadmap to Enhanced Biodiversity





# Our Journey to Enhanced Biodiversity

Biodiversity loss is one of the biggest global and national challenges we face today.

We aim to protect the natural environment on our sites to the highest levels through our policies and Environmental Management System. For example:

- Ecological surveys are completed in advance of all activities that might have an impact on species and their habitats, whether it is construction, demolition, estate management, experimental trials or even drone flights
- We introduced the requirement for Biodiversity Net Gain several years in advance of it becoming a legal requirement
- In the rare cases where otherwise healthy trees are felled, they are replaced at a ratio of at least 3:1 (new to old)
- We seek to minimise unnecessary pesticide use wherever possible

However, we recognise we need to go beyond halting biodiversity loss and contributing to a more positive future for our native wildlife. This document summarises the activities we are undertaking in order to meet the ambitious goals we have set ourselves over the coming years.

It is a sign of our commitment to biodiversity and a blueprint to not just to halt the decline of nature on our estate, but to reverse it.

**Dominic Jones**

Executive Director Environment, Safety, Health and Quality





# Why Biodiversity Matters

Biodiversity refers to the biological diversity of life forms, species, genetic variation and ecosystems. It is a crucial component of the environment within which human society exists. Global biodiversity is declining and species populations are dwindling, pushing many organisms and ecosystems close to extinction.

Healthy ecosystems (those with high level of biodiversity) also provide a range of benefits, services and material provisions for humans. These can be divided into:

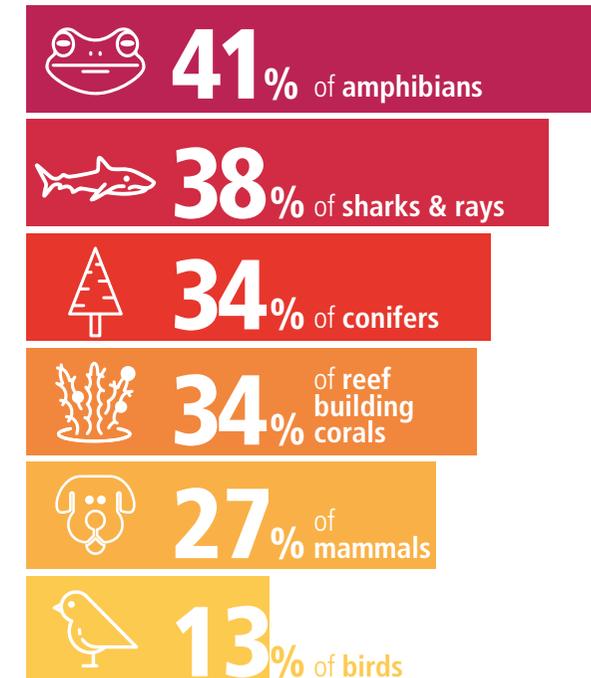
- Cultural: spiritual or religious enrichment, cultural heritage, recreation and tourism, aesthetic experience.
- Provisioning: food, fibre, fresh water, genetic resources.
- Regulating: climate, hazard, noise, pollination, water, air and soil quality, disease and pest control.
- Supporting: photosynthesis, nutrient and water cycling, and soil formation.

The 2019 Global Assessment Report on Biodiversity and Ecosystem Services<sup>1</sup> is the most comprehensive assessment ever completed and identified the main causes of biodiversity loss as: changes in land and sea use, direct exploitation of organisms, climate change, pollution and invasive alien species.

The AWE estate includes several priority habitats including lowland heath and wood-pasture.

It also hosts a range of flora and fauna with over 30 species of birds (including more highly protected species such as woodlark, kingfisher and peregrine falcons), five species of amphibians (including a breeding population of great crested newts), four species of reptiles, at least four species of bat, and ancient oak trees.

Therefore, it is critical that organisations such as AWE assess impacts on the natural world and begin to better value their benefits. Currently, there are more than 147,500 species on The IUCN Red List, with more than 41,000 species threatened with extinction<sup>2</sup>, including:



<sup>1</sup> [https://ipbes.net/sites/default/files/inline/files/ipbes\\_global\\_assessment\\_report\\_summary\\_for\\_policymakers.pdf](https://ipbes.net/sites/default/files/inline/files/ipbes_global_assessment_report_summary_for_policymakers.pdf)

<sup>2</sup> <https://www.iucnredlist.org/>



# External Policy

We are committed to protecting and enhancing the biodiversity on our sites. To ensure this can be done effectively, our biodiversity vision, goal and objectives are aligned to local, national and international objectives:

- The Greening Government Commitments (GGCs) set out the actions UK government departments and partners will take to reduce their impacts on the environment in 2021 to 2025.
- The Ministry of Defence Climate Change and Sustainability Strategic Approach which sets the ambition, principles and methods needed for UK Defence to meet the challenge of climate change.
- The National Policy Planning Framework (NPPF): Includes the protection of priority habitats and species, reflected by West Berkshire Council in its Local Plan - with a Core Policy (Policy CS17) covering biodiversity.
- Biodiversity Net Gain: This is a key concept which is reflected in the NPPF, and a 10% net gain will become mandatory for new developments under the Environment Act 2021.<sup>3</sup>
- Biodiversity Duty: Under the Natural Environment and Rural Communities Act (2006) AWE, as a non-departmental public body, has a legal duty to ensure biodiversity conservation and enhancement.
- UN Biodiversity Conference (COP 15) and Sustainable Development Goals: Governments from around the world agreed the Kunming-Montreal Global Biodiversity Framework (GBF), which aims to conserve 30% of the world's land and ocean by 2030. Sustainable Development Goal 15 relates to life on land and specifically aims to halt biodiversity loss.

<sup>3</sup> Further detail on Biodiversity Net Gain is provided later in this report



Magpie inkcap, *Coprinus picaceus*



# AWE's vision

Figure 1

<b>2050 Vision</b>	The value of the biodiversity of the AWE estate has been enhanced, with maximised benefit for both current and future generations.
<b>2040 Goal</b>	AWE has fully integrated the Natural Capital approach into its financial accounts and has created at least 100,000m <sup>2</sup> of pollinator friendly habitat.
<b>2030 Objectives</b>	AWE is delivering on its Nature Recovery Plan, including: <ul style="list-style-type: none"> <li>■ At least 75,000m<sup>2</sup> of pollinator friendly habitat created</li> <li>■ Woodland area increased by 10%</li> <li>■ Ecosystem Services Assessment complete</li> </ul>
<b>2025 Targets</b>	<ul style="list-style-type: none"> <li>■ Develop &amp; publish a Nature Recovery Plan</li> <li>■ Publish a Natural Capital Register</li> <li>■ All development projects will have achieved at least 10% Biodiversity Net Gain</li> <li>■ The area of woodland area will be enhanced by 5%</li> <li>■ 30,000m<sup>2</sup> of pollinator friendly habitat created</li> <li>■ Annual surveys completed for target species groups</li> <li>■ Achieved the Wildlife Trust Biodiversity Benchmark</li> </ul>





# Areas of Focus

To achieve AWE's ambitions we have developed our Nature Recovery Plan which identifies specific areas of focus up to 2025.

## Engage with external stakeholders to ensure we are making an appropriate contribution to biodiversity

Our biodiversity enhancement activities are more likely to have a positive impact if they are coordinated with those of external stakeholders, especially those in the local area. For example, AWE will explore how we can contribute to the Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust's (BBOWT) vision for a Nature Recovery Network<sup>4</sup>.

This is important, as wildlife needs to move and disperse across the landscape - when species become isolated they are at much greater risk of extinction. Landscape scale habitat networks also allow recolonisation if local extinction events do ever occur and are an effective method of conserving nature in landscapes that have

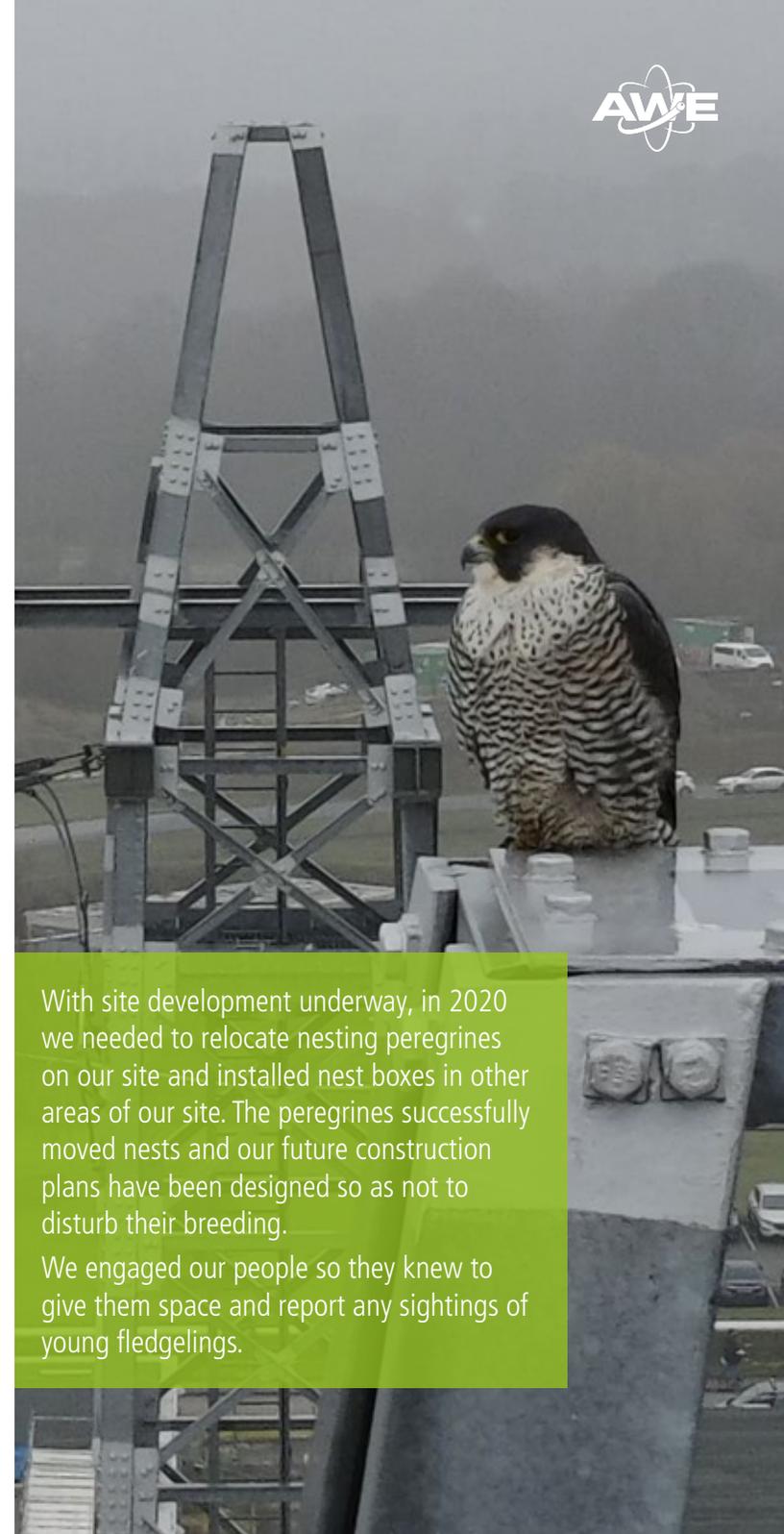
become fragmented by human actions.

We will also look to collaborate with similar organisations, such as other public bodies and operators within the civil nuclear sector. These organisations face many of the same challenges to AWE in terms of duties on public bodies or in dealing with the constraints of dealing with both hazardous materials and security requirements.

## Raise internal awareness about biodiversity issues

It is important to raise the awareness of biodiversity across the whole business to ensure improvements can be identified more widely. We do this by:

- Targeted training
- Awareness presentations and exhibitions
- Improvements to information on the company intranet and Geographic Information System
- Articles in staff publications



With site development underway, in 2020 we needed to relocate nesting peregrines on our site and installed nest boxes in other areas of our site. The peregrines successfully moved nests and our future construction plans have been designed so as not to disturb their breeding.

We engaged our people so they knew to give them space and report any sightings of young fledgelings.

<sup>4</sup> <https://www.bbowl.org.uk/wildlifematters/nature-recovery-networks>



# Areas of Focus

## Incorporate biodiversity considerations across the business

AWE has already substantially integrated biodiversity into its processes through operating an Environmental Management System, which is certified to ISO 14001. However, there are opportunities for further improvements whilst reflecting the duty placed on public bodies to conserve and enhance biodiversity:

- Biodiversity Net Gain (BNG) - the target for all major developments at AWE to meet at least 10% BNG will build biodiversity enhancement into the planning of new constructions.
- Meeting the requirements of the Wildlife Trust's Biodiversity Benchmark. This will build on AWE's existing ISO 14001 certification and allow us to better demonstrate our commitment through an independently verified standard.
- Identify parts of the estate as Biodiversity Opportunity Areas. Our aim is to achieve this through a mixture of long-term habitat

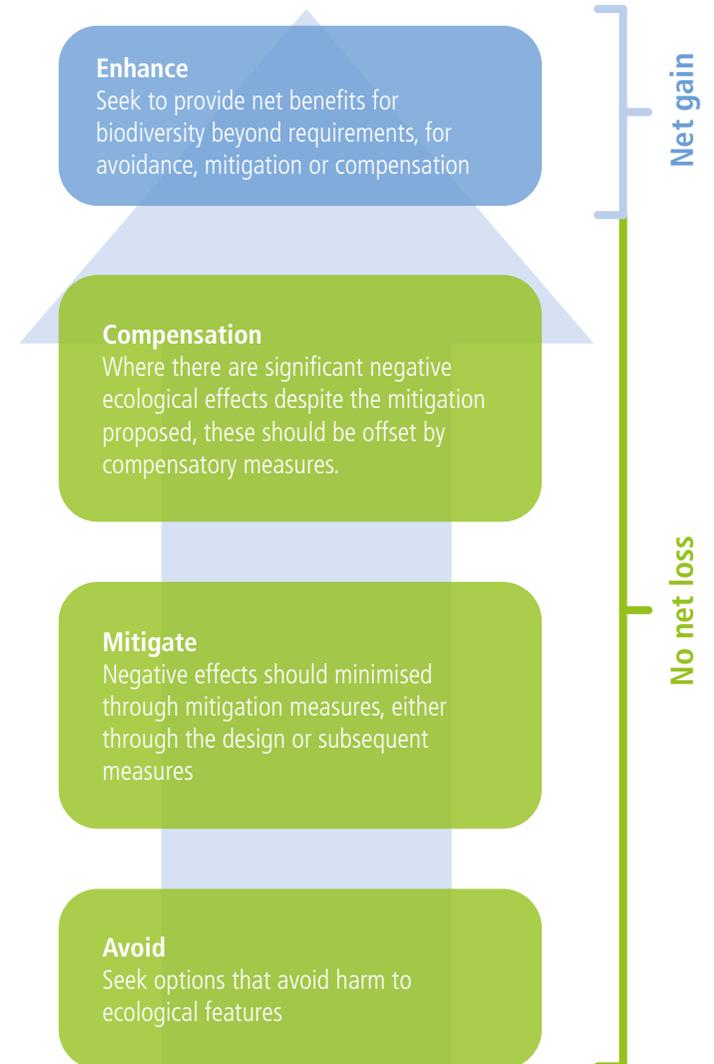
management of areas - where future development is unlikely - and temporary landscape management - where future development is planned but not immediate.

BNG aims to leave the natural environment in a measurably better state than beforehand and is measured using a standard metric produced by the Department of Environment and Rural Affairs (Defra). It is important to note that achieving gains in biodiversity does not override any existing planning policy or legislation, including the mitigation hierarchy (see Figure 2 right).

Applying the mitigation hierarchy means aiming to retain habitats in situ and avoiding or minimising habitat damage so far as possible.

**We have identified approximately 13% of our estate can be set aside for biodiversity conservation and enhancement.**

Figure 2: BNG and Ecological Mitigation





# Areas of Focus

## Protect and enhance tree planting and woodland cover

The 2030 target to increase the area of woodland on the AWE estate by 10% (against the 2021 baseline of 8.1%) will be achieved by:

- Compensatory planting when trees are felled at a minimum ratio of 3:1 (new to old). Although our preference is never to fell a healthy tree on our estate, it is sometimes required to facilitate development.
- Influencing landscape and Biodiversity Net Gain schemes for new build developments to ensure they include appropriate planting of native tree species.
- Creating an orchard on a 2.5ha site at AWE Burghfield. The intention is to use apple varieties native to West Berkshire and to replicate a traditional orchard planting scheme, using non-plastic biodegradable tree guards. This habitat has been identified as a priority habitat at both national and local levels.

Protecting and enhancing tree cover will also contribute to our efforts to reduce carbon. A study undertaken in February 2021 estimated that the existing woodland at AWE will sequester around 404 tonnes of CO<sub>2</sub> per annum.

In addition, to increase our understanding of the extent and nature of the woodland, the surveying and recording of the ancient and veteran trees will be extended across the estate. Ancient and veteran trees have a very high ecological, historical and landscape value. Bats and birds often use the hollow stems, and some species of lichen, fungi and insect can only be found on older trees. As few trees reach this age, they are relatively scarce in the landscape and therefore the species that rely on them are also rare. An initial partial survey undertaken in 2021 identified fifteen trees as either ancient, veteran or notable.



Ancient oak at AWE



# Areas of Focus

## Protect and enhance pollinator friendly habitat

The UK Government's National Pollinator Strategy<sup>5</sup> identified the loss of flower-rich habitat as the likely primary cause of the recorded decline in diversity of wild bees and other pollinating insects. Flower-rich habitats, such as meadows, are crucial to supporting pollinators by providing good sources of nectar and pollen throughout the summer, and shelter and nest sites. Conserving our remaining flower rich habitats directly supports pollinators and brings other benefits including protecting threatened plant populations and the wildlife that depends on such habitats.

Our aim is to achieve 75,000m<sup>2</sup> of habitat being created by 2030 by:

**In 2023, we exceeded our target with 170,000m<sup>2</sup> of reduced mow grassland created.**

- Extending a reduced mowing area by 5000m<sup>2</sup> per year. The intention is that these areas of grassland are not mowed between April and August to allow wildflowers to seed. Outside this period, it is important that they are mowed to reduce the encroachment of scrub species.
- Planting an orchard on a 2.5ha site at AWE Burghfield. Orchards support native pollinator species and can be under-sown with flower-rich grassland and will increase the area of woodland on the AWE estate. This habitat has been identified as a priority habitat at both national and local levels.
- Influencing planting plans Biodiversity Net Gain schemes to maximise their benefit to pollinator species. One of the primary ways of achieving this will be through increasing the use of native flowering species.



Flower rich grassland at AWE

<sup>5</sup> The National Pollinator Strategy: for bees and other pollinators in England (2014) DEFRA



# Areas of Focus

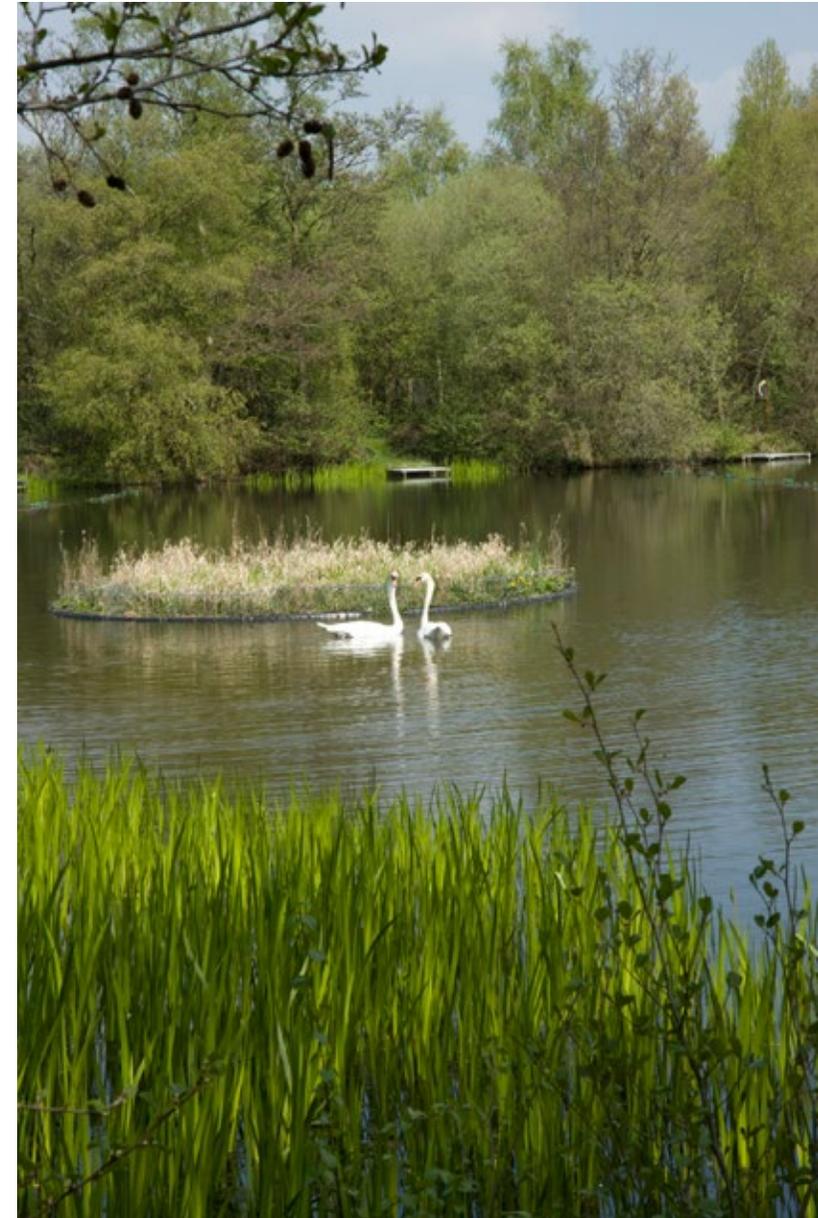
## Recognise the potential of, and deploy, nature based solutions

Nature Based Solutions (NBS) have been defined by the United Nations Environment Assembly as “actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems, which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services and resilience and biodiversity benefits”.<sup>6</sup>



Some of the NBS with the potential to be used at AWE include:

- Widening the current assessment of carbon captured by habitats on our estate
- Tree planting as a method of carbon capture, aligned to our 2030 target to increase the area of woodland on the AWE estate by 10%
- Wider consideration of the use of NBS, for example sediment capture and flood management
- Ensuring access to nature is included in staff wellbeing activities For example we previously used floating islands installed on one of our lakes as a form of bioremediation to reduce the occurrence of algae blooms, which could then impact water quality for habitats downstream.



<sup>6</sup> <https://www.unep.org/environmentassembly/unea-5.2>



# Areas of Focus

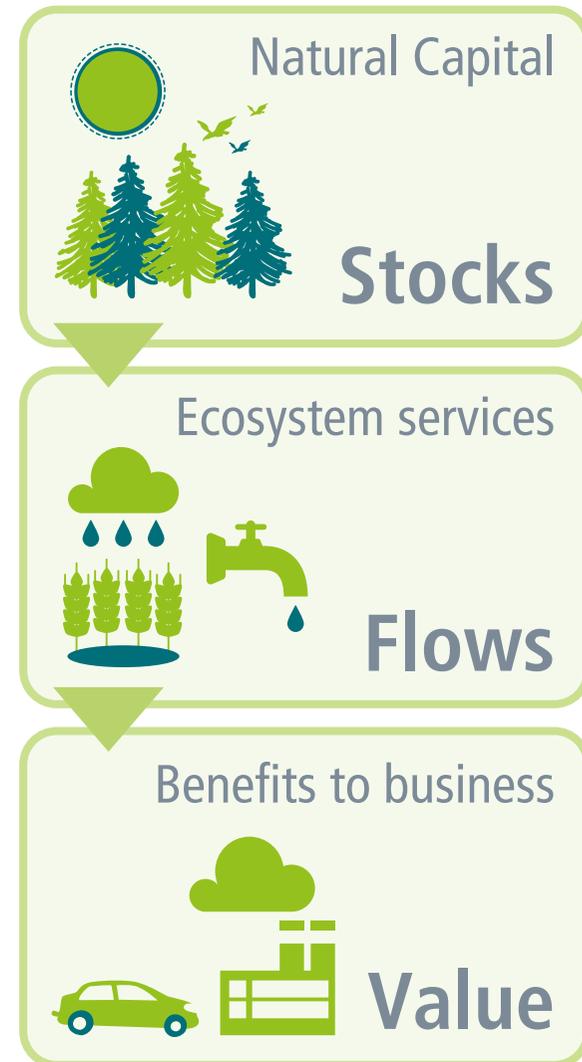
## Develop a set of Natural Capital accounts

Natural Capital accounting is a tool to measure the changes in the stock of Natural Capital and to integrate the value of ecosystem services into accounting and reporting systems. Natural Capital includes many different components of the living and non-living natural environment that directly or indirectly produce value to people.

A Natural Capital Register is effectively a balance sheet for these assets. The benefits we derive from these assets can be described as ecosystem services (see Figure 3 right) and assessing changes in value of the assets is equivalent to a profit and loss account. Combining these assessments would produce a set of Natural Capital accounts, which would facilitate the inclusion of the true value of the environment into public and private decisions.

AWE intends to create a Natural Capital Register and assign values by 2025, which will form the basis for subsequent assessments of the benefits derived from Ecosystem Services and, ultimately, the production of a full set of Natural Capital accounts.

Figure 3: Natural Capital stocks, flows, and values<sup>7</sup>



<sup>7</sup> Source: Adapted from the Natural Capital Coalition



# Areas of Focus

## Report against Nature Recovery Plan and demonstrate progress against key biodiversity indicators and targets

Progress will be tracked by AWE as part of its business as usual governance processes. Now we are a Non-Departmental Public Body, we have additional external reporting requirements and it is likely these will require greater detail in the future. To fully prepare for further requirements, we will:

- Engage with the Ministry of Defence (MOD) to establish specific biodiversity reporting requirements
- Expand surveys of target species groups to collect estate-wide baseline data

Although extensive survey work is undertaken before developments, AWE does not have recent data on species and habitats at an estate level. To assess the impact of our activities we will carry out site-wide ecological surveys.

Depending on the target species group, this may be to establish presence/ absence, or establish population sizes. Initially the surveys will concentrate on breeding birds, over-wintering birds and great crested newts, with the aim to expand this activity to other species groups in the future. Surveys will follow standard methodologies and in line with professional guidelines, so that the results can be compared to external sources.

In 2023, we surveyed for reptiles in an area of good habitat, completed a site wide breeding bird surveys and extended our survey looking to identify ancient and veteran trees.

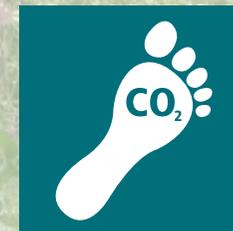
We are very proud of the steps we have made, but we recognise this is only the start. We look forward to reporting on our progress in the future against these plans.



Surveying for great crested newts at AWE



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