



Modelling better business:

Anglian Water's approach to
valuing its land for biodiversity
and preparing for net gain

The University of Cambridge Institute for Sustainability Leadership

The University of Cambridge Institute for Sustainability Leadership (CISL) is a globally influential Institute developing leadership and solutions for a sustainable economy. We believe the economy can be 'rewired', through focused collaboration between business, government and finance institutions, to deliver positive outcomes for people and environment. For over three decades we have built the leadership capacity and capabilities of individuals and organisations, and created industry-leading collaborations, to catalyse change and accelerate the path to a sustainable economy. Our practitioner orientated research builds the evidence base for action.

The Natural Capital Impact Group (NCIG)

The NCIG is a global network of companies, working collaboratively to determine how business can sustain the natural world and its resources through its strategies and operating practices, convened by the University of Cambridge Institute for Sustainability Leadership.

The Group is composed of progressive companies, including market leaders and household names, with significant land footprints and dependencies upon natural capital. The group members co-create, deploy and embed innovative and enterprising approaches to protecting soil, water and biodiversity in their businesses. In this way companies can enhance the natural environment and access new market opportunities, generate competitive differentiation and manage risks.

Anglian Water

Anglian Water covers the largest geographical area of any water company in England and Wales. The company employs 5,000 people and supplies water and water recycling services to more than seven million customers in the east of England and Hartlepool.

The region Anglian Water serves has a high proportion of flat and low-lying areas, including The Fens in Cambridgeshire and the Norfolk Broads. A quarter of the region lies below sea level which increases the risk of flooding. It is also one of the driest regions in the country, with just 600 millimetres of rain each year. On average, this is a third less than the rest of England and, in some areas, it has a lower annual rainfall than Jerusalem.

Anglian Water's strategy, Love Every Drop,¹ seeks to put water at the heart of a whole new way of living and helps people understand the realities of water use and climate change. To safeguard future water supplies, Anglian Water is working with water users across the region – housing developers, retailers, manufacturers, government representatives and customers – learning from each other and investigating new ways to supply and use water sustainably.

Publication details

Copyright © 2019 University of Cambridge Institute for Sustainability Leadership (CISL). Some rights reserved.

The material featured in this publication is distributed under the Creative Commons Attribution-NonCommercialShareAlike Licence. The details of this licence may be viewed in full at: <https://creativecommons.org/licenses/by-nd/4.0/>.

Disclaimer

The opinions expressed here are those of the authors and do not represent an official position of CISL, the University of Cambridge, or any of its individual business partners or clients.

Authors and acknowledgements

The lead author of this case study was Andrew Raingold (Change in Nature). Expert contributors included Chris Gerrard (Anglian Water) and Dr Cath Tyleur (CISL).

Reference

Please refer to this report as: University of Cambridge Institute for Sustainability Leadership (CISL). (2019, December). Modelling better business: Anglian Water's approach to valuing its land for biodiversity and preparing for net gain. Cambridge, UK: University of Cambridge Institute for Sustainability Leadership.

Copies

This full document can be downloaded from CISL's website: www.cisl.cam.ac.uk/publications

Modelling better business

This series of case studies, underpinned by sound research, provides examples of how large multinational companies are protecting natural capital on the ground, and the business and societal benefits this delivers.

Our goal is to create compelling commercial cases for action, in sectors reliant on natural capital, which companies may learn from and potentially replicate.

Natural Capital Impact Group

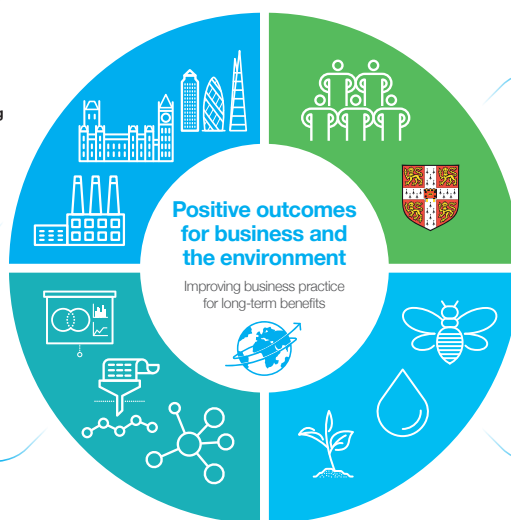
A global network of companies, working collaboratively to determine how business can evolve its strategies and operating practices to sustain the natural world and its resources, while creating new market opportunities and commercial benefits.

Creating positive impact at scale

Application of new thinking through our work with industry, financial institutions and policymakers

Harnessing research and thought leadership

Taking an innovative, enterprising and research-driven approach, while sharing knowledge, tools and processes



Learning with forward-thinking market leaders

Senior engagement between leading companies supported by the University of Cambridge

Delivering through member-led workstreams

SOIL – evaluating strategies to enhance soil fertility and measure business impacts

WATER – collaborating with stakeholders to implement solutions to flooding

BIODIVERSITY – developing simple, practical biodiversity metrics that are meaningful across business value chains

Modelling better business: measuring and managing natural capital

“The degradation of the environment, particularly due to intensive agricultural practices in post-war Britain, has been more intensive in this region than almost anywhere else,” Brian Eversham, Chief Executive of the Wildlife Trust for Bedfordshire, Cambridgeshire and Northamptonshire states.

“This has led to a huge loss of natural habitats and a big decline in wildlife in a place that has suffered from human impacts from the time even before the Romans arrived here. As a result, Cambridgeshire is the least wooded county in the UK. After decades, centuries of loss, for the first time in 4,000 years, we may be creating more wildlife habitats than we are destroying.”

Anglian Water has worked in partnership with the Wildlife Trust for decades to manage nature reserves at Grafham Water and Pitsford Water. Brian goes on to say: “In my experience, Anglian Water not only takes biodiversity very seriously, but they have been leaders in measuring, analysing and interpreting data. For years, they have developed indices to help them manage what they are doing on the biodiversity side to complement their metrics on the business side.”

Anglian Water supplies water and water recycling services to over seven million domestic and business customers across the east of England and Hartlepool. The services they provide are inextricably linked to the natural environment. For example, Anglian Water:

- takes water from rivers and aquifers, and returns treated water back to the environment
- has significant land and water assets across the region, including globally or nationally important wildlife habitats such as Rutland Water
- relies on the natural environment to help maintain water quality and quantity.

The company has always recognised its responsibility to protect the natural environment and enhance biodiversity within the region and beyond. Peter Simpson, Chief Executive of Anglian Water, states: “A healthy natural environment is the foundation of a strong economy and prospering communities. We rely on the environment to provide the over 1.2 billion litres of water we supply to customers every day, so we recognise we have an important role in safeguarding it.”

In its Strategic Direction Statement, Anglian Water describes itself as a “Natural Capital Business”, relying on healthy ecosystems to help to supply water, manage flood risks and recycle water after it has been used.² In its Biodiversity Strategy, it states that “the region’s biodiversity is important and unless we look after it the benefits it provides us will be diminished... As a water company we benefit when wildlife habitats such as woodlands and wetlands help keep water clean by removing sediment and other contaminants, or slow its movement through the catchment to prevent flooding. We even rely on nature to help treat our used water before it goes back into the environment.”

While the uptake of approaches to natural capital is growing within corporate contexts, measuring and managing these benefits remains challenging. With approximately 7,000 sites across the region that are home to thousands of different animal and plant species, Anglian Water needs to understand what it should measure and how it can maximise the positive impact it can have on the environment.³

Anglian Water takes a collaborative approach to solving sustainability challenges. This is one of the reasons it joined the Cambridge Institute for Sustainability Leadership’s Natural Capital Impact Group (NCIG).⁴ Members recently tackled the issue of measuring their natural capital impacts, working together to develop a set of metrics to inform business decision-making processes, whilst being simple and practical for stakeholders to use.

Building upon the work of NCIG, Anglian Water commissioned studies to measure natural capital and biodiversity in greater detail. This not only helps the company to meet its own commitments to protect and enhance the natural environment but also provides useful frameworks that can influence others as the issue continues to rise up commercial and political agendas.

Anglian Water also recognises that a successful business is underpinned by other forms of capital and an understanding of the role they play in delivering outcomes for customers, communities and the environment. Fundamental to its decision-making processes is the measurement and optimisation of six capitals: Natural, Social, Human, Manufactured, Financial and Intellectual. This forms a key part of its 2020–2025 business plan² and integrated reporting framework.

“

By taking action for wildlife and wild spaces we can play our part in creating a flourishing environment, ensuring our region remains a great place to live, work, and visit.

Peter Simpson

Chief Executive, Anglian Water

”

The overall context

The world's natural resources and ecosystems are being degraded at an alarming rate, a problem which is deepening with rising population and per capita consumption.

According to a comprehensive international study, compiled by 145 expert authors from 50 countries, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) found that nature is declining globally at rates unprecedented in human history.⁵ The report, published in May 2019, found that around one million animal and plant species are now threatened with extinction, many within decades, and the average abundance of native species in most major land-based habitats has fallen by at least 20 per cent.

The UK is one of the most nature-depleted countries in the world. The 2019 State of Nature report,⁶ which brought together data and expertise from over 70 organisations, found that of the 8,431 species assessed in the UK, 15 per cent are threatened with extinction and 2 per cent are already extinct. The UK population of nightingales, for example, has declined by 61 per cent since the 1990s and its

breeding range has significantly contracted in the last 40 years.⁷ Factors contributing to species loss include agricultural intensification, climate change, hydrological change and urbanisation.

In response to these trends, combined with the impact of a changing climate, many organisations and public bodies, including the UK Parliament, have declared an environment and climate emergency.⁸ This is because ecosystems, biodiversity and a stable climate are fundamental to our health, wellbeing and prosperity. Indeed, healthy ecosystems and resource security form two of the six sustainability ambitions that are set out in CISL's Rewiring the Economy report – a ten-year plan to lay the foundations for a sustainable economy and meet the UN's Sustainable Development Goals (SDGs) – which should be addressed through ten interconnected tasks.⁹

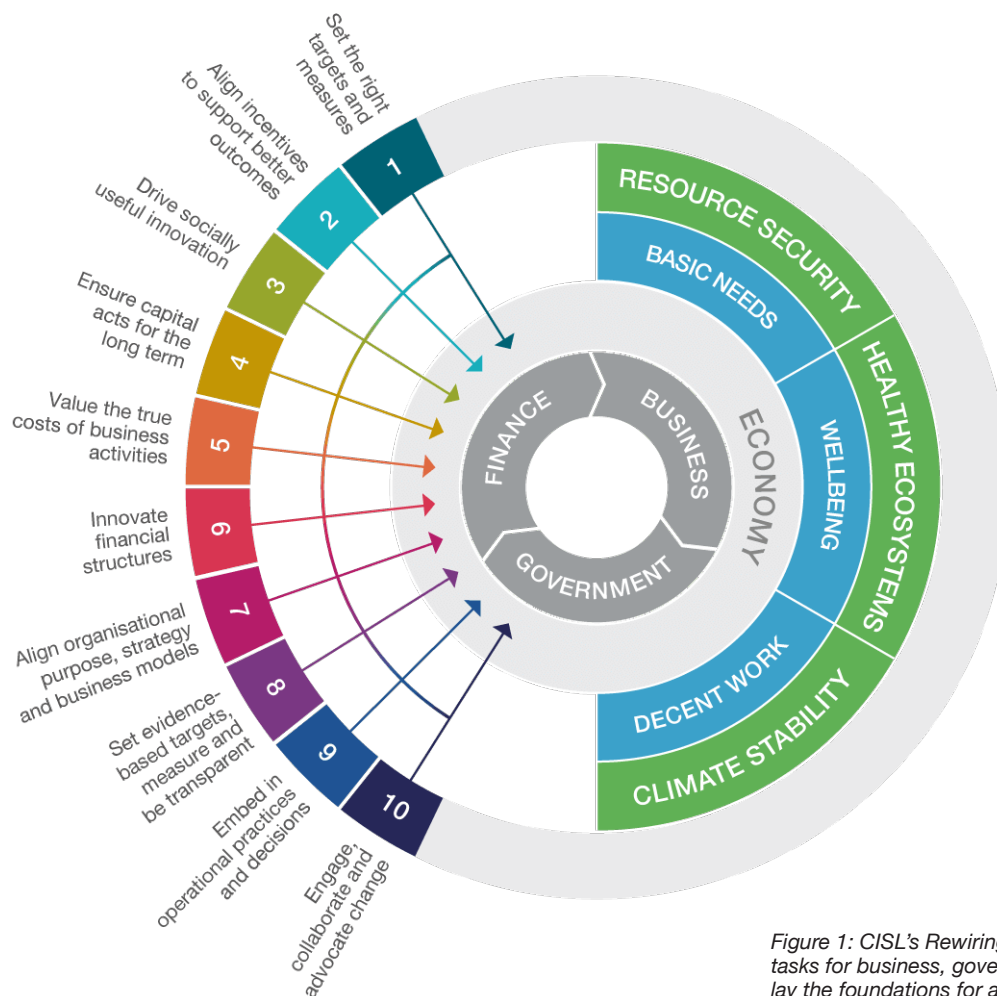


Figure 1: CISL's Rewiring the Economy: Ten tasks for business, government and finance to lay the foundations for a sustainable economy

There is also increasing awareness amongst business leaders of the implications of the threats posed by biodiversity loss and ecosystem collapse. This ranked in the top ten highest corporate risks in terms of both likelihood and impact in the World Economic Forum's Global Risks Report 2019.¹⁰

All businesses, either directly or indirectly, depend upon biodiversity and ecosystem services for their ongoing commercial success. It is vital for businesses to address the significant risks and opportunities relating to these dependencies and subsequent impacts. As a result, some businesses are assessing their dependency on biodiversity and ecosystem services, and integrating measures for the sustainable use of these into their corporate strategies. To date almost a third of the top Fortune 100 companies have made clear biodiversity commitments (although only five of these have made measurable, time-bound commitments¹¹). Leading companies are also adopting practices to protect and restore ecosystems, source raw materials sustainably and expand green goods, services, products, investment vehicles and markets which value and protect ecosystem services.¹²

The value of biodiversity and ecosystem services is rarely incorporated into corporate decision-making adequately, and greater action is required if businesses are going to play their full part to help meet the UK's long-term goal for improving the environment within a generation.¹³ In line with this goal, Anglian Water is adopting a biodiversity 'net gain' approach. Moving beyond 'no net loss', this is a commitment to leave biodiversity in a measurably better state as a consequence of a company's activities. In 2019, the UK government announced it would use the Environment Bill to introduce biodiversity net gain as a mandatory requirement for new development (such as housing and infrastructure projects) in England.¹⁴ Prior to this announcement Anglian Water made a commitment to deliver net gain through its construction and land management activities.

“

Why net gain?

No net loss is simply not good enough. The decline of species and the loss and fragmentation of wildlife habitat across our region needs to be reversed if we are to stop human-driven extinction, help nature cope with inevitable climate change and continue to get the benefits to society that nature provides.

In what ways does membership of NCIG benefit Anglian Water?

We like to look ahead, anticipate, learn and collaborate. Exploring issues relating to natural capital with like-minded practitioners, combined with the academic rigour provided by the University of Cambridge, helps us to address our challenges and co-create solutions. It has been hugely beneficial to have access to some great thinkers, be inspired by what others are doing and share our knowledge and expertise. We can then take the learning back and apply it.

The Biodiversity Impact Metric helped to shape our thinking and became a springboard for our approach to measure and manage our biodiversity impacts. What was particularly influential for us is how the metric is broken down into the three components of area, quantity and importance. While the methodology itself is particularly useful for companies with international supply chains, the conceptual framework corresponds very closely to the metric we have now adopted. The intention of the NCIG was not to create a uniform metric that could be applied by all companies in all situations but to lead the way in setting out an approach that could be adapted for individual needs.

Chris Gerrard

Natural Catchment and Biodiversity Manager, Anglian Water

”

Changing the paradigm: measuring business impacts on nature

Transformative shifts in policies are needed to protect and enhance ecosystems and address the biodiversity crisis. Key to this is measuring the right things so that businesses can understand and improve their impacts. This is why broadening the measurement and disclosure framework is one of CISE's recommended tasks for business in *Rewiring the Economy*.⁹

To meet this objective, members of CISE's NCIG came together and expressed a need to develop clear, standardised metrics to demonstrate their progress towards reducing their impact on nature. The group worked in partnership with leading academics and NGOs to develop a new approach to measurement that determines where corporate impacts pose the greatest risks to natural capital.¹⁵

NCIG members believe that measuring impacts on biodiversity, soil and water offers a strategic way of evaluating the business risks of degrading or depleting nature. If a company has a rigorous approach to understanding its biggest impacts, investment can be directed to where it can have most benefit.¹⁶

While a plethora of methodologies, standards and tools exist that help investors and businesses understand their interaction with nature, CISE's NCIG¹⁷ identified a need for simple and commonly accepted impact metrics, ones that help shape operational decision-making, engage with civil society and respond to investor needs. The principles for these metrics are outlined in Table 1.

Table 1: CISE's key principles for impact metrics¹⁵

Principle	Description
Meaningful	Meaningful to business and investor communities so it can be used to drive decision-making. Methodology is clearly understood.
Measurable and comparable	Allows for comparison across geographies and time.
Possible to aggregate	Can be aggregated from site level to regional and global scales.
Practical	Data is accessible, measurable by the company or available via free, globally available datasets. Ability to substitute better information where available.
Replicable and credible	Based on a reputable scientific method.
Context based	Considers local conditions/levels to reflect 'impact' (beyond 'usage').
Responsive	Responds to changes in company activities, both long and long term.

The NCIG¹⁵ developed three metrics for measuring impacts on:

- biodiversity
- soil
- water.

One of these three metrics, the Biodiversity Impact Metric, can be used to assess and track the impact of a company's commodity sourcing based on the biodiversity lost through land transformation for production. The basic framework for the metric is:

- the area of production
- multiplied by the quantity of biodiversity lost through land conversion
- multiplied by the global importance of the biodiversity lost.¹⁵

The Biodiversity Impact Metric was designed for companies in commercial sectors including food, beverages and apparel where much of their impact on nature lies in their supply chains, often three or four tiers upstream. A different approach to measuring biodiversity impact is required for companies with a more precise understanding of their operating context, such as water companies.

Case study:

Anglian Water and net gain

The company and regional context

Anglian Water is the largest water and sewerage company in England and Wales by geographic area, covering 23 per cent of the land area (27,476 km²). It supplies 4.3 million people with high-quality drinking water and collects used water from over six million customers.

The company operates in the driest region in the UK – receiving only two-thirds of the national average rainfall each year (approximately 600 mm). Its region has over 3,300 km of rivers and is home to the UK's only wetland national park – the Norfolk Broads. The business operates 143 water treatment works and 1,128 water recycling centres, supplying over 1 billion litres of water every day to 2.5 million households and 110,000 businesses.¹⁸

Anglian Water recognises that it has the potential to affect the environment both positively and negatively. It seeks to ensure that its activities enhance rather than damage nature; in July 2019 it enshrined environmental and social purpose within the company's constitution, committing to: “conduct its business and operations for the benefit of members as a whole while delivering long term value for its customers, the region and the communities it serves and seeking positive outcomes for the environment and society.”¹⁹

Anglian Water's Biodiversity Strategy³ outlines the work it does to protect wildlife. This includes:

- managing 49 Sites of Special Scientific Interest that are protected by law because of their high value for wildlife – their total area equates to 146,000 tennis courts and includes Tetney Blow Wells in Lincolnshire, Rutland Water in Rutland and Newbourne Springs in Suffolk
- ensuring construction projects are carefully planned to avoid or minimise harm to wildlife
- managing its sites to enhance their wildlife value
- working in partnership with organisations such as the Wildlife Trust, Keep Britain Tidy and the British Trust for Ornithology to undertake conservation projects across the region
- funding projects to conserve species including the osprey, nightingale and pool frog
- working with the Environment Agency to manage the impact of

abstractions on rivers and aquifers.

The company's work to promote a flourishing environment is widely supported by its customers. Insight from customer engagement completed for its 2020–2025 business plan demonstrated that 74 per cent of customers supported high investment in this area, and there was almost universal support for more natural capital approaches.²

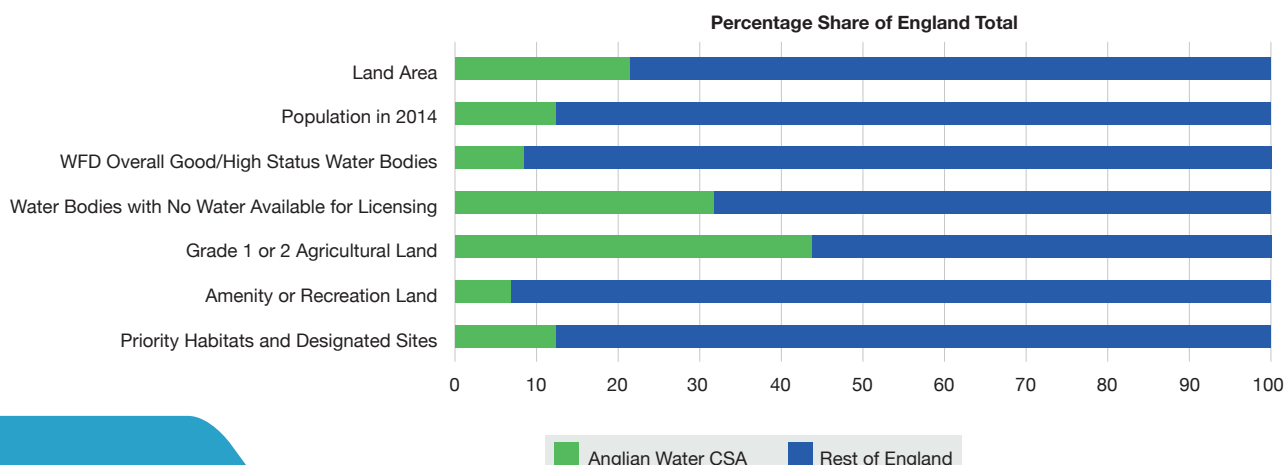
Natural capital in the region

Anglian Water's starting point, when looking at what it could be doing to enhance the environment, was not at the company level but rather the wider region it serves. To better understand the context in which it operates, Anglian Water commissioned a study by the University of East Anglia to characterise the natural capital assets in the region.

The natural capital asset check examined the quantity, quality and location of natural assets, such as habitats, soils, freshwaters and bathing waters. It also assessed key benefits that flow from these assets such as support for food production, climate regulation and recreation use. The study drew on freely available data to ensure that the approach could be easily replicated for other geographical areas or stakeholders in the region. The results were then used to compare the profile of Anglian Water's region with the remainder of England, as shown in Figure 2.

The analysis showed that the region has relatively poor water quality and restrictions on water availability. In addition, there are proportionally fewer areas of amenity or recreation land and important sites for biodiversity. However, there was a high proportion of high-quality agricultural land. Indeed, the region contains 48.5 per cent of the best quality agriculture land (Grade 1 and 2) in the country.

Figure 2:
Natural capital
assets in
Anglian Water
region



A risk register was used to map two pressures (growth and water resource availability) with the presence of natural capital onto each local authority within the Anglian Water region (Figure 3). The authorities depicted in the darker green and blue shades had significant amounts of natural capital but also the highest levels of pressure on those assets. Four authorities in the Anglian Water region (Breckland, Havering, Luton and Uttlesford) had the highest level of both natural capital assets and pressures. The map highlights locations where there is likely to be a need for careful spatial planning.

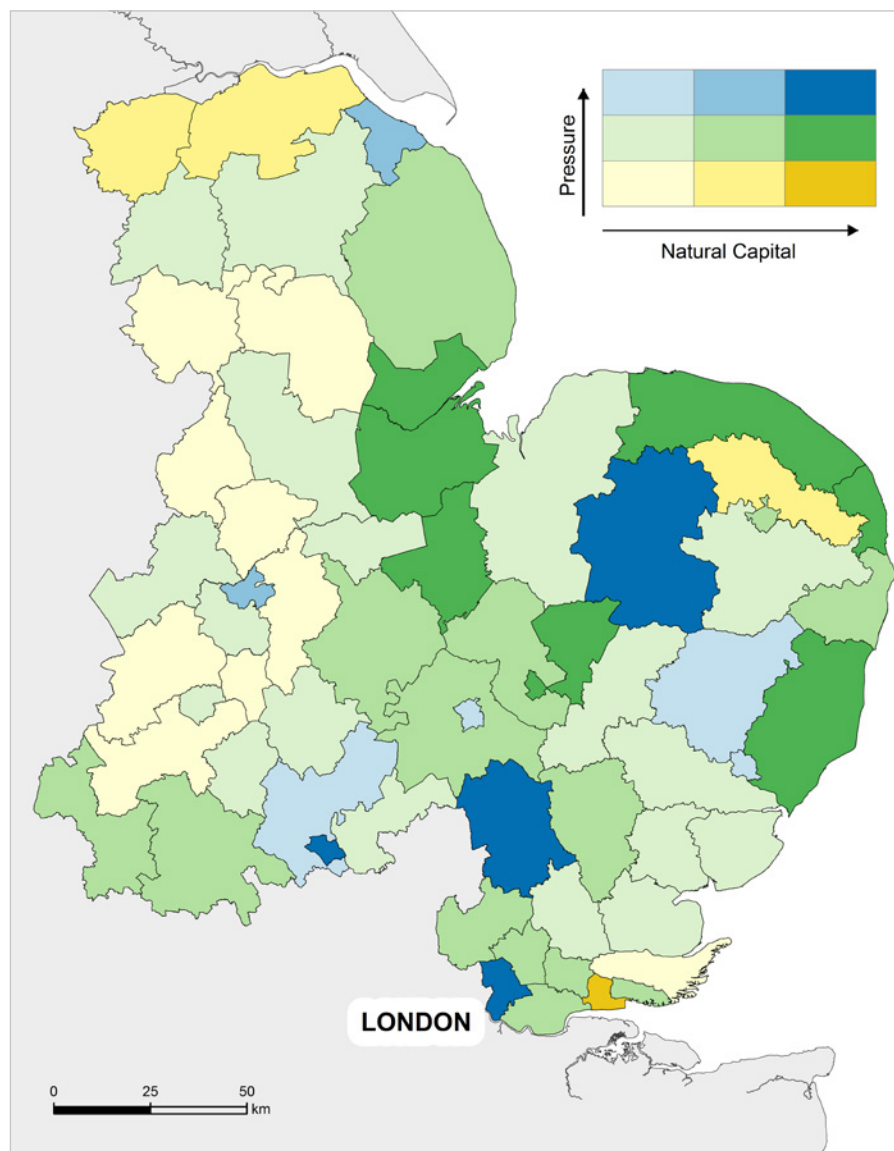


Figure 3: Geographical analysis of natural capital assets and pressures

“

How has the natural capital analysis been useful for the company?

The natural capital asset check and risk register painted a picture of a region with many challenges. While it did not give us many surprises, it certainly helped to shape our thinking.

The report informed our natural capital approach and the metrics we selected. We recognise that there is action we can take ourselves and other challenges that can only be addressed by working collaboratively. This led to our decision to establish Natural Capital East, a business-led coalition working to enhance the region's natural capital.

Chris Gerrard
Natural Catchment and
Biodiversity Manager,
Anglian Water

”

Measuring biodiversity impacts for net gain

The natural capital asset check and risk register highlighted the relative lack of biodiversity in the region. While a 'no net loss' approach would only seek to halt decline, Anglian Water's net gain commitment aspires to enhance biodiversity in the region as a result of its activities.

To achieve this ambitious goal Anglian Water needed to gain a better understanding of biodiversity on its land and to set up a robust and auditable process for recording biodiversity losses and gains. To meet these needs, the company took a twin track approach: an audit of its biodiversity assets and a biodiversity baseline study.

Anglian Water's Biodiversity Strategy: a flourishing environment for nature and everyone³

"A good outcome will be... The environment in our region flourishes. Rivers, lakes, aquifers and coastal waters support a rich biodiversity, contribute to a growing economy and provide a valuable amenity for families and communities. There is joined-up, effective and collaborative management of the water cycle in our catchments (areas drained by a river) from source to tap and back to the environment. Our activities are sensitive to environmental needs, and risks and adverse impacts are avoided. People, businesses, water-users – and land-users in our region are engaged in the challenges of maintaining a sustainable environment. All legal requirements are met."

The **biodiversity audit** provides Anglian Water with a ranking that takes into account the value of each site at a landscape level. This helps the company to identify the most important sites to manage better or that are so valuable from a biodiversity perspective that it seeks to avoid building assets.

The **biodiversity baseline analysis** quantifies all of Anglian Water's land in terms of biodiversity units. Once the biodiversity impact of a development is known Anglian Water can calculate how much biodiversity needs to be created in order to deliver net gain. Taken together the biodiversity baseline and the biodiversity audit provide a deep understanding about the value of Anglian Water's assets to support decision-making:

- As well as identifying sites for proactive management, the audit provides additional insight into the biodiversity value of land, helping inform the application of the biodiversity baseline and mitigation hierarchy on the most sensitive sites to ensure their value for wildlife is fully taken into account.
- The baseline helps identify the most important parts of a site to inform approaches to land management.

Biodiversity audit of Anglian Water's land assets

Anglian Water owns approximately 7,000 sites, so one of its challenges is to identify the most important for biodiversity and prioritise them for management. To help address this they undertook a comprehensive analysis²⁰ with the University of East Anglia. The analysis provided a prioritisation and ranking of Anglian Water sites on the basis of their relative biodiversity value; this helped to inform priorities for management and identify where improvements can be delivered. Datasets on habitats, species assemblages and protected areas were collated and assessed to inform an evidence-based conservation strategy.

The study used the 'Better, Bigger, More, Joined' recommendations of the Lawton Review,²¹ a Government study of the challenges and opportunities facing biodiversity conservation in England, to inform how Anglian Water's sites could be prioritised in the context of the UK's wider ecological network. Overall, the analysis helps to inform priorities for mitigation and biodiversity gain during infrastructure development and active conservation management.



Applying the Lawton principles

Three metrics were devised for each of the components of Better, Bigger and Joined*. Each of these components was weighted and applied to Anglian Water's sites. These nine component scores were then combined to generate a total score for each site.

Better

- The presence of functionally significant habitat on site
- The abundance of species on site
- The occurrence of rare species on site

Bigger

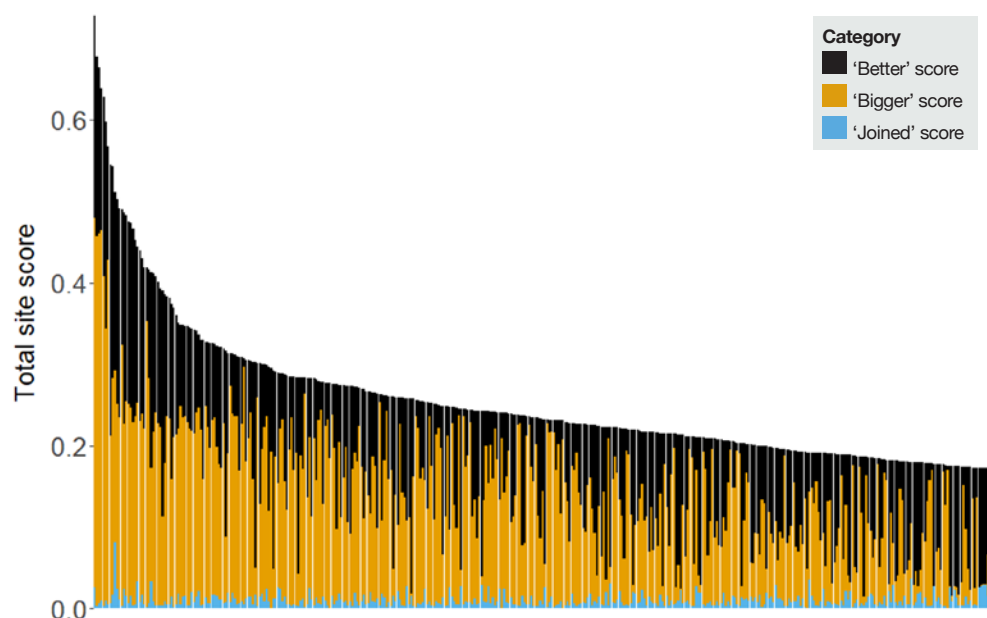
- Sites big enough to enable species to complete their life cycle on site
- Sites big enough to support habitat diversity
- Sites big enough to provide opportunities for 'wildness'

Joined

- The site's proximity to protected sites in the surrounding area
- The site's proximity to priority habitats in the surrounding area
- The site's presence within landscape scale conservation initiatives

* The Lawton principle of More was not relevant in this context as Anglian Water is not in a position to buy land solely for the purpose of creating biodiversity.

Figure 4: The top 400 Anglian Water sites ranked for biodiversity impact. This chart shows the combined score for each of the top 400 sites, each one made up by summing the sites' Better, Bigger and Joined scores. Each column represents a site and the maximum score a site can have is 1.



One of the most significant benefits of the ranking is that it highlights the importance of sites that do not have any legal designation, such as Local Wildlife Sites and priority habitats.

In some cases it has helped to bring to attention sites that may not have been thought of as significant for biodiversity. A good example is the three-hectare area around Homing-Knackers Wood Water Recycling

Centre in Norfolk. This ranked as the 24th most valuable site, mainly due to its connection to the adjacent landscape, which includes woodland, wet grassland and a tributary of the River Ant in the Norfolk Broads. Due to this finding, Anglian Water is now considering habitat enhancement around the recycling centre to increase the diversity of plant and animal species.

“The collaboration with Anglian Water allowed us to develop a set of novel quantitative measures to implement the Lawton principles of landscape-scale restoration and apply them to a huge data set of real-world sites. This will help Anglian Water prioritise interventions and mitigation measures based on robust evidence.”

Paul Dolman Professor of Conservation Ecology, University of East Anglia

Biodiversity baseline of Anglian Water’s land assets

A biodiversity baseline of Anglian Water’s land holdings was undertaken by WSP. Areas of habitat were identified on each operational asset and given a biodiversity unit score. As a result, Anglian Water now has a score for each site and for each parcel of habitat within each site. Anglian Water can measure the progress of its land management and construction projects against its net gain commitment by using this baseline.

The biodiversity metric, using Defra guidance,²² is made up of three components:

- 1. The area of the habitat in hectares.
- 2. The quality of the habitat, assessed as poor, moderate or good.
- 3. The distinctiveness of the habitat, assessed as low, medium or high. Distinctiveness reflects, amongst other factors, the rarity of the habitat concerned (at local, regional, national and international scales) and the degree to which it supports species rarely found in other habitats.

These three components broadly correlate to the three components of the NCIG’s Biodiversity Impact Metric, as shown in Figure 5.

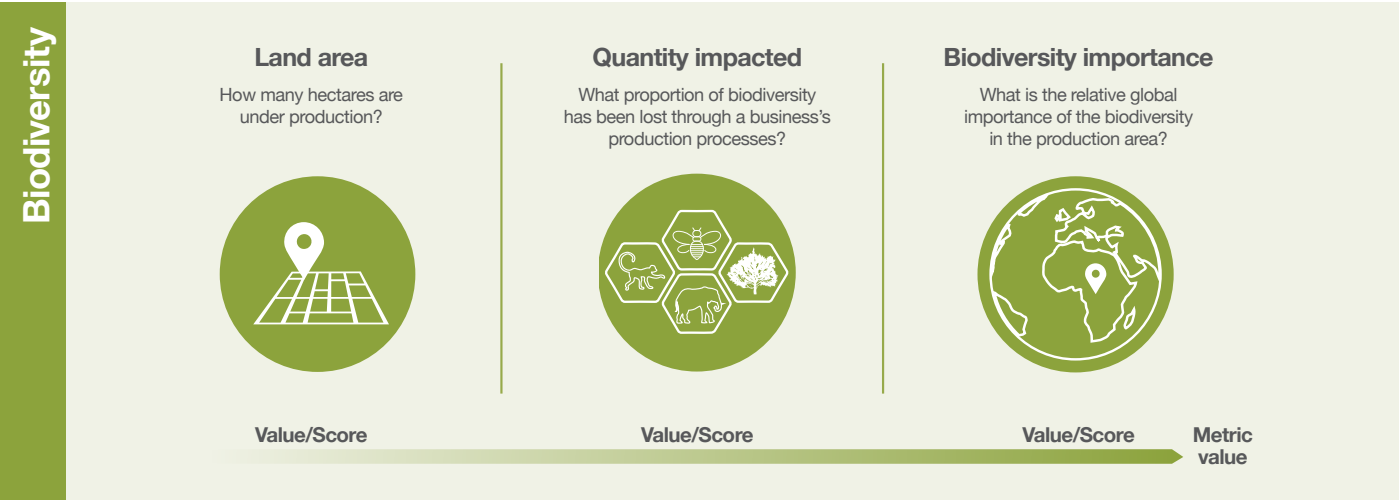
Version 2 of the Defra metric, published in beta in summer 2019, includes two more components: habitat connectivity and strategic significance. As the baseline analysis preceded this release, default scores for these components were used and will be updated when more information is available.

This metric can be used, for example, to quantify the unavoidable loss of biodiversity that might result from a new construction project and support Anglian Water in understanding where it can reduce or offset this loss to deliver biodiversity net gain. Examples of offsetting include:

- increasing the distinctiveness of habitats, for example, converting conifer woodland to broadleaved woodland
- improving the quality of biodiversity through better land management, for example, by converting regular mowing to hay meadow, or introducing grazing, in order to improve species richness and structural diversity
- increasing the area of biodiversity such as the creation on farmland of lagoons at Rutland Water that occurred in the late 2000s.

Figure 5: NCIG’s Biodiversity Impact Metric

A comparison of the biodiversity metrics developed by Defra and NCIG.			
Attribute	NCIG/CISL	Defra	Calculation
Area	Area in hectares	Area in hectares	In both approaches each attribute has a numerical score. The numerical scores are multiplied to give a total score. This enables decision-makers to consider options for reducing impact and delivering net gain
Quantity	Mean species abundance for different land use types (e.g. managed forests, cropland or urban) and intensities (e.g. minimal, moderate or intense)	Whether the habitat impacted is assessed as being in poor, moderate or good condition prior to the asset being built	
Importance	Uses range rarity to identify the relative importance to biodiversity of different regions across the globe	Uses a distinctiveness score which includes consideration of the rarity of the habitat impacted	



“

What have been the benefits of Anglian Water's approach to net gain?

We set ourselves a big challenge with our approach to net gain. We didn't want to think about our land holdings in isolation but to value them as part of the wider ecological network.

The aim is to have a map of every single Anglian Water asset detailing how many biodiversity units are associated with each asset. Why is this useful? It helps our construction teams understand the value of a site, plan accordingly and reduce our impact on biodiversity. Where impacts cannot be avoided we are committed to creating measurable net gain.

The baseline metric we use has its limitations. For example, it can be a relatively blunt tool which focuses at habitat level rather than a species level and does not yet include any recognition of what is next to or beyond a particular site. The Defra metric is being updated to address some of these limitations and will be published in early 2020.

Our detailed site knowledge also helps. The ranking from the biodiversity audit helps to put each site in the context of the wider ecosystem and the species it supports.

When you put the audit and baseline metrics together it provides a really comprehensive picture of both how we can manage our land better and the importance of sites in the wider context of the landscape. It is a massive leap in our understanding. We never had this ability in the past. It is great for our team to know we are doing the right things in the right places and we can ensure our customers know this too.

Chris Gerrard
Natural Catchment and Biodiversity Manager,
Anglian Water

”

“

Anglian Water is demonstrating its leadership by investigating the biodiversity value of its existing assets and using this to commit to a target of net gain. The work they have done provides a blueprint for the UK water industry demonstrating how they can and should be taking care of the wider environment. We are delighted that our Natural Capital Impact Group can help spark the ideas that underpin transformative and pioneering action.

Dr Cath Tayleur
Programme Manager,
Business and Nature, CISE

”

Lessons and opportunities

What the company learned

Anglian Water is taking strides to meet its net gain commitment by measuring and managing biodiversity at a site level and tracking this over time. This can support both staff and external stakeholders to understand and verify the progress being made by the company.

However, the company's aspirations for delivering net gain go beyond the individual site level with a commitment to enhance wider environmental and societal outcomes. Although the metric is robust, it does not take account of the wider benefits that could be delivered by targeting where and how biodiversity net gain is delivered. For example, if Anglian Water prioritised delivering net gain on sites around its reservoirs, this could improve water quality and enhance recreation opportunities. Defra is developing an 'Eco-metric' to help deliver a net gain in ecosystem services resulting from development and is designed to be used once biodiversity net gain has been secured. It could be a useful tool to help Anglian Water provide greater benefits for society and the environment and meet its public interest commitment.

To inform decision-making, it is important that Anglian Water's approach to net gain and natural capital is incorporated into the company's strategic thinking at the highest level, including key performance indicators. It has achieved this by making natural capital, including a metric tracking biodiversity net gain, one of its Performance Commitments in its 2020–2025 business plan.² Performance Commitments are used by Ofwat, other regulators and stakeholders, such as NGOs, to measure and compare water company performance.

What the Natural Capital Impact Group learned

For businesses to measure and manage their impacts on biodiversity and natural capital there is a wide variation in the availability, resolution and accuracy of data. Metrics not only have to be meaningful, workable and impactful but easy to understand for non-experts in the business and its customer base.

Anglian Water's collaboration with the NCIG helped the company to shape its thinking, particularly in the early stages of its approach to measuring net gain. The development of the company's biodiversity metrics was an iterative process bringing together academic insight with practical application. Anglian Water was able to take the metric principles developed by NCIG and use them to develop a measurement approach tailored to its local and national context, including operational imperatives, legislative drivers and land management frameworks.

NCIG members recognise that it is extremely challenging to make the same measurement approach work for companies operating in different sectors and geographies, such as procuring cotton from India or a UK-based water company building new infrastructure. Anglian Water has rich datasets to draw upon and a precise understanding of the land area that falls under its influence. Companies with international supply chains find it more difficult to know exactly where their producers operate and have less access to relevant environmental datasets. Rather than developing a metric that can be universally applied, it is more important that metrics are built on robust principles and deliver results that can inform decision-making.

Next steps

Biodiversity net gain forms one element of Anglian Water's commitment to embedding a six-capitals decision-making approach in its next business plan. Metrics are being developed for each capital and processes are being refined accordingly to integrate these into company decision-making.

Anglian Water's approach is consistent with Defra guidance and the UK governments announcement to use the Environment Bill¹⁴ to introduce biodiversity net gain as a mandatory requirement for new developments in England. Anglian Water has prepared for and will use version 2.0 of Defra's biodiversity net gain metric published in summer 2019.

Recognising that Anglian Water cannot improve natural capital across the region alone, it is working with other companies and organisations to establish Natural Capital East, a business-led initiative to protect and enhance natural capital for the benefit of biodiversity, communities and the economy.

For further information or advice on our work in this area, please email info@cisl.cam.ac.uk

Glossary

Key Term	Explanation
Biodiversity	Biodiversity is the variety amongst living things on earth. Biologists define it at different scales, including habitats, species and genetics.
Biodiversity net gain	Biodiversity net gain is a measurable target for development projects where impacts on biodiversity are outweighed by a clear mitigation hierarchy approach to first avoid and then minimise impacts, including through restoration and/or compensation. ²³
Ecosystem	An ecosystem is a community of living (animals, plants, fungi) and non-living (water, climate and atmosphere) things. Examples of ecosystems include forests, grasslands, deserts, tundra, freshwater and marine.
Ecosystem services	Ecosystem services are the benefits that humans gain from ecosystems and the natural environment, such as clean air and water.
Natural capital	Natural capital is the stock of renewable and non-renewable resources (e.g. plants, animals, air, water, soils, minerals) that benefit people. The state of natural capital assets (such as landscapes, soils, water, air and ecosystems) affects their ability to maintain the provision of ecosystem services into the future.

References

1. Love Every Drop. (2019). Retrieved October 9, 2019, from Anglian Water website, <http://www.anglianwater.co.uk/about-us/who-we-are/sustainability/love-every-drop/>
2. Anglian Water. (2019). Our Plan 2020–2025. (2019) Retrieved from <http://www.anglianwater.co.uk/siteassets/household/pr19/01-pr19-our-plan-2020-2025.pdf>
3. Anglian Water. (2019, February). Biodiversity Strategy. Retrieved from <https://www.anglianwater.co.uk/siteassets/household/in-the-community/anglian-water-biodiversity-strategy.pdf>
4. Natural Capital Impact Group. (2019). Retrieved October 9, 2019, from University of Cambridge Institute for Sustainability Leadership website, www.cisl.cam.ac.uk/natcap
5. Plenary of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. (2019, May). Summary for policymakers of the global assessment report on biodiversity and ecosystem services. Retrieved from https://www.ipbes.net/system/tidf/ipbes_7_10_add.1_en_1.pdf?file=1&type=node&id=35329
6. State of Nature Partnership. (2019). State of Nature 2019. Retrieved from <https://nbn.org.uk/wp-content/uploads/2019/09/State-of-Nature-2019-UK-full-report.pdf>
7. Hewson, C. M., Miller, M., Johnston, A., Conway, G. J., Saunders, R., Marchant, J. H. et al. (2018). Estimating national population sizes: Methodological challenges and applications illustrated in the common nightingale, a declining songbird in the UK, *Journal of Applied Ecology*, 55(4), 2,008–2,018. doi: 10.1111/1365-2664.13120
8. Declare a Climate Emergency. (n.d.). Retrieved from <http://www.climateemergency.uk>
9. University of Cambridge Institute for Sustainability Leadership (CISL). (2015, July; updated 2017, November). Rewiring the Economy: Ten tasks, ten years. Retrieved from <https://www.cisl.cam.ac.uk/resources/publication-pdfs/rewiring-the-economy-report.pdf>
10. The World Economic Forum. (2019). The Global Risks Report 2019, 14th Edition. Retrieved from http://www3.weforum.org/docs/WEF_Global_Risks_Report_2019.pdf
11. Addison, P. F. E., Bull, J. W., & Milner-Gulland, E. J. (2019). Using conservation science to advance corporate biodiversity accountability. *Conservation Biology*, 33, 307–318.
12. Ecosystem Markets Task Force. (2019). Retrieved October 9, 2019, from GOV.UK website, <http://www.gov.uk/government/groups/ecosystem-markets-task-force>
13. HM Government. (2018). A Green Future: Our 25 Year Plan to Improve the Environment. Retrieved from <http://www.gov.uk/government/publications/25-year-environment-plan>
14. Defra Press Office. (2019, March 13). Government to mandate 'biodiversity net gain'. [Web log post]. Retrieved from <https://deframedia.blog.gov.uk/2019/03/13/government-to-mandate-biodiversity-net-gain/>
15. Di Fonzo, M., & Cranston, G. (2017). Healthy Ecosystem metric framework: Biodiversity impact, University of Cambridge Institute for Sustainability Leadership (CISL), Working Paper 02/2017.
16. University of Cambridge Institute for Sustainability Leadership (CISL). (2019). Measuring business impacts on nature: A framework to support better stewardship of soil, water and biodiversity in global supply chains, Cambridge, UK: University of Cambridge Institute for Sustainability Leadership.
17. Di Fonzo, M., & Hime, S. (2017). How businesses measure their impacts on nature: A gap analysis, University of Cambridge Institute for Sustainability Leadership (CISL), Working Paper 01/2017.
18. Fast facts. (2019). Retrieved October 9, 2019, from Anglian Water website, www.anglianwater.co.uk/about-us/media/fast-facts/
19. Anglian Water (2006, updated 2019, July). Articles of Association of Anglian Water Services Limited. Retrieved from <https://www.anglianwater.co.uk/siteassets/household/about-us/aws-articles-of-association.pdf>
20. Liam Crowther, Daniel Saliss, Paul Dolman. University of East Anglia. Biodiversity audit of Anglian Water's land assets (Phase 1). (June 2018). Unpublished raw data.
21. Lawton, J. (September, 2010). Making Space for Nature: A review of England's Wildlife Sites and Ecological Network. Retrieved from <https://webarchive.nationalarchives.gov.uk/20130402170324/http://archive.defra.gov.uk/environment/biodiversity/documents/201009space-for-nature.pdf>
22. Defra. (2013, September). Biodiversity offsetting in England: Green paper. Retrieved from https://consult.defra.gov.uk/biodiversity/biodiversity_offsetting/supporting_documents/20130903Biodiversity%20offsetting%20green%20paper.pdf
23. CIEEM, CIRIA & IEMA. (2016). Biodiversity Net Gain: Good practice principles for development. Retrieved from <https://cieem.net/wp-content/uploads/2019/02/Biodiversity-Net-Gain-Principles.pdf>

Head office

1 Trumpington Street
Cambridge,
CB2 1QA, UK

T: +44 (0)1223 768850
info@cisl.cam.ac.uk

Brussels

The Periclès Building
Rue de la Science 23
B-1040 Brussels, Belgium

T: +32 (0) 2 894 93 19
info.eu@cisl.cam.ac.uk

Cape Town

PO Box 313
Cape Town 8000
South Africa

T: +44 (0)1223 768850
info@cisl.cam.ac.uk