



# Climate Emergency Development Plan Document

Topic Paper: Natural Climate Solutions  
July 2020



This is one in a series of topic papers produced to inform the preparation of the Council's Climate Emergency Development Plan Document (DPD)

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## Executive Summary

The natural world has been in long term poor health in the UK with 56% of our species in decline and 15% threatened with extinction. A healthy stock of Natural Capital Assets will not only rebuild our Biodiversity but will absorb Greenhouse Gases, bolster ecological resilience and enable adaptation to climate change through flood absorption and heat shading. More than this, Natural Capital underpins the ability of ecosystems services to continue to provide services such as air filtration and crop pollination during times of climactic change.

The aim of a Natural Climate Solutions approach is to deliver a long-term strategy to increase stocks of Natural Capital Assets in Cornwall and unlock the innate abilities of the natural world to provide effective responses to the climate emergency.

National Planning Policy (NPPF 2019) and the Cornwall Local Plan already contain policies which require “Net Gains” in biodiversity, the consideration of ecosystem services and the establishment of green infrastructure within development. However Net Gains have been inconsistently achieved owing to its lack of definition and green infrastructure has remained a peripheral concept within the planning process both with developers and planners.

The Climate Emergency DPD is an opportunity to bolster existing policies at a local level, provide more details and therefore establish environmental net gains and green infrastructure at the heart of the planning process. This is a necessary step in order to balance out current government ambitions on house building and infrastructure and is in line with aims and intentions of the HM Government 25 Year Environment Plan.

The future approach of Cornwall Council is to anticipate the forthcoming National policies of the Draft Environment Bill 2020 and provide some additional innovative solutions, such as the option of Canopy Cover policy for trees in development and a Green Points System for minor developments. The policies build on the research and evidence of DEFRA in their development of the DEFRA Biodiversity Metric.

There is also an increasing body of evidence which suggests that green infrastructure and greater levels of greenery in towns have further cross-cutting positive benefits in terms of mental health, active travel, recreation and well-being. The benefits of a Natural Climate Solutions approach are wide and represent good value.

## What is this topic paper about?

The Council is preparing a new Plan to set the framework for dealing with climate change. This will sit underneath the Local Plan and forms the strategic framework for planning decisions. This topic paper summarises the latest available evidence on natural climate solutions. Reflecting the wide scope of this topic there are a number of overlaps between this paper and the other papers.

To view all the topic papers and the latest update on the Climate Emergency DPD, please visit: [www.cornwall.gov.uk/climatechangedpd](http://www.cornwall.gov.uk/climatechangedpd)

## Can I comment on this topic paper?

The Climate Emergency DPD topic papers are factual in nature and set out the planning policy context and current issues in Cornwall, along with potential future approach to inform policy development. There will be opportunities to comment on the content of the Climate Emergency DPD at various stages of its development. As such we are currently seeking views on these topic papers, in particular any gaps in evidence.

If you wish to be kept informed of any forthcoming consultation please email [climateemergencydpd@cornwall.gov.uk](mailto:climateemergencydpd@cornwall.gov.uk) with your contact details.

# Natural Climate Solutions

## Introduction

The natural world can help address the causes and effects of climate change. However, nature has been in long term poor health in the UK, with 56% of our species in decline and 15% threatened with extinction. In order to address this at a policy level, biodiversity (plant and animal species), habitats, geology, soils, air and water have collectively become reframed in recent years as Natural Capital. This definition highlights that our natural resources can not only be depleted but can in fact be regarded as **assets** that we can collectively build up, store and draw upon into the future.

The UK Government has placed regulations on LPAs to take a lead in responding to biodiversity losses through the adoption of clear environmental and planning policy requirements that encourage developers to take account of biodiversity impacts. Planning and investment to enhance biodiversity can also contribute to wider local objectives, for example relating to health and wellbeing, active travel, flood prevention and local economies.

The aim of a Natural Climate Solutions approach within the planning framework in Cornwall is to establish an effective long-term strategy to increase our local Natural Capital Stocks and thereby unlock the innate abilities of the natural world to **mitigate and adapt** to the climate emergency.

## Mitigation through Sequestration of Carbon Dioxide

Soil and vegetation collectively sequester carbon dioxide. Of the UK's total carbon stock, soils contain 94.2% (4,019 million tonnes of carbon) and terrestrial vegetation comprises 5.8% (247 million tonnes of carbon). While habitats such as well managed forest or woodland make a higher contribution per m<sup>2</sup> to total carbon stocks, habitats such as semi natural grassland also have great potential owing to their greater land cover and ease of establishment. (*Biocarbon Stock Estimates by Habitat 2007 – Office for Natural Statistics*). A Natural Climate Solutions approach therefore seeks to provide an increased and varied number of natural habitats and ensure they remain undisturbed, thereby allowing both the vegetation and the soil to lock away carbon dioxide into the future.

## Adaptation through Enhancing Ecological Resilience

Eco-systems are comprised of interconnected sets of Natural Capital Assets and provide us with a set of free regulatory and provisioning services. These outputs are known as 'eco-systems services' and underpin the daily functioning of our economy and of society through processes such air filtration and crop pollination.

Increases in global temperatures are set to spur latitudinal movement of wildlife, challenging the ability of our ecosystems to self-support and continue to deliver these essential eco-system services. The resilience of eco-systems can be enhanced by

increasing the natural capital assets that comprise them, by developing robust populations and by targeting investment towards sites that maximise ecological networks and reduce habitat fragmentation. In addition, the absorptive qualities of natural systems also play an important and cost-effective role in protecting humans from anticipated extremes in weather patterns.

### **Green Infrastructure**

Green Infrastructure comprises a variety of Natural Capital Assets such as hedgerows, trees, bushes, banks, meadows etc and can be seen as an operational arm of Net Gain. It is defined in the NPPF 2019 as a network of multi-functional green space, urban and rural, which is capable of delivering a wide range of environmental and quality of life benefits for local communities.

Green Infrastructure not only strengthens networks of ecological resilience by allowing porous connections through development sites for wildlife, but it also increases the ability of the natural world to absorb water in times of flooding and provide shade and urban cooling during times of prolonged heat. It does this while simultaneously providing recreational active spaces which encourage a sense of place and positive mental well-being.

### **Delivering Natural Climate Solutions through 'Net Gains' in Natural Capital**

Although the current planning system already requires 'net gains' as part of the planning process there is no commonly agreed or measurable definition, and therefore a level playing field for developers does not exist. Given that current government ambitions on house building and infrastructure are likely to further accelerate land use change, the implementation of a Net Gain policy is urgently required in order to reverse the overall decline of Natural Capital and create positive increases.

Biodiversity Net Gain then is an approach to development that leaves the environment in a measurably better state than beforehand. Where Biodiversity Offsetting is required this can be achieved by using land identified within the Local Nature Recovery network and does not necessarily change how highly-productive agricultural land is used – it can be done with lower-yield land without endangering food security.

In addition to Biodiversity Net Gains specific to the development site, the concept of measuring the impact on the surrounding environment and requiring wider compensatory environmental gains has been gaining traction nationally with pilots and emerging metrics across the UK. This new approach aligns with the aims and intentions of other Natural Capital Net Gain Cornwall Council policies such as the Forest for Cornwall, with its aim of increasing canopy cover by 2% and the Environmental Growth Strategy.

## **Health and Well-being**

Cornwall needs healthy, happy and resilient human populations in order to respond, and adapt to the stresses of climate change. In recent years much research has gone into understanding the health promoting effects of the greening of residential environments, with a great deal of evidence mounting that access to nature has not only preventative health benefits but can also accelerate patient recovery. Natural Climate Solutions provides all round good value.

## Policy Context and Evidence

### National Planning Policy

**National Planning Policy Framework (NPPF) (2019)** includes Ch. 15 Conserving and enhancing the natural environment. The current National planning approach to 'Net Gains' for biodiversity is set out in paragraphs 170d) and 175a). The NPPF requires that development should:

- Minimise impact on biodiversity
- Provide Net Gains for Biodiversity
- Establish Coherent and Future resilient Ecological Networks
- Be refused if harm to biodiversity cannot be avoided or compensated for

The NPPF requires that impact on biodiversity is included as a material planning consideration in the weighing up of any planning decision. However, the lack of a commonly agreed or measurable definition of 'net gain' has left developers without a level playing field and led to patchy and inconsistent implementation across the UK.

Given that current government ambitions on house building and infrastructure are likely to accelerate land use change, the implementation of a Net Gain policy with clearly defined parameters is urgently required in to reverse the overall decline of Natural Capital.

**The National Planning Policy Framework (NPPF) (2019)** also sets out the requirement for provision of *Green Infrastructure* in Paragraphs 91, 150, 171 and 181. The NPPF requires the planning system to:

- Address the range of impacts from climate change, particularly in vulnerable areas
- Enhance habitats and Green Infrastructure on a regional scale
- Identify opportunities to improve air quality through green infrastructure
- Improve health and well-being

**The Draft Environment Bill (forthcoming 2020)** is set to put into law a requirement for a minimum 10% Biodiversity Net Gain, measured with an agreed Biodiversity Metric, for all planning applications.

**DEFRA Biodiversity Net Gain Consultation 2019** informed the content of the Draft Environment Bill 2020 and suggested that a minimal 10% Biodiversity Net Gain requirement would achieve the most appropriate balance between reconciling Natural Capital objectives and economic development.

Within the response’s developers expressed concerns about financial viability of projects while environmental groups pushed for higher net gain requirements to compensate for temporary loss of habitats and uncertainties involved in establishing new net gains over long periods of time.

<http://publications.naturalengland.org.uk/publication/5850908674228224>

### **Draft Agriculture Bill (2020)**

**Town and Country Planning Act (2017)** Environmental Impact Assessment including (para 4 (b) Process; Schedule 3.1 (d) Screening development; Schedule 3.2 (1) (b) Location of development; Schedule 4.1 (c) Information in Environmental Statements

**National Planning Practice Guidance Natural Environment** (para 10 – 35) responsibilities regarding protected and priority species and habitats; ‘proportionate’ information and assessment required on biodiversity impacts at all stages of development; local ecology networks and nature recovery networks; application of mitigation hierarchy, net gain metrics, and promotion of woodlands

**(Draft) Environment (Principles and Governance) Bill (2019/2020)** (England and Wales)

**Conservation of Habitats and Species Regulations 2012** (HM Government, 2017)

**Natural Environment and Rural Communities (NERC) Act (2006)**

**Wildlife and Countryside Act (1981)** (as amended)

**HM Government: A Green Future: Our 25 Year Plan to Improve the Environment:** The aim is to shift the focus from nature conservation to improving the quality and increase the stock of Natural Capital.

## **Local Planning Policy**

**The Cornwall Local Plan Strategic Policies 2010-2030** approach to Net Gains and Green Infrastructure is set out primarily in Policies 23 and 25. There is a general requirement to ‘conserve, protect and *where possible* enhance biodiversity’ ; it is worth noting that the NPPF has removed the words ‘*where possible*’ from national policy, thereby changing the interpretation of policy 23. This is because the NPPF has primacy in policy terms.

**CLP Policy 23 (Natural Environment)** requires that development should:

- Avoid adverse impact on existing features as a first principle
- Adequately and proportionally mitigate adverse impacts on biodiversity
- **Enable net gains** by designing in landscape and biodiversity features and enhancements.
- Only propose offsite compensation as a last resort, when adverse impacts are unavoidable
- ‘sustain local distinctiveness and character and protect and where possible enhance Cornwall’s natural environment and assets...’

As with the NPPF 2019, Net Gains in biodiversity are not defined or quantified. The type, quality or scale of any net gain in a proposal would therefore need to be agreed between the applicant and the planning authority.

This leaves scope for inconsistency in approach from the Council. This is because positive ecological outcomes are more likely to be achieved on planning applications where the council’s planning ecologist has the resource to be more closely involved. A quantified approach to net gain is now required in order to provide a predictable and level playing field for developers.

**CLP Policy 25 (Green Infrastructure)** requires that development:

- Demonstrates the creation and enhancement of functional environmental infrastructure, ecosystem services and biodiversity and provides appropriate buffers to natural spaces
- Creates connections, including eco-system services and the restoring and the enhancing of connectivity

The existing Cornwall Local Plan policy requirements are not specific in content and make relatively conceptual policy asks with minimal guidance available in the **Cornwall Design Guide 2013**. Green Infrastructure, therefore, as a concept, has not yet achieved primacy within the planning system in Cornwall.

It is worth noting that the **Cornwall Draft Design Guide** has recently been through consultation and contains updated and expanded information on how to successfully integrate Green Infrastructure into proposals. This is set to be adopted in 2020.

*In addition:*

**CLP Policy 2 (Spatial Strategy)** sets out the importance of protection and enhancement of environmental assets.

**CLP Policy 12 (Design)** requires the provision of multi-functional and natural green spaces.

**CLP Policy 16 (Health and Wellbeing)** requires development to protect and alleviate risk to people and the environment from unsafe development by avoiding or mitigating potential hazards from future climate change impacts and providing flexible community spaces that promote health needs and social interaction.

**CLP Policy 28 (Infrastructure)** requires developer contributions to be sought to ensure the necessary physical, social, economic and green infrastructure is in place to deliver development. It also requires that contributions will be sought for any biodiversity offsetting required.

**Cornwall Council Chief Planning Officer Note - Biodiversity Net Gain 2020:** This note has been through consultation stage and sets out an intention for policy alignment with the Draft Environment Bill 2020. The Note states that all major developments in Cornwall from 1<sup>st</sup> March 2020 must demonstrate a minimum 10% Biodiversity Net Gain as measured with the DEFRA Metric. A Biodiversity Net Gain Plan must also accompany the application detailing how and where the Net Gain has been achieved.

This Chief Officer Planning Note signals to developers that Cornwall Council planners and ecologists are now interpreting 'net gain' in accordance with the most up-to-date national ecological advice and tools available from DEFRA.

With regards to **eco-systems services** and wider environmental gains, Paragraph 170b) of the NPPF does require that development should protect and enhance the local environment by recognising the benefits of natural capital and ecosystems services. The Cornwall Local Plan Policy 25 also requires that Green Infrastructure contributes to the operation of ecosystem services. However, like Biodiversity Net Gain, there has so far been no nationally agreed way of assessing or measuring this wider environmental requirement and implementation has been low.

## Evidence

There is established and growing evidence of the benefit of natural systems in the enhancement and protection of development in Cornwall and the ability to help humans and species to adapt to climate change.

- Gov.uk - Biodiversity Net Gain  
<https://www.gov.uk/government/consultations/biodiversity-net-gain-updating-planning-requirements>
- DEFRA Metric and Biodiversity Net Gain Consultation  
<http://publications.naturalengland.org.uk/publication/5850908674228224>

- Natural Climate Solutions: [www.naturalclimate.solutions/the-science](http://www.naturalclimate.solutions/the-science)
- Natural systems mapping, University of Exeter for South West for Economic and Environmental Prosperity <https://sweep.ac.uk/>
- Lagas Natural Capital Information and Information Hub [lagas.co.uk](http://lagas.co.uk)
- Royal Town Planning Institute (RTPI), Planning for Biodiversity: Obligations and opportunities to promote biodiversity through the UK planning systems [RTPI | Biodiversity in Planning](http://RTPI.org.uk/Biodiversity-in-Planning)
- Cornwall Council Environmental Growth Strategy: <https://www.cornwall.gov.uk/environmentalgrowth>
- DEFRA Biodiversity Metric <http://publications.naturalengland.org.uk/publication/5850908674228224>
- Natural England Climate Change Adaptation Manual (NE751) Part 4 – Green Infrastructure / Part 7 – Eco-systems <http://publications.naturalengland.org.uk/publication/5679197848862720>
- UK Government 25 Year Environment Plan - 'A Green Future: Our 25 Year Plan to Improve the Environment' <https://www.gov.uk/government/publications/25-year-environment-plan/25-year-environment-plan-our-targets-at-a-glance>
- UK Government 2<sup>nd</sup> National Adaptation Programme – Talks about building ecological resilience – nature recovery network part of that plan <https://www.gov.uk/government/publications/climate-change-second-national-adaptation-programme-2018-to-2023>
- Treasury Green Book 2018 <https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government>
- UK Government Spring Statement 2019 – Implementation of Biodiversity Net Gain – Government to Mandate net gains for biodiversity on new developments in England to deliver an overall increase in biodiversity <https://www.gov.uk/government/topical-events/spring-statement-2019>
- Environment Bill 2020 - Set to achieve Royal Assent at end 2020 / 2021 <https://www.gov.uk/government/publications/environment-bill-2020/10-march-2020-nature-and-conservation-covenants-parts-6-and-7>
- High Wycombe Canopy Cover SPD Policy – 25% Mandatory Tree Canopy Cover <https://www.gov.uk/government/publications/environment-bill-2020/10-march-2020-nature-and-conservation-covenants-parts-6-and-7>
- Grabs Expert Paper 6 Interreg - <https://nextcity.nl/wp-content/uploads/2017/01/1701256-Malmoe-Tools-c-Annika-Kruuse.pdf>
- Draft London Plan 2017 – Chapter 8 Green Infrastructure and Natural Environment [https://www.london.gov.uk/sites/default/files/new\\_london\\_plan\\_december\\_2017.pdf](https://www.london.gov.uk/sites/default/files/new_london_plan_december_2017.pdf)

- Natural England & Oxford University Eco-metrics - <https://ecosystemsknowledge.net/ecometric>
- Natural Capital Planning Tool - <http://ncptool.com/>
- TCPA – The Green Space Factor and the Green Points System - <https://www.tcpa.org.uk/the-green-space-factor-and-the-green-points-system>
- (Biocarbon Stock Estimates by Habitat 2007 – Office for Natural Statistics) <https://www.ons.gov.uk/economy/environmentalaccounts/bulletins/uknaturalcapital/experimentalcarbonstockaccountspreliminaryestimates>
- CABE - Future Health: Sustainable places and wellbeing: <https://webarchive.nationalarchives.gov.uk/20110118110739/http://www.cabe.org.uk/files/future-health.pdf>

#### **Further or enhanced evidence requirements:**

Viability work would be required to justify any local Cornwall ambitions to aims for any exceed the forthcoming National 10% Biodiversity Net Gain minimum at 20%.

Smaller / minor development sites are set to be covered by the Biodiversity Net Gain 10% minimum mandate in the Draft Environment Bill. It is anticipated that such sites will use a simplified version of the DEFRA Metric, but in the current absence of national guidance, the Council is developing the use of a local Green points System. Evidence may be required to demonstrate that the Green Point System is in line with the 10% minimum requirement for Net Gain.

The Trees in Development policy involves complex calculations on tree maturity and species type in order to create a system which provides for an above ground canopy cover percentage. This builds on the work done by High Wycombe and intellectual property rights may be available to purchase. However, more research may be required to understand more fully how this policy both interacts with the Biodiversity Net Gain DEFRA Metric and also how the concept translates to the climate of Cornwall. Understanding the role of landowners in carbon capture and biodiversity offsetting and mechanisms for linking them to development and securing contributions. (potentially via conservation covenants, especially related to Biodiversity Net Gain)

Update may be required to facility studies for rural areas to provide background to any approach of development of additional clustered/shared facilities. Further scoping work may be required to test the approach to linking whole estate plans to planning policy.

## Future Approach

The approach and suggested policies for the Climate Emergency DPD are based around the core Natural Capital concept of the 25 Year Environment Plan and emerging national policy such as the Draft Environment Bill 2020. The adoption of such policies will establish an effective long-term strategy to increase Cornwall's Natural Capital Stocks and thereby unlock the innate abilities of the natural world to **mitigate and adapt** to the climate emergency.

### Policy recommendations/options:

#### Biodiversity Net Gain on Major Development

- Require a minimum 10% Biodiversity Net Gain
- Using the DEFRA Metric to measure habitats as Biodiversity Units
- Option for the council to adopt a more ambitious minimum 20% figure.
- Invest Compensatory Biodiversity Units into Local Nature Recovery Network
- 'Trashed Site' Policy to discourage pre-development ecological site clearances

#### Biodiversity Net Gain on Minor Developments – Cornwall Green Points System

- A simplified approach achieving 10% Net Gain via a simplified Green Points system, with exemptions in line with the Draft Environment Bill 2020
- National Government may issue a simplified DEFRA Metric in the future.
- Each green feature (landscaping, trees, green roofs, green walls and nature-based sustainable drainage) has a designated point score and the number of points required per development is calculated using the overall plot size.
- There is scope within this policy for requiring that a percentage is achieved using trees.
- Styled on urban greening systems developed by Malmo in Sweden, the TCPA, Southampton and the London Draft Plan.

**Cornwall Green Points System V1.0:**

Green Point Score Per Feature	Green Feature
1 point	Water Butt
2 points	Bat box / Bird Box / Bee Brick / Wildlife Corridor under Main Road / Amphibian Friendly Curbs
3 points	1xTree in Residential Garden 1x Pond (minimum 3m <sup>2</sup> ) Meadow (min 20m <sup>2</sup> ) Planted landscape bed (min 20m <sup>2</sup> ), swale / wetland (min 8m <sup>2</sup> )
4 points	Tree in Public Realm 15m of linear hedgerow (double planted offset row) Green roof (minimum 16m <sup>2</sup> ) Green wall (minimum 16m <sup>2</sup> )
5 points	Public Realm Tree in Engineered Pit Stone faced Cornish hedge planted with trees (min length 10m)

Site Footprint Covered by Redline Boundary	Essential Green Point requirement from Trees (Optional)	Green Points Required Overall
0-100M <sup>2</sup>	2	5
100-200m <sup>2</sup>	4	10
200-300m <sup>2</sup>	6	15
300-400m <sup>2</sup>	8	20
400-500m <sup>2</sup>	10	25
500-600m <sup>2</sup>	12	30
600-700m <sup>2</sup>	14	35
700-800m <sup>2</sup>	16	40
800-900m <sup>2</sup>	18	45
900-1000m <sup>2</sup>	20	50

**Trees in Development Policy (Additional Policy)**

- Requirement for 15% Canopy Cover Provision on all development
- 15% Target is based on current provision of baseline tree coverage in Cornwall (10%) plus Forest For Cornwall canopy aim (2%) in addition to a further net gain of 3% which is considered to be possible by the Environment Team at Cornwall Council.
- Uses an innovative Canopy Calculator developed by High Wycombe District Council who have a 25% Canopy Coverage Policy
- Cornish climate makes establishment of trees more challenging than High Wycombe
- UK Government 25 Year Plan aims for 12% tree coverage as a nationwide average by 2060.
- **Advantage:** Secures a predictable supply of new trees

- **Disadvantage:** Biodiversity Net Gain Metric already counts and protects the trees onsite and using 2 Metrics may become complex when making changes to site layouts.



### Eco-system Services / Environmental Gain

- All major developments required to submit an ecosystem services assessment.
- There are a range of emerging tools available such as the Natural Capital Planning Tool or Natural England's Eco metric.
- Potential for upstream planting of trees or provision of wetlands to provide flooding protection for new developments
- Linked to mapping of flood mitigation opportunities as part of The South West Partnership for Environmental and Economic Prosperity (SWEEP).
- Aligns with the aims and intentions of other Natural Capital Net Gain Cornwall Council policies such as the Forest for Cornwall, with its aim of increasing canopy cover by 2% and the Environmental Growth Strategy