

Essex Biodiversity Net Gain Evidence for Need



Client
Essex County Council

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1. Introduction

- 1.1. The Environment Act (2021) introduced a mandatory requirement for many of the developments subject to the Town and Country Planning Act (1990) to demonstrate a minimum of 10% net gain in biodiversity, as measured by a statutory biodiversity metric calculation tool developed by Defra. This part of the Act commenced in February 2024 for larger developments, and in April 2024 for small sites, with net gain for Nationally Significant Infrastructure Projects (NSIPs) planned to follow in November 2025.
- 1.2. The Government's Planning Practice Guidance on Biodiversity Net Gain¹ sets out in paragraph 006 that *"Plan-makers should not seek a higher percentage than the statutory objective of 10% biodiversity net gain, either on an area-wide basis or for specific allocations for development unless justified. To justify such policies, they will need to be evidenced including as to local need for a higher percentage, local opportunities for a higher percentage and any impacts on viability for development."*
- 1.3. The purpose of the document is to assess whether or not a higher percentage of net gain is justified by the need for nature recovery in Essex, and to consider opportunities for delivery. Parallel studies into the impact of a higher percentage on the viability of development in Essex are taking place and should be considered alongside this document².
- 1.4. The two main aspects considered here are: what does available evidence tell us about historic and ongoing declines in biodiversity in Essex, that might support a need for a higher level of net gain, and what impact could a higher level of net gain have in Essex in practical terms. The latter question takes into account the balance between offsite and onsite delivery, and the differing character of these in terms of the quantity and quality of biodiversity measures that can be achieved.
- 1.5. The document includes consideration of NSIPs, which are often larger and/or more extensive schemes, to consider how much difference higher levels of gain would make to deliverability and ecological benefit.
- 1.6. Full details of the regulations and guidance that set out the way in which biodiversity net gain are applied can be found on the Government's website¹ and are not repeated here.

¹ <https://www.gov.uk/guidance/biodiversity-net-gain>

² SQW Temple (2024) *Viability Assessment of Biodiversity Net Gain in Essex*

2. National and Local Policy on Nature Recovery

National Policy

- 2.1. In 2018, the Government produced *A Green Future: Our 25 Year Plan to Improve the Environment*, which set out the ambition of being the first generation to leave the environment in a better condition than it was found in. The plan included an aim of achieving “*thriving plants and wildlife*”, with policies including “*Recovering nature*” and a goal of “*Creating or restoring 500,000 hectares of wildlife-rich habitat outside the protected site network.*” It also included an action to strengthen the already existing requirement for net gain for biodiversity, including considering a mandatory requirement.
- 2.2. The Environment Act 2021 introduced that mandatory requirement for biodiversity net gain for many planning applications and set a minimum level of 10%. This level was set on the basis that it was “*the most achievable level of net gain that the department could confidently expect to deliver genuine net gain, or at least no net loss, for biodiversity and thereby meet its policy objectives*” as reported in Defra’s *Biodiversity net gain and local nature recovery strategies impact assessment*³. The report acknowledges that 10% is a low level of gain, with most of the effort required to compensate for the loss of habitat resulting from the development.
- 2.3. The Act also expanded an existing statutory duty on public authorities to enhance as well as conserve biodiversity.
- 2.4. As required by the Environment Act, the Government’s published regulations setting out environmental targets in relation to biodiversity in January 2023, with actions to achieve them detailed in the first Environmental Improvement Plan, published at the same time to review the 25 Year Environment Plan. These targets include:
 - By 2030, to:
 - halt the decline in species abundance
 - protect 30 per cent of UK land
 - By 2042, to:
 - increase species abundance by at least 10 per cent from 2030
 - restore or create at least 500,000 hectares of a range of wildlife rich habitats (140,000 hectares by 2028)
 - reduce the risk of species extinction
 - restore 75 per cent of our one million hectares of terrestrial and freshwater protected sites to favourable condition, securing their wildlife value for the long term.
- 2.5. The Environmental Improvement Plan states that mandatory biodiversity net gain is expected to play a role in achieving the nature recovery targets, with agri-environment schemes the only other significant mechanism for delivery.

³ <https://assets.publishing.service.gov.uk/media/5da5d695ed915d17b4f13f63/net-gain-ia.pdf>

- 2.6. Biodiversity net gain is also seen as a key component of action to increase the proportion of green cover in urban residential developments, as set out in Natural England's Green Infrastructure Framework⁴, with a target value of 40%.

Local Policy

- 2.7. Development management policy is set out in the Local Plans of the 14 individual Local Planning Authorities, interpreting national policy to reflect local context. At present none of the Greater Essex Local Plans require more than 10% biodiversity net gain, although it is being widely considered. The positions of those LPAs that have addressed the issue as part of their Local Plan review process are:
- Castle Point Borough Council's Issues and Options document is currently out for consultation and asks whether stakeholders would support a biodiversity net gain requirement of more than 10%
 - Chelmsford City Council – Preferred Options document requires 10% net gain, with 20% for two garden community development areas. Net gain is expected to be delivered within the planning application boundary unless demonstrably not possible
 - Thurrock Council's Initial Proposals Document sets out a requirement for 20% biodiversity net gain
 - Uttlesford District Council commissioned Land Use Consultants to consider the evidence available to justify 20% biodiversity net gain and as a result of the report's positive conclusions, their Regulation 19 version of their new Local Plan includes a policy that will require development proposals to demonstrate 20% gain
- 2.8. The Environment Act included a requirement for the production of Local Nature Recovery Strategies to cover the whole of the UK, to be prepared by appointed responsible bodies that largely correspond to county boundaries. In Greater Essex, including the unitary authorities of Thurrock and Southend-on-Sea, Essex County Council was appointed the responsible body.
- 2.9. The public consultation draft of the Greater Essex Local Nature Recovery Strategy sets out an objective of 25% (91,787.5ha) of the county supporting "green or blue habitats" by 2030 against a baseline of 14% (51,401), an increase of 40,386ha, but with an aspiration for 30% (110,145ha, an increase of 58,744) in line with the Government's published targets. The habitat-based objectives in the Strategy aim for the creation or restoration of 64,100ha of wildlife-rich habitat (excluding marine and inter-tidal habitats.)
- 2.10. This represents an ambitious target requiring a considerable shift in land management practices and will need a substantial contribution from the delivery of biodiversity net gain in addition to beneficial changes in the management of agricultural land.

⁴ <https://designatedsites.naturalengland.org.uk/GreenInfrastructure/Home.aspx>

3. Essex Habitats and Species

- 3.1. Essex is a varied and contrasting county with habitat characters still governed by its geological history. The county can be divided into the coastal strip, all those habitats influenced by the sea or that were in the past, and the largely agricultural interior with its river valleys, meadows and scattered woodlands. During the 20th Century, the county changed from being predominantly rural with a mix of cropping and a thriving livestock economy, to supporting the largest development growth area in the country, with heavy industry, a massively increased population, and agriculture almost entirely dominated by large-scale arable production.
- 3.2. The Essex coast is predominantly estuarine with the characteristic intertidal habitats of mudflats and saltmarsh, which together constitute a highly productive and diverse system. Dynamic coastal habitats of sand, shingle and shell are present in several, more exposed parts of the coast, often sheltering blocks of saltmarsh. At present intertidal habitats are excluded from consideration for biodiversity net gain, although this is likely to change in the future.
- 3.3. The habitat created from the middle ages onwards where seawalls were built and the land drained, once formed a broad swathe of coastal grazing marsh grassland, supporting an economy based upon sheep that made the county rich. The best of the remaining coastal pastures, divided by ditches that transition from fresh to saline, attract a high diversity of aquatic and terrestrial invertebrates and a characteristic plant community, and can be home to an abundance of breeding waders and waterfowl where water level management is favourable.
- 3.4. The seawalls, and the borrowdykes from where the material used to build them was won, have themselves developed some ecological significance, with a distinctive community of nationally scarce and rare plants, forming a last semi-natural refuge for invertebrate and reptile species in some parts of the county.
- 3.5. There are small sections of soft-cliff habitat in scattered locations along the coast, but the more extensive cliffs at Walton-on-the-Naze are of highest significance. Some of the other, stabilised sections of cliff retain interest, especially after the occasional, localised slippages.
- 3.6. The high ground in the northwest corner of the county, around Saffron Walden, holds the most significant natural chalk outcrop in the county, with the surrounding landscape having much in common with south Cambridgeshire over the border. A small section of the East Anglian Chalk National Character Area (NCA88) extends south into Essex. Fragments of chalk grassland remain, while the land to the south and east is characterised by a combination of chalk and London clay known as chalky boulder clay, mixed by glacial action, and the basis for the South Suffolk and North Essex Claylands National Character Area (NCA86). These soils support a similarly calcareous grassland type and produce conditions that support diverse habitats characterised by nationally significant plant species.

- 3.7. To the southeast, at a point that broadly coincides with the route of the A12, the soils lose the chalky influence and the London Clay that supports the Northern Thames Basin National Character Area (NCA111) and the Thames Estuary results in more neutral conditions.
- 3.8. On top of the clay base, beds of sands and gravels were deposited under a shallow sea 50 million years ago and more recently by the River Thames along old routes and at different water levels over the last 2 million years. These deposits cover two broad corridors, from the southwest through to the northeast, and from Southend north to Bradwell. Included in these bands are the Essex “uplands” of Brentwood and the Danbury Ridge, and what was formerly an extensive area of heathland around Colchester, now more or less restricted to Tiptree Heath. These deposits also include the Thames terraces of Thurrock and Basildon, south facing and free draining with their very significant and characteristic plant and invertebrate assemblages of national significance.
- 3.9. The freer draining soils support our remaining fragments of acid grassland and heathland and also our densest concentration of woodlands, spared from clearance for agriculture because of their poor growing conditions. Essex has a woodland cover of 7%¹, compared to 10% across England as a whole, but over a third of this cover (2.4%) is Ancient Woodland demonstrating its significance. Aside from a few densely wooded landscapes – Hatfield Forest, Epping Forest, the Danbury Ridge and Hockley Woods, for example – many of our woodlands are small and isolated within the agricultural landscape.
- 3.10. Open mosaic habitats on “brownfield sites” developed by accident following a wave of abandonment of industrial sites during a period of economic change and decline in the late 20th Century. A combination of environmental factors such as climate, topography, substrate (natural and artificial) and hydrology, and geographical locations within already biodiverse landscapes led to the development of incredibly diverse species populations on unremarkable and unnatural looking sites. One of these sites, Canvey Wick, is now protected as a SSSI and is often described as the most biodiverse site in the UK.
- 3.11. The Essex Rivers broadly rise in the higher ground to the northwest and flow east and south cutting through the geology discussed above. The River Cam and the River Stort are our only chalk streams, flowing north to the Cambridgeshire border and south to join the River Lea, respectively. Both are heavily influenced by the surrounding agricultural land and by the settlements on their banks. The Stour, Colne, Blackwater and Chelmer are predominantly rural, with some extensive areas of remaining floodplain pasture interspersed with willow plantations over fen and marsh vegetation. The short, south Essex rivers of the Crouch and Roach are more urban with little ecological value above their tidal limits, but the valley of the Mardyke forms a highly significant corridor of semi-natural habitats in an otherwise urban setting.
- 3.12. Essex is lacking in large, natural, fresh waterbodies, but this is to some extent compensated by the ecological importance of the reservoirs at Abberton, Hanningfield and Ardleigh, and by gravel pits such as those in the Lea Valley and along the Chelmer Valley. Reedbeds are few and generally small, with notable exceptions at Old Hall Marshes, Hanningfield Reservoir and Stanford Warren, but reed can frequently be found fringing

rivers or filling borrowdykes. Although many have been lost, ponds are still a frequent feature across Essex, particularly on the clay.

3.13. Although not a comprehensive summary of the county's habitats, these are some of the most important in a local and national context, making up the core of our local ecological network.

4. Evidence for Habitat and Species Loss in Essex

- 4.1. Quantitative evidence about the loss of natural habitat in Essex is hard to come by, with no history of systematic data collection. National statistics reveal the scale of impacts to the most important wildlife habitats in a wider context⁵:
- Species-rich grasslands have decreased in extent in England and Wales by around 97% since 1930
 - Lowland heathlands in England now cover only 20% of the area present in the 19th century
 - Of the wetlands, 99.7% of fens, 81% of grazing marsh and 44% of lowland bogs have been lost.
 - Coastal margin habitats have declined in extent by around 10% in the last 60 years
 - Up to 70% of ancient woodlands have been deforested or damaged, much of this during the past century
- 4.2. Through a combination of development pressure, particularly along the Thames Estuary, and the dominance of arable farming, it is likely that the scale of loss of some habitats in Essex is even higher. Away from the coast, Essex lacks the landscape scale habitat networks and high-profile sites that tend to attract national, statutory designations with accompanying legal protection and strategic solutions to harmful impacts.
- 4.3. The remaining wildlife-rich habitat, mostly designated as SSSIs or Local Wildlife Sites (LoWS), is generally – away from the coast at least – in small and isolated patches within arable or developed landscapes. Looking at LoWS specifically, those in the south of the county have generally been more threatened by development pressure, while in the more rural north, a lack of appropriate management is the main driver for declining condition or loss.
- 4.4. Some of the most distinctive and nationally significant habitats in Essex have been most affected by manmade impacts in the last 100 years or more, and those not protected by statutory means are still threatened. Some examples are given below:
- Over the last 100 years or so, much of the coastal grazing marsh in Essex was either converted to arable production, used for the disposal of waste, or developed, leaving relatively few sites in their original condition. Nationally, it is estimated that two-thirds of coastal grazing marsh was lost during the 20th Century and only 5% of what remains is semi-natural, the rest being agriculturally improved
 - The chalk influenced grasslands of the northwest part of the county have largely been cultivated, leaving only the common land on village greens and some fragments of road verge to support their distinctive flora, which include several species of national significance
 - Changes in woodland structure due to the significant decline in traditional coppice management has been identified as one of the main drivers for the decline in

⁵ <https://www.gov.uk/government/publications/working-with-nature>

woodland bird populations. Combined with browsing pressure from a large deer population and nutrient enrichment from surrounding arable land, this decline in condition is particularly evident in the woodlands of north Essex

- Many of the accidental biodiversity hotspots on “brownfield sites” became a focus for regeneration and redevelopment, because of their strategic locations and a mistaken belief that they would be of low environmental value
- The soft cliffs of Essex have been subjected to extensive stabilisation over the last 150 years, such that naturally eroding sections are a limited resource in Essex now. Stabilisation converts the cliffs from a dynamic, open mosaic habitat to a mixture of grassland and scrub, or they become more formal parts of the seafront landscape

4.5. Recent LoWS reviews reveal that sites designated for their biodiversity continue to be lost as a result of development:

- Three LoWS and three Potential LoWS were recorded as lost to development in Thurrock during a 2022 review, with partial loss of another LoWS
- Three LoWS were recorded as lost to infrastructure development in Uttlesford during a 2021 review
- One LoWS was significantly reduced in size due to consented residential development during the 2022 review of Castle Point

4.6. Alongside the loss of extent of important habitats for biodiversity, there has been a gradual degradation in their quality as a result of the influences of climate change, pollution, and changes in management practices.

4.7. Across the UK, 11% of land is subject to a legal nature conservation designation, but only 44% of designated land is assessed to be in favourable condition. Only 14% of the UK's Priority Habitats are assessed to be in good condition. Despite 44% of the UK's woodland being certified as sustainably managed, only 7% of the national total is considered to be in good condition. Only 5% of Essex water bodies have achieved a ‘good’ ecological classification status, with 20% considered to be ‘poor’.⁶

4.8. Many semi-natural habitats in the wider countryside have been affected by a long-term absence of management due to a shift in priorities, often related to a change in the economics of traditional land uses. Woodlands are often not managed, or only used for game rearing, and meadows are either abandoned to scrub over, or improved to be more agriculturally productive. During the Uttlesford LoWS Review in 2021, ten LoWS were recorded as lost due to inappropriate management, with a further nine demoted to Potential LoWS status in the hopes that the effects could be reversed.

4.9. For a much larger number of LoWS throughout Essex, even though changes in management have not yet led to the loss of their designation, a decline in condition has been noted, most notably with grassland sites, where ecological changes are much quicker than in woodlands.

⁶ <https://stateofnature.org.uk/>

- 4.10. Increased levels of nitrogen and other pollutants in the environment, deposited by traffic and as runoff from arable fields, has resulted in nutrient enrichment across most of our countryside. This has a very obvious impact on water quality, with farming playing a role in preventing 'good' status in 40% of England's waters. It has an equally harmful impact on terrestrial habitats, favouring common, fast-growing, species over more sensitive, less common species.
- 4.11. In grassland and woodland habitats those species that are indicative of more natural habitats are outcompeted and over-shaded by generalists and those that are adapted to higher nutrient levels. Increased nutrient levels and a longer growing season due to milder winters has meant that perennial grasses are becoming more dominant in grassland habitats, changing their structure and removing opportunities for diversity.
- 4.12. Improvements in technology and agrochemicals in combination with the development of agricultural policy, mean that the capacity of farmed landscapes to support biodiversity has been reduced. With almost two thirds of the county subject to this land use, and total farming productivity still increasing², the impact on biodiversity at a landscape scale is very significant.
- 4.13. Although the percentage of farmland in agri-environment schemes continues to increase, it is reported in *The State of Nature 2023* that evidence suggests that the current scale of roll-out is insufficient to achieve nature recovery, although there has never been an assessment of what the level would need to be to meet Government targets. These schemes are the primary policy mechanism being used in an attempt to address declines in farmland biodiversity.
- 4.14. The report produced by a partnership of nature conservation and research organisations across the UK provides some startling statistics on the decline of species that have been monitored in England over the last 30 years:
- Average 32% decrease in species abundance
 - Average 82% decrease in the abundance of Priority Species, those identified to be of principal importance for the purpose of conserving biodiversity
 - 18% decrease in invertebrate distribution, with 22% in pollinating insects and 40% in predatory species
 - 16% decrease in the abundance of common breeding birds, with 59% decrease in farmland birds
 - The distribution of 64% of flowering plant species has decreased since 1991, with an average 16% decrease in distribution since 1991(23% since 1930); the greatest declines since 1950 are shown in species adapted to low fertility conditions and that show low competitiveness
 - 2% (151) of the UK species assessed against IUCN Red Data List criteria are extinct, with a further 16% threatened with extinction
- 4.15. Comprehensive data on extinctions of Essex species is lacking, but there are some well-known examples, such as the Essex Emerald moth, last recorded in Essex in 1985 and

now extinct nationally and Field Cow-wheat. Bird populations have perhaps been recorded better than most species and there is considerable evidence for extinctions in Essex. Once widespread bird species such as Tree Sparrow, Willow Tit and Red-backed Shrike no longer breed in Essex and there are well-documented and ongoing declines in other species for which Essex supports nationally important populations, such as Corn Bunting, Turtle Dove, Grey Partridge and Nightingale.

- 4.16. In summary, using almost any measure of change in habitat condition and extent, or species distribution and population levels, it is clear that the biodiversity of Essex has declined substantially in the modern era, and continues to do so. To achieve recovery of our nature will require large scale changes in land management practices throughout the landscape. This will need to encompass better management to enhance the condition of existing semi-natural habitats alongside the creation of new habitats to expand, buffer and connect the remaining sites of biodiversity importance.

5. Development pressure in Essex

- 5.1. Although development accounts for only 10% of land in Essex, half of which is taken up by transport and utility uses, it could be argued that it has had a disproportionate impact on biodiversity over the last 40 years because of its spatial distribution and the habitats and landscapes most affected. A land use assessment carried out by the UK Centre for Ecology and Hydrology showed that between 1990 and 2020, Essex had the second largest increase in urban land cover of all of the counties of the UK⁷.
- 5.2. With the biodiversity value of agricultural land having declined, in most parts of the county it is the less obviously valuable peri-urban habitats of rough grassland, self-sown scrub and previously developed land that support the highest biodiversity and become important for the maintenance of species populations at a local level. This land, often viewed as “waste” or “derelict” land often becomes the focus for development as settlements expand, seen as preferable to the loss of “greenfield” sites.
- 5.3. Only 1.5% of the county is in residential uses, but the newly revised methodology for calculating mandatory housing targets for local authorities would see an estimated 13,700 new homes being built every year in Essex, nearly 70,000 over the next five years. The disproportionate demand for development in the southeast of England is likely to continue, meaning that additional measures to those set out for the UK as a whole may be needed.
- 5.4. Although market analysis work carried out by the Government in 2021⁸ predicted that 50% of net gain units would be delivered onsite, early evidence from a study carried out towards the end of 2023 was that the actual proportion of onsite delivery (albeit in advance of the mandatory requirement) has been 90%⁹. The same study concluded that there is considerable risk in the delivery of genuine gains using onsite measures because of the associated human pressure – both through adverse usage and from pressure for more formal management of land perceived as untidy or neglected – and because of the difficulties in enforcing non-compliance.

Nationally Significant Infrastructure Projects

- 5.5. Nationally Significant Infrastructure Projects (NSIPs) are not subject to the local authority planning system and are instead consented by the Secretary of State on the recommendation of the Planning Inspectorate, although with the local planning authority as a statutory consultee. Although regulations regarding biodiversity net gain for NSIPs have not yet been produced, the Environment Act includes a mandatory requirement for a minimum 10% net gain and indications are that the processes will largely be consistent with those already in force.
- 5.6. A total of eleven NSIPs in Essex are either proposed or already approved, and they are variable in character and impact, with differing implications for biodiversity net gain, although they can be grouped:

⁷ <https://www.ceh.ac.uk/press/almost-2-million-acres-gb-grassland-lost-woodland-and-urban-areas-expand>

⁸ EFTEC (Economics for the Environment Consultancy Ltd). (2021). Biodiversity net gain: Market analysis study. Economics for the Environment Consultancy Ltd.

⁹ <https://conbio.onlinelibrary.wiley.com/doi/full/10.1111/cobi.14198>

- Three highways projects, including a new tunnel crossing of the Thames Estuary linking to the M25 and the widening of the A12
 - Two offshore wind farms, with associated onshore network infrastructure, and two energy transmission schemes, including a major new line extending from Norwich to Tilbury with associated new substations and other infrastructure
 - A solar farm
 - A waste management facility
 - A port expansion
 - A new nuclear power station
- 5.7. The most significant variables in effects from a biodiversity net gain perspective are the permanence of the impacts and the extent of land take, which relates to the opportunity for onsite net gain delivery. Some NSIP schemes, particularly linear ones or those single site schemes with a larger footprint, will be less able to avoid higher distinctiveness habitats and so, because of the trading rules within the statutory metric methodology, will increase their net gain requirement. Even within the groupings set out above, there can be considerable variation in net gain requirements and potential delivery between schemes.
- 5.8. Energy transmission projects largely involve temporary impacts during installation, with only scattered permanent loss associated with new structures. Aside from these locations, there is very little land that remains permanently within the control of the developer, with most restored to its original condition. This generally means a net loss of biodiversity within the scheme boundary, with the lack of retained land meaning the need for offsite measures. As the more extensive schemes are likely to have a very large baseline biodiversity value, the 10% gain would require extensive habitat creation. For the Essex section of the Norwich to Tilbury scheme, this is estimated by SQW Temple as 800 habitat units, which is equivalent to creating 125ha of 'other neutral grassland' in good condition on arable cropland. To achieve 20% net gain, an additional 495 habitat units would be required.
- 5.9. Highways schemes result in significant permanent loss of habitat under sealed surfaces, but with some level of landscaping typically retained by the operator providing opportunities for compensation habitat. However, the unavoidable loss of higher distinctiveness habitats may result in the need for offsite measures due to trading rules, even if more than 10% gain can be delivered onsite. The extent of permanent land take by the developer can be limited in some schemes, in which case offsite measures are likely to be needed.
- 5.10. Solar farms are usually taken to be temporary installations, but with significant land take over the operational phase and other impacts associated with installation and access infrastructure. However, there is also typically a large extent of retained habitat, including the majority of linear features such as hedgerows. With most schemes taking place on agricultural land, it can be relatively easy to achieve a high percentage of net gain in biodiversity within the site boundaries, which would generate a surplus even with a 20% requirement. The availability of surplus habitat units from solar farm developments is a potential constraint on the long-term benefits of biodiversity net gain to effect nature recovery. It would seem self-evident that the fragmented grassland habitat amongst solar panels will not have the same ecosystem-level biodiversity benefits as a field of grassland

without them, excluding some groups of species that favour open conditions. It is questionable whether habitat created in this context could be counted towards Government targets and local aspirations for land management.

- 5.11. Other types of NSIP schemes are more comparable to commercial or residential applications, site based and with different requirements determined by the size and character of the pre-existing landscape and the availability of onsite land for compensation measures.
- 5.12. In general, NSIP schemes can involve a significant requirement for offsite net gain measures and so have the potential to make a proportionately high contribution to the expansion of semi-natural habitats in Essex. The large numbers of habitat units involved in some schemes could also facilitate landscape scale habitat creation or enhancement measures, especially where these form a strategic solution to impacts over large linear distances.
- 5.13. The viability work carried out by SQW Temple concludes that the additional cost to achieve 20% is minimal as a proportion of the overall project costs. However, the policy mechanism to require 20% in Essex is not clear in relation to the NSIP planning process.

Agriculture

- 5.14. Intensive agricultural management has had an ongoing negative impact on biodiversity since the mid-20th Century, through the development of more efficient machinery, an increasing reliance on agrochemicals, and agricultural subsidies based on production. Approximately 68% of Essex is under an agricultural land use, the majority of which is arable cultivation.
- 5.15. The Environment Improvement Plan sets out an expectation that 80% of the 500,000 hectares of restored or created wildlife-rich habitat will be achieved by farmers and land managers, with the implication that this will be through countryside stewardship schemes and the introduction of nature friendly farming measures. It is estimated that 20% of farmland across the UK is already in an agri-environment scheme, but not all of that would be considered nature-friendly farming. The State of Nature 2023 considers that “The best available information suggests that nature-friendly farming needs to be implemented at a much wider scale to halt and reverse the decline in farmland nature.”
- 5.16. Agricultural land itself is under pressure from alternative uses, with an increase in the development of solar farms and renewed pressure for residential development in the greenbelt. The CEH land use study found that Essex had the second highest decrease in agricultural land area of all UK counties between 1990 and 2020.
- 5.17. It is likely that the majority of larger scale offsite habitat schemes will predominantly be delivered on agricultural land, which could then integrate with nature friendly farming measures to deliver wider ecological benefits.

6. Impact of Statutory Biodiversity Net Gain

- 6.1. A mandatory requirement for 10% net gain in biodiversity has applied to many planning applications since April 2024, but it has been slow to result in the delivery of offsite measures in Essex. A number of landowners have established large scale offsite schemes, meaning that the availability of offsite habitat units is not likely to be a constraint on delivery of local net gain, in the short term at least.
- 6.2. It is estimated that there is an average gain of about four habitat units per hectare in offsite habitat creation and enhancement schemes. This will vary depending on the distinctiveness of the habitat to be created and the time taken for the habitat to achieve maturity. Woodland habitats will generate fewer units per hectare.
- 6.3. Mandatory biodiversity net gain of 10% will not necessarily result in the creation of substantial new habitat in the wider countryside away from development sites and a consequent expansion of the local ecological network. Scenarios for different sized developments are set out below, as informed by the modelling carried out by SQW Temple in the accompanying viability study, and these support the study that estimated 90% of units will be delivered onsite:
 - Large residential developments on greenfield sites are expected to be able to deliver a surplus of habitat units within the red line boundary
 - Small, Small-medium and Medium residential developments (25-100 units) on greenfield sites will only require small numbers of offsite units to reach 10%
 - Developments on brownfields sites are likely to be able to achieve 10% within the redline boundary due to the lower baseline value of the habitats present
 - Commercial developments of any size are likely to be able to deliver the necessary increase in habitat units within the red line boundary
- 6.4. This suggests that while there will be new habitats created and existing habitats enhanced, this is likely to be focussed in and around the developments themselves. Increasingly, the requirements for net gain will be taken into account when land is purchased, as it is more cost efficient to deliver net gain on site rather than having to purchase offsite units. This casts doubt on the ability of 10% net gain to make a significant contribution to the Government's targets and the aspirations expressed in local policy, including the Local Nature Recovery Strategy.
- 6.5. A requirement for 20% net gain would not result in twice as much habitat post-construction as would 10% net gain. For example, the development of a site with a baseline value of 100 habitat units leaves 110 units of habitat post-construction, of which only 10 units are new habitat, with the other 100 units simply compensating for the habitat that is lost. At 20%, the same development would only leave 120 units of habitat, with 20 new habitat units, meaning only a 9% higher post-construction habitat unit value than delivered with a 10% level of gain.
- 6.6. SQW Temple's modelling suggests that the increase in offsite habitat units required with a 20% net gain requirement would be modest. However, it is likely that in a proportion of

real-world circumstances, an increase from 10% to 20% will mean the difference between onsite delivery and the need for some offsite compensation. For those schemes already requiring off site provision to achieve 10%, the benefits of a 20% level of gain will be substantially enhanced.

- 6.7. There is an argument for higher levels of gain than 20%, to increase the proportion of gain in relation to compensation. The SQW Temple shows that even at 50% net gain, the additional cost would not affect the viability of many developments, particularly those on brownfield sites. It is well documented that known, upfront costs associated with developments primarily affect land prices, with reductions in margins being absorbed by the landowner.
- 6.8. As well as achieving an improved extent of semi-natural habitats, increasing the need for offsite measures will have qualitative benefits for nature recovery. Offsite delivery is likely to be more secure than onsite because of its administration through the national register of biodiversity sites and the associated requirement for a more rigorous legal mechanism to be in place. Although onsite gains will be subject to development management conditions, the ability for LPAs to enforce such measures may be compromised¹⁰. Such measures are also likely to make a proportionately higher contribution to Local Nature Recovery Strategy objectives, particularly those related to strategic locations and improving connectivity, through the incentivisation of opportunity areas.
- 6.9. It may be that in many cases, an increase to 20% alone will not be sufficient to drive developers to seek offsite solutions and so other policy measure should be considered to support this aim. Of most relevance would be a need for developers to split biodiversity net gain delivery between onsite and offsite measures, meaning that all developments would make some contribution to more strategic measures.
- 6.10. Favouring offsite delivery may not be appropriate in all parts of all local authority areas, particularly those that are more heavily developed and with fewer opportunities for strategic offsetting. It may be preferable to seek more robust green infrastructure within developments in order to maintain connectivity within the urban environment. However, increasing the gain target will similarly improve the benefits to the local community in such as case.
- 6.11. However, Local Authorities may not be able to insist that net gain for consented deliveries is delivered within their administrative boundaries, or even within Essex. Metric calculations allow delivery anywhere within National Character Area boundaries with no penalty and it is unclear whether local policies requiring delivery within the LPA boundary will be found to be acceptable by Planning Inspectors.
- 6.12. NSIP requirements for biodiversity net gain units may be very large and so have the potential to make a significant impact on the delivery of strategic objectives for nature recovery. However, without sufficient strategic planning, there could be issues with the availability of suitable net gain opportunities in areas associated with the impact, *i.e.* within LPA or NCA boundaries. This may mean that a proportion of the required net gain for projects affecting Essex is achieved through the purchase of statutory credits, derived from

¹⁰ <https://conbio.onlinelibrary.wiley.com/doi/full/10.1111/cobi.14198>

habitat creation and enhancement measures that are not likely to be delivered in the county.

7. Conclusions

- 7.1. There can be no doubt that the Essex countryside has changed substantially over the last 100 years, such that the extent of all semi-natural habitats has declined significantly, and the populations of many of our species have shown declines in both distribution and abundance. With continued pressure from residential and commercial development, and from improvements to infrastructure, these declines will continue unless positive change in the countryside can be effected.
- 7.2. Biodiversity net gain offers a mechanism for the delivery of nature recovery that could make a significant contribution to national and local targets aimed at leaving the environment in a better condition. The Government's mandatory level of 10% was set to reflect the minimum value at which they could be reasonably certain of no net loss, which means that there must be some doubt about it being able to achieve nature recovery across the landscape.
- 7.3. This is especially so given the apparent preference and capability for developers to deliver the majority of their net gain requirements within development site boundaries, with a consequent concern over the quality of the habitats that will result. Onsite gains will also make far less contribution to the strategic opportunities identified within the Local Nature Recovery Strategy as those that will have the most significant benefit for nature recovery.
- 7.4. Although it is impossible to assess how much land is really needed to achieve thriving plant and animal populations in the county, the Local Nature Recovery Strategy, and other local and national targets call for the creation or restoration of large areas of land, to secure landscape scale changes in the network of green infrastructure. While some of that change will come through agri-environment schemes and a shift towards nature-friendly farming, the greatest benefits will be gained where such productive land management is integrated with semi-natural habitats dedicated to the support of biodiversity. To support landowners to deliver this, a thriving market for offsite net gain is needed.
- 7.5. In summary, for biodiversity net gain to be an effective mechanism for achieving the recovery of nature at a landscape level, a level of 10% is considered to be inadequate, and it is recommended that a minimum level of 20% be established across Essex as a responsible measure to increase confidence of meeting national and local targets for nature recovery. The evidence of need and the scale of targets for nature recovery would support an even higher level of gain.
- 7.6. The reasons why an increased level of 20% are needed in Essex are:
 - There is substantial evidence for the historical and continued decline of biodiversity in Essex at a large scale
 - There is continued pressure for development in the county, with a large number of existing NSIPs, and with the situation exacerbated by the new Government's revised housing targets

- The Government's mandated level of 10% net gain is only considered to be the minimum needed to avoid net loss, with most of the resulting effort simply compensating for habitat losses
- At 10% net gain, it is anticipated that 90% of delivery will be within the red line boundary, which will result in lower quality habitats and a lack of contribution to strategic priorities
- Increased demand will serve as encouragement for landowners considering getting involved with habitat creation and enhancement measures

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