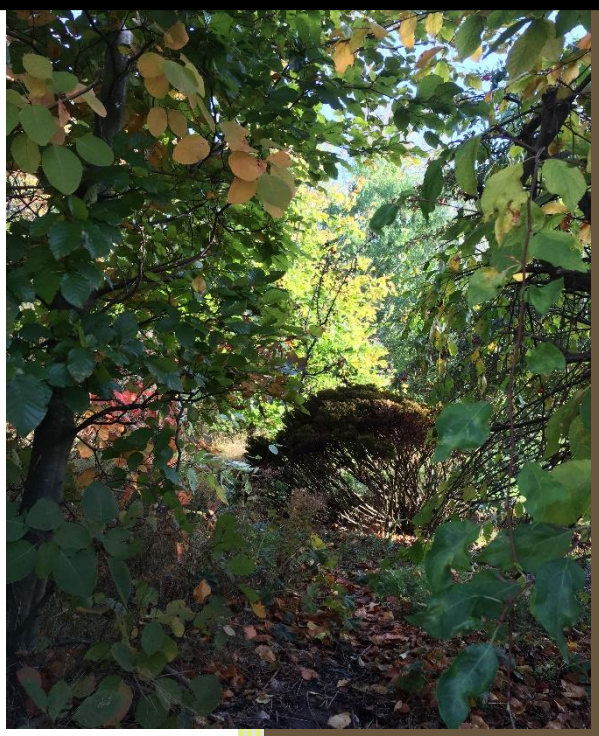
2024

Environment Report – Tree and Woodland Strategy for East Lothian



Planning Service

East Lothian Council

5/7/2024

Tree and Woodland Strategy for East Lothian

Strategic Environmental Assessment

Draft Environment Report

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Mapping

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KEY FACTS: East Lothian Tree and Woodland Strategy

The key facts relating to this Strategy are set out below:

Name of Responsible Authority: East Lothian Council (The Council)

Title of Strategy: Tree and Woodland Strategy for East Lothian

What prompted the Strategy: Legislative provision of the Planning (Scotland) Act 2019 amending Section A159 to the Town and Country Planning (Scotland) Act 1997, to require the Council as planning authority to prepare a Forestry and Woodland Strategy for East Lothian. This Tree and Woodland Strategy for East Lothian (TWSEL) will replace the Lothian Forestry and Woodland Strategy 2013-2017, which is now out of date, in East Lothian. The TWSEL should consider the East Lothian Green Network Strategy however is not bound by it.

Area covered by Strategy: East Lothian Council area, however the strategy should integrate with the Forestry and Woodland Strategies of neighbouring administrative areas

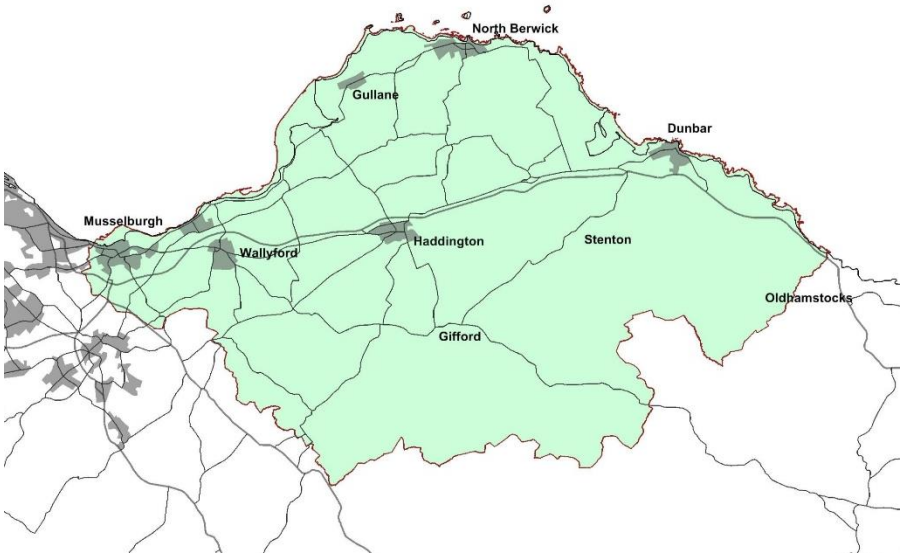

Figure 1: East Lothian

Subject: Forestry.

Period covered by Strategy: The Strategy does not have an end date but is intended to provide direction for the next ten years.

Frequency of updates: it is likely the Council will consider review of the Tree and Woodland Strategy in roughly the same timescales as the Local Development Plan.

Purpose of Strategy: To set framework for the expansion and management of tree, forestry and woodland cover across East Lothian including, as laid down by legislation:

(a) the identification of woodlands of high nature conservation value in the planning authority's area, and

(b) the planning authority's policies and proposals in their area, as to—

(i) the development of forestry and woodlands,

(ii) the protection and enhancement of woodlands, in particular those mentioned in paragraph (a),

(iii) the resilience to climate change of woodlands, in particular those mentioned in paragraph (a),

(iv) the expansion of woodlands of a range of types to provide multiple benefits to the physical, cultural, economic, social and environmental characteristics of the area.

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ABBREVIATIONS

CAT	Countryside Around Town
COSLA	Convention of Scottish Local Authorities
EA(S) Act	Environmental Assessment (Scotland) Act
DEFRA	Department of Environment, Food and Regional Affairs
ELC	East Lothian Council
TWSEL	Tree and Woodland Strategy for East Lothian (East Lothian's Forestry and Woodland Strategy under the Planning (Scotland) Act 2019)
ER	Environment Report
HRA	Habitat Regulation Appraisal
INNS	Invasive Non-Native Species
IPBES	Intergovernmental Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
JNCC	Joint Nature Conservancy Council
LBS	Local Biodiversity Site
PPS	Plan, Project or Strategy
NLCAR	National Landscape Character Assessment Review
NPF	National Planning Framework
SEA	Strategic Environmental Assessment
SEPA	Scottish Environment Protection Agency
SESPLAN	South East Scotland Plan, Strategic Development Plan 1
SIMD	Scottish Index of Multiple Deprivation
SNH	Scottish Natural Heritage (now Naturescot)
SPA	Special Protection Area
SPG	Supplementary Planning Guidance
SPP	Scottish Planning Policy
SSSI	Site of Special Scientific Interest
SUDS	Sustainable Urban Drainage
UN	United Nations

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LIST OF FIGURES

1 INTRODUCTION

1.1 East Lothian is an attractive area lying to the East of Edinburgh. It is under considerable development pressure driven by the growth of the city, its attractive landscape, pretty towns and good quality of life. Trees and woodland pay an important part in adding to the character of East Lothian, although canopy coverage here is less than average for Scotland. This is due in part to the suitability of much of the land for other purposes, including arable farming, housing, economic development and recreation.

1.2 This Strategy has been prepared in response to legislative requirements of the Town and Country Planning (Scotland) Act. The Council in 2019 declared a Climate Emergency. The Council's ambition to plant a Climate Forest of 2 million trees followed this in 2021. Last year the Council further declared a Nature Emergency. These are both drivers for producing strategic guidance on woodland and trees in our area.

2.1 The Council must carry out Strategic Environmental Assessment on this Strategy. This document is the Environment Report of the Tree and Woodland Strategy for East Lothian (TWSEL), which is our statutory Forestry and Woodland Strategy. The purpose of SEA is to predict (identify and describe) and evaluate (make a judgement on the significance of) the environmental effects of the TWSEL and any reasonable alternatives.

1.3 Consultation with the public and the Consultation Authorities (SEPA, NatureScot and Historic Environment Scotland), as well as other interested bodies, are an important part of producing the final Environment Report. This has helped make sure all relevant environmental impacts are taken into account in finalising the TWSEL and making a decision on whether or not to adopt it

1.4 We sought the views of the public on the draft Strategy and Environment Report and have taken these into account in preparation of this final Strategy and this document.

2 APPROACH TO STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)

Statutory requirements

2.1 This Environment Report has been prepared in accordance with the Environmental Assessment (Scotland) Act 2005 ('the EA(S) Act'). The Act requires certain plans, policies and strategies that are likely to have a significant effect on the environment to be subject to Strategic Environmental Assessment (SEA). The main stages of SEA are:

STAGE	PROGRESS
Screening – determining whether or not a plan needs SEA	✓
Scoping – establishing what aspects of the environment are likely to experience significant effects, and how this should be examined	✓
Environmental Assessment – draw up a draft Environment Report assessing the impacts of the proposed strategy, including consulting and 'Environment Report'.	✓

STAGE	PROGRESS
Consultation – Consulting the public and the Consultation Agencies on the draft Environment Report	✓
Finalised Environment Report – amend the draft Environment Report taking into account the views of key statutory bodies and the public	✓
Decision – deciding on whether or not to approve the plan, taking into account the environmental information contained in the finalised Environment Report	**14 May 2024**
Post-Adoption Statement – setting out how the assessment and views of the public and key statutory bodies were taken into account	**June 2024**
Monitoring – monitoring the significant effects of the plan and taking action if anything unexpected arises from the implementation of the plan	**3, 6 and 9 years from 2024**

2.2 The Council considered the TWSEL to be a plan that automatically requires SEA under Section 5 (3) of the EA(S) Act, so did not carry out Screening.

2.3 SEA must assess the ***likely significant*** environmental effects, both positive and negative, of the strategy. The purpose of SEA is to make better policy by taking account of environmental issues from the start. SEA gives both the public and decision takers a better understanding of the environmental impacts of a strategy.

2.2 The TWSEL will operate within a framework of the existing national and local policy, including the Scottish Forestry Strategy, the Scottish Biodiversity Strategy, National Planning Framework 4, East Lothian Local Development Plan the East Lothian Local Biodiversity Action Plan and many others. These strategies have where relevant been subject to SEA[1]. The relationship of the TWSEL with other plans is included.

Reasonable Alternatives

2.3 The EA(S) Act requires the Council to consider reasonable alternatives to the plan or programme. The Council considered three potential options. The first was 'do nothing'. However, there is a statutory requirement to produce a forestry and woodland strategy. The Council has also already indicated its ambition to plant a 'Climate Forest' of 2 million trees in East Lothian to help meet our carbon targets[2] through a decision in January 2021. It is strongly desirable that the planting of this woodland is steered to suitable locations. Therefore 'do nothing' is not a reasonable alternative.

2.4 The second option was to produce a higher-level strategy than the one now being proposed. This Strategy is detailed in terms of both mapping and policy. It was considered that the Strategy had

[1] The SEA documents for the East Lothian Local Development Plan 2018 and the plan itself can be downloaded following the links from https://www.eastlothian.gov.uk/downloads/download/13023/local_development_plan_2018

[2] Council decision January 2021

to contain sufficient detail to steer the creation of a climate forest, and to support the woodland grant making process. Therefore, producing a higher-level strategy would not have been useful and so was not a realistic option.

2.5 The last option considered was to focus on one aim, the most likely candidate being mitigating climate change. Focussing on this aim would be likely to have led to the planting of more faster growing species which can be used commercially (thus continuing to store the carbon after the removal of the tree). However, this was not considered realistic due to the legislative requirement to achieve multiple benefits.

2.6 The Consultation Authorities did not object to this approach. The Council has therefore not further considered or appraised any other approach to the one chosen. This is in line with the approach taken by the SEA of the Scottish Forestry Strategy[3] which likewise did not consider any alternative to the strategy adopted.

Likely Evolution of the area without the Strategy

2.7 The Environment Report must set out how the area is likely to evolve without the strategy.

2.8 Without the Strategy, Scottish Forestry would continue to base their grants on the Edinburgh and the Lothians Forestry Strategy 2012-17. This Strategy is now somewhat out of date. Since then, Local Geodiversity Sites have been designated in the East Lothian Local Development Plan. These sites are therefore not recognised in that methodology. Battlefields and Designed Landscapes were also previously considered as 'sensitive' and therefore unlikely to attract funding, where it is now considered that some woodland creation could be possible (and in some cases even desirable) in such areas. Prime agricultural land was not included specifically as constraint previously: there is more emphasis on its protection now nationally. Although woodland can fit with this type of land, it should not be seen as 'preferred' as parts with no other constraint were previously.

2.9 Without the TWSEL there would be some further tree planting and woodland creation driven by public enthusiasm and the availability of grants to landowners. Planting under these conditions is likely to be more haphazard and less extensive than would occur under the Strategy. Species chosen may be less suitable for different areas and current and predicted conditions. Different environmental receptors would mostly continue to evolve as now; this will be set out in the topic chapters. It is less likely that the Climate Forest would be delivered in full.

Methodology

2.10 The report is structured by first giving background information on trees and woodland in East Lothian as baseline information. A chapter on each of the SEA topics follows. For each of the SEA topic areas, the Environment Report identifies the main issues for that topic in general. Each section provides information on the current state of the environment which could be affected by the TWSEL (baseline). Some issues could fall under more than one topic area, and the SEA has tried to cover each issue in only one place. For example, wildfires are considered under Air, though wildfire also affects for example biodiversity and material assets.

[3] Scottish Government, "SEA of Scottish Forestry Strategy" at https://www.gov.scot/publications/scotlands-forestry-strategy-2019-29-strategic-environmental-assessment-environmental-report/

2.11 Officers identified relevant the environmental issues and the impact of the TWSEL using professional judgement. They looked at the baseline data and environmental protection objectives contained in other relevant policies and strategies, noted in Appendix 2. They also sought the views of the Consultation Authorities. The 'Scoping Tables' at the start of each topic chapter show which issues were considered relevant.

2.12 For each SEA topic, the aim was to identify the main issues that already exist for that topic; and the impact of TWSEL on that issue, for better or worse. This helped identify where there was potential for the TWSEL to either improve or worsen the situation for that issue. This approach helped apply the principle in the Continuity Act that protecting the environment should be integrated into policymaking. This process also indirectly covers cumulative impacts, although the other sources of harm may not be explicitly identified.

KEY

Score	Code
Positive	+
Neutral	0
Unknown	?
Mixed/variable	//
Negative	--

2.13 The assessment has been carried out partly in narrative form and partly by using 'SEA Objectives'. 'SEA Objectives' help focus attention on how each target, action and policy of the TWSEL affects each of the SEA topics. This was a framed as a question. Where possible the SEA Objectives align with those in the SEA of the Scottish Forestry Strategy. Use of objectives is a common method of identifying the main effects of a strategy. The results of the assessment are shown in a matrix within each SEA topic chapter. A 'score' of Positive, Neutral, Unknown, Mixed or Variable, and Negative is given for each objective. This helped identify, predict and evaluate the effects of the Strategy. Narrative was included to make sure impacts were not hidden within a general 'score' against each SEA Objective, and to explain the reasons for the score given.

2.14 The Environment Report must consider short, medium and long-term effects; permanent and temporary effects; positive and negative effects; and secondary, cumulative and synergistic effects. Short, medium and long-term effects are considered under the chapter headings as relevant, along with permanent and temporary effects, be they positive or negative.

2.15 Secondary effects are side effects – something that is not the main effect of the action. Cumulative effects are those that act additionally on the same receptor with effects from other plans and projects which increase the overall effect on that receptor. Synergistic effects are effects resulting from multiple sources or combined effects different in nature from the individual effects, but which act together to affect a different receptor. The Environment Report notes these at the end of each chapter.

2.16 The topic chapters end with consideration of mitigation that is in place. The section below gives an overview of the main provisions which form mitigation external to the Strategy. Where relevant, each topic chapter notes this. The 'mitigation' section of each topic chapter includes external mitigation where it is particularly relevant. These sections also include embedded mitigation (that is, mitigation which forms part of the Strategy) and mitigation which will or should take place at project level.

2.17 An overall conclusion on the impact of the TWSEL, taking into mitigation into account is made for each topic area.

Mitigation

2.18 The EA(S) Act requires that the Environment Report includes "measures envisaged to prevent, reduce and as full as possible offset any significant adverse effects on the environment of implementing the plan or programme". The TWSEL will sit alongside the East Lothian Local Development Plan 2018 (ELLDP) and below legislation and national policy. This legislation and policy, and the associated regulatory regimes, forms mitigation for some impacts that would otherwise be expected. The most important areas are noted below.

2.19 **Principles of sustainable forest management.** These principles have been agreed internationally[4] at the Second Ministerial Conference on Forests in Europe, held in 1993. The UK and Scottish governments have adopted both the principles and definition. UK and Scottish forestry legislation, practice and related policies are built on this.

Sustainable Forest Management: Definition

"The stewardship and use of forest lands that maintains biodiversity, productivity, regeneration capacity, vitality and potential to fulfil now and in the future relevant ecological, economic and social functions at local, national and global levels and that does not cause damage to other ecosystems".

2.20 The **UK Forestry Standard** sets out how the UK will apply the principles of sustainable forest management. This standard is reviewed every five years and is the basis for regulating forestry activities, including approvals for felling licences. Government grants and where relevant, consent, for woodland creation and forestry management are conditional on meeting the standard, including its supporting guidelines. The Standard includes provision for protection of biodiversity, landscape, cultural heritage assets and others.

2.21 **Environmental Impact Assessment (EIA).** The EIA regime requires formal assessment of the impacts of projects likely to have a significant effect on the environment. This may be required for forestry or related projects where there is likely to be a significant environmental effect. Forestry projects are covered by the **Forestry (EIA)(Scotland) Regulations 2017**, while related infrastructure – tracks, structures, buildings – is covered by the related provisions for town and country planning. The environmental impact assessment regulations also cover works that are normally permitted development, where they have a significant environmental effect. The EIA process can help reduce or prevent adverse environmental effects and strengthen positive effects through full exploration of environmental effects and the requirement for mitigation.

2.22 **Planning consent.** In addition to the UK Forestry Standard and EIA regulation, some projects or aspects of projects that come forward will be subject to the planning system. At the time of writing, the development plan consists of National Planning Framework 4 and the East Lothian Local Development Plan 2018 (ELLDP). These plans contain policies promoting and protecting specific interests, including amenity and natural and cultural heritage. Where planning permission is required, these policies will mitigate against some potential impacts as it can be assumed that they would apply as intended to prevent harm to relevant interests. The Council's Planning Service will require Flood Risk Assessment, Transport Assessment, Coal Mining Risk Assessment, Habitats

[4] Second Ministerial Conference on the Protection of Forests in Europe, June 1993 https://www.foresteurope.org/docs/MC/MC_helsinki_resolutionH1.pdf

Regulations Appraisal, Landscape and Visual Impact Assessment and any other relevant assessment to be carried out on any qualifying proposals

2.23 **Consents from HES, NatureScot and SEPA.** Some activities within SSSIs, at designated historic environment assets or within the water environment also require consent from NatureScot, HES or SEPA. The Environment Report assumes that regulatory control will be applied as intended to avoid harm to these sites. The Conservation (Natural Habitats, &c.) Regulations 1994 (Habitats Regulations) provide that were there is harm to a European Site from a plan or project, unless there are exceptional circumstances it cannot go ahead. Sites of Special Scientific Interest are protected from planting under the Wildlife and Countryside Act 1981 (as amended) and the Nature Conservation (Scotland) Act 2004. Planting on Scheduled Monuments requires consent under the Ancient Monuments and Archaeological Areas Act 1979.

2.24 Measures to prevent, reduce or offset any significant effects are set out in the 'Mitigation section' of each chapter.

Data gaps

2.25 The EA(S)A requires that gaps in knowledge or data and any difficulties in carrying out the assessment are reported. The main data gap in preparing both the TWSEL and the Environment Report was the lack of information on

- species, condition and location of urban trees
- species, condition and location of hedgerows
- location of orchards, wood pasture and parkland and ancient woodland not included in NatureScots inventory or National Library of Scotland mapping
- nationally recognised methodology for assessing connectivity of woodland (in preparation we believe)

2.26 The TWSEL contains proposals for a tree audit, Hedgerow Plan, and for mapping of orchards, wood pasture and parkland to help address this going forward. Scottish Forestry reported data in 2013 in the Native Woodland Survey of Scotland on the makeup of woodland, however this survey has not been repeated and is now somewhat out of date.

2.27 The Council also does not have information on demand for wood fuel locally.

Coordination with Habitats Regulation Appraisal

2.28 The plan is not directly connected with or necessary to the management of the European site(s) and has a likely significant effect on the Firth of Forth, Fala Flow and Gladhouse Reservoir SPAs. Accordingly, the TWSEL has been subject of a separate Habitats Regulations Appraisal and Appropriate Assessment. This assessment found that there is no adverse impact on the integrity of any European Site, and the Strategy can therefore be adopted.

UK Withdrawal from the European Union

2.29 As SEA is required for this Strategy, the Council must consider guiding principles on the environment set out in the UK Withdrawal from the European Union (Continuity) (Scotland) Act 2021. These are:

(a) the principle that protecting the environment should be integrated into the making of policies,
(b) the precautionary principle as it relates to the environment,
(c) the principle that preventative action should be taken to avert environmental damage,
(d) the principle that environmental damage should as a priority be rectified at source,
(e) the principle that the polluter should pay.

2.30 Principle (a) above has been met through the SEA process is being carried out in tandem with the preparation of the TWSEL, with the same officers working on both. This has meant that protection of the environment is intertwined with the objectives and proposals of the strategy. Principle (b), the precautionary principle[5], has been considered through recognition that tree planting/woodland creation, although in general beneficial, has the potential to cause environmental damage if done with the wrong species, in the wrong way or place, or at the wrong time. Mitigation of climate change is a strong driver for this strategy. Principle (c) is reflected in the strategy itself with its promotion and support of woodland creation. This is in support of the principle that preventative action should be taken to avert environmental damage. In addition, mitigation is set out which may be required at project level to avert specific environmental harms.

2.31 Principle (d) requires that environmental damage be rectified at source. The TWSEL is being prepared partly to mitigate climate change. The land on which trees will be planted is generally not the source of climate forcing emissions. However, the UK as a whole has a historic climate debt through early industrialisation and woodland clearance for agriculture. In this sense the environmental damage is being rectified at source. The Strategy also contains measures to avoid further environmental damage caused by tree planting and woodland creation.

2.32 Principle (e) the polluter pays principle is respected. The act of planting trees should have a net benefit rather than being a polluting activity. There can be emissions from tree planting and tree and forestry management. This will be managed through conditions on woodland grants, afforestation consent and planning consent. Where necessary action may be taken through other statutory mechanisms, such as CAR regulations, planning permission or Operation Requiring Consent to put the costs of avoiding harm to the environment onto the polluter.

Relationship with project level assessment

2.33 The purpose of the Environment Report is to identify the strategic level effects that could occur from the Strategy overall. It does not take the place of detailed assessment, including Environment Impact Assessment, Flood Risk Assessment, Landscape and Visual Impact Assessment and others, which may be required at project level.

[5] The precautionary principle was stated in the Rio Declaration "where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation". This definition was reiterated in Principle 7: Environment of the UN Global Compact – see https://www.unglobalcompact.org/what-is-gc/mission/principles/principle-7

3 OUTLINE OF CONTENTS AND MAIN OBJECTIVES OF THE PLAN

Background

3.1 The Planning (Scotland) Act 2019 introduced a statutory requirement that the planning authority should produce a Forestry and Woodland Strategy for their area. In the same year, both the Scottish Government and East Lothian Council declared a Climate Emergency, and Scottish Ministers approved the Scottish Forestry Strategy. East Lothian Council also approved its Green Network Strategy. Last year the Council declared a Nature Emergence also.

3.2 The TWSEL is being produced against a background of rising public demand to address the Climate and Nature Emergencies, and a strong feeling that tree planting and woodland creation needs to be part of the solution. East Lothian is also experiencing significant housing growth, and this needs to be balanced by conservation of the natural environment. At the same time, the Council recognises that there are areas that are unsuitable for trees. Some land is needed for other purposes, including food production and urban development. Parts of the historic or natural environment have a value which would be lost by tree planting there. Some land performs a carbon sequestration function in a different way, such as saltmarsh, peatland or even grassland, which can sometimes be overlooked.

3.3 The TWSEL therefore must fit in with a suite of existing designations and land-uses. The task for this strategy is to increase woodland cover in the right places, in line with maintaining the quality of East Lothian's natural and built assets and other land use requirements.

Purpose of the Strategy

3.4 The Council has an ambition to plant 2 million trees in the next 10 years to form a Climate Forest. The TWSEL aims to guide this planting in terms of location and species, as well as identifying and protecting existing woodland of high nature conservation value. The Strategy will meet the statutory requirement to produce a Forestry and Woodland Strategy and identify appropriate woodland types for different areas and purposes. It will help fulfil the Council's duty to promote sustainable forest management[6]. The Strategy will also set the framework for action such as the allocation of grants and planting on council owned or managed land. It will help maintain the quality environment that makes East Lothian attractive.

3.5 The draft proposed Vision is "Expanded and sustainably managed networks of woodland and trees across East Lothian contribute to addressing climate change, and provide healthy and resilient environment, nature recovery, a strong sustainable economy and enhanced quality of life for local communities". The strategy contains aims for each of the chapters:

Climate Mitigation "Increase the contribution that East Lothian's existing and future woodlands make to achieving net zero carbon in line with East Lothian Council and Scottish Government targets"

Resilience and Climate Adaptation "Increase resilience of East Lothian's environment and its woodlands, including using trees and woodland to adapt to Climate Change"

[6] S2.2 of Forestry and Land Management (Scotland) Act 2018 "Forestry and Land Management (Scotland) Act (2018)"

Biodiversity "Work towards a more natural tree and woodland cover with thriving native flora and fauna, protecting, maintaining and connecting our distinctive native woodland types, and enhancing and connecting nature in our urban areas"

Community "maximise the benefits for all people of trees and woodlands for recreation, health, wellbeing and community including through placemaking"

Economy "Trees and woodland contribute towards a Sustainable and Inclusive Economy"

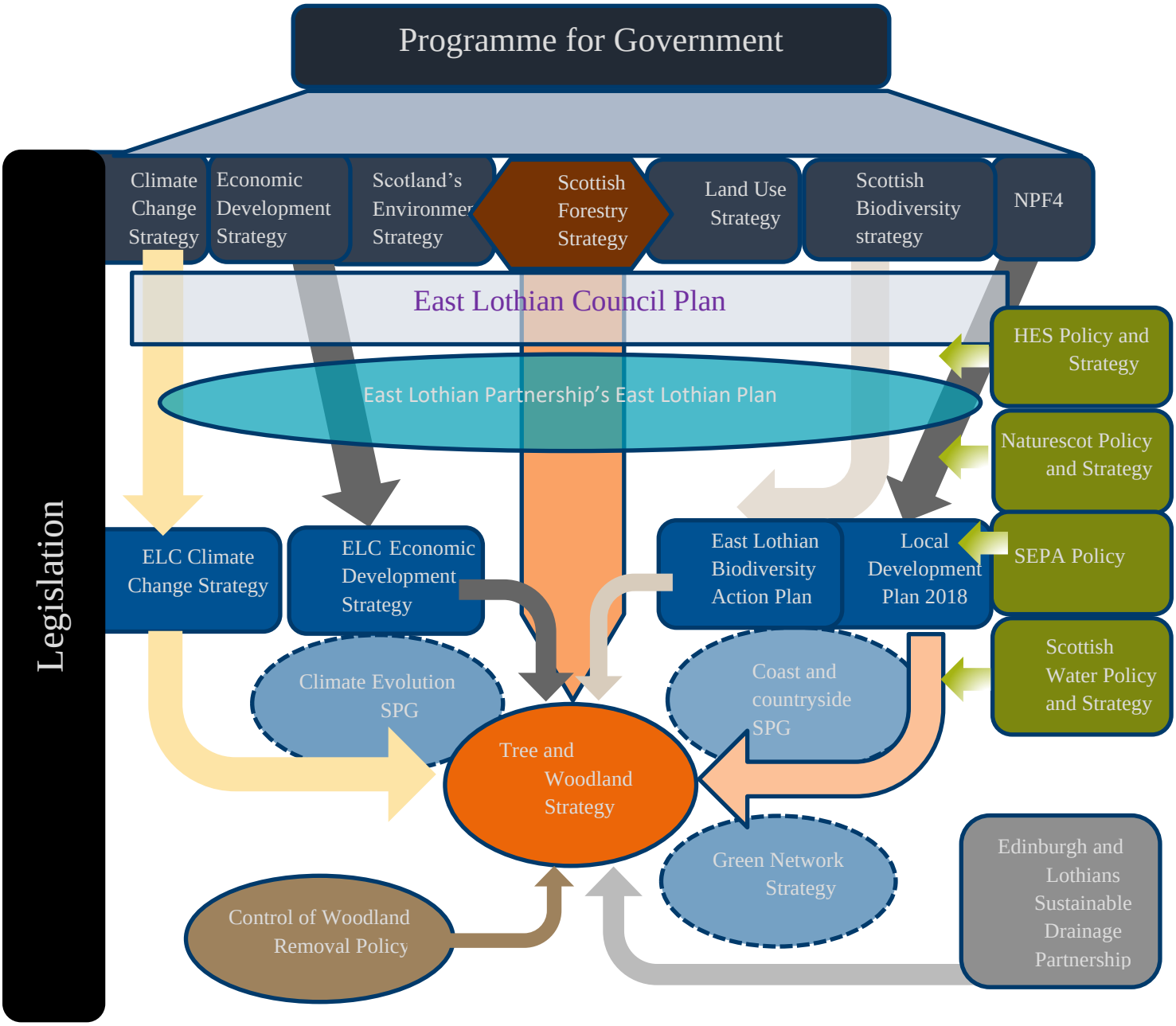
Cultural Heritage "Celebrate the role of trees and woodland as part of our cultural heritage and protect cultural heritage assets from harm from trees"

Landscape Character "Use trees to help retain and enhance the distinctiveness of landscape and settlement character within East Lothian"

3.6 A decade ago, Forest Research, in partnership with the Council and others, produced the Edinburgh and the Lothian Forestry Strategy 2012-2017. This Strategy updates and builds on that work.

4 RELATIONSHIP BETWEEN TWSEL & OTHER RELEVANT PLANS, PROJECTS AND STRATEGIES

4.1 The TWSEL sits in a hierarchy of plans, summarised in the diagram below. How the TWSEL has taken account of the objectives of different plans is shown in Chapter 12.



4.2 The Programme for Government continues to support a stepped increase in woodland creation, aiming for 18,000 hectares a year by 2024-25 across Scotland, of which 4000 hectares should be native woodland. The Scottish Climate Change Plan has a target of increasing Scotland's woodland cover from 18% of our land to 21%. The Scottish Forestry and Woodland Strategy 2019-29 sets out the Scottish Government's ambitions for this sector. The TWSEL will also help achieve the aims of the East Lothian Council Plan and Climate Change Plan. Legislation, including that on health and safety at work, protected species, development in the water environment and others will affect the TWSEL and actions coming forward under it. Other existing national, regional and local policies, strategies and guidance are also relevant. A list of the main ones and what environmental objectives they are intended to achieve is set out in Chapter 12. Chapter 12 also shows how the TWSEL fits with their objectives.

4.3 The Scottish Forestry Strategy sets the main policy context. How the TWSEL has taken this into account is shown in Chapter 12. The legislative and policy context for forestry is set out within that document (reproduced below).

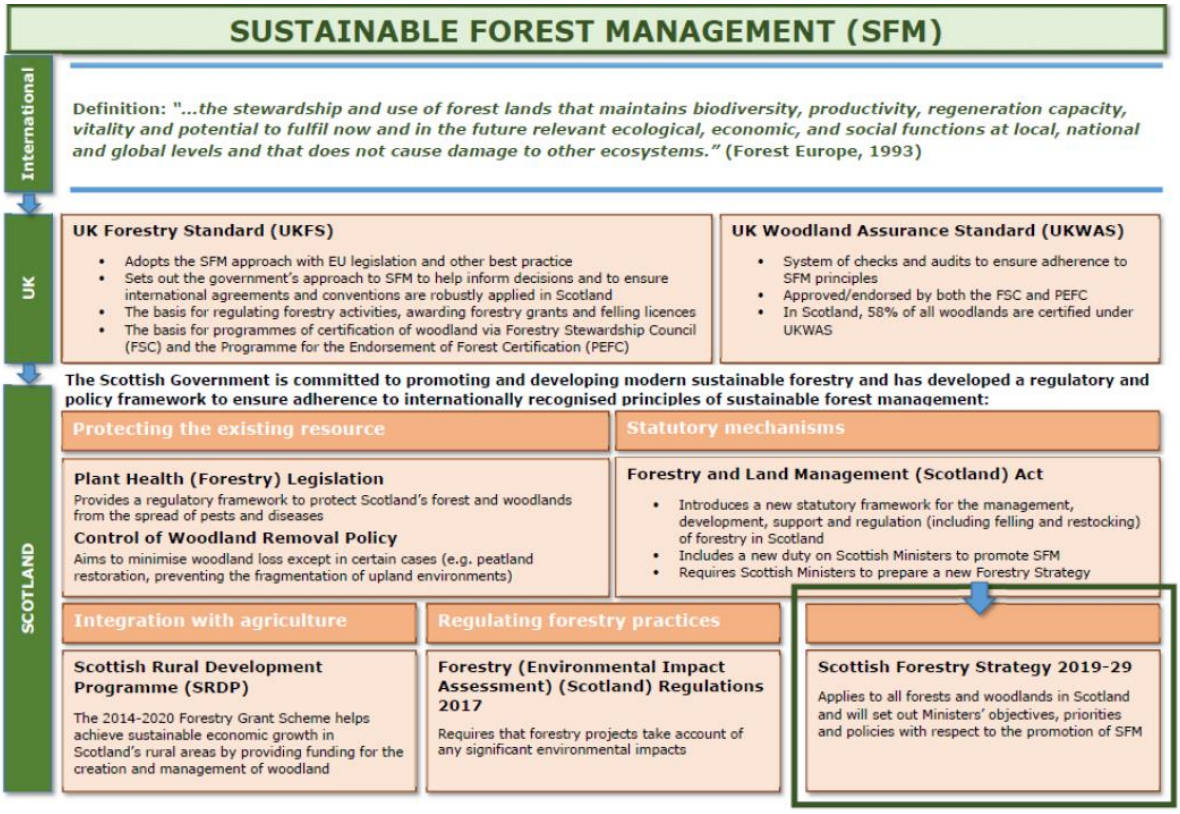


Figure 2 Where the Scottish Forestry Strategy sits (from Scottish Forestry Strategy 2019-2029)

5 TREES AND EAST LOTHIAN

5.1 The EA(S)A act requires that details are given of the character of the environment that may be affected including any existing pressures. This section gives general background on East Lothian, and of forestry and woodland in the area. More specific baseline information on the SEA topic areas is given in the topic chapters.

East Lothian – the place

5.2 East Lothian is a small area of 680 square kilometres, home to around 109,580 people[7]. Between 1999 and 2019, the population of East Lothian has increased by over a fifth, the highest percentage increase of Scotland's 32 council areas. The population is concentrated to the west of the area however there are three towns – Haddington, North Berwick and Dunbar – to the centre and east, as well as numerous smaller settlements. Population in the Lammermuir Hills and foothills, to the south, is sparse.

5.3 East Lothian is located mainly within eastern central Scotland, with landscape characterised by attractive coast, open arable plains with igneous outcrops, and more treed river valleys. The land rises to the south to the broad plateaus of the Lammermuir Hills, with deeply incised cleughs on the slope of the southern upland slope. The landscape contains a rich architectural and archaeological heritage.

History of Forestry and Woodland

5.4 At the time of the Ice Age, some 11,000 years ago, East Lothian was under ice. The movement of this ice formed the glacial features seen here today. As the ice retreated, woodland started to reappear, though marshy ground in parts of the lowlands would have restricted growth. People have settled in East Lothian for a long time, with land clearance for early agriculture starting the decline of the original woodland. The combination of human activity and a change to a cooler,

[7] https://www.nrscotland.gov.uk/files/statistics/council-area-data-sheets/east-lothian-council-profile.html

wetter climate led to natural replacement of some woodland by peat. Agricultural improvements of the 17th and 18th centuries involved further removal of woodland, however, owners of the larger estate houses also created policy woodland, shelterbelts and plantation woodland.

5.5 The first half of 20th century saw the planting of some large areas of mainly coniferous trees intended as a timber crop. According to the 4th Statistical Account of East Lothian[8], many of these were clear-felled to support the war effort (Binning Wood, Brownrigg, High Wood, Butterdean, Woodside, Colstoun and Saltoun Big Wood). The Account continues that the replanting of these areas was mainly with conifers due to lack of suitable hardwood seedlings, with growth of rhododendron as understorey. In the post war period, the Forestry Commission bought woods at Pressmennan, Saltoun Big Wood, Butterdean, and the seed orchard at Whittingehame. They sold these in the 1980's to the Woodland Trust and the Council. In the later part of the 20th century, Dutch Elm disease spread to East Lothian. This resulted in the loss of many of East Lothian's elms, in particular English elm. Wych elm, being scrubbier by nature, was less affected.

5.6 The Fourth Statistical Account notes that woodland expansion took place in the Lammermuirs from 1961 to 1981. Substantial areas were planted almost entirely with Sitka spruce at Ferneylea, Cracking Shaw and Stobshiel. Windfarm development has involved removal of some of this forestry, notably at Cracking Shaw but also at Monynut, with replacement planting with native woodland in the cleughs for the latter. From the 1960s to the 1980's there was also broadleaf planting, with some pine and larch, on estate land at Winton, Whittingehame, Lennoxlove and others, to improve agricultural and sporting value. Planting of broadleaves also occurred on the reclaimed or contaminated land at Musselburgh ash lagoons, Wallyford bing, and Carberry landfill site. The government's broadleaved woodland policy, published in 1985, led to around 300 ha of broadleaf woodland being planted by the year 2000.

Trees Today

5.7 Woodland cover now makes up around 10.5% of the total land area of East Lothian[9] (compared to 19% for Scotland as a whole[10]), with only one fifth of this being native or nearly native woodland.

5.8 The SEA of the Scottish Forestry Strategy 2019-29 notes that no woodlands in Scotland can be regarded as truly natural, however some woodlands are semi-natural. These are a conservation priority due to their high levels of biodiversity. East Lothian contains a small amount of woodland on ancient woodland sites (893ha) of which around a third is native woodland i.e., woodland where more than half of the canopy is native. Scotland has six native woodland types, not

[8] Jim Affleck (2000), 'Forestry' in The Fourth Statistical Account of East Lothian' https://el4.org.uk/county/the-land/forestry/

[9] Derived from information in https://scotland.forestry.gov.uk/images/corporate/pdf/fcs-nwss-east-lothian.pdf

[10] Scottish Forestry Strategy SEA https://www.gov.scot/binaries/content/documents/govscot/publications/consultation-paper/2018/11/scotlands-forestry-strategy-2019-29-strategic-environmental-assessment-environmental-report/documents/scotlands-forestry-strategy-2019-29-strategic-environmental-assessment-environmental-report/scotlands-forestry-strategy-2019-29-strategic-environmental-assessment-environmental-report/govscot%3Adocument/00543239.pdf

including scrub. The most common type in East Lothian is lowland mixed deciduous woodland. There are no native pinewoods here; pine is not native to East Lothian.

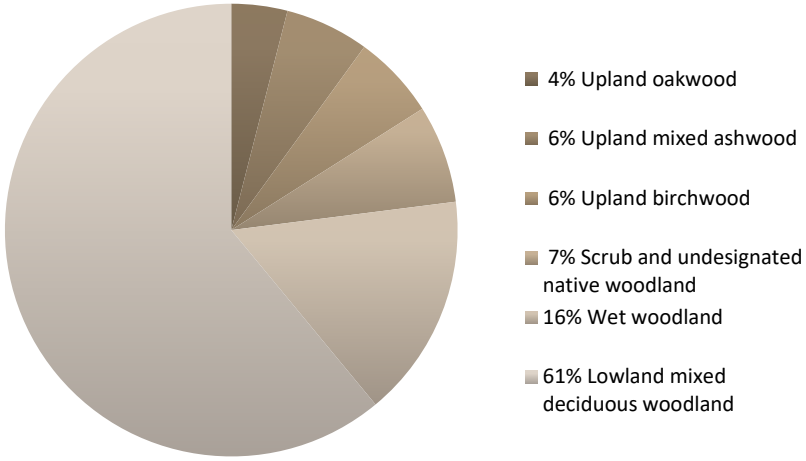


Figure 3 East Lothian's Native Woodland, by type [11]

5.9 SSSI designation protects some of these semi-natural woodlands – fen woodland at Danskine Loch, juniper scrub at Lammer Law, upland mixed ash woodland at Lammermuir Deans and Papana Water, valley fen at Lammermuir Deans, and Upland Oak Woodland at Rammer Cleugh and Woodhall Dean.

5.10 East Lothian had 7,130 ha of woodland in 2021 as recorded in Scottish Forestry's National Forest Inventory. This map shows the type and location of woodland.

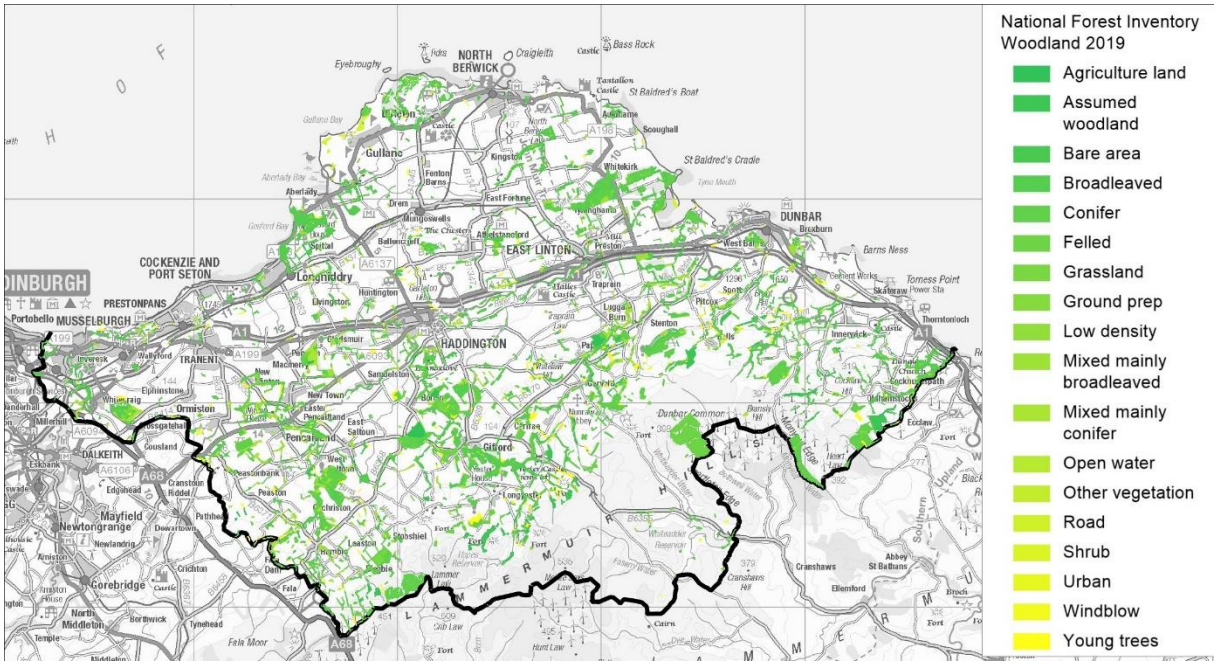


Figure 4 Woodland in East Lothian, from National Forestry Inventory 2019

[11] From Native Woodland Survey of Scotland, East Lothian, by Forestry Commission Scotland 2013 https://scotland.forestry.gov.uk/images/corporate/pdf/fcs-nwss-east-lothian.pdf

5.11 In addition to native woodland, forestry plantation, policy woodlands and shelterbelt, East Lothian also contains important small woodlands and individual trees within towns and villages. These often have significant amenity, landscape and/or heritage value. There are some significant individual trees in the rural areas also, such as the Ormiston Yew under which John Knox reputedly preached, some 'champion' trees (the largest or oldest known specimens of their species) and many field boundary trees[12].

5.12 A citizen science project supported by Forest Research (further information is here: https://www.forestresearch.gov.uk/research/i-tree-eco/urbancanopycover/) found tree canopy cover to be as follows:

Table 1 Tree Canopy Cover by Ward	
Ward	Estimated cover
Musselburgh	17.9%
Dunbar and East Linton	16.2%
North Berwick Coastal	9.8%
Haddington and Lammermuir	14.1%
Tranent, Wallyford and Macmerry	10.0%
Preston, Seton, Gosford	11.7%

5.13 Further information about tree canopy coverage in towns and villages, and in the lowest 30% of areas which are lowest in the Scottish Index of Multiple Deprivation, are shown in the Strategy itself.

Tree pressures

5.14 East Lothian's trees and woodlands are facing pressures to their health, function and in some cases even existence. **Climate change**, in addition to affecting the distribution of pests and diseases, is likely to affect species distribution, and potentially the ability of some trees to survive in place. Climate change could also make drought conditions more likely so increasing the chance of fires and increase extreme weather events such as high winds which can cause damage to trees and consequent harm, including to people and the built environment. **Pests and diseases** such as *Phytophthora ramorum*, which affects larch, and *chalara* which causes ash die back are making an impact on East Lothian's trees. Fragmentation of woodland has occurred historically, and this threat continues. Pressure for **built development or energy projects** has also led to loss of trees

[12] See East Lothian Cultural Heritage and the Built Environment SPG https://www.eastlothian.gov.uk/downloads/file/27907/cultural_heritage_and_the_built_environment_spg and Forthcoming Conservation Area Appraisals

and woodland. Although replacement planting is now generally required this takes time to replace the functions and value of the trees lost.

5.15 **Poor woodland management** affects woodland quality. **Grazing** by rabbits, deer or sheep can cause damage, as they eat young growth and affect woodland regeneration; under grazing can also be problematic. **Recreational pressure** can also affect woodland through trampling, setting fires or introduction of pathogens. Invasive species can affect the woodland's biodiversity. **Muirburn** has been an issue for the juniper scrub of the Lammermuirs. **Changes to drainage or water management** can affect wet woodland.

6 BIODIVERSITY, FLORA AND FAUNA

Introduction

6.1 Biodiversity is all the variety of life found on earth – plants, animals, fungi, microorganisms. It is critical to maintaining human life on this planet. Some people consider we also have a responsibility of stewardship towards our natural environment and the creatures that live in it.

6.2 Globally, nature is in crisis. According to the UN Environment Programme, one million of the world's estimated 8 million species of plants and animals are threatened with extinction. Human action has significantly altered three quarters of the Earth's land surface[13]. Issues relating to biodiversity should be considered in this global context i.e., that biodiversity is under pressure and urgent action is required to improve the situation. The Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) advises the United Nations on Biodiversity. The key message of their 'Global Assessment Report on Biodiversity and Ecosystem Services'[14] in 2019 was that nature and its vital contributions to people, are deteriorating worldwide. The IPBES Report[15] advises that both direct and indirect drivers of change adversely impacting biodiversity have sped up in the last half century. Those with the most impact are, in descending order of harm: changes in land and sea use; direct exploitation of organisms; climate change; pollution; and invasion of alien species. The report also identified as indirect drivers the disconnect of people from nature and lack of value and importance placed on nature.

6.3 The Global Framework for Biodiversity agreed at COP15, in recognition of this trend, adopted 4 main goals and 23 targets for action.

6.4 Trends in the UK reflect this global picture. The first report of the House of Commons Environmental Audit Committee[16] described the UK as one of the most nature depleted countries in the world. Despite its reputation for its natural environment, Scotland is not bucking this global

[13] UN Environment Programme website https://www.unep.org/facts-about-nature-crisis (accessed 18-05-2023)

[14] https://ipbes.net/global-assessment

[15] Global Report on Assessment and Biodiversity Services, above.

[16] Environmental Audit Committee, 'Biodiversity in the UK: Bloom or Bust' First Report of Session 2021-22

trend. In 2019 the NatureScot report, the State of Nature[17] showed the abundance and distribution of Scotland's species has on average declined over recent decades. The report itself notes that its findings should be seen against a backdrop of profound historic influences on nature in Scotland. Key pressures on biodiversity identified were: agricultural management; hydrological change; urbanisation; woodland management; pollution; invasive non-native species (INNS); upland management; marine climate change and fisheries. More positive trends are reduction in freshwater pollution, some marked reductions in emissions of harmful pollutants, and some increase in woodland and wetland habitat overall.

6.5 These historic and current pressures are as relevant for East Lothian as for Scotland as a whole. East Lothian has a long history of land use change and biodiversity loss resulting from human efforts to control the land to provide for our needs for homes, food, materials, goods, energy and transport. This historic (and continuing) land use change has led to a paucity of both species and habitat, and loss of habitat connectivity. Early agricultural enclosure brought removal of woodland as well as drainage of the land for agricultural production, which has gradually intensified. It also however brought the introduction of hedges. The low point for woodland was probably reached around the end of the 19th century, since when tree planting has increased. However, some of this increase was of non-native trees for timber production, which has limited biodiversity benefit.

6.6 More recently, agricultural field expansion and mine-working, including opencast, has led to removal of features such as hedges and groups of trees, while wind farm development has involved removal of some commercial forestry. Built development and related recreational pressures in the area have had (and will continue to have) direct and indirect effects on both species and habitat[18]. Loss and fragmentation of the original woodland cover overall has had a considerable effect on its biodiversity from loss of large mammal species to loss of diversity of invertebrates.

6.7 Scotland's Biodiversity Strategy a Route Map to 2020[19] set out Six Big Steps for Nature.

These are:

- Ecosystem restoration,
- Investment in Natural Capital,
- Quality Green Space for health and education benefits,
- Conserving Wildlife in Scotland,
- Sustainable Management of Land and Freshwater, and
- Sustainable Management of marine and coastal ecosystems.

NatureScot consulted on a draft replacement Scottish Biodiversity Strategy in summer 2023. The final version will be a high level, policy focussed strategy taking account of CoP15 and the new global biodiversity framework. This framework set global targets for 2030, including effective conservation and management of at least 30% of the world's land, coastal areas and oceans; reduce to near zero the loss of areas of high biodiversity importance; prevent the introduction of priority invasive alien species, and reduce by half the introduction and establishment of others.

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[17] Available here: https://www.nature.scot/state-nature-scotland-report-2019

[18] See SEA and HRA of East Lothian LDP 2018 available here: https://www.eastlothian.gov.uk/info/210547/planning_and_building_standards/12242/local_development_plan/2

[19] See https://www.gov.scot/publications/scotlands-biodiversity-route-map-2020/documents/

6.8 There are opportunities for the TWSEL to support these objectives either directly or indirectly through conservation of woodland, creation and management of woodland and planting of trees, and in some place avoidance of planting (for example in on coastal land used by coastal bird species).

6.9 The following Scoping Table shows the issues considered. The Environment Report considers people's feeling of connection to nature under health, although it is recognised as important for preserving biodiversity also. There are opportunities to benefit biodiversity with woodland expansion, in particular woodland species. This could come from additional habitat, new types of woodland habitat, replacement planting of trees and woodland lost to pests and disease, and increased connectivity. There is also the opportunity to protect woodland habitat through better woodland management and managing public access.

6.10 However, there are also ways in which expansion and changes to management of woodland could affect other aspects of biodiversity. TWSEL Policy 14: Protection of the Natural Environment aims to protect existing designated sites, and balance woodland expansion with respect for other important habitats, as identified by the Central Scotland Green Network. These issues will require to further consideration project level.

Scoping Table 1: Biodiversity	
Issue	Scoped in/out
Contribute to addressing to national/international issues	
Changes in land-use	In
Direct exploitation of organisms	In
Climate change (biodiversity adaptation)	In
Pollution	Out
Impacts from invasive non-native species	In
Reintroductions of species made extinct in the UK	Out
Woodland management [added post-Scoping]	In
Conserve existing biodiversity	
Conservation of international and European sites – Firth of Forth SPA/Ramsar site, River Tweed SAC, Fala Flow SPA, Gladhouse Reservoir SPA, Greenlaw Moor SPA, Forth Islands, Outer Firth of Forth and St Andrews Bay complex	In
Conservation of all other European and International sites	Out
Conservation of SSSIs	In
Conservation of Local Biodiversity Sites (LBS)	In
Conservation of protected species	In
Non-designated biodiversity	In

Support the Central Scotland Green Network	
Contribution to the Green Network	In

Baseline and issues – Biodiversity

6.11 The habitats of East Lothian are strongly linked to land use. Much of the lowland area outwith settlement is arable, with some recreational use such as golf courses especially around the coast. As the land rises to the Lammermuirs, pasture and rough grazing starts to predominate, with grouse moorland on the hill plateau in the south of the area. In addition to these uses, some areas have been subject to mining, quarrying, use for water supply, or commercial coniferous planting, which has lessened and changed the biodiversity of those sites and the area as a whole.

6.12 A Phase 1 Habitat Survey was carried out in 1997 in support of the Lothian Region Structure Plan. Although now over 25 years out of date, it shows the general type and location of habitats across East Lothian.

Figure 5: Phase 1 Habitats (1997)

6.13 There are a few areas where natural or semi-natural habitat remain. These areas are mainly where it is too rocky, steep or wet for other beneficial use. The East Lothian Local Biodiversity Action Plan identifies East Lothian priority habitat. This includes coastal, grassland, woodland and wetland habitats, some of which are relatively extensive. There are also many reservoirs and smaller ponds. Hedgerows exist across most parts of the area (except the moorland plateau), though there are sections where these are lacking. Work for the Lothian Structure Plan 2015 identified habitat networks of Broadleaf and Yew, Fen Marsh Swamp and Neutral Grassland. The figure below shows these habitats, along priority habitat from the 1997 Phase 1 survey. This shows the connectivity of the main habitat networks.

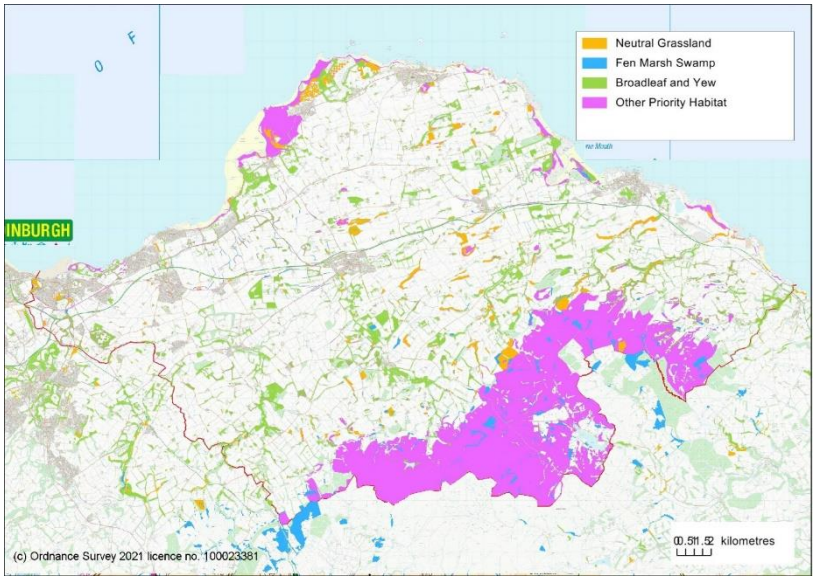

Figure 6: Integrated Habitat Networks and Ancient Woodland

6.14 Forest Research have mapped the native woodlands of Scotland in the Native Woodland Survey of Scotland[20]. NatureScot have produced an Inventory of Ancient Woodland[21]. A map of these is shown below. As can be seen, both types of woodland (which sometimes overlap) form a small proportion of the total land area of East Lothian. In addition, the National Library of Scotland has identified ancient woodlands not previously mapped (see https://maps.nls.uk/projects/woodland/info/).

[20] Native Woodland Survey of Scotland data is available here: https://data.gov.uk/dataset/da3f8548-a130-4a0d-8ddd-45019adcf1f3/native-woodland-survey-of-scotland-nwss

[21] Ancient Woodland Inventory data can be found following this link: https://www.nature.scot/guide-understanding-scottish-ancient-woodland-inventory-awi

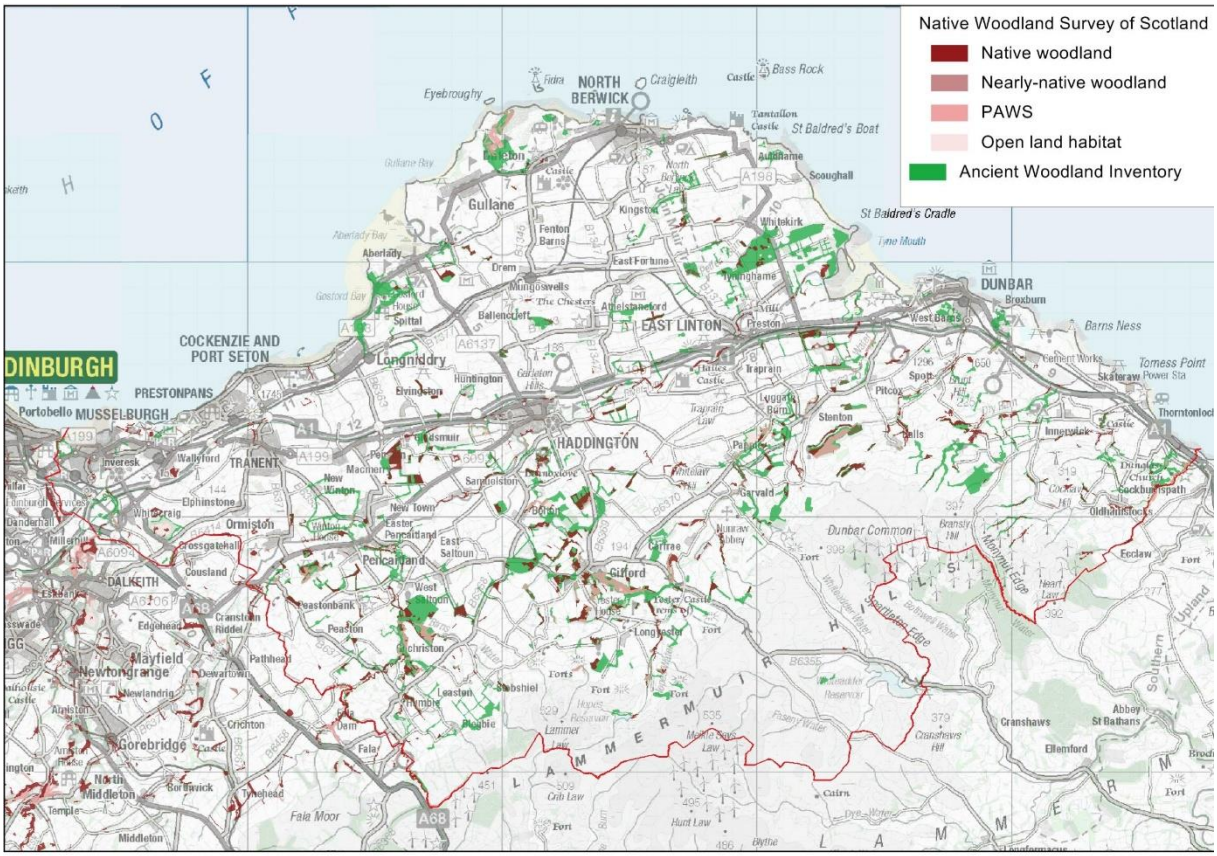

Figure 7 Native Woodland Survey of Scotland woodland, and land on NatureScot's Ancient Woodland Inventory

Contribution to International and National Issues

Changes in land use

6.15 The IPBES identifies changes in land and sea use as major pressure on biodiversity, with NatureScots' State of Nature also noting land use change as a pressure on biodiversity.

6.16 Previously (both in historic times and more recently) agriculture, urbanisation and windfarm development in East Lothian have led to some losses of both open and woodland habitat. The East Lothian Local Development Plan 2018 allocates land for housing and economic development. Development pressure is high here due to proximity to Edinburgh (which drives housing and employment land demand). There is also a good wind resource, which leads to pressure for windfarm development.

6.17 The TWSEL will create land use change through woodland creation and restructuring. Generally speaking, this change is positive for biodiversity as the woodland supported by the strategy is a richer habitat that those it will replace. Although there is the potential for impact on other important habitat directly or indirectly, including loss of connectivity, the Strategy contains mapping and policy protecting other valued habitats and if operated as intended, this will not happen. The potential for harm to other important habitat should be considered at project level.

6.18 There is the potential to mitigate biodiversity loss through land use change to urban use by increasing tree planting in and around urban areas. The Strategy also supports an increase of canopy coverage in urban areas, which will also help mitigate land use change to urban.

6.19 The Control of Woodland Removal policy limits circumstances where woodland can be removed for development, and where this is allowed, replacement planting is required. The TWSEL Policy 1 reaffirms commitment to the Control of Woodland Removal Policy, aims to guide this replacement woodland creation to suitable locations and recommends suitable woodland types.

6.20 Increased land use change to woodland could also bring the introduction or spreading of tree pests and diseases. The TWSEL aims to combat this through encouraging sustainable woodland management (Policy 7: Sustainable Woodland Management), support of the UK Forestry Standard and use of locally sourced stock in Policy 9: Seed and Tree Stock Sourcing.

Direct Exploitation of organisms

6.21 Harvesting of wood may lead to loss of those elements of biodiversity adapted to live there, as well as the trees themselves. Previous productive forestry has resulted in some mainly coniferous plantations with lower biodiversity value. However, hardwood trees, including native trees, can be commercially exploited, including some with a high biodiversity value. The TWSEL encourages sustainable woodland management (Policy 7: Sustainable Woodland Management), which includes sustainable extraction of timber and avoids clear felling. The TWSEL encourages management of productive woodland to encourage biodiversity in Policy 20: Productive Woodland. Although felling a tree will lead to the loss of its biodiversity value, the potential for obtaining a return on the timber may encourage landowners to retain woodland as such. Overall, support for productive hardwood is likely to be beneficial.

6.22 Foraging is another way that woodland species may be directly exploited. There is legislation in place to prevent digging up of wildflowers however foraging for personal consumption is permitted under the Land Reform (Scotland) Act 2003. The Strategy does not encourage foraging. However, increasing access to and knowledge of woodland and woodland plants could lead to an increase in foraging, which may affect woodland biodiversity. This should be balanced by an increase in the woodland resource overall however (Target 1: Creation of the Climate Forest).

Climate change – biodiversity adaptation

6.23 Climate change could affect the survival of woodland species in East Lothian, and their ability to adapt. The impact of climate change on biodiversity in East Lothian (as elsewhere) is not entirely predictable. It may bring new invasive species and new diseases for plants, animals and people. Well-connected, diverse networks are needed to allow species to move in response to changed climate. Climate change could also affect resilience of the trees as the conditions to which they have evolved change. Drought, colder springs, and more extreme weather events, such as wind, can stress some trees and woodland species, making them more susceptible to pests and diseases.

6.24 Planning for increased woodland cover brings the opportunity to improve woodland connectivity. This can help species migrate. As noted above, the TWSEL provides for the protection of other habitat networks, which will also need to respond to climate change, in Policy 14: Protection of the Natural Environment. The TWSEL will help biodiversity adapt to climate change through encouraging species diversity and allowing for climate migration (Section 7, Connection for Climate Migration and related policy and mapping).

6.25 Sea level rise and coastal habitat squeeze is one of the main issues that might affect the East Lothian coast. In this area, there are limited options for replacing coastal habitat due to the presence of existing built development. Woodland creation could also reduce the land available to coastal habitat. The TWSEL encourages the formation of coastal mosaic habitat here (Target 3, Action 29, mapping). In the Innerwick Coastal Margin, which is a narrow area between the North Sea and the Lammermuirs, the TWSEL encourages the development of a Landscape Masterplan for this area to allow for climate migration of different habitats, while enhancing the landscape (Target 7 and Action 30).

Pollution

6.26 Biodiversity can be affected by pollution including air pollution and nitrogen enrichment. Nitrogen deposition effects are long lasting, altering plant communities and ecological functioning. New agrochemicals, pharmaceuticals and plastics also cause harm. Air quality has improved in Scotland, and of the main pollutants all bar ammonia are below 40% of their 1990 values[22]. NatureScot's State of Nature Report 2019 notes that forestry, along with agriculture, is one of the main causes of diffuse pollution in Scotland, with nutrient and pesticide run-off, soil erosion through cultivation. Noise pollution could potentially affect the amount and type of biodiversity in woodland[23].

6.27 Pollution of air, water and soil is considered in those respective sections of this Environment Report. Tree planting can help remove pollutants including from air, water and soil, and address noise in some situations.

6.28 The TWSEL is not expected to affect the levels of pollution which affect biodiversity other than through its effects on air or water quality, and pollution is Scoped out here.

Impacts from Invasive Non-Native Species

6.29 Invasive Non-Native species are an issue globally and for East Lothian. It is possible that Expansion of woodland could unintentionally lead to proliferation of invasive woodland species. Increasing woodland cover in wanted places could also lead to increased self-seeding in unwanted places. Species relevant for the TWSEL are sea buckthorn and rhododendron, cherry laurel, fallow and sika deer, among others (see also 'Woodland Management' below).

6.30 NatureScot suggest in their response to consultation on the draft Environment Report that a minimum of 100m buffer between planted woodlands and native and protected woodlands to reduce the spread of Invasive Non-Native Species should be included. Planted woodland could include Native woodland. While this may impact genetic diversity of the existing woodland, it is needed to improve connectivity overall. Further text has been added to the TWSEL at parapgraph 6.85 in response to this. The Strategy is likely to lead to changes in the genetic make up of woodland species due to new planting, which could have an adverse impact even if it is

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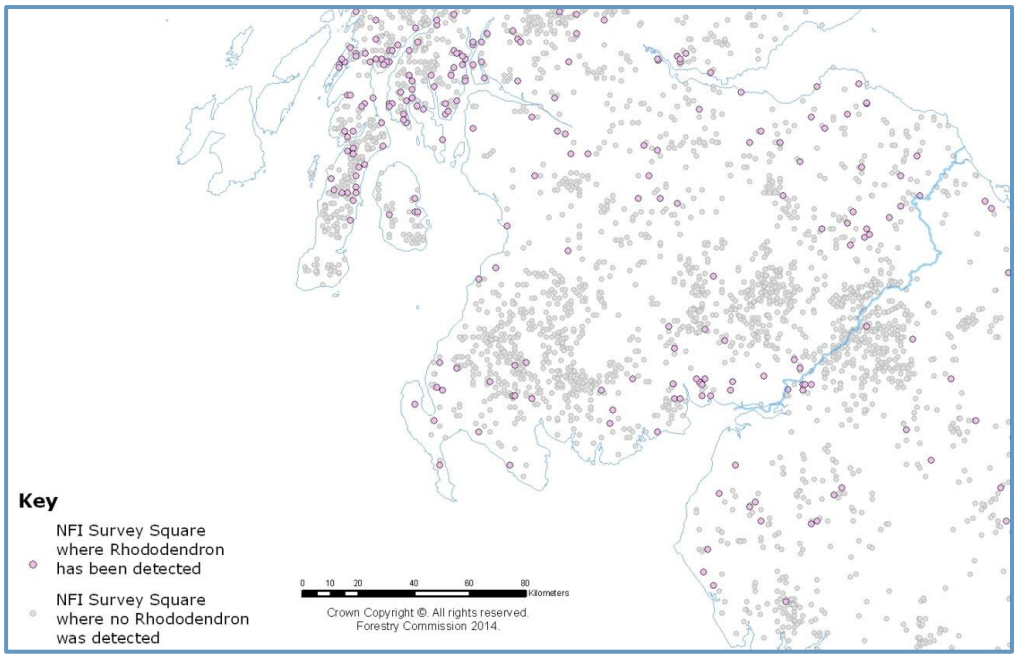
[22] NatureScot "State of Nature" report 2019 https://www.nature.scot/sites/default/files/2019-10/State-of-nature-Report-2019-Scotland-full-report.pdf

[23] Phillips, Jennifer, et al. "Long-Term Noise Pollution Affects Seedling Recruitment and Community Composition, with Negative Effects Persisting after Removal." *Proceedings of the Royal Society B*, vol. 288, no. 1948, 2021, pp. 20202906., doi:10.1098/rspb.2020.2906 quoted in Treehugger Anna Nordseth "How Do Trees Reduce Noise Pollution" at https://www.treehugger.com/how-do-trees-reduce-noise-pollution-4863592#citation-14 accessed 27/09/2021

native woodland. There could also be an increase of non-native species entering native woodland areas due to increased connectivity.

6.31 The flowing map extract is from a Forestry Commission Report in 2016[24] looking at rhododendron and shows that this plant does occur at several sites in East Lothian. The TWSEL notes that this species is a threat to woodland as it shades out the understorey and spreads pathogens, in particular to larch. This plant is a major cause of woodland SSSIs not being in good condition. The TWSEL supports removal of rhododendron, which would benefit biodiversity overall.



6.32 The Council will continue to manage sea buckthorn at the coast but does not aim to eliminate it. This existing practice is not a result of the TWSEL.

Figure 8 Sea buckthorn

6.33 TWSEL Policy 11: Invasive Species supports management of invasive species in line with national policy. The Strategy also includes Policy 12: Deer Management, which supports addressing deer issues.

6.34 The creation of the Climate Forest is likely to lead to some increase in invasive woodland species in particular deer. Deer control is needed as a priority mitigation measure against increased habitat

[24] Forestry Commission 2016, "NFI preliminary estimates of the presence and extent of rhododendron in British woodlands" https://www.forestresearch.gov.uk/documents/2715/Presence_of_Rhododendron_in_British_Woodlands.pdf

creation for deer.

6.35 Pheasants are not native to the UK and probably arrived in the UK with the Normans. Use of woodland for pheasant rearing for game is a relatively common in East Lothian and may expand with further woodland creation. There are concerns that pheasant breeding and release may have a negative ecological impact, including the impact of pheasant release pens on the woodland ground flora and soils below the pen. However, the Game and Wildlife Conservation Trust quotes research[25] showing that the woodland management for game birds, including coppicing, maintaining glades and clearings, rides and hedges, and planting game crops, has many advantages for other wildlife.

6.36 Overall, there is likely to be some increase in invasive species, although this is not the intention of the strategy which does not support this. Rather it is the likely result of providing more suitable habitat.

Woodland Management

6.37 The UK Forestry Standard sets out requirements for sustainable forestry management, and meetings its provisions is a condition for woodland creation consents or distribution of Scottish Forestry grant funding. This will encourage and require sustainable forestry management. The TWSEL recognises and supports the UK Forestry Standard.

6.38 The SEA of the Scottish Forestry Strategy identified the following impacts of woodland management on biodiversity:

- deer browsing impacts and loss of woodland structure, and potential associated effects of deer management on deer welfare
- neglect or lack of management

[25] Game and Wildlife Conservation Trust "Pheasant release pens: The long-term effects of pheasants on the plant community" at https://www.gwct.org.uk/game/research/species/pheasant/long-term-effects-of-pheasant-release-pens/ accessed 26/04/2024

- mismanagement (e.g. “scrub” clearance) impacts of poorly planned and designed woodland expansion (e.g., vulnerability to disease due to monocultures; interactions with native woodlands; impacts on open-ground habitats, land management practices etc.).

6.39 The Native Woodland Survey of Scotland (Forestry Commission 2013) showed that although there were hotspots of damage, over 90% of East Lothian’s native woodland was in the lowest two categories for impact of herbivores (see Figure 12).

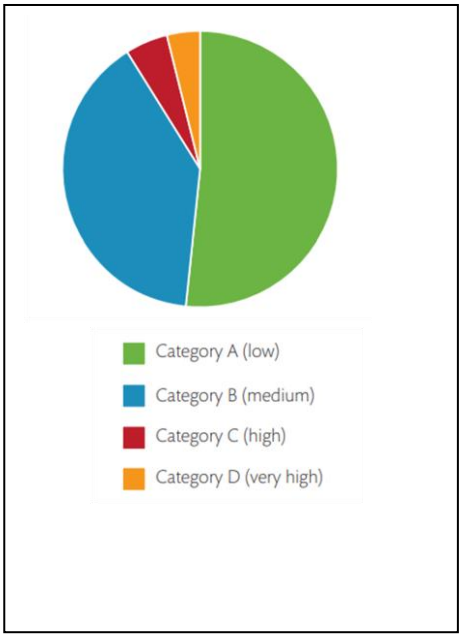


Figure 9 Herbivore Impact in East Lothian's Native Woodland (Forestry Commission 2013)

6.40 While deer (or at least some species of deer) are native and part of woodland biodiversity, large numbers can be damaging as their browsing can damage trees, as well as stifling regeneration and development of the understorey. They can also contribute to road traffic accidents. Sustainable management of deer is an important part of sustainable forest management. The Scottish Forestry Strategy supports ‘Scotland’s Wild Deer: A National Approach’ which sets out Scotland’s vision for wild deer. This aims among other things, to manage deer as an integral and essential part of biodiversity. Activity carried out under the National Approach will continue. Deer management is subject to national legislation and procedures which will continue. The TWSEL supports this, encouraging land managers to work with NatureScot on deer issues (Policy 12, Deer Management).

6.41 With regard to scrub clearance, the TWSEL also identifies Scrub as a Native Woodland Type and includes areas of scrub as woodland on the mapping. Scrub is noted through the text as a type of woodland that may be appropriate in some areas. This may help raise awareness of the value of this habitat and avoid harm to biodiversity through uninformed scrub clearance.

6.42 The TWSEL encourages woodlands to be positively and sustainably managed (Policy 7: Sustainable Woodland Management). The effects of the TWSEL are likely to be positive for sustainable management of woodland, especially alongside the UK Forestry Standard and the National Approach to deer management.

Reintroductions

6.43 Increasing woodland may make it more likely that reintroduced animals that favour woodland may arrive in East Lothian. Beavers have been reintroduced and are now a protected species (see ‘Protected species below.

6.44 Wild boar were made extinct in the UK in medieval times but were reimported from the continent for meat farming in the 1980s. Some of them escaped and there are now some feral populations. There have been some reports of feral boar in Scotland. Wild boar live in woodland. Wild boar have not been introduced into the wild as a matter of government policy however increasing woodland cover may make them more likely to establish here. Wild boar are dangerous and hard to catch, and also hard to control especially in areas with a relatively

dense human population. They are however part of our original woodland biodiversity and are generally positive for its overall biodiversity as they root in soils and leaf litter, mixing soil nutrients. This helps increase plant biodiversity.

6.45 Lynx and wolf are both woodland species that were once present in Scotland, and there is some public debate over the possibility of their reintroduction. An application to reintroduce Lynx to the Kielder Forest was rejected in 2018. Bears were also once present in Scotland, but their reintroduction is much less likely.

6.46 The TWSEL support increased woodland connectivity (Policy 10: Addressing Fragmentation, Target 4), which would help dispersal of woodland species including reintroductions. Discussion of potential long-term effects would however be purely speculative at this stage, and this topic is therefore Scoped out other than to note there could be an effect.

Conservation of existing biodiversity

6.47 Despite the overall picture of historic biodiversity loss, there remain some important areas of habitat and species. These require conservation. Existing law and policy has provided a framework for protection of valued habitats and species through designation of sites and legislation on protected species.

Conservation of International, European and National Sites

6.48 East Lothian contains areas designated internationally for birdlife. There are also areas designated nationally for their biodiversity value, including some woodland areas.

6.49 The Firth of Forth is internationally recognised as a Ramsar site and shares boundaries with the Firth of Forth Special Protection Area, a European site. The other European Sites in the area are the Forth Islands SPA (part) and the Outer Firth of Forth and St Andrews Bay Complex SPA (part). All the European sites are also covered by SSSI designation. There are 15 SSSI's within or partly within East Lothian, some of which (Bangley Quarry, Garleton Hills and Keith Water) are designated solely for their geological interest. The cited features of SSSIs, their status, trend, and pressures occurring within the SSSIs are shown in Appendix 1: Condition of SSSIs. Further information on international and national sites, including the most recent assessed condition of these sites, can be found on NatureScot's website at: https://www.nature.scot/information-hub/snhi-data-services . Figure 10 shows national and international sites in and near East Lothian.

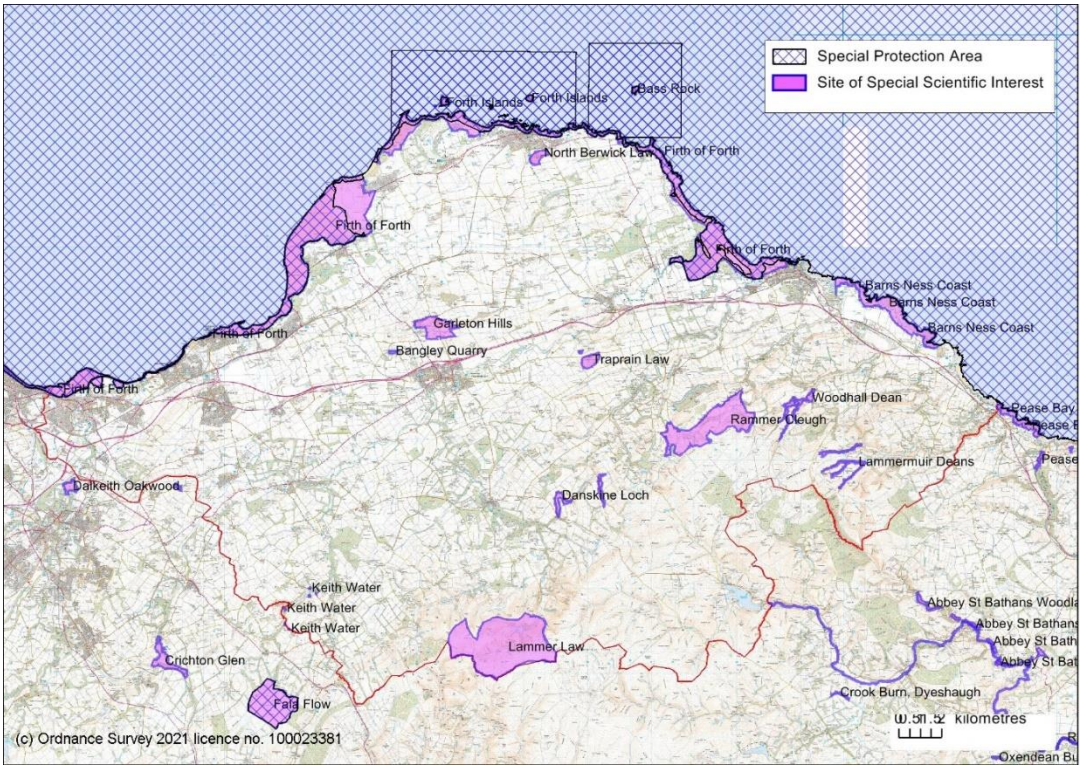


Figure 10 European Sites and Sites of Special Scientific Interest

6.50 The Council has undertaken Habitats Regulation Appraisal/Appropriate Assessment of this Strategy, which should be read alongside this Environment Report. This gives information on the qualifying interests and condition of European sites and the predicted effects of the TWSEL.

6.51 Some features of European Sites and Sites of Special Scientific Interest are either not in favourable condition, or are declining, or both. The pressures on the SSSIs include both those *on* woodland interests within a SSSI and *from* trees or shrubs on other qualifying interests of the SSSI. Poorly considered tree planting or woodland creation could have a significant detrimental effect on most if not all of these. However, all SSSIs have a list of Operations Requiring Consent, which where necessary include the introduction of a plant or seed, or woodland management. Given the operation of this scheme of control, SSSI's are protected from direct effects of planting or poor woodland management, where that is a risk.

6.52 Pressures on woodland sites include invasive species (Danskine Loch's Fen woodland, Lammer Law's juniper scrub) overgrazing by deer (affecting Upland Oak Woodland at Woodhall Dean and Upland Mixed Ashwood of the Lammermuir Deans, the latter also being affected by sheep), while invasive species and undergrazing are a pressure on the ash wood at Papana Water. Pressures arising from invasive tree and shrub species on non-woodland features are Scots Pine and scrub at Bangley Quarry; Forth Islands (mallow); and Firth of Forth (sea buckthorn). Forestry Operations are a pressure on the geological interest at Rammer Cleugh. The woodland SSSIs would naturally be part of a larger network. Lack of being part of a larger network means less resilience and genetic diversity for species there, especially woodland specialists.

6.53 There is the opportunity for a positive impact on woodland qualifying interests of SSSIs by expansion of similar woodland habitat which could help support genetic diversity and connectivity. The TWSEL also encourages neglect or lack of management of these sites to be addressed, though for many woodland sites, the Council cannot directly affect landowner activity.

6.54 Woodland creation could also create adverse indirect effects. Some trees and shrubs can be invasive in some situations, and expansion of forestry and woodland could lead to self-seeding which could affect both geological and biological SSSI's.

6.55 Without the Strategy, the Special Protection Areas, Ramsar Sites and SSSIs will continue to experience pressures as noted in NatureScot's information, the HRA and Appendix 1. The East Lothian Countryside Rangers and East Lothian Conservation Volunteers have an ongoing programme of work at coastal sites, which helps maintain the East Lothian section of the Firth of Forth site(s). The areas of supporting habitat used by inland waders will remain largely as now, though there may be some changes with minor residual effects through development proposed by the East Lothian Local Development Plan 2018.

6.56 The TWSEL supports improved connectivity (Target 4, Action 11, Action 12, mapping) and this would allow for greater resilience of the species within SSSIs especially woodland specialists.

6.57 The TWSEL supports peatland restoration over woodland creation in areas where this is possible (Policy 15: Peatland) as well as reducing run off into watercourses (Target 2B, mapping identifying riparian zones). In the areas that drain into the Tweed, this would be upland montane scrub mainly, with some cleugh woodland (Policy 6: Water Management and slope stability). The TWSEL supports natural regeneration over planting. This avoids silt run-off into the tributaries of the SAC which could occur with planting (Policy 9 Seed and Stock Sourcing).

6.58 The effects of the TWSEL on European Sites are noted in the Habitat Regulation Appraisal.

Conservation of Local Biodiversity Sites

6.59 The Council designated Local Biodiversity Sites (LBS) in 2018, and included sites with rare species and/or habitats but also sites for their connectivity and community value. These sites include areas with East Lothian priority habitat and species. The sites identified for community interest may not contain the rarest biodiversity, but have enough about them to inspire and allow people to connect with nature on their doorstep. The process therefore recognised that biodiversity does not exist in isolation, but benefits from supporting habitat and supportive people.

6.60 There is the potential for significant positive impacts on woodland Local Biodiversity Sites through improving connectivity and woodland structure. Local Biodiversity Sites do not have the benefit of Operation Requiring Consent control, and therefore could potentially be adversely affected by woodland creation where the interest is in another habitat.

6.61 Figure 11 shows Local Biodiversity Sites, the Local Nature Reserve (Aberlady Bay), the Country Park (John Muir) and land covered by Tree Preservation Orders. A list of Local Biodiversity Sites, their main habitats, notable species and wildlife can be found in Appendix 1 of East Lothian's Green Network Strategy.

6.62 The main issues for Local Biodiversity Sites are connectivity, and potentially pressure from an increase in population in the area. There is also a lack of sites suitable for designation in some parts of this area, due to the overall lack of biodiversity.

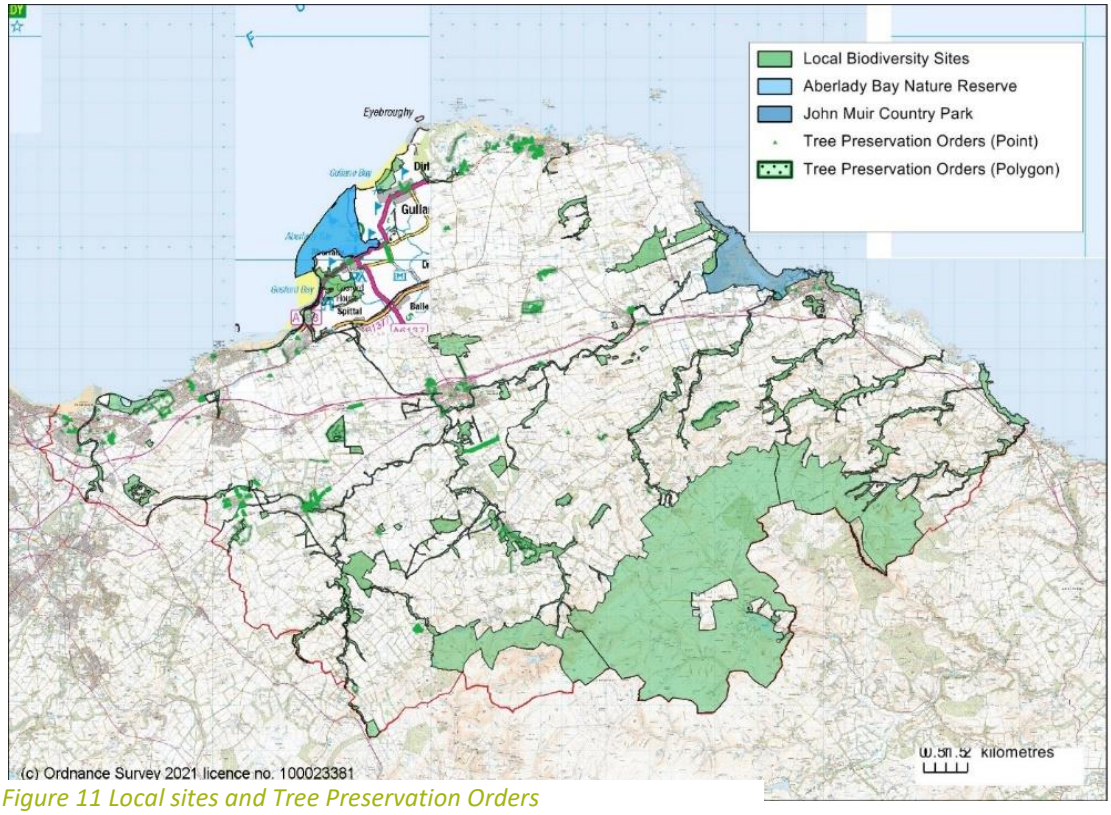


Figure 11 Local sites and Tree Preservation Orders

6.63 Without the Strategy the overall condition of Local Biodiversity Sites in this area is likely to remain similar to what is there now. There might be some ad hoc improvement due to community action, and also actions under the forthcoming East Lothian Local Biodiversity Action Plan.

6.64 The TWSEL identifies the woodland network Local Biodiversity Sites as Woodlands of High Nature Conservation Value. This helps protect these sites from development as National Planning Framework 4 Policy 6 states that development proposals will not be supported where there is adverse impact on native woodlands of high biodiversity value identified in the Forestry and Woodland Strategy. Policy 14: Protection of the Natural Environment states that woodland management, expansion, creation, removal or restructuring should not harm Local Biodiversity Sites. This gives both woodland and non-woodland sites greater protection than they would have had without the TWSEL.

6.65 Improving woodland connection generally should also help support the woodland Local Biodiversity sites ((Target 4, Action 11, Action 12, mapping). Implementation of the TWSEL should therefore benefit Local Biodiversity sites through greater connectivity of the woodland sites, increased sustainable management, and increased recognition of the existence and value of these sites.

Conservation of Protected Species

6.66 There is a range of protected species in East Lothian. European protected species include bats, which occur in suitable habitat across East Lothian; otter along many watercourses and the coast; great crested newt in a small selection of ponds. There are also records of marine mammals visiting the coast however these will not be affected by the Strategy. There are thought to be some small water vole populations remaining, and mountain hare in the uplands. Badgers are not uncommon across the area. There are also some Annex 1 birds.

6.67 The following table shows which species are considered and why.

Table 2 Protected Species Considered in Assessment			
Species	Threats / Opportunities	Why its relevant	Effects of the TWSEL
Bats	Vulnerable as impacts can have widespread effects	Bats tend to roost in woodland but forage over open ground or water. They may follow hedgerows to foraging sites. European Protected Species.	Expansion of woodland (Target 1, Action 2, mapping) and increasing riparian woodland (Target 2, mapping) should expand roosting sites. Increase of hedgerows would support navigation and invertebrate populations for feeding. Effects should be positive.
Otter	Disturbance	Woodland creation in riparian areas has the potential to affect otter habitat. European Protected Species	Riparian woodland would increase (Target 2B), providing more suitable habitat, supporting otter.
Great Crested newts	Loss of habitat	The newts live in ponds but need open land for foraging. Woodland creation could reduce this and adversely affect them. European Protected Species.	Increased woodland planting has the potential to impact on wetland habitat, Policy 14 states that woodland management or expansion should respect CGSN wetland, which is likely newt habitat, as well as avoiding harm to protected species through location of proposals. The impact on newts should be neutral.
Badgers	Loss of habitat, disturbance	Badgers can live in woodland but like a diversity of habitat and could be affected. Protected under the Protection of Badgers Act 1992.	The TWSEL should increase woodland habitat (Target 1, Action 2), but may also increase disturbance through increasing access to woodland. However, badger are not protected for reasons of rarity.
Water voles	Change in habitat	Water voles prefer unshaded waterways so an increase in riparian woodland	Increasing riparian woodland (Target 2B) in balance with open habitat along watercourses should improve water vole habitat. Increasing public access

Table 2 Protected Species Considered in Assessment			
		could adversely affect them. Wildlife and Countryside Act 1981.	to woodland including along rivers may increase disturbance however this generally favours water voles as people with dogs deter mink, which predate the voles.
Beavers	Change in habitat	Beaver have been successfully re-introduced to Scotland and are a European Protected Species.	Beaver are not resident in East Lothian at present to our knowledge but in the long term it would be expected that they will migrate here. Increasing woodland habitat especially in riparian areas (Target 2B) should support beaver re-colonisation should they reach East Lothian. The effects of beavers on ecosystems can be considerable, being generally positive for woodland and biodiversity generally[26].
Birds – Annex 1 and Schedule 1	Disturbance during nesting / Change in habitat / Reduction to feeding grounds / Increase in shelter and feeding areas	Most of the Annex 1 species are qualifying interests of the SPA (Golden plover, bar-tailed godwit and sandwich tern) and impacts would be explored through HRA. Increased food availability and shelter would help barn owl.	Woodland expansion is expected to favour woodland birds over those of farmland. Farmland birds are declining in general. Hedgerows could favour such birds however as field margins provide good habitat for them. Most Annex 1 birds in East Lothian are qualifying interests of the Firth of Forth SPA. Woodland creation in arable fields and open land could affect foraging and roosting habitat of some of these birds and will require to be considered at project level (see also Habitat Regulation Appraisal/Appropriate Assessment). Barn owls roost in woodland but hunt generally over farmland and may suffer loss of foraging habitat.
Protected / rare / Schedule 8 plants	Change / loss of habitat / disturbance	Bluebell is a woodland species, the only Schedule 8 plant and has partial protection	Bluebell would be supported due to protection and expansion of woodland.
Salmon	Impediments to breeding grounds, high river water temperatures, oceanic issues	Woodland creation on river banks can affect river temperature; salmon prefer cool water and high temperatures can	The TWSEL plans to expand riparian planting in balance with open habitat. This will help regulate river temperatures and should help support salmon breeding.

[26] Scottish Government. 2017, "Beavers in Scotland" SEA Environment Report, at https://consult.gov.scot/forestry/beavers-in-scotland/user_uploads/sct09170881161-01-2.pdf

Table 2 Protected Species Considered in Assessment			
		reduce breeding success	
Invertebrates	Change/loss of habitat	Northern brown argus	The northern brown argus feeds on rockrose. This appears generally on rocky grassland habitat, which could be adversely affected especially by cleugh planting which the TWSEL supports. This should be considered at project level.

6.68 Without the Strategy, legislation should protect these species from direct harm. However they can be vulnerable to indirect effects such as habitat loss.

Non-designated biodiversity

6.69 The TWSEL is expected to significantly increase the amount of woodland habitat. The Scottish Biodiversity List is a list of animals, plants and habitats that Scottish Ministers consider to be of principal importance for biodiversity conservation in Scotland. Woodland habitats on the list are: Lowland mixed deciduous woodland; native pine woodlands; upland birchwoods; upland mixed ashwoods; upland oakwood; wet woodland and wood pasture and parkland. Hedges and traditional orchards are also on the list.

6.70 An increase in woodland implies a decrease in some other habitat types. Habitat types where the TWSEL may support woodland creation or tree planting include amenity grassland within urban areas, agricultural land where food production capacity is not lost, and some types of grassland.

6.71 The value of amenity grassland for biodiversity is low. Arable land does have value, in particular for birds, and arable field margins are a Scottish Biodiversity List habitat partly for their importance in supporting farmland birds. Lowland calcareous and dry acid grassland are also on the list, having considerable biodiversity value which is often overlooked.

6.72 Where a habitat type on the Scottish Biodiversity List is created on a habitat that was not on the list, there is likely to be a gain for biodiversity overall. TWSEL Policy 14 recognises and seeks to protect the Central Scotland Green Network grassland and wetland habitat networks and protects them. Overall, the effect of the TWSEL on Scottish Biodiversity List grassland and wetland habitat is expected to be neutral as woodland creation and tree planting is not supported there. There may be a slight positive effect from bringing attention to the value of grassland networks, which can seem suitable sites for tree planting.

Table 3 Scottish Biodiversity List habitats	
Coastal	Coastal saltmarsh
Coastal	Coastal sand dunes
Coastal	Coastal vegetated shingle
Coastal	Machair
Coastal	Maritime cliff and slopes
Freshwater & Wetland	Coastal and floodplain grazing marsh
Freshwater & Wetland	Eutrophic standing waters
Freshwater & Wetland	Lowland fens
Freshwater & Wetland	Lowland raised bog
Freshwater & Wetland	Mesotrophic lakes
Freshwater & Wetland	Oligotrophic and dystrophic lakes
Freshwater & Wetland	Ponds
Freshwater & Wetland	Reedbeds
Freshwater & Wetland	Rivers
Lowland	Arable Field Margins
Lowland	Hedgerows
Lowland	Lowland calcareous grassland
Lowland	Lowland dry acid grassland
Lowland	Lowland Heathland
Lowland	Lowland meadows
Lowland	Open mosaic habitats on previously developed land
Lowland	Purple moor-grass & rush pastures
Lowland	Traditional orchards
Lowland	Upland hay meadows
Woodland	Lowland mixed deciduous woodland
Woodland	Native pine woodlands
Woodland	Upland birchwoods
Woodland	Upland mixed ashwoods
Woodland	Upland oakwood
Woodland	Wet woodland
Woodland	Wood Pasture and Parkland
Upland	Blanket bog
Upland	Calaminarian grasslands
Upland	Inland Rock Outcrop and Scree Habitats
Upland	Limestone Pavements
Upland	Mountain heaths and willow scrub
Upland	Upland calcareous grassland
Upland	Upland flushes, fens and swamps
Upland	Upland heathland
Upland	Juncus squarrosus-Festuca ovina grassland
Upland	Nardus stricta-Galium saxatile grassland

6.73 The TWSEL seeks riparian planting (Target 2B) which will benefit river habitat.

6.74 The TWSEL also brings the opportunity to address neglect or lack of management for new and existing woodlands (including planning enforcement e.g., for woodland that has been planted but not grown); deer browsing impacts and loss of woodland structure, as well as fragmentation.

6.75 The TWSEL has the potential to support wetland and open water biodiversity. Properly designed riparian planting can help moderate shade and water temperature, which can help maintain a suitable environment for fish and other biodiversity. Ideally, around half of the watercourse should be open to sunlight, with the rest in dappled shade. The TWSEL supports riparian planting (Target 2B, Policy 10: Addressing Fragmentation). TWSEL Policy 14 recognises the CGSN wetland habitat network and seeks to protect it. Overall the effect on wetland and river biodiversity is expected to be neutral or positive.

Support the Central Scotland Green Network

Contribution to the East Lothian Green Network

6.76 The East Lothian Green Network Strategy[27] includes a Nature Network. The aim of this is to support wildlife recovery, while recognising the important role of agricultural land. The Green Network Strategy notes that movement of wildlife needs a connected network, and that habitat management is essential to maintain the quality of this network. The Green Network Strategy recognises public access to and enjoyment of biodiversity as important to improve public engagement with the natural world and therefore biodiversity conservation. One of its aims is that every community should have an area nearby that has some biodiversity interest. Contribution to the Green Network is related to the biodiversity topics above.

6.77 The Green Network Strategy sets out 'Tasks' to improve the Nature Network. The most relevant task is Nature Network Task 1: 'To improve woodland habitat, by seeking opportunities to expand native woodland and tree planting in appropriate areas, managing ancient woodland sites to encourage wildlife, and creating tree lines and woodland connections between areas of existing habitat'. The Nature Network shows the areas thought suitable. The TWSEL refines these through following the methodology of Right Tree Right Place to create constraints mapping. Policy 10: Addressing Fragmentation encourages new woodland and hedgerow connectivity, in particular where it supports the Central Scotland Green Network woodland habitat. The main aims of the Green Network Strategy for woodland, namely a strategic east/west corridor; river valley and cleugh planting and a strengthened woodland connection along the Longniddry/Haddington Railway walk are retained.

6.78 Nature Network Task 2: Coast, and Nature Network Task 3: Grassland and Farmland seek opportunities for saltmarsh and grassland and farmland habitat expansion respectively. Nature Network Task 4, Wetlands: Great Crested Newts and Water Voles seeks opportunities to improve and expand wetland habitat, including improving value of habitat along watercourses, improving and creating ponds in appropriate locations, improving and extending water vole habitat, and promoting great crested newt conservation. The TWSEL takes this into account in providing for protection of other important non-woodland habitat (Policy 14: Protection of the Natural Environment).

Likely Significant Effects - Biodiversity

6.79 The following table shows the SEA objectives for Biodiversity and summarises the impact.

[27] Available here: https://www.eastlothian.gov.uk/downloads/file/28136/green_network_strategy_spg

SEA Objective, Biodiversity: Maintain and enhance biodiversity			Theme 1 – Climate Mitigation	Theme 2 – Resilience and adaptation	Theme 3 – Biodiversity	Theme 4 – Community	Theme 5 - Economy	Theme 6 – Cultural Heritage	Theme 7 – Landscape Character
SEA Indicator questions for assessment. Does the plan….?	KEY								
	Positive	+							
	Neutral	0							
	Unknown	?							
	Mixed/Variable	//							
	Negative	-							
Contribute to addressing national/international biodiversity issues			+	+	+	//	//	0	+
Conserve existing biodiversity			+	+	+	//	0	+	+
Support the Central Scotland Green Network			+	+	+	+	+	+	+

Commentary on Biodiversity Indicators

6.80 The TWSEL will contribute to addressing **national and international biodiversity issues and conserve existing biodiversity** through increasing protection of woodland (Policy 1: Retention of Woodland, Trees and Hedges) and guiding the creation of new sustainably managed native woodland, avoiding areas of other habitat networks (Constraints for Woodland Expansion Map, Policy 14: Protection of the Natural Environment). There will be a positive impact on woodland SSSIs and Local Biodiversity Sites, through increasing connectivity (Policy 10: Addressing fragmentation) and improving structure of woodland (Policy 7: Sustainable Woodland Management). It is the intention of the TWSEL that potential adverse impact on non-woodland SSSI and Local Biodiversity Sites be avoided both by these locations being identified as Sensitive in the mapping, and by the inclusion of Policy 14 which requires projects to enhance designated sites. This policy also requires projects to consider impacts on protected species.

6.81 There is the possibility that woodland creation could enable the spread of non-native invasive species, such as grey squirrel and rhododendron, as well as some species of deer. Policy 11 requires management of invasive species in line with national policy. However, an increase in non-native invasive species (and roe deer, which are native but invasive) may still occur as it is hard to expand woodland without also giving the opportunity for some invasive species to spread.

6.82 Impacts on European and Ramsar sites are considered through the HRA/Appropriate Assessment process and those documents should be read in conjunction with this SEA. It is possible that woodland proposals (in particular farmland woodland or coastal mosaic woodland habitat) could come forward in areas that are used by inland wader and the pink footed goose of the Firth of

Forth SPA/Ramsar/SSSI for roosting and foraging, potentially leading to the loss of this habitat. The Strategy recognises that the interest of the SPAs is a constraint. Policy 13: Protection of European Sites specifically requires that proposals that are likely to have a significant effect on a European site must undergo Habitat Regulation Appraisal and where needed, Appropriate Assessment.

6.83 The Strategy will **support** the Central Scotland Green Network both by increasing woodland habitat and by encouraging increased access to some woodlands. There is a tension between the biodiversity value of the wood and encouraging visitors to it – although encouraging visitors has the potential to engage people in biodiversity, helping support its protection. The Land Reform (Scotland) Act 2003 already gives a right of access to many woodland areas, with Core Paths running through some of them. Allowing visitors to woodland is therefore not a result of this strategy. However, access is encouraged and this may lead to possible negative impacts on woodland, including from dogs. The TWSEL recognises the need to manage visitor pressure from recreation. The TWSEL cannot prevent access to woodland as this is covered by Land Reform Act access rights. Paragraph 7.30 notes that steering recreation to robust woodlands helps protect sensitive woodland, and in the following paragraph notes the Councils intention to continue to manage the woodland sites it owns or manages to help manage pressures. The TWSEL draws attention to the Scottish Outdoor Access Code, which gives guidance on how countryside visitors should act to avoid damage. This will hopefully help balance recreational demand with the needs of more fragile woodlands, benefitting biodiversity.

Mitigation of potential adverse impacts of the Strategy – Biodiversity

6.84 **Embedded mitigation:** The Strategy contains Policy 13 European Sites and Policy 14 Protection of the Natural Environment that aims to protect biodiversity. The constraints mapping identifies areas that are sensitive for natural heritage reasons, which are therefore unlikely to receive funding for woodland creation.

6.85 **External Mitigation:** Scottish Ministers have a duty under the Forestry and Land Management (Scotland) Act 2018 to promote sustainable forest management. Scottish Ministers must have regard to this duty when managing forested land or considering felling applications. Scottish public authorities must also promote sustainable forest management in so far as it is consistent with the exercise of their functions. The UK Forestry Standard[28] has provisions on biodiversity, which will help mitigate some effects; adherence to the standard is required for payment of government grants for woodland creation and forest management. Public bodies in Scotland have a duty to further the conservation of biodiversity under the Nature Conservation (Scotland) Act 2004.

6.86 The existing policy and regulatory framework regarding protected species and designated sites will act as mitigation to some of the potential impacts on biodiversity. The Wildlife and Countryside Act 1981 and Conservation (Natural Habitats etc.) Regulations 1994 (as amended) set out a range of provisions to prevent harm to wildlife, including breeding birds and European Protected Species. National Planning Framework 4 and the Local Development Plan contain

28 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/687147/The_UK_Forestry_Standard.pdf

policies protecting biodiversity, which will apply to any development proposals coming forward that require planning permission.

6.87 **Project level mitigation:** The potential for conserving and enhancing important habitat and species should be considered at project level. Project level mitigation includes carrying out Habitat Regulations Appraisal and Appropriate Assessment where required. Surveys may be required prior to starting a project. Information on surveys is available on NatureScot's website at https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/planning-and-development-protected-species.

6.88 **Deer Control** NatureScot suggest in their consultation response that deer control be highlighted as a priority mitigation measure against increased habitat creation for deer. NatureScot has a statutory responsibility to further the conservation, control and sustainable management of all wild deer species in Scotland. Managing deer requires a collaborative approach and NatureScot work with a variety of partners to deliver sustainable management.

Secondary, Synergistic and Cumulative effects

6.89 Increasing woodland and woodland recreation could have adverse cumulative impacts on biodiversity as some recreational activities can have significant impacts on the natural environment and wildlife. Although impacts vary with type of recreation and area, there are 5 key generalisations (Cole, quoted in Forest Research "Recreational use of forests and disturbance of wildlife")

1. Impact is inevitable with repeated use;
2. Impact occurs rapidly, recovery slowly;
3. Impacts are greater on use of new places than on already impacted sites
4. Magnitude of impact depends on frequency, type and spatial distribution of use as well as environmental conditions and
5. The relationship between amount of use and level of impact is usually non-linear.

6.90 The TWSEL aims to increase recreation in some areas, and there is potential for cumulative impact with many other plans and projects (Edinburgh City Plan, Midlothian Local Development Plan, Climate Evolution SPG). This includes impacts from loss of supporting habitat or disturbance for qualifying interests of the Firth of Forth, which will be examined through Habitat Regulation Appraisal.

6.91 Mitigation could include management of recreation at the coast to protect the Firth of Forth SSSI/SPA/Ramsar. This needs to be considered regardless of the TWSEL; the pressures come mainly from changes to leisure activities, increased leisure time and an increase in population in the area generally, rather than from this strategy itself.

6.92 There is the potential for positive cumulative effects of increasing woodland with the Scottish Forestry Strategy and the Forestry and Woodland Strategies of the other 31 local authorities required by legislation.

6.93 The Strategy's aim of mitigating climate change, cumulatively with many other PPS, would also benefit biodiversity.

Conclusion – Biodiversity

6.94 The effects on woodland biodiversity are generally positive (Biodiversity Chapter and others). Woodland biodiversity will improve overall through protection of existing woodland, sustainable management of woodland and improved woodland connectivity. This includes likely cumulative effects with tree and woodland strategies of other areas. The TWSEL aims to protect valued non-woodland habitat from the impact of woodland creation (Policy 13 Protection of European Sites, Policy 14 Protection of the Natural Environment). An increase in the urban tree canopy will be positive for urban biodiversity.

Residual adverse effects

- Likely increase in invasive non-native plant species associated with woodland such as rhododendron.
- Some potential for adverse impact from increasing recreational access, including cumulatively with other plans, projects and strategies
- Likely increase in deer numbers, none of which other than roe are native. This is out of balance as adult deer now have no natural predators.
- Likely loss of habitat for northern brown argus, a butterfly

7 POPULATION

Introduction

7.1 East Lothian is one of the fastest growing areas in Scotland. There has been significant level of population change through new residential development here, and further growth is planned. The population is also predicted to have a greater proportion of older people. The western part of East Lothian is its most populous area. Although in general East Lothian is prosperous there are some areas which fall into the lowest 20% on Scotland's Index of Multiple Deprivation.

7.2 The TWSEL brings the opportunity to help address some of the issues which come from an expanding and ageing population, such as increasing recreational pressures on the countryside, integrating development into the landscape (see 'Landscape' below) and creating well designed, accessible living environments. There is also the chance to mitigate the effects of living in areas of multiple deprivation by improvement to the visual and recreational qualities of the area. There is some limited potential for the Strategy to impact on the daytime distribution of population through increasing rural employment and recreation.

7.3 Through Scoping the following issues were considered. The Table below shows what existing issues are considered relevant to this strategy. SEA objectives are shown in red.

Scoping Table 2: POPULATION	
Issue	**In/Out**
Mitigate the effects of population growth	
Rapidly expanding population in East Lothian	**In**
Reduce the impact of inequality	
Some areas experience multiple deprivation as shown by the SIMD index	**In**
Ageing population	**In**
Other Equality Act protected characteristics	**In**
Community ownership of woodlands (opportunity)	**In**
Enabling increased participation in volunteering and learning new skills	**In**

Support rural employment	
Socio-economic impact on rural areas	**In**

Baseline, issues and impact – Population

Mitigate the effects of Population Growth

7.4 The TWSEL is not intended and is not likely to change the growth, decline or structure of population. However, it can help mitigate its effects through contributing to a good quality environment. In 2021[29] East Lothian had an estimated population of 109,580 living in 48,440 households. East Lothian's population has increased by the highest percentage of all Council areas in the last 20 years, increasing by 21.2% since 1999 compared with a 7.6% rise for Scotland as a whole.

7.5 It is projected that East Lothian's population growth will continue to outpace the Scottish average between 2018 and 2028. The number of households is expected to rise by 10.5% (Scotland 4.9%) over this time, and population by 7.2% (Scotland 1.8%). The large majority of this growth is expected to come from migration into the area. Most of this growth is in older (above 65) age groups; geographically, most of the population expansion will be in the western part of East Lothian. The projected rate of change is shown in the figure below, with projections by age and sex shown in Figure 14.

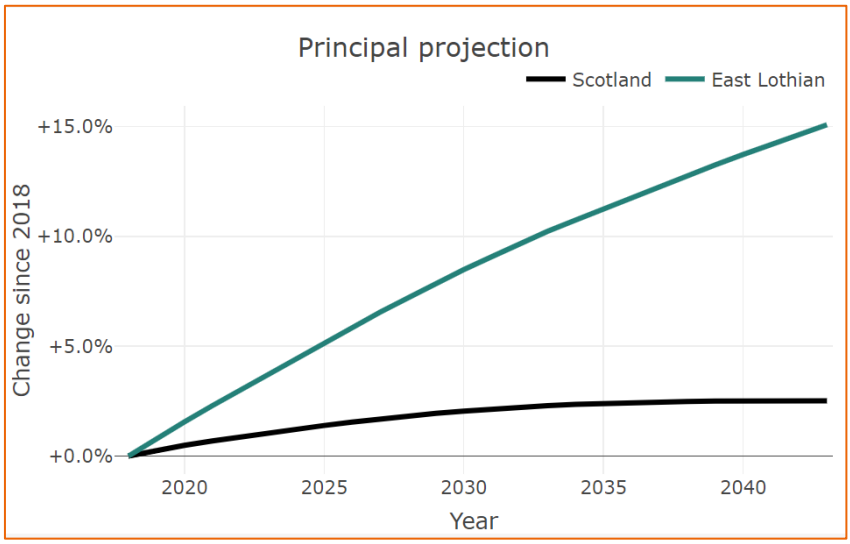


Figure 12 Projected population change, from Subnational population projections of Scotland - National Records of Scotland (shinyapps.io)

7.6 Further baseline information is available from the National Records of Scotland East Lothian Council Area Profile (nrscotland.gov.uk) and their interactive tool at Subnational population projections of Scotland - National Records of Scotland (shinyapps.io)

7.7 Population growth will bring pressures on existing coastal and countryside sites. Pressures increased during the Covid-19 pandemic, particularly at the coast. Increasing accessible woodland

[29] East Lothian Council Area Profile (nrscotland.gov.uk) Note this information is updated regularly; the figures are from the website as accessed 26/04/2024

could help reduce the recreational pressure on these areas. However, as the Scottish Forestry Strategy SEA notes "unmanaged woodland recreation can also introduce problems such as trampling, the disturbance of wildlife, and the introduction of pathogens[30]".

7.8 The TWSEL aims to increase accessible woodland (Target 4B, Action 14). This may draw some recreational pressure from the coast. The TWSEL also seeks an increase to the urban tree canopy and sets a working target of 30% in settlements. This should bring an improvement in urban living environment helping mitigate the impact of population growth. However, some trees may be planted in some places where they affect people's enjoyment of their areas or homes. This is not the intention of the strategy, and this should be considered at project level. Nonetheless it could occur.

Equality issues

Areas of multiple deprivation

7.9 Increasing levels of woodland in and around towns can improve quality of life for those in deprived areas. Improving access to greenspace, integration of communities and improving perception of such areas will lessen the experience of inequality across East Lothian.

7.10 The Scottish Index of Multiple Deprivation (SIMD) shows the spatial distribution of relative deprivation across Scotland, last updated in 2020. The data is available on the Scottish Government website at http://simd.scot where the methodology for determining the rank of different areas can also be found.

7.11 People who live in areas of multiple deprivation are more likely to experience conditions that limit their opportunity. Not all people facing deprivation will live in deprived areas, and not all people in deprived areas will experience deprivation. However, the data can be used to help identify areas where placed based intervention will hopefully have the most beneficial effect.

7.12 The maps below, from the SIMD website: SIMD (Scottish Index of Multiple Deprivation shows that the areas of relative deprivation are concentrated in the west of East Lothian. No area east of Tranent/ Prestonpans has a datazone within the most deprived 20%. Haddington does however contain two zones in the most deprived 30%. The Coalgate in Tranent and North Prestonpans are within the lowest 10%. As few datazones in East Lothian are within the most deprived areas, for some purposes related to reducing inequalities the Council looks at areas within the lowest 30%. This then takes in most of the remainder of Prestonpans, central/Eastern Tranent, some further areas of Wallyford and Musselburgh, and parts of the southeast, east and central Haddington.

7.13 The TWSEL also seeks an increase to the urban tree canopy and sets a working target of 30% in the lowest 30% SIMD areas. Funding is also available from Scottish Forestry for improving accessibility of woodlands within 500mm of the lowest 15% SIMD areas.

[30] Forestry Research (2012) Recreational use of forests and disturbance of wildlife [online] Download from https://www.forestresearch.gov.uk/research/recreational-use-of-forests-and-disturbance-of-wildlife/ (accessed 28/09/2021)

Figure 13 SIMD Datazones in the 20% most deprived, 2020

Ageing well

7.14 The UK population and workforce is ageing; connected policy is required to meet challenges of this demographic change[31]. There are implications for how we plan for and approach old age. Increasing accessible woodland and trees in towns can help people to age well in place.

7.15 In East Lothian in 2021, the 45 to 64 age group was the largest, with a population of 31,764. In contrast, the 16 -24 age group was the smallest, with a population of around 9,500. The average age in East Lothian is expected to increase as the baby boomer generation becomes more elderly and lifespans increase over previous generations. The 16 – 24 year age group is expected to see an increase of nearly 7%, but this is exceeded by the projected increase in over 75s (nearly 33%) and the 65-74 age group. In terms of absolute size however, the 45-64 year olds are projected to remain the most numerous group[32].

[31] See "Future of an Aging Population" – Government Office for Science at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/816458/future-of-an-ageing-population.pdf

[32] NRS Scotland population projections East Lothian East Lothian Council Area Profile (nrscotland.gov.uk)

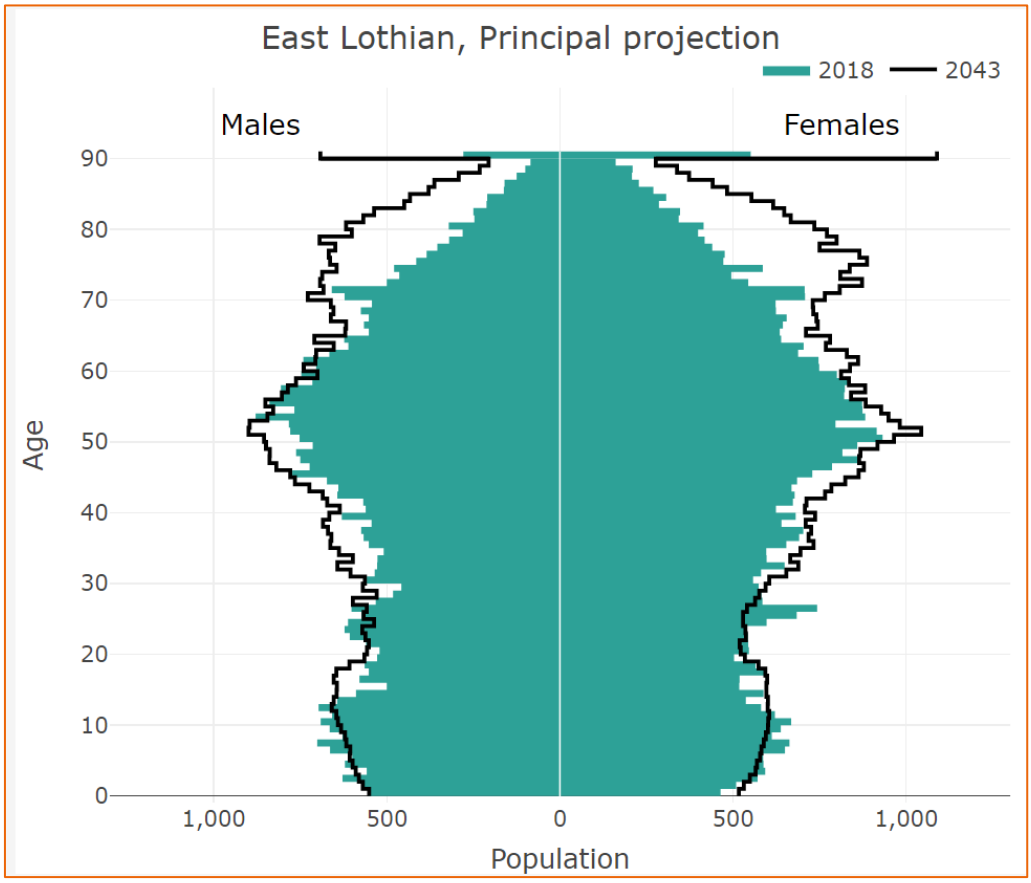


Figure 14: East Lothian population projection to 2043 by age and sex, from [Subnational population projections of Scotland - National Records of Scotland (shinyapps.io)]

7.10 Dementia is linked to age structure as an illness predominantly affecting older people. As healthcare improves and fewer people die younger of something else, dementia is likely to affect an increasing proportion of the population. Across East Lothian an estimated 7.4% of the population aged 65 and over suffers from dementia (2016)[33].

7.11 The workforce is also ageing. Becoming old where there is a large proportion of older people is different experience from growing old where there are many younger people. It poses challenges for the workforce, public services, care, and the built environment, and may change approaches to old age and what people can expect at that stage of life. Plans should therefore consider the needs of older people. Providing an environment where people can age well is increasingly important.

7.12 In some areas access to attractive outdoor space, including woodlands accessible to all, is limited. Some urban environments also have low woodland canopy coverage. This may be a factor in how much older people or people in deprived areas walk or cycle locally. Keeping active, including by walking, is important in maintaining health and mobility, as well as giving opportunities for social contact. Some of the Area Partnership Plans include action for older people, such as the promotion of dementia friendly communities.

7.13 The TWSEL sets a canopy cover target of 30% for settlements and lower SIMD areas, which if achieved would improve the living environment. The TWSEL also aims to protect trees with

[33] Tranent-Macmerry-Wallyford Ward Profile, ELC 2016

cultural value or notable trees. This can help make a landscape more legible which supports dementia friendly communities.

Other protected characteristics

7.14 Woodland planting and increasing trees in urban areas could affect actual and perceived safety of those who are or feel vulnerable. This may include some people who feel vulnerable due to a protected characteristic such as sex, disability, transgender status or racial origin. It could therefore limit the movement of such people around the area especially at night.

7.15 Information on the characteristics of East Lothian's population can be found on the Scottish Government's Equality Evidence Finder pages: www.equalityevidence.scot and Scotland's Census webpages at Home | Scotland's Census (scotlandscensus.gov.uk) . In 2011 East Lothian had a lower than average number of people with long term health problems or disabilities; around 36% had some problem or disability, with about half of these stating that it affected their life a lot. This is marginally lower than the average for Scotland. In terms of ethnic origin, in 2011 less than 2% of the East Lothian population (4% across Scotland) were from an ethnic minority, with Asian groups being the largest group other than white. Women slightly outnumber men overall, mainly due to there being greater numbers of older women than there are older men.

7.16 Collaboration with communities at project level and through Local Place Plans is included as well as recommendation that equality impact assessment is carried out at project level (Policy 18: Community Collaboration and Action 17). The TWSEL therefore aims that the concerns of different sectors of the community are fully taken into account. Action 16 notes that the Council will promote access to and enjoyment of the woodland for all, especially with respect to underrepresented groups. This aims to spread the benefits associated with visiting woodland to those who do not normally participate.

Volunteering and learning new skills

7.17 There is a shortage of skills in the forestry and woodland sector at presents, with the Forestry Commission in England offering free courses to combat this.

7.18 East Lothian Council runs a volunteer scheme through the Ranger Service, the East Lothian Countryside Volunteers and the Junior Rangers. Third sector organisations also organise volunteers such as Sustrans (path wardens), Friends of the River Tyne, and various In Bloom groups. The Woodland Trust and Scottish Wildlife Trust also own and manage woodland in East Lothian. Increasing the areas of woodland would increase volunteering and learning opportunities in local areas, supporting community cohesion and reducing inequality.

7.19 The TWSEL aims to encourage volunteering through inclusion of a section on encouraging positive individual action, which gives information on opportunities (Section 8, Volunteering). The 'Economy' section encourages businesses related to woodland, which along with greater amounts of woodland supports the gaining of new skills for green jobs.

Rural Employment

Job density and location

7.20 In 2021[34], the job density within East Lothian was approximately 0.63 jobs per working age person (suggesting a high out-commuting travel pattern). This compares to the Scottish job density of 0.81 jobs per person. The percentage of unemployed people of the working population in East Lothian is 2.8%, which was lower than for Scotland overall (3.5%). Although East Lothian is a generally prosperous area, levels of employment deprivation in some areas, particularly in the west, are above average. Living in such areas has well documented effects on people's health, well-being, employment prospects and life expectancy. This affects children as well as adults.

7.21 A high level of out commuting is well known as a climate change issue. However, it is also an issue for population. Movement of people out of their communities in the daytime affects the local economy, the vibrancy of place and can weaken community links.

7.22 TWSEL Section 9, 'Economy' aims to increase rural employment opportunities in forestry, tourism and recreation. This can help retain population in the countryside during the day. Although overall numbers are likely to be low, the effect is positive. The TWSEL also aims to support incomes in agriculture through agro-forestry (Policy 21 Woodland creation within farmland).

[34] Statistics in this para. from NOMIS at http://www.nomisweb.co.uk/reports/lmp/la/1946157414/printable.aspx

Likely Significant Effects – Population

7.23 The following table shows the SEA objectives for Population and summarises the impact of the impact of each Theme of the Strategy:

SEA Objective, Population: Maintain or enhance the quality of life for all East Lothian's residents	KEY		Theme 1 – Climate Mitigation	Theme 2 – Resilience and adaptation	Theme 3 – Biodiversity	Theme 4 – Community	Theme 5 - Economy	Theme 6 – Cultural Heritage	Theme 7 – Landscape Character
SEA Indicator Questions for assessment. Does the plan….?	Positive	+							
	Neutral	0							
	Unknown	?							
	Mixed/Variable	//							
	Negative	-							
Mitigate the effects of population growth			+	+	+	0	+	+	+
Reduce the impact of inequality – older people, protected characteristics, lower SIMD areas			+	+	+	0	//	+	+
Support rural employment			+	+	//	+	+	+	+

Commentary on indicators

7.24 The effect of the 'Climate mitigation' theme on population is generally positive. This section includes as Target 1 the creation of the Climate Forest (an existing Council ambition). The effect of this increase in tree cover will be positive in mitigating the impact of population growth through integrating new development into the landscape; reducing the effects of inequalities through improving townscape and landscape; and increasing rural employment in woodland creation and management.

7.25 The Climate Mitigation Theme also includes the Council investigating offsetting its unavoidable carbon emissions with woodland creation locally. Woodland creation, as supported through Key Target one and related woodland creation and tree planting actions and policies, are generally positive for population. However, this carries the risk that woodland and tree planting may occur in communities or near people that do not welcome them, and where they have safety issues or amenity issues. This is especially important in areas of social housing where people may have limited choice over where they live. The Strategy seeks a collaborative approach to make sure that tree planting does not occur where there are issues for particular groups or trees are unwanted. This includes inclusion of more local provision for woodland in Local Place Plans or Area Partnership Plans (Policy 18, Action 17).

7.26 The 'Resilience' theme is expected to have positive effects on all three indicators. Providing native woodland connections will help mitigate the impact of development related to population growth through helping to integrate this into the landscape. The TWSEL will also help avoid effects on

water quality which arise from extra waste and surface water of population growth and related increase in hard surfacing (Policy 6: Water Management and Slope Stability)

7.27 The 'Biodiversity' theme policies and actions are largely positive for mitigating the impact of population growth. The Strategy's support for biodiversity in general and native woodland in particular will give people living here greater opportunity to connect with nature, providing a better living environment. This helps mitigate the effects of inequality by improving places where people live. The Biodiversity Theme includes protection of woodland of high nature conservation value (Policy 8: Protecting the Biodiversity Value of East Lothian's Woodland, and following text box identifying those woodlands) ,identifying much of our native woodland as such.

7.28 In terms of Support for Rural Employment, protection of woodland may reduce opportunities for non-woodland economic activity that could otherwise have taken place there. Support for peatland restoration over woodland (Policy 15) may also marginally reduce employment opportunity. This land cover tends to have little associated economic activity. This policy is in line with Scottish Government policy towards protecting designated sites, ancient woodland and restoration of peatland.

7.29 The actions/policy of the 'Economy' theme will bring some minor positive effect on rural employment through support for productive woodlands, and promotion of woodland-based tourism.

7.30 The 'Community' Theme includes Key Target 4 for canopy coverage of 30% in settlements and lower SIMD areas. Action 17 and encourages communities to include policies for trees and woodlands in their plans. This Theme also includes support for increasing access to woodland. TWSEL includes policy (Policy 16: Design for All) and action (Action 15) to encourage provision of woodland suitable for people with disabilities, and increase access to woodland for people with disabilities. This is positive for both mitigating the impact of population growth and reducing the impact of inequalities by creating a more attractive environment with access to woodland for recreation for all. It will also have positive effects on urban air quality, heat and coolling, which helps reduce the effect of inequalities. Community fruit growing will also help reduce the impact of inequality through providing access to cheap, healthy food and opportunity to socialise. Policy 18: Community Collaboration recommends equality impact assessment to guard against schemes coming forward in places the community does not welcome them, and make sure equalities issues are addressed. This theme includes Policy 19: Management of Council Trees, which sets out the restricted circumstances in which the Council will remove trees. Although trees are usually seen as beneficial, there may be occasions where residents disagree. This may impact especially on lower income groups as they are likely to have less choice over their housing.

7.31 The Cultural heritage theme aims to protect and celebrate East Lothian's cultural heritage assets from potential adverse effects of woodland creation. It aims to identify, promote and retain trees of cultural significance (Key Target 6, Action 27, Policy 23: Notable Trees) and developing tree trails in towns and villages (Action 26). This will help mitigate the impact of population growth reduce the impact of inequality by improving the range of free things to do in the local area. It may also provide some small-scale employment opportunities.

7.32 The Landscape theme includes support for the planning of structural planting in the Blindwells Area (Action 31), as set out in the Climate Evolution Vision, and the Innerwick coast (Action 30). This theme also includes planning for replacement of ash trees lost to ash dieback, and tree

planting for green networks. Mitigation of the effects population growth was one of the main drivers behind developing the Climate Evolution vision, by providing a high quality green/blue infrastructure. Although the west of East Lothian is seeing the greatest pressure, there is increasing pressure on outdoor space throughout the area from recreational users. This was especially challenging in some areas during the Covid-19 pandemic. There are also development pressures at the eastern end of the area, around Innerwick, mainly from electricity infrastructure. These landscape scale plans would help mitigate that, as well as reducing the effect of inequality by provision of recreational opportunities close to communities. A programme of replacement of trees important to townscape character (Action 32) also supports both these goals.

Mitigation of potential adverse impacts of the Strategy – Population

7.33 **Embedded mitigation**: Policy 18 Community Consultation seeks consultation with people when planning tree planting or woodland creation. This will help avoid the impact of trees being planted in places they are unwanted. The Strategy's provision for tree planting in urban areas, includes targets for an increase in canopy cover including in lower SIMD areas (Target 4A). This will help avoid a potential widening of the difference in environmental quality between less and more deprive areas.

7.34 **Project level mitigation:** At project level, locations for urban planting must be carefully considered. Lower SIMD areas where further canopy coverage is sought, often coincide with social housing areas where people may have low or no choice over their accommodation. Planting trees where they cause issues of shading or creating areas which feel unsafe to residents must be avoided.

7.35 The Strategy includes provision for equality impact assessment at project level, and involvement of communities. As projects come forward, provision for groups with protected characteristics and cross cutting themes including poverty should be specifically considered. This should include looking at the needs of older people and people with dementia in the design of woodlands, places and open spaces. How to maximise the benefits of woodland expansion for the existing population, especially those in areas of multiple deprivation, should be considered. This should include engagement with the community, and draw on knowledge from previous engagements. The safety and perceived safety of the project should be considered.

7.36 **External mitigation:** East Lothian Council Plan 2022-27 includes as one of three over-arching objectives "reducing poverty and inequality". The Council thus aims to address inequality, including that which has a spatial dimension, across all its activities. The Fairer Scotland Duty will further focus attention on this work.

Secondary, Synergistic and Cumulative effects

7.37 **Positive** There will be cumulative positive effects on socio-economic factors with other PPS such as the East Lothian Economic Development Strategy. There will be cumulative positive effects on older people with other Aging Well strategies, and those living in lower SIMD areas with other anti-poverty work of the Council and others, such as that carried out under the Fairer Scotland Duty. This arises from the planned improvement to amenity of urban areas and increasing accessible woodland.

Conclusion – Population

7.38 The effects of the TWSEL are generally expected to be positive for population. Guiding woodland creation to appropriate places in landscape and townscape supports good placemaking, and so mitigates the effect of population growth. Increasing canopy cover with a focus on lower SIMD areas will help reduce the effects of income inequality, and support people in ageing well in place. The Strategy is expected to bring an increase in employment which will allow people to stay in their communities in the day time. Although the numbers are is small, this may be noticeable in some rural areas.

Residual adverse impacts

- risk that tree planting in urban areas could affect the feeling of (and actual) security, which can affect some groups (such as women or people from BAME communities) more than others

- Some trees may be planted in some place that cause stress to some people, or adversely affects their enjoyment of their area or home. Although the Strategy aims to avoid this through Policy 18 Community Consultation it is likely that some effect will remain.

8 HUMAN HEALTH

Introduction

8.1 The World Health Organisation defines health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity"[35]. This definition therefore goes a lot further than merely not being ill, to encompasses well-being of the body, mind, and self in relation to others. It is a very positive definition.

8.2 Health services are important, but they are only around a fifth what shapes our overall health. Social and economic factors are the most important, followed by health behaviours including supporting active lives[36]. The physical environment can also directly influence human health – in obvious and immediate ways such as badly maintained pavements tripping us up or trees falling on us. It can also affect health in more long term and less obvious ways such as through the quality of our air or water. Climate change is a significant threat to health.

8.3 An accumulation of evidence shows that access to natural greenspace can help both mental and physical health. Greenspace within towns can also improve air quality and general quality of life. Trees in towns can increase the perception of environmental quality – the 'leafiness' of 'leafy suburbs' is a characteristic picked out for a reason. Natural spaces, even if viewed through a window, can improve our mental health. Provision of attractive open space and active travel routes can also influence health behaviours such as walking.

8.4 The total impact of environmental factors such as climate, geography and environmental hazards on health is termed the environmental burden of disease, most of which, in theory is preventable.

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[35] See https://www.who.int/about/governance/constitution

[36] Public Health Service presentation at Sustainable Scotland Network Conference, 25-05-2023 https://sustainablescotlandnetwork.org/events/ssn-annual-conference

The aim should therefore be to reduce the adverse health effects that arise from living in poor quality environments, and maximise the benefits of living in good ones.

8.5 The Scottish Government and the Convention of Scottish Local Authorities (COSLA) have identified six priorities for public health in "Public Health Priorities for Scotland". These are summarised as:

- living in vibrant, healthy and safe places and communities:
- flourishing in early years:
- good mental wellbeing;
- reduced harm from alcohol, tobacco and other drugs:
- a sustainable, inclusive economy with equality of outcomes for all; and
- eating well, have a healthy weight and are physically active.

8.6 The Strategy supports some of these objectives either directly or indirectly through the creation and management of woodland and planting of trees, as well as encouraging access to existing woodland. There are also potentially some adverse health effects that could result from increased numbers of trees. This includes increased pollen levels (which can affect those with hay fever), risk of spread of vector borne illness (mainly from ticks) and tree related accidents, including those occurring at work. The Human Health Scoping Table below shows, with reasons, what existing issues are considered relevant to this strategy.

8.7 Poor air quality is a leading environmental cause of ill health in the UK. It is implicated in a number of health conditions including heart disease and dementia, as well as diseases of the lungs. Poor air quality is also, as the Cleaner Air For Scotland Strategy notes, a health equalities issue as "it affects the more vulnerable members of the population disproportionately (people who are very young, elderly, those with pre-existing medical conditions, and those living in urban areas and deprived circumstances)". Tree planting of the right species in the right place can help mitigate existing air pollution. There is also some potential for air pollution through forestry operations. Air pollution is considered under 'Air' though the health effects are recognised.

8.8 The experience of being flooded, especially the experience of being flooded out of one's home, can have significant health impacts across the full range of the community, with long-term impacts on mental and emotional health often a hidden impact. Woodland creation and tree planting in the right place can have significant benefits in reduction of flood risk. Although flooding is also primarily an issue due to its effects on human health (and also affects material assets) as it shares much of the baseline information with water quality it is considered in the 'Water' section.

8.9 Contaminated land can also have issues for health but is considered under 'Soil'.

8.10 Creation of vibrant, healthy, safe places, and reduction of inequalities both have positive effects on health, and aspects of this are considered under 'Population' above also. Heat stress and wildfires are considered under 'Climate Change'.

Scoping Table 3: HUMAN HEALTH	
Issue	**In/Out**
Creation of vibrant, healthy and safe places and communities, support good mental wellbeing, a healthy weight and physical activity	

Expansion of woodland and trees in around urban areas – opportunity	**In**
Expansion of woodland and trees in and around urban areas – threat	**In**
Flourishing in early years	
Increase opportunities for young people to experience play in woodland – opportunity	**In**
Reduce the direct health impact from woodland, and forestry operations	
Risks to the public from increase in trees and woodland – accidents	**Out**
Increased risk of animal/insect borne illness due to change in habitat	**In**
Risk to the public from trees – allergens	**In**
Risks to forest workers health and safety from forest operations	**Out**
Reduce the impact of noise	
Noise impact from forestry operations	**Out**
Impacts on Candidate quiet area	**Out**
Use of trees to absorb, deflect, or mask existing noise	**In**

Baseline, issues and impact – human health

8.11 Life expectancy in Scotland improved considerably until around 2012-14, when the increase stopped. Between 2017-19 and 2019-21, life expectancy fell by around 14 weeks per year for males and 7.9 weeks for females. The majority of this fall was due to Covid-19. Scotland now has the lowest life expectancy in Western Europe[37].

[37] National Records of Scotland, 2022 "Life expectancy in Scotland" at https://www.nrscotland.gov.uk/files/statistics/life-expectancy-in-scotland/19-21/life-expectancy-19-21-report.pdf

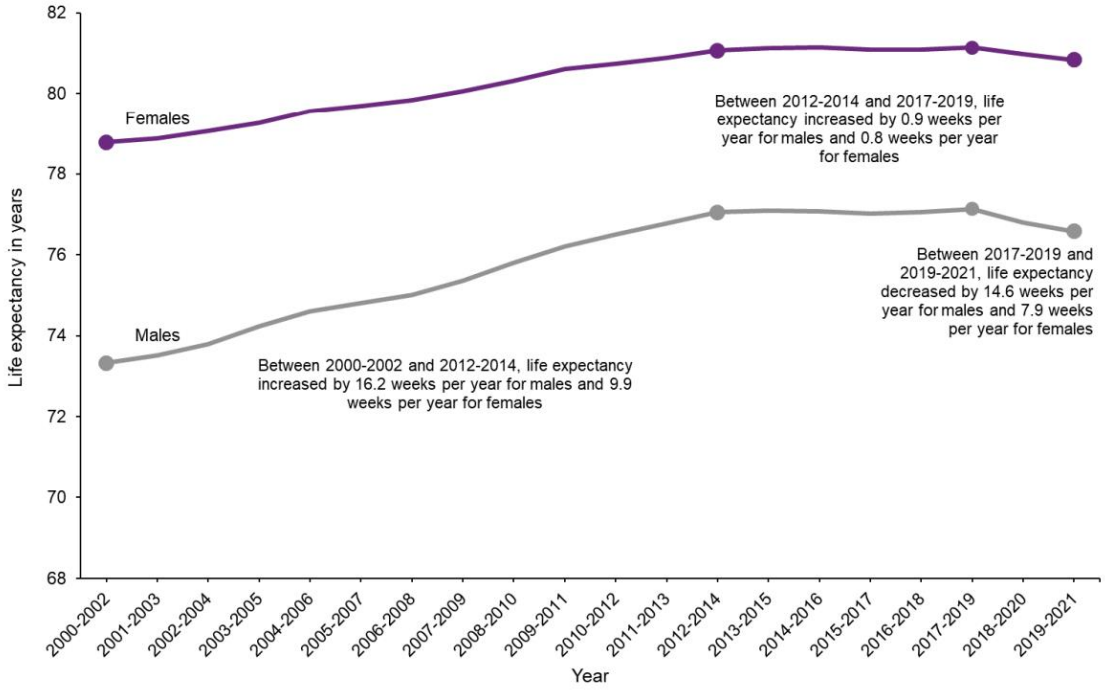

Figure 15 Annual change in life expectancy in Scotland, NRS 2022

8.12 Life expectancy in East Lothian is above average for Scotland, with life expectancy at birth currently (2019-21) being 78.9 years for males and 82.6 for females[38]. The overall figures conceal variations within the area, with some areas having life expectancy below the Scottish average, generally within areas that are more deprived overall[39]. Healthy life expectancy, the number of years that can be expected to be lived in good health, is also lower in deprived areas.

8.13 For men in East Lothian, the leading cause of death was ischaemic heart diseases followed by dementia and Alzheimer's disease; these were the leading causes of death of women also though dementia and Alzheimer's were ahead of heart disease. However, for both men and women cancer would be the leading cause of death if all cancers were grouped together for recording purposes[40]. Levels of physical activity can affect heart disease, dementia and some cancers.

8.14 Obesity is a significant health problem, linked to many diseases and conditions and lowering life expectancy. The Scottish Public Health Observatory has found that in 2020, the majority of adults over 16 are overweight (28%) or obese (35%); more men than women are affected, and more older people than younger[41]. A clear gradient of inequality is evident for both men and women with obesity levels highest for those living in the most deprived areas[42]. Women and children in the most deprived areas are more likely to be very obese. Covid-19 has made the obesity situation worse, through an effect on both diet and physical activity levels.

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[38] https://www.nrscotland.gov.uk/files/statistics/council-area-data-sheets/east-lothian-council-profile.html#life_expectancy

[39] East Lothian by Numbers December 2016 (Scotpho 2015)

[40] See NRS East Lothian Profile at https://www.nrscotland.gov.uk/files/statistics/council-area-data-sheets/east-lothian-council-profile.html

[41] See https://www.scotpho.org.uk/clinical-risk-factors/obesity/data/adults/

[42] https://www.scotpho.org.uk/clinical-risk-factors/obesity/key-points and ONS publication The Scottish Health Survey 2018 updated 2020, at https://www.gov.scot/publications/scottish-health-survey-2018-volume-1-main-report/

8.15 There is lower than average life expectancy in some of our most multiply deprived areas. There are also higher rates of cancer, emergency hospitalisation and low birthweight babies. The link between areas of deprivation and poorer health is complex however environmental issues are thought to play a role. These include poor access to open space, open space of poor quality, lack of active travel networks and poor access to healthy food, poorer air quality, noise, stress arising from low quality work, as well as health issues arising from perceived low socio- economic status.

Creation of Vibrant, Healthy and Safe Places

Expansion of woodland, and more trees in urban areas – opportunity

8.16 The places we live, work and play, the connections we have with others all have a significant impact on our health and wellbeing. Reducing the sedentariness of the population could significantly reduce morbidity and mortality rates. Woodland and trees close to where people live can help improve green space. This makes people more likely to use it, which should increase mental wellbeing and physical activity levels. People who live within 500m of accessible greenspace are 24% more likely to meet recommended levels of physical activity[43].

8.17 The Climate Change Committee predicts that climate change will exacerbate the urban heat island effect, so increasing the need for shady outdoor spaces in urban areas. Use of trees in urban areas can also help reduce the overall temperature of urban areas in summer. This helps reduce heat stress on people, especially those in buildings not adapted for hotter weather. Trees can also reduce the incidence of UV-related health problems by providing shade from the sun. The TWSEL aims to increase tree canopy coverage in those urban areas where the canopy is below 30%. This will help reduce heat stress and UV exposure.

8.18 The Central Scotland Green Network is a National Planning Framework 4 National Development extending over 21 local authority areas in central Scotland, and aims to provide a step change in environmental quality of the area. The East Lothian Green Network is part of the Central Scotland Green Network, and aims to create an environment that supports healthy lifestyles and well-being, mitigates and adapts to climate change, and provides a place for nature to flourish. East

East Lothian Green Network tasks include:

- A Place for Growth 2: create attractive employment sites with 'oasis' areas for workers to use at lunch and breaks
- A Place in Balance 2: Provide parks and high-quality greenspace close to where people live
- A Place to feel good 5: Increase the use of trees and plants in towns, especially along transport routes to combat air pollution.
- A Place to feel good 9: Increase natural and wild spaces in school grounds

[43] Coombes, E. G., Jones, A. P., Hillsdon, M (2009). 'The relationship of physical activity and overweight to objectively measured green space accessibility and use.' Social Science and Medicine, under review

Lothian Green Network Strategy contains many actions relevant to creating vibrant, healthy and safe places.

8.19 In November 2018, East Lothian's Open Space Strategy was adopted (https://www.eastlothian.gov.uk/meetings/meeting/16252/cabinet .) The Open Space Strategy was informed by an Open Space Audit, which confirmed East Lothian enjoys a good supply of high quality parks and open spaces. The Open Space Audit looked at quantity, quality and accessibility. Other than Tranent cluster, all areas of East Lothian have sufficient open space in terms of quantity, though some areas fall short in terms of accessibility of some types of spaces, as shown in Figure 3 below. In Tranent, there is a lack of open space in total in Tranent and some of it is not well located in relation to the settlement (Polson Park).

Cluster	Green Networks (Semi-natural Greenspaces, Green Corridors)	Parks and Gardens			Amenity Greenspace	Playspace	Sports Areas
	Accessibility	Quantity	Quality	Accessibility	Quality	Accessibility	Accessibility
Dunbar	Yes	Yes	Yes	Yes	Yes	No	Yes
Haddington	Yes	Yes	Yes	No	Yes	Yes	Yes
Musselburgh	Yes	Yes	Yes	Yes	No	Yes	Yes
North Berwick	Yes	Yes	Yes	No	Yes	No	No
Prestonpans	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tranent	Yes	No	Yes	Yes	Yes	Yes	Yes

Figure 16: Excerpt from East Lothian Open Space Strategy 2018 Quantity, Quality & Accessibility Standards

8.20 East Lothian Council owns and manages a considerable number of the open spaces in the area, though some of the open spaces in residential developments are owned by the residents and managed through factoring arrangements. The costs and quality of factoring of open space can be an issue in some residential areas leading to a desire for it to be sold off. Population changes may also lead to a desire for a different type of open space, for example as estates mature typically there are fewer children, so less demand for formal play space.

8.21 Trees can also make walking and cycling routes more attractive and so increase levels of active travel. This supports fitness, which brings a range of health benefits. Active travel also brings more opportunity to meet other people, supporting vibrant communities.

8.22 Without the strategy, the Council will continue to deliver sustainable management of the open and green spaces it owns or manages, along with community groups such as 'In Bloom' groups. The policies of the East Lothian Local Development Plan 2018 will protect public open spaces. New housing development is coming forward at the main towns of East Lothian as well as at Blindwells, Wallyford, Gullane, Longniddry and some new public open space will come forward through this. The Design Standards for New Housing Areas SPG includes guidance on the design of new spaces and active travel connections within residential areas, with the aim of driving up quality. Improvements to existing open spaces may be identified through the Area Planning process, and there is some funding available for this.

8.23 The Scottish Household Survey asks respondents questions about their local area. The 2019 survey data is available from the Scottish Government, here: https://scotland.shinyapps.io/sg-scottish-household-survey-data-explorer/ . The percentage of adults rating their neighbourhood as 'Very Good' or 'Fairly Good' in East Lothian has been

above 95% all years but one since 1999/2000. From 1999 – 2010, except for one year, the percentage was significantly higher than Scotland as a whole. This has only been repeated since in 2014 and 2018. The percentage of those in the lowest 20% SIMD areas (a measure of multiple deprivation) who rated their neighbourhood as 'Very Good' or 'Fairly Good' rose steadily from 77% in 2005/6 to 87% in 2016/17, though this has fallen off slightly since. This is lower than the average for neighbourhoods as a whole.

8.24 Canopy coverage tends to be lower in lower SIMD areas, and further tree planting as proposed in the TWSEL is likely to improve these areas. This will help create healthy communities and also to address the effects of inequality.

8.25 The TWSEL has as a component of its vision to provide enhanced quality of life for local communities, and a major part of this is through improving the environmental quality of East Lothian's towns and villages through provision of trees in the right places. This supports healthy places through encouraging active travel. Guidance on suitable locations for East Lothian's Climate Forest supports this, as do targets for increased tree canopy cover and accessible woodland. Landscape scale actions including planning for replacement of trees lost to ash dieback and increasing riparian woodland creation will also support this.

Expansion of woodland in and around urban areas – threat

8.26 Trees have the potential to cause accessibility issues for people with mobility issues (growing over roads and pavements, raising the surface). Trees in urban areas can also cause stress from unwanted shading, leaf dropping, worry about falling branches, garden maintenance &c. Tree and woodland planting may also increase real and perceived feelings of danger especially in the dark (see Population). Reducing sunlight penetration in parks and urban areas could reduce vitamin D absorption, which is important for health.

8.27 The TWSEL supports increasing (or in areas that already meet the 30% target, maintaining) canopy cover. However, it also encourages collaboration with communities where tree planting, especially in urban areas, is proposed, and encourages Local Place Plans to consider trees and woodland in their area (Action 17, Policy 18). This should reduce though not entirely avoid the possibility of trees coming forward in places where health issues such as stress, crime or fear of crime arise.

Flourishing in Early Years

8.28 Woodland and trees should be part of the play experience for children and teenagers. East Lothian's Play Policy[44] notes that play is vital to children's emotional and physical health and wellbeing, contributes to their learning and can reduce the impact of inequality of parental income. The Aim of East Lothian's play policy is that "All children and young people will have access to a range of opportunities to play in East Lothian's built and natural environment and their right to play will be recognised and supported by adults". A Principle of this policy is that "Children and young people's access to outdoor spaces should include natural and wild spaces with particular attention to actions to promote inclusive access."

[44] https://www.eastlothian.gov.uk/downloads/file/27211/east_lothian_play_policy_2017_-_2020_with_appendices

8.29 The TWSEL recognises the importance of play in children's lives (para 8.35). Scotland's Forestry Strategy supports the provision of more opportunities for children to play and learn in forests and woodlands, particularly in urban areas. Increasing the amount of accessible woodland and access to woodland (Target 4B, Policy 16: Design for All, Action 15, Action 16) will help meet this aim, as will an overall increase in woodland. Increasing canopy coverage may also provide greater opportunities for tree related play in urban areas. Mapping and promoting access to woodland for all will help disabled children to access woodland.

Direct Health impact from woodland, and forestry operations

Accidents

8.30 In the UK, there seem to be about 550-600 tree related Accident and Emergency admissions annually[45]. These include where the person has slipped, tripped on or collided with a tree, been playing on it or fallen from it, been working on it or hit by it &c. There were 64 fatalities in the 10 year period from 1999, mostly related to wind. This topic is scoped out due to small numbers involved.

Vector borne illness

8.31 Increasing woodland and access to woodland may increase exposure to ticks as well as other current and potential future pests and pathogens.

8.32 Lyme disease is a serious illness caused by a bacteria carried by ticks. Lyme disease appears to be increasing in Scotland.

8.33 Some other serious illnesses are also tick borne, and surveillance for these continues[46]. Ticks increase where there is suitable habitat for their mammal and avian hosts. Urban woodlands and woodland edge have been identified as key habitat for ticks infected with Lyme disease. Increasing accessible woodland areas may therefore increase the prevalence of and exposure to infected ticks.

8.34 Climate change may lead to an increase in ticks due to warmer winters as ticks are not killed off by frost. It may also bring other woodland related pests and pathogens that could have an impact on human health.

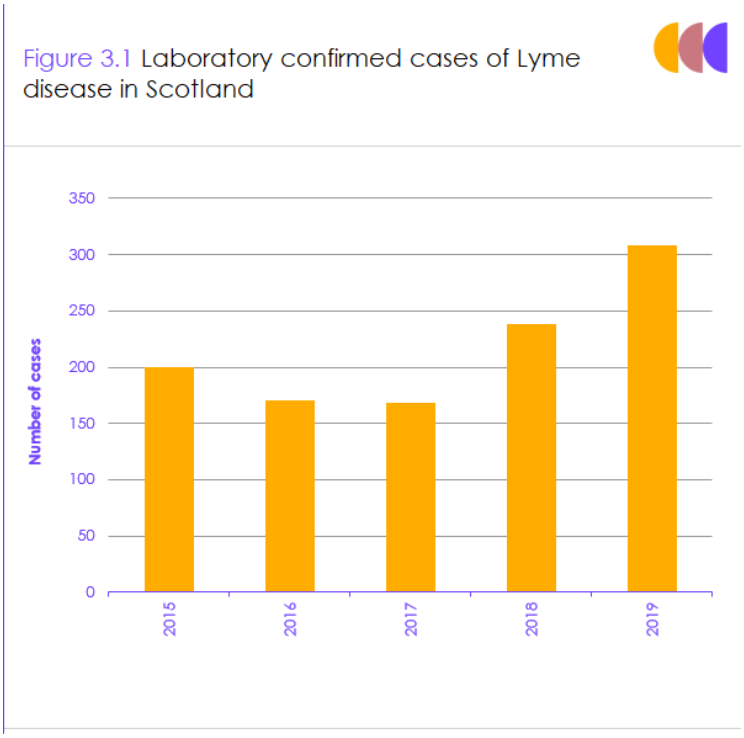

Figure 17: Lyme Disease in Scotland, from CCC Supporting Charts and Data

[45] https://ntsgroup.org.uk/wp-content/uploads/2016/06/NTSG-Report-1_Trees-and-the-Risk-of-Harm.pdf

[46] See https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6210260/

8.35 The TWSEL aims to increase woodland cover, including accessible woodland (Targets 1 and 4, numerous actions and policy). This is likely to increase numbers of woodland mammals including deer, which in turn is likely to increase tick numbers and tick born disease.

8.36 Public information campaigns may be useful to mitigate this impact.

Allergens

8.37 Tree pollen allergies affect a large number of people (one in four people have hay fever and about a quarter of those are allergic to tree pollen[47]) which can increase the risk of asthma attack as well as adversely affect quality of life. Climate change may change the amount and type of pollen released.

8.38 The appearance of tree pollen can start as early as February in Scotland, and continue until early July. The main species responsible here are Alder (February to May), Ash (mid-March until early June), Birch (mid-March to late June), and Oak (early April until early July)[48]. More trees will mean more pollen, so more and/or more severe, illness. Climate change could affect the pollen season. Birch allergy can be particularly problematic as it can cause cross sensitivity with foodstuffs such as apple, almond, carrots, celery, cherry, hazelnut, kiwi, peach, pear and plum.

8.39 Mitigation could include publicising the Met Offices Pollen Forecast at https://www.metoffice.gov.uk/weather/warnings-and-advice/seasonal-advice/pollen-forecast so that affected people can plan their activities accordingly. It may also be possible to choose tree species which have lower allergenic potential especially locations where there are high concentrations of vulnerable people. These include schools and care homes, as younger and older people are more susceptible to allergies.

Forestry Workers Health and Safety

8.40 Increased number of trees is likely to lead to increased number of forestry and tree workers, and so a potential increased number of accidents at work. The Health and Safety at Work Act 1974 covers safety precautions which aim to address risk and this mitigates but will not completely overcome this impact. This impact is Scoped out due to the low numbers involved and control by health and safety legislation.

Noise

8.41 Noise is unwanted sound that can occur when it reaches certain levels or intensities, or has a certain tonal quality. The World Health Organisation considers there is "sufficient evidence from large-scale epidemiological studies linking the population's exposure to environmental noise with adverse health effects at specific health end points"[49]. Living in a noisy environment can cause

[47] https://www.narf.org.uk/the-allergy-explosion and https://firstaidforlife.org.uk/tree-pollen-allergy-what-you-need-to-know-this-springtime/

[48] See University of Worcester Pollen calendars at https://www.worcester.ac.uk/about/academic-schools/school-of-science-and-the-environment/science-and-the-environment-research/national-pollen-and-aerobiology-research-unit/pollen-calendar.aspx

[49] Edinburgh Noise Action Plan, at https://noise.environment.gov.scot/action-planning-round-three.html

high blood pressure which can then lead to cardiovascular disease[50] ; disturbed sleep from noise can also cause irritability and difficulty focussing, and in the long term can affect metabolic and endocrine systems[51]. Noise has the potential to affect the recreational experience below levels at which it would be considered a statutory nuisance.

8.42 Noise from roads and railway traffic is monitored under the Environmental Noise (Scotland) Regulations 2006 around roads or railways where there are more than 6 million vehicle passages or 60,000 train movements. Urban areas of more than 250,000 population are also monitored. The noise mapping carried out under the regulations is available here: https://noise.environment.gov.scot/noisemap/ . Figure 18 shows assessed noise from roads. There is also likely to be some contribution from rail traffic however this is below the level assessed under the regulations. Some parts of East Lothian have high levels of noise associated with roads. The East Lothian Local Development Plan 2018 has allocated new sites for housing and employment use in the area and this could increase levels of noise from traffic.

8.43 The Figure below shows assessed noise from major roads in the area.

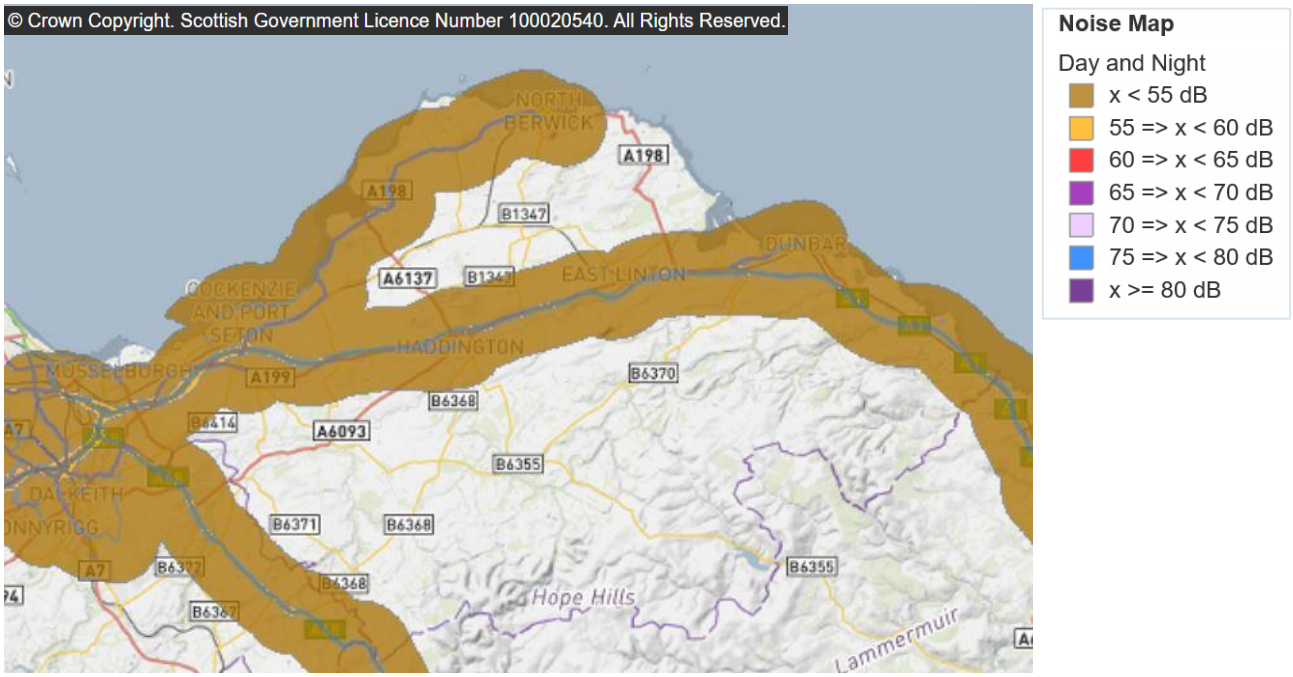

Figure 18: Average annual noise from roads (Day, Evening and Night (Lden)[52].

Candidate Quiet Area

8.44 The Edinburgh Agglomeration Noise Action Plan notes that access to quiet areas and peaceful soundscapes is generally known to bring about a range of benefits to human health and well-

[50] Basner, Mathias, et al. "Auditory and Non-Auditory Effects of Noise on Health." *The Lancet*, vol. 383, no. 9925, 2014, pp. 1325-1332., doi:10.1016/S0140-6736(13)61613-X quoted in Anna Nordseth "How to Trees Reduce Noise Pollution" Treehugger website https://www.treehugger.com/how-do-trees-reduce-noise-pollution-4863592#citation-13 accessed 27/09/2021

[51] Halperin, Demian. "Environmental Noise and Sleep Disturbances: A Threat to Health?" *Sleep Science*, vol. 7, no. 4, 2014, pp. 209-212., doi:10.1016/j.slsci.2014.11.003

[52] Source: Scottish Noise mapping at https://noise.environment.gov.scot/noisemap/

being. Designation of Quiet Areas is required under the Environmental Noise (Scotland) Regulations 2006. Parts of the coast at Prestonpans are part of the Firth of Forth Candidate Quiet Area. The Firth of Forth Candidate Quiet Area could be affected by increased use either from behavioural change or increased population in the area. Although further tree planting here could help buffer noise here this may not be desirable as qualifying interest species from the Firth of Forth SPA could use grassland habitat here.

Figure 19: Firth of Forth Candidate Quiet Area[53]

8.45 The TWSEL is unlikely to affect the quietness of the Firth of Forth Candidate Quiet Area. Some tree planting has taken place here already, and this is likely to increase the perceived quietness of this area, and may reduce measured levels of noise. Some of the roads bordering this area already have tree and/or hedge planting along the roadside, though further such planting, which the strategy supports, could further reduce noise here.

Buffering existing noise

8.46 Trees can reduce urban noise through absorbing, masking and deflecting sound. The larch has found to be the most effective tree for the job[54]. Some studies have shown that even where there is not a measurable difference in noise, people perceive noise to be lower as they expect trees to screen noise (Ward Thompson et al, 2016). There may be opportunities to use tree planting to mitigate the effects of noise from existing noise sources[55].

8.47 The likely evolution of the area without the strategy is that noise is likely to continue to be an issue for noise sensitive development close to roads, including at Blindwells where it will require be mitigated (not only by trees). Noise may also be an issue for noise sensitive receptors in older development that pre-dates modern noise standards or where traffic noise has increased.

8.48 TWSEL includes actions that are likely to reduce the effect or perceived effect of noise. This includes increasing the canopy in urban areas (Target 4), and planting along the side of roads to benefit air quality (Action 20).

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[53] Source: Edinburgh Agglomeration Round 3 Noise Action Plan mapping at https://noise.environment.gov.scot/pdf/RoundThree/Edinburgh/Edinburgh%20CQA.pdf

[54] Applied Acoustics Journal, reported at BBC website https://www.bbc.co.uk/news/science-environment-52139333 accessed 27/09/2021

[55] See https://ec.europa.eu/environment/integration/research/newsalert/pdf/328na6_en.pdf

Noise from forestry traffic and operations

8.49 The TWSEL on its own is unlikely to lead to such an increase in traffic that noise from roads or railways would change other than very marginally. Increasing the amount of accessible woodland and associated recreation or commercial use could bring a slight increase in movements on rural roads which currently have low traffic levels. However this would affect a small area and is not considered likely to be significant at the strategic level.

8.50 Noise from forestry operations could be a nuisance to noise sensitive receptors. There is limited impact on residential or recreational amenity at present due to the low levels of forested areas and their location. Where planning permission is required, operational noise would be controlled through conditions on hours of working. However some noise during forestry operations is often unavoidable. The effect of noise from forestry operations is not considered likely to be significant at the strategic level but some proposals may require project level assessments.

Likely Significant Effects – Human Health

8.51 The following table shows the SEA objectives for Human Health and summarises the impact of the TWSEL.

SEA Objective, Human Health: Maintain, or provide opportunities to improve, human health	Theme 1 – Climate Mitigation	Theme 2 – Resilience and adaptation	Theme 3 – Biodiversity	Theme 4 – Community	Theme 5 - Economy	Theme 6 – Cultural Heritage	Theme 7 – Landscape Character
SEA Indicator questions for assessment. Does the plan….?							
Help create vibrant, healthy and safe places and community, support good mental well-being and maintaining a healthy weight through physical activity	//	+	+	//	0	+	+
Flourishing in early years: increase opportunities for young people to experience play in woodland	+	0	+	+	0	0	+
Reduce health impact from woodland and forestry operations	//	//	//	//	0	0	+

KEY

Positive	+
Neutral	0
Unknown	?
Mixed/Variable	//
Negative	-

Reduce the impact of noise	0	0	0	+	0	0	+

Commentary

8.52 The impact of tree planting and woodland creation (Climate, Resilience, Biodiversity, Community and Landscape themes) on health is positive in terms of creation of vibrant communities, as the increase in woodland and trees in towns and the landscape will improve amenity. This would be expected to reduce stress and increase levels of physical activity outdoors. It also brings opportunities for play in a natural environment. However, a greater number of trees, especially in towns and in accessible areas may also increase pollen allergies as well as more risk of tick borne illness. The 'Community' theme promotes increase in tree canopy cover and accessible woodland (Target 4). Encouragement of fruit and nut growth (Action 25) supports both nutritional health and physical activity. Action 23 provides for planting along strategic road corridors and industrial sites, with the aim of improving air quality and consequent improvement to health. This is also likely to reduce the impacts of noise. Policy 21 advocates tree planting being taken forward in a collaborative approach. This increases sense of ownership and community cohesion, which contributes to good mental health.

8.53 The Cultural Heritage theme will support a sense of identity and connection with nature through identification of Notable Trees locally and development of Tree Trails. This helps support good mental and physical health.

8.54 Generally, the effects on health are expected to be positive, due to improved mental health from an improved daily living environment and recreational opportunity. Air quality should also improve which has positive benefits for respiratory and heart health. There may be some adverse impact from an increase in tree allergies and ticks related illness.

Mitigation of potential adverse impacts of the Strategy

8.55 **External mitigation:** The existing policy and regulatory framework will act as mitigation to some of the potential impacts on health. National Planning Framework 4 and the East Lothian Local Development Plan together make up the development plan for this area. They contain policies protecting amenity (including noise) which will be applied to any development that requires planning permission, as is the case with felling permission. There are statutory provisions relating to noise enforced by East Lothian Council's Environmental Health and Protection service.

8.56 The National Health Service will treat patients who become ill from allergies or vector borne disease, or who suffer accidents.

8.57 **Embedded mitigation** includes policy on involving communities in planning for woodland creation and management, and urban tree proposals. This will help avoid stresses on people that arising from trees being poorly located.

8.58 **Project level mitigation** should include equalities assessment including consideration of perceived safety for vulnerable groups and where relevant a road safety audit. Species choice in urban areas should consider pollen potential.

8.59 **Further mitigation** should also include publicity about dangers of ticks such as provision of information on boards. Measures such as keeping grass short around paths are also helpful.

Publicising the availability of pollen forecasts so vulnerable people can take measures on days when levels are high would also be useful.

Secondary, Synergistic and Cumulative effects

8.60 **Positive:** There are many programmes, projects and strategies which aim to improve human health, or which impact on it. The TWSEL overall is expected to have a positive effect cumulatively with these strategies by supporting a healthier urban environment, reducing flood risk, improving air quality and in a small way, mitigating climate change which has been described as an existential threat.

Conclusion – Human Health

8.61 The effect on human health is expected to be generally positive on both physical and mental health. Planting more trees in settlement tends to improve both. Accessible woodland will encourage people to exercise in the outdoors. Air quality should improve, and this has strong links to health. The Strategy supports reduction of flood risk, which can damage physical and mental health. Perception of unwanted noise, which can cause stress, is expected to reduce. An increased amount of trees will is likely to bring with it an increase in vector borne illness and allergies.

Residual adverse impacts:

- Increase in vector borne illness and tree pollen allergies.

9 SOIL

Introduction

9.1 Soil is literally the foundation of our environment. It delivers essential functions of food production, carbon storage and maintaining the balances of gases in the air, filtering pollutants and regulating water flow. It also provides biodiversity habitat, provides raw materials including minerals, and preserves cultural heritage assets. Soil degradation can have a strong effect on air and water quality. Soils need to be managed and protected to make sure they continue to function effectively.

9.2 SEPA produced the 'State of Scottish Soils' Report in 2009[56]. This noted that climate change and changes in land use and land management are the most significant pressures on Scottish soils. The main threats to soil structure were loss of organic matter, soil sealing, contamination (including deposition of acidifying and eutrophying air pollutants), changes in soil biodiversity, erosion and landslide, and compaction. These impacts are difficult to reverse.

9.3 The Scottish Soil Framework 2009[57] considered that due to largely sustainable land management, Scotland's soils were generally in good health. The document notes that threats associated with cultivation, namely erosion, loss of structure and compaction are not a risk at the national scale but can be locally. The impacts of this can be significant for example loss of peatland, damage to archaeological features and impacts to water quality. The Report notes that it is difficult to appraise emerging threats due to lack of data.

9.4 Much of the lowland area of East Lothian is prime agricultural land, with poorer soils in the Lammermuirs in the south of the area. There is some peat in the upland areas. There are significant urban areas here, with further growth planned. There are some areas of contamination, mainly from previous mining or industrial activity. More information on Soils is available at Scotland's Environment Web.

9.5 Through Scoping the following issues were considered. The Table below shows, with reasons, what existing issues were considered relevant to this strategy. Deposition of acidifying and eutrophying air pollutants are a threat to soil but are considered under 'Air'.

[56] https://www.sepa.org.uk/media/138741/state-of-soil-report-final.pdf

[57] https://www.webarchive.org.uk/wayback/archive/3000/https://www.gov.scot/resource/doc/273170/0081576.pdf

Scoping Table 4: SOIL	
Overall objective: To maintain or improve soil quality, quantity and function	
Issue	**In/Out**
Conserve the food production capability of land	
Change of use from agriculture to forestry	**In**
Maintain soil quantity and quality	
Conserve soil organic matter – opportunity	**In**
Reduce soil erosion and landslides - opportunity	**In**
Compaction and soil sealing	**Out**
Minimise disturbance to carbon rich soils in particular peat – threat	**In**
To reduce levels of soil contamination	**Out**

Baseline and Issues– Soils

Food production capability of land

9.6 The Food and Agriculture Organisation Forestry Department sets out the global role of forest soils on their website. They note that forests and forest soils make an essential contribution to agricultural production and global food security.

9.7 East Lothian contains some of Scotland's best agricultural land. Agricultural land is vital for food production. Globally (and in Scotland), there is finite amount of prime agricultural land - indeed agricultural land in general. It is a resource that once lost is incredibly difficult to replace. Scotland imports around 40% of its food; UK food production to supply ratio (farm-gate value of raw food for production divided by value of raw food for human consumption) dipped under 60% in 2016[58]. A lack of agricultural land could be significant in the future if for any reason (pandemics, climatic and population change, trade arrangements, economic performance) the country as a whole cannot import so much food. In a changing world then, demand for agricultural land both locally and globally could increase.

9.8 Adaptation Scotland warns that climate change may have an impact on food production globally, though a warming climate and longer growing season has the potential to improve conditions here. Prime agricultural land located close to population centres (as in East Lothian) also allows for a reduction in food miles, which can help mitigate climate change.

9.9 Pressures on the food production value of land include development (including changes of use) and potential changes to agricultural support payments.

[58] https://www.gov.uk/government/publications/food-statistics-pocketbook-2017/food-statistics-in-your-pocket-2017-global-and-uk-supply

9.10 The SEA for the East Lothian Local Development Plan 2018 found that there was loss of agricultural land overall as major development sites were allocated on prime land. National Planning Framework 4 aims to protect agricultural land or lesser quality land that is locally important. The plan supports development on such land only where it is for essential infrastructure, small-scale rural development, food processing or renewable energy. This may reduce losses of agricultural land to development going forward.

9.11 The maps below show agricultural land. The best, most versatile agricultural land is Class 1, with all land above Class 3.1 being prime. Although Class 1 agricultural land, and prime land in general, is relatively common in East Lothian, it is much rarer in Scotland as a whole.

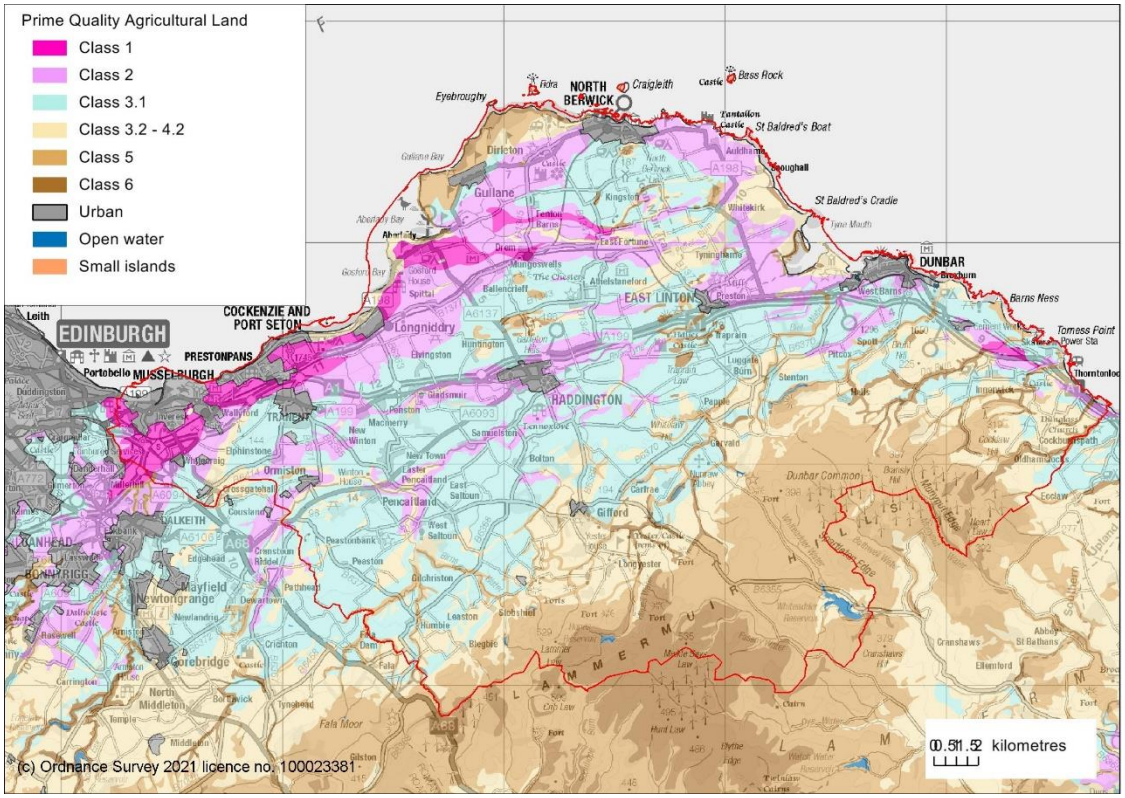

Figure 20: Agriculture land classification of East Lothian

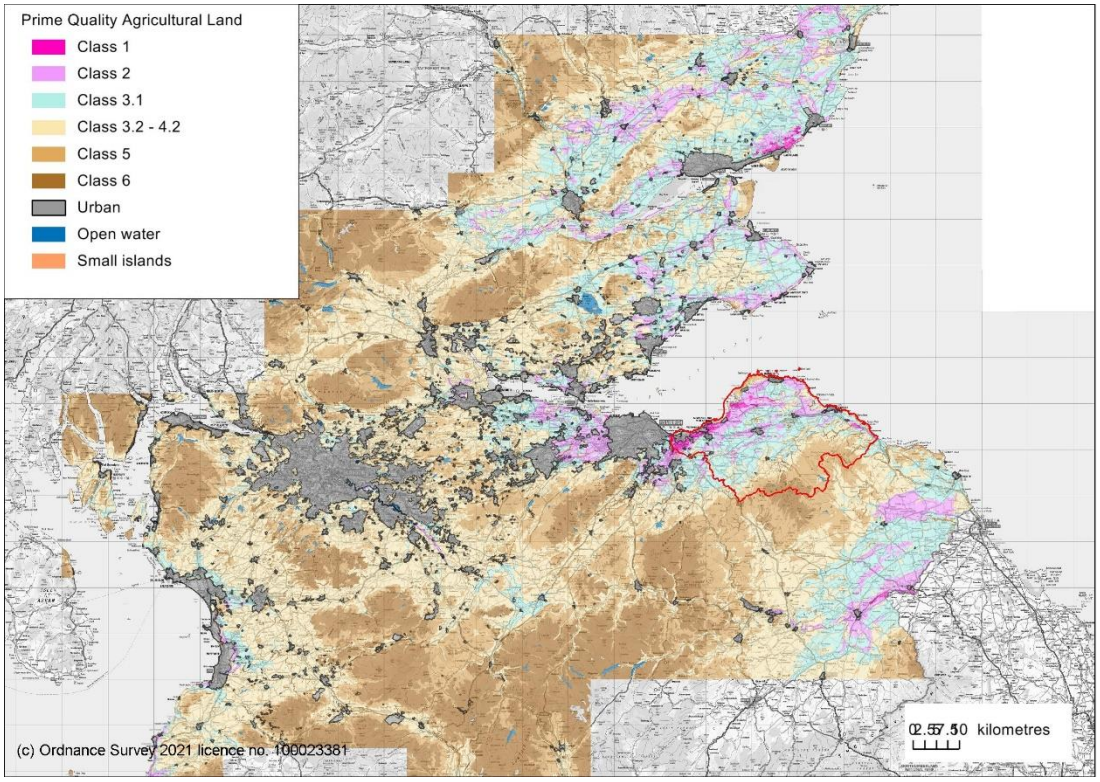

Figure 21 Agricultural land, Central Scotland

9.12 Woodland creation on agricultural land could affect agricultural production. There could be direct, negative effects from loss of land area, though there can also be positive effects from well-placed shelterbelts.

9.13 The TWSEL supports the planting of 2 million trees through the East Lothian Climate Forest (Target 1, Action 2). This will require between 800 – 2000 ha of land. Some of this will be in urban areas but it is likely that some will be on land currently in agricultural use. The TWSEL aims to guide woodland creation to areas that are less sensitive. The accompanying mapping identifies agricultural land, both prime and sub-prime, as a sensitivity. This does not rule out woodland creation in such areas. However, the Strategy only supports woodland creation where it will support agricultural production. Policy 21: Woodland Creation within Farmland states that such woodland should aim to complement and improve agricultural production, but may also be acceptable where it improves water quality and/or reduces flood risk. Target 4 aims to create 300 hectares of new farm woodland that supports agricultural production. Overall, although the TWSEL proposes considerable new woodland creation, it does not generally support this in areas where agricultural production would be harmed.

9.14 There is likely to be cumulative impact on loss of prime agricultural land with the East Lothian Local Development Plan 2018 and many other plans, strategies and projects.

9.15 It may be possible to mitigate the impact on agricultural production of loss of land given to woodland creation by using trees to help support food production, for example orchards, or shelterbelt trees that can help arable crops cope with drought[59]. The TWSEL notes that woodland

[59] Woodland Trust "Managing crop drought with trees" website accessed 27/09/2021 https://www.woodlandtrust.org.uk/publications/2012/03/managing-crop-drought-with-trees/

creation should only occur where it supports the function of the land in food production. However, that does not avoid the reduction in the total quantity of prime agricultural land in itself.

Maintain soil quantity and quality

9.16 Loss of organic matter, changes in soil biodiversity, erosion/landslides and soil erosion are expected to remain significant issues[60].

Conserve soil organic matter

9.17 Intensive farming on soils can have long lasting effects on soil health, which can be difficult to restore[61]. Farming can disturb the soil structure, leading to loss of soil organic matter and an increase of bacteria at the expense of fungal communities. This can affect the fertility of the soil and ecosystem services provided by soils such as its ability to regulate water, hold nutrients or break down pesticides. It can also reduce soil biodiversity, which again is core to how well soils can perform. It can take hundreds of years for soils to recover, even after farming has ended. From the point of view of the soil itself, therefore, a change of use from agriculture to woodland, depending on the type, is likely to be beneficial.

Mineral soils	Erosion risk	Organic Peaty soils
	Low	
	Moderate	
	High	

Landslide and erosion

9.18 Tree planting could help prevent landslide and soil erosion.

9.19 Erosion causes direct loss of soil and can reduce its long-term fertility. Soil erosion risk depends on the soil texture and its capacity to absorb rainfall as well as the slope of the land. The slope determines how erosive overland flow could be with steeper slopes leading to faster runoff. There is therefore most risk of erosion where coarse textured soils with a low water adsorption capacity are on steep slopes. Figure 22 shows the risk of a bare soil being eroded by water under intense or prolonged rainfall and primarily covers the cultivated land in Scotland. The data is from the John Hutton Institute and is available on Scottish Environment Web.

[60] Dobbie, K.E., Bruneau, P.M.C and Towers, W. (eds) 2011. The State of Scotland's Soil. Link: https://www.sepa.org.uk/media/138741/state-of-soil-report-final.pdf

[61] European research "Intensive Agriculture leaves lasting legacy on soil health" 2012 https://ec.europa.eu/environment/integration/research/newsalert/pdf/291na4_en.pdf

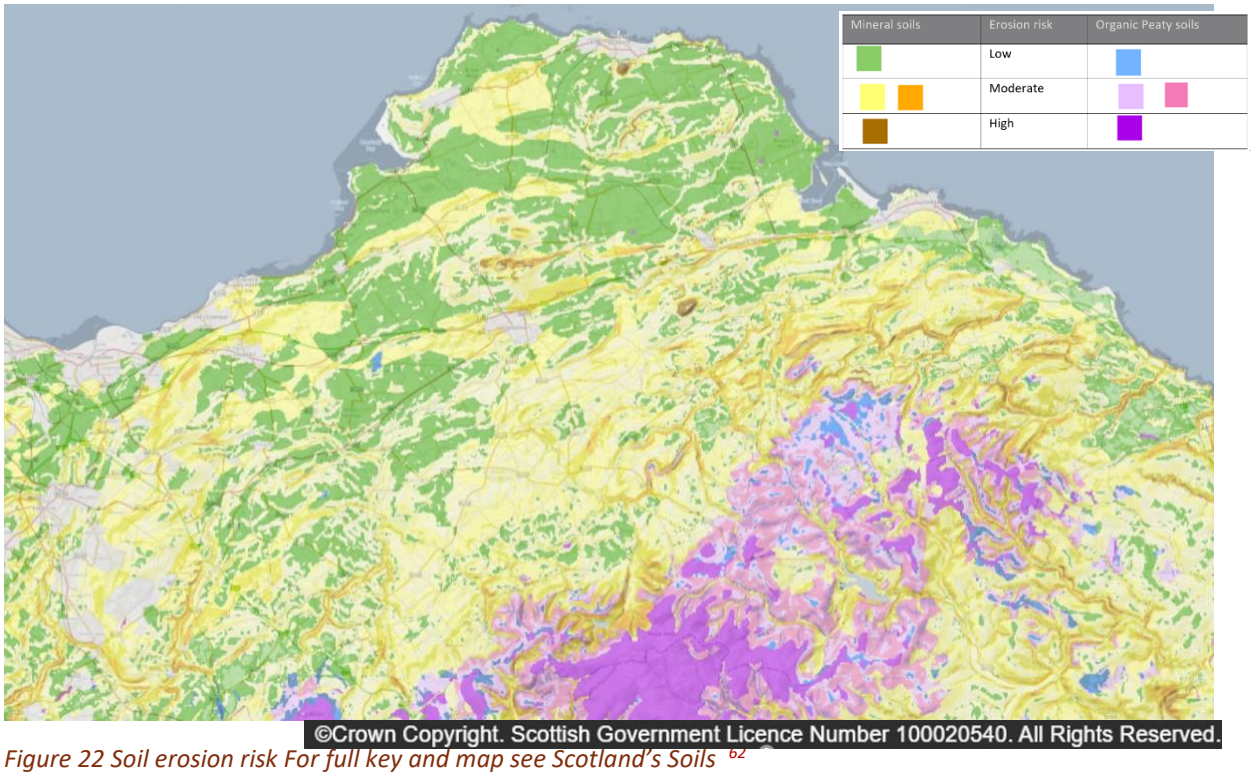

Figure 22 Soil erosion risk For full key and map see Scotland's Soils [62]

9.15 Wind can also cause loss of topsoil through erosion. Climate change could alter both wind, drought and rainfall patterns.

9.20 Woodland creation can help reduce soil erosion as the roots help bind the soil while the above ground parts can act as windbreaks. Strips of trees planted as windbreaks can help reduce the amount of soil lost to wind, particularly ploughed soil. Riparian planting can help bind the soil at riverbanks and reduce erosion there.

9.21 However, preparation of land for forestry planting can lead to soil erosion.

9.22 The effect of the TWSEL on soil erosion is likely to be positive. The 'Resilience and Climate Adaptation' chapter includes a section on the use of trees to protect and enhance the soil resource. Target 2B encourages riparian planting, while Target 5 seeks 300 ha of new small farm woodlands and shelterbelts, supported by Policy 21, which will reduce soil run-off into rivers as well as erosion by wind. Policy 9: Seed and Tree Stock Sourcing promotes natural regeneration that means preparation of land for planting is avoided.

Compaction and soil sealing

9.23 The use of heavy machinery can compact soils. Some development related to forestry such as tracks and other infrastructure may lead to soil sealing. No large scale expansion of commercial forestry is promoted through this Strategy. Where soil sealing occurs the effect is either from existing forestry, which the TWSEL would not affect, or localised and not strategically significant. This topic has therefore been Scoped out.

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[62] From Scottish Environment Web, full key is here: Map of soil erosion risk (partial cover) | Scotland's soils (environment.gov.scot) Lilly, A. and Baggaley N.J. 2018. Soil erosion risk map of Scotland (partial cover). James Hutton Institute, Aberdeen

Carbon rich and rare soils

9.24 There are some relatively carbon rich soils in East Lothian, mainly in the Lammermuir Hills. The deepest peat is in the Lammer Law area and is covered by SSSI designation; however, there is some shallow peat elsewhere. The following figures show organic matter in soils and location of peat.

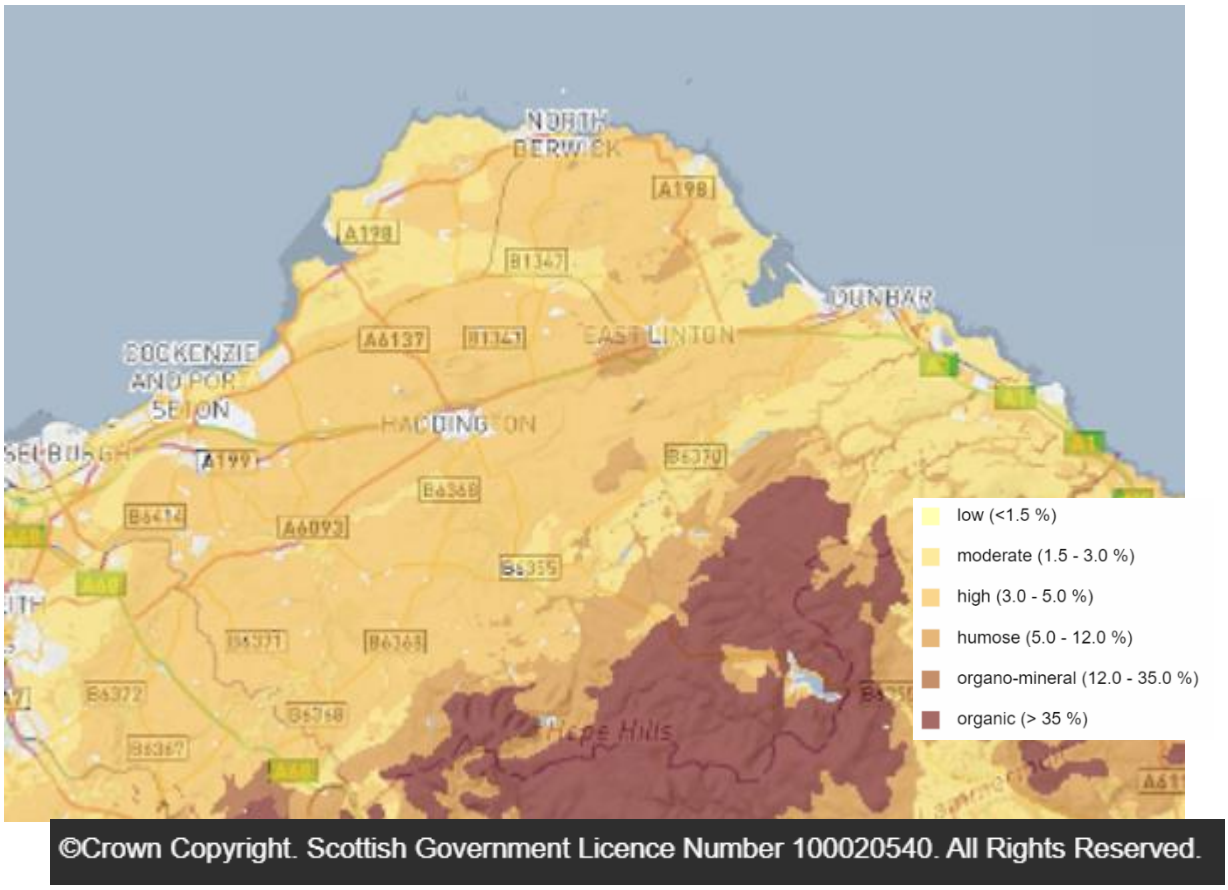

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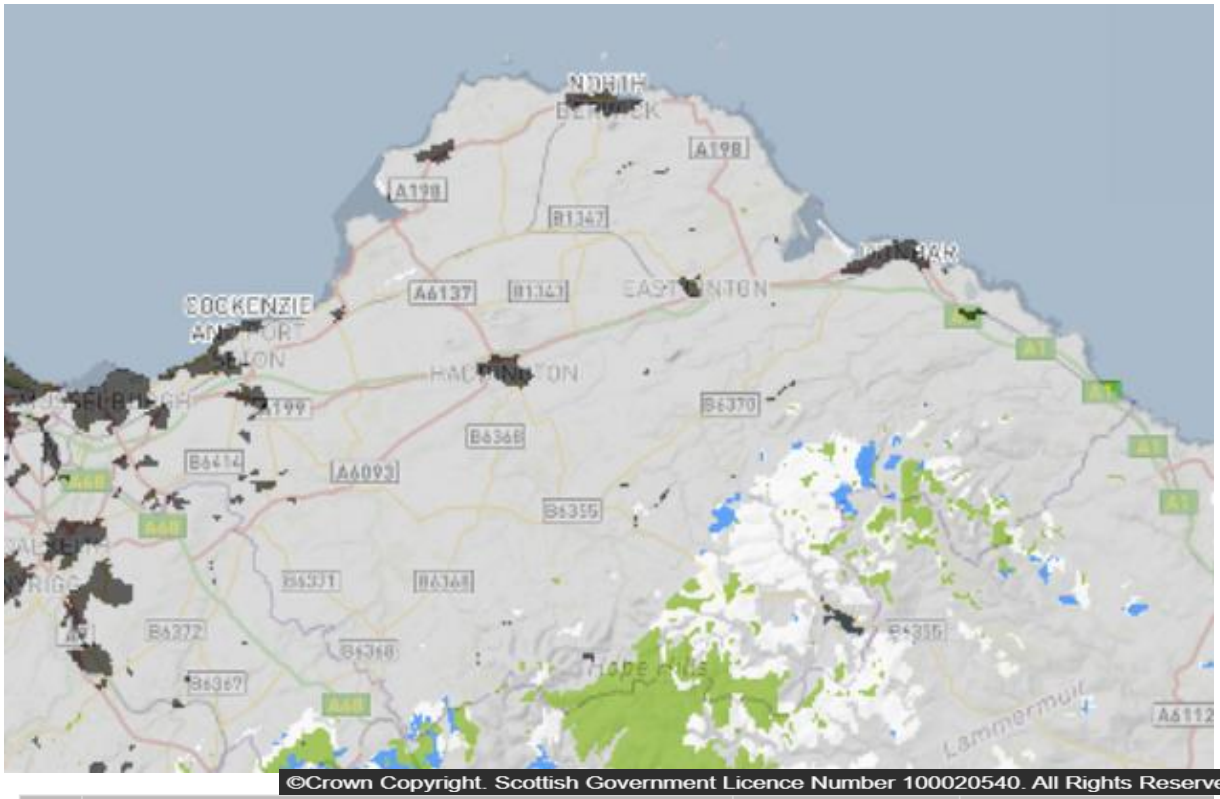
Figure 23 Topsoil organic carbon concentration[63]

[63] From Scottish Environment Web at Scotland's Soils - soil maps (environment.gov.scot)



	Class description	Indicative soil	Indicative vegetation
	Class 3 - Dominant vegetation cover is not priority peatland habitat but is associated with wet and acidic type. Occasional peatland habitats can be found. Most soils are carbon-rich soils, with some areas of deep peat	Predominantly peaty soil with some peat soil	Peatland with some heath
	Class 4 - Area unlikely to be associated with peatland habitats or wet and acidic type. Area unlikely to include carbon-rich soils	Predominantly mineral soil with some peat soil	Heath with some peatland
	Class 5 - Soil information takes precedence over vegetation data. No peatland habitat recorded. May also include areas of bare soil. Soils are carbon-rich and deep peat.	Peat soil	No peatland vegetation
	Mineral soil - Peatland habitats are not typically found on such soils (Class 0)	Mineral soils	No peatland vegetation
	Unknown soil type – information to be updated when new data are released (Class -1)	Not classified (unknown soil type)	Not applicable
	Non-soil (e.g. loch, built up area, rock and scree) (Class -2)	No soil	Not applicable

Figure 24 Carbon and peatland 2016[64]

[64] From Scottish Environment web at https://map.environment.gov.scot/Soil_maps/?layer=10 accessed 09/09/2021

9.25 Where there is a high carbon content disturbance of the soil for forestry planting could initially cause a release of carbon. Drainage to support tree growth could also have this effect.

9.26 The TWSEL recognises the value of peatland both as habitat and as a carbon store. Policy 15 Peatland supports retention of existing peatland or creation/restoration of peatland where this is possible, over woodland creation. The effect on carbon rich soils is likely to be positive by promoting use for peatland and seek to avoid woodland creation on such areas.

Contaminated land

9.27 There are some areas of contaminated land in East Lothian. Soil can become contaminated in a variety of ways. These include deposition from the air, forestry and agricultural operations including pesticide use and waste management as well as the industrial causes that perhaps first come to mind. Run-off from contaminated sites can lead to transfer of pollutants. Contaminated land can be remediated by removing or treating the pollutant; breaking or removing the pathway; or protecting or removing the receptor. Woodland creation can potentially do all three[65].

9.28 The Environmental Protection 1990 Act regulates some types of contaminated land. For land to be considered contaminated under Part IIa of this Act, there must potentially or actually be significant harm caused, or pollution of controlled waters. There must therefore be a source, a receptor, and a pathway. So there may be some soil which contains contaminants but is not considered contaminated under the Act as there is either no receptor or no pathway for harm or water pollution.

9.29 Although there is remarkably little obvious trace, East Lothian has had a varied industrial past, especially in the west of the area. This included potteries, brickworks, tanneries, iron foundries, gas works, timber works, power stations, railways and others, all of which produce hazardous wastes. Mining and quarrying was another major contributor to land contamination. Non-industrial uses such as petrol stations, military airfields, farms, scrap yards and even fly tipping can also lead to contamination. Current land uses that are potentially contaminating are managed through a system of licensing. The Council is the lead regulator for most contaminated sites, and on some sites where no other responsible person can be found, is responsible for remediation. The Council tackles the most pressing and serious problems first, and follows a risk based approach. It will require remedial action only where the contamination poses unacceptable risks to human health or the environment.

9.30 The East Lothian Contaminated Land Register lists land designated as contaminated and is available here: https://www.eastlothian.gov.uk/downloads/download/12758/contaminated_land .

9.31 Land contamination issues will continue to be addressed through the planning process and contaminated land remediation process, including the Council taking action on 'orphan' sites on a prioritised basis.

9.32 Some types of planting can be used to remediate contamination. Natural land decontamination methods such as phytoremediation could be considered rather than soil stripping. The TWSEL does not consider use of trees or woodland as a method of remediating contaminated land.

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[65] See Tony Hutchings, Forestry Commission 2002, "The Opportunities for Woodland on Contaminated Land" available at Forestry Commission Information Note: The opportunities for woodland on contaminated land (forestresearch.gov.uk)

9.33 Preparation for tree planting may disturb and mobilise contaminants through the wider environment. The potential for hazard should be considered at the project level.

Likely Significant Effects Summary - Soil

9.34 . The following table gives SEA objectives and summarises the impact of the TWSEL on each.

SEA Objective, Soil: To maintain or improve soil quality, quantity and function	KEY		Theme 1 – Climate Mitigation	Theme 2 – Resilience and adaptation	Theme 3 – Biodiversity	Theme 4 – Economy	Theme 5 - Community	Theme 6 – Cultural Heritage	Theme 7 – Landscape Character
SEA Sub-objective/ questions for assessment. Does the plan….?	Positive	+							
	Neutral	0							
	Unknown	?							
	Mixed/Variable	//							
	Negative	-							
Conserve the food production capability of land			0	0	0	+	0	0	-
Maintain soil quantity and quality			+	+	+	0	+	0	+

Commentary on soil indicators

9.35 Theme 1 Climate Mitigation includes the creation of the East Lothian Climate Forest. This will require up to 2000 ha of land over the 10 year period. It will be difficult to achieve this without some loss of agricultural land, though not necessarily prime land. The TWSEL guards against loss of agricultural production by Policy 18 'Woodland Creation within Farmland' which states that woodland creation on farmland should aim to complement and improve agricultural production. The strategy also contains mapping to show where this is consideration. Despite this, it is likely there will be some loss of agricultural land, given that most of East Lothian consists of farmland.

9.36 The creation of new woodland is likely to have positive effects on maintaining soil quantity and quality, as trees tend to stabilise soil, reducing erosion. Woodland soils tend to be rich in biodiversity and to have good structure as they are generally undisturbed. Theme 2, Resilience, includes Action 4 to work with SEPA to help increase slope stability, which will reduce soil erosion, as will working with landowners (Action 5) to reduce water run-off onto roads. This section also encourages continuous cover forestry, which will reduce soil erosion (Policy 7).

9.37 Theme 3, Biodiversity, provides for the expansion of native woodland and increased connectivity. As with woodland creation overall, the effect of potential loss of agricultural land is mitigated by the inclusion of policy on protecting agricultural production and the inclusion of agricultural land

on the sensitivity mapping. An increase in native woodland is positive for soil conservation overall as the quality of soil in new areas of native woodland is likely to be good, and this landcover allows for new soil to form. Supporting natural regeneration over tree planting (Policy 9) is positive for conserving soil structure. Protection of biodiversity interests (Policies 8 and 15) will protect the soil in those areas also. Preparing a hedgerow management plan (Action 13) is expected to be positive for agricultural production, as this will allow for the best placing of hedgerows for multiple benefit including agricultural production. It also could benefit soil by reducing erosion. Prioritising peatland restoration over woodland creation (Policy 16) is also considered positive for soil quality.

9.38 The Economy theme includes a target of creating 300 hectares of farm woodlands and shelterbelts which align with agricultural production. This should support its food producing capacity, as well as soil quality. Policy 18 of this theme specifically states that woodland creation within farmland should aim to complement and improve agricultural production, though woodland planting to improve water quality is also acceptable. This policy should protect agricultural land from inappropriately sited woodland. Though purely from a soil conservation and quality point of view, woodland use may be preferable to arable, as it has less input, some of which can damage some aspects of soil. However, the food production value of soil is important.

9.39 Most of the Actions and Policies of Theme 5: Community have a neutral effect on soil. This theme includes action (Action 17) to increase accessible woodland. However, as with woodland creation in the Climate and Biodiversity themes, this will be mitigated by policy on protecting farmland. There is some tension between these two objectives (promoting accessible woodland and protecting agricultural production) however as many of our settlements, in particular Prestonpans and Haddington, which both lack accessible woodland in some places, are set amidst prime quality agricultural land. The Strategy supports promoting access to existing woodland before creation of new woodland on prime agricultural land ('Improving Woodland Access by Woodland Creation').

9.40 Promotion of access to woodland (Action 19, Policy 19), may harm soil structure. Although the Action requires this to be done without harm to the woodland, it will be difficult to avoid some level of compaction and potentially soil erosion on paths. Land Reform Act rights may make access and consequent damage difficult to control. Woodland expansion along road corridors (Action 23) may help trap pollutants near the source, and reduce pollution of soil from vehicle emissions. Hutting is supported by National Planning Framework 4, provided the impacts are manageable. Policy 20 seeks to restrict this in sensitive woodland areas, which will help reduce damage to soil from trampling and compaction. Although hutting is a low impact form of development, in sensitive areas damage can easily occur.

9.41 The Landscape Theme also involves woodland creation (Target 7 supporting structural planting in the Cockenzie/Blindwells area and Innerwick Coast, and Action 29, Coastal Mosaic creation). Masterplanning of these areas will help protect both agricultural and woodland creation interests. The effects of the structural planting for which masterplans are required are uncertain but would be considered at the time of preparation.

Mitigation of potential adverse impacts of the Strategy – Soil

9.42 **External mitigation:** The existing policy and regulatory framework will act as mitigation to some of the potential impacts on soil. National Planning Framework 4 and the East Lothian Local Development Plan contain policy which provides some protection for agricultural land from development. This would apply to forestry related development that requires planning

permission. National Planning Framework 4 also contains policy protecting peatland. The UK Forestry Standard[66] has provisions on soil as well as a supporting guideline, which will help mitigate some effects. Adherence to the standard is required for payment of government grants for woodland creation and forest management.

9.43 Embedded mitigation: includes Policy 18: Woodland Creation within Farmland, which aims for woodland to complement and improve agricultural production. The sensitivity mapping shows where such land is, and supporting text notes that loss of agricultural land which is not prime may nonetheless be important where it harms agricultural production overall. Policy 15 Peatland supports peatland restoration over new woodland planting in suitable areas, which will help support this carbon rich soil. The sensitivity mapping identifies peatland areas as a constraint to woodland planting.

9.44 Project level mitigation: address the potential for tree planting to disturb and mobilise contaminants in soil. Ensure that tree planting or woodland creation on prime and sub-prime agricultural land is designed to support agricultural production where possible.

Secondary, Synergistic and Cumulative effects

9.45 **Negative:** While policy in National Planning Framework 4 aims to avoid development significantly affecting prime agricultural land, much of East Lothian consists of this type of land. One of the targets of the TWSEL is to increase woodland cover while supporting agricultural production on agricultural land classes 1 – 4.2. It also encourages tree borne food production. However, it will be difficult to significantly expand woodland and forestry without some loss of land with capability for food production. Losses (including of prime quality agricultural land) will also occur through development proposed by the East Lothian Local Development Plan 2018, Midlothian Local Development Plan and others, leading to an overall loss.

9.46 **Uncertain:** Food production globally is affected positively by improvement to agricultural techniques, and also impacted both positively and negatively by climatic changes. Population changes also affect how much food is potentially available for each person. There could be synergistic and cumulative effects on food production that are hard to predict. The extra contribution of the TWSEL is likely to be negligible, however the receptor is sensitive.

9.47 **Positive:** Scotland's Peatland Action programme aims to restore peatland. The TWSEL prioritises peatland restoration over woodland creation, and aims to protect peatland. Together these strategies will help protect and restore peatland.

Conclusion – Soil

9.48 The effects of the TWSEL on soil are mixed. There is likely to be some loss of agricultural land, including prime agricultural land, to woodland. The aim of the strategy is that this does not affect the food production capacity of the soil. Creation of small farm woodlands and hedgerows should reduce soil erosion. The Strategy seeks to protect and restore peat soils.

66 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/687147/The_UK_Forestry_Standard.pdf

Residual adverse effects:

- Direct loss of some agricultural land including prime and sub-prime agricultural land

10 WATER

Introduction

10.1 Water is fundamental to supporting human life and environmental quality. We need good water to drink and wash in, for food production, for industrial processes, while its importance in both land and marine ecosystems cannot be underestimated. The quality of the water environment in Scotland is generally good, though there are problems such as diffuse pollution, discharge of wastewater, abstraction of water and historic physical alterations to watercourses. Other issues relevant to water include quantity of water (flooding and drought); drinking water quality; and the sustainability of natural ecosystems.

10.2 Trees can benefit the water environment through protecting water habitat, supporting drinking water quality, combatting flood risk, and preventing eroded soil entering watercourses. However, badly managed or planned operations can mean these benefits are not fully realised, or worse, contribute to flood risk or water quality issues. The TWSEL therefore has the potential to affect the water environment.

10.3 Regulations enacted under the Water Framework Directive set out how natural water is to be managed with the aim of improving its quality. SEPA coordinates action. Scottish Water manages drainage and drinking water. East Lothian Council and SEPA, as well as property owners, have responsibilities regarding flooding.

10.4 Through Scoping the following issues were considered. The Table below shows, with reasons, what existing issues are considered relevant to this strategy. The provision of drinking water and drainage is a water issue also relevant for material assets due to the infrastructure involved in providing the services.

Scoping Table 5: WATER	
Issue	**In/Out**
Reduce flood risk	
Flood risk	**In**
Protect or enhance water quality	

Impacts on water quality – watercourses and ground water – threat and opportunity	**In**
Impacts on water quality – drinking water	**Out**
Sewer issues and coastal water quality	**??**
Maintain availability of water	
Water availability – opportunity and threat	**In**

Baseline and Issues – Water

Flood Risk

10.5 Flooding happens when too much water arrives at the same time, and is a risk to life, health and property. Impacts of flooding may be worse for disadvantaged people and communities. Human activity can exacerbate flood risk; climate change is also like to increase this risk. Predictions are for wetter winters and more intense rainfall that will increase the likelihood of flooding. Some parts of East Lothian have a history of flooding and/or have been identified as at risk of coastal, surface water or fluvial flooding by SEPA, or are in Potentially Vulnerable Areas.

10.6 Trees and woodland can slow water run-off, helping to flatten peak flows and reduce flooding. This can also help restore habitats and provide for recreation. However, removal of forestry can lead to faster run-off, as can preparation of land for planting. There are some limited areas where tree planting may increase flood risk.

10.7 SEPA identifies areas of 1:200 flood risk which are used for development management purposes to help appraise risk of flooding. The map below shows areas that have been identified as at risk

(smaller watercourses are not including in the mapping). Further detailed information is available from SEPA at https://www.sepa.org.uk/environment/water/flooding/flood-maps/ .

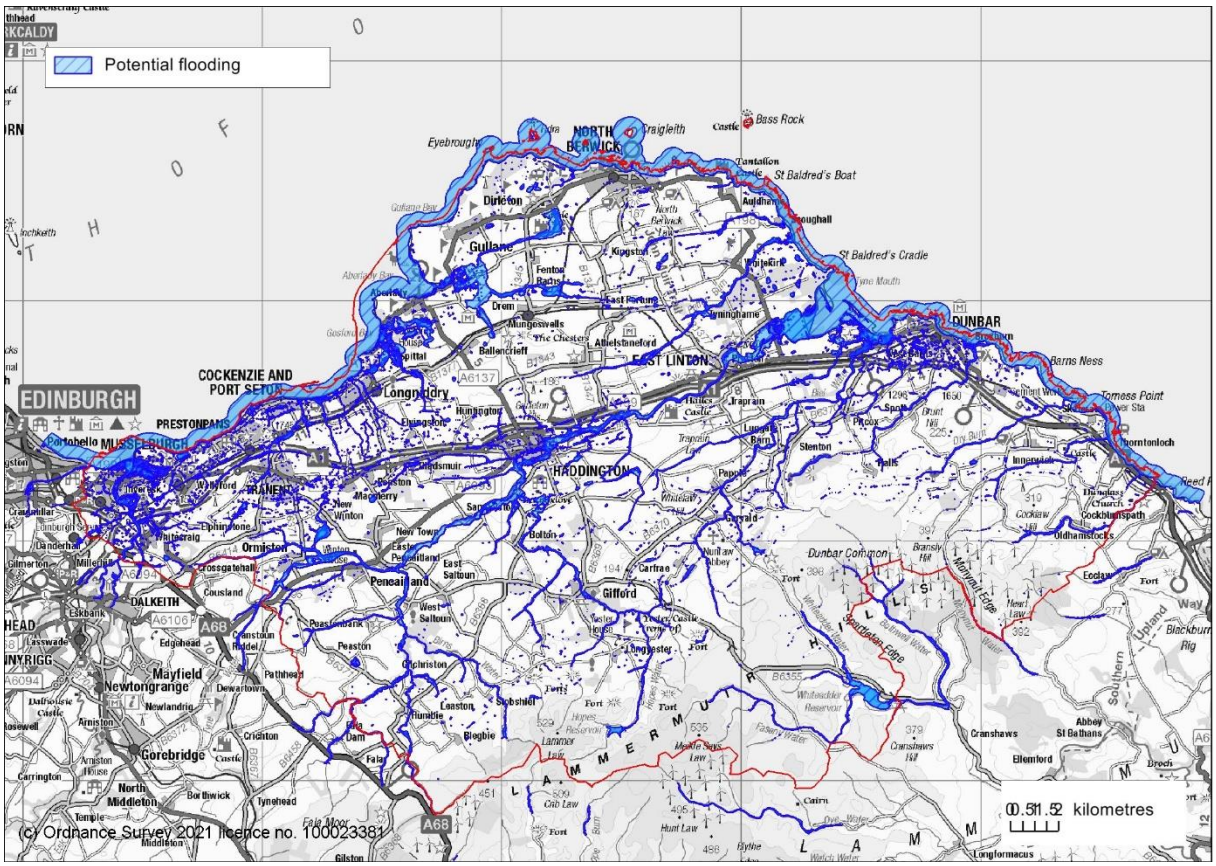


Figure 25: Areas of potential flood risk

10.8 SEPA's National Flood Risk Assessment identified Potentially Vulnerable Areas – areas of potentially significant flood risk for people and property now or in the future. This assessment informed SEPA's Flood Risk Management Strategy. This in turn informed the Forth Estuary Flood Risk Management Plan, which presents actions for the avoidance and reduction of the risk of flooding to communities within the Potentially Vulnerable Areas. Further information is available

at Forth Estuary Local Plan District | Flood Risk Management Strategies (sepa.org.uk) and is shown in APPENDIX THREE – Flooding in Potentially vulnerable areas.

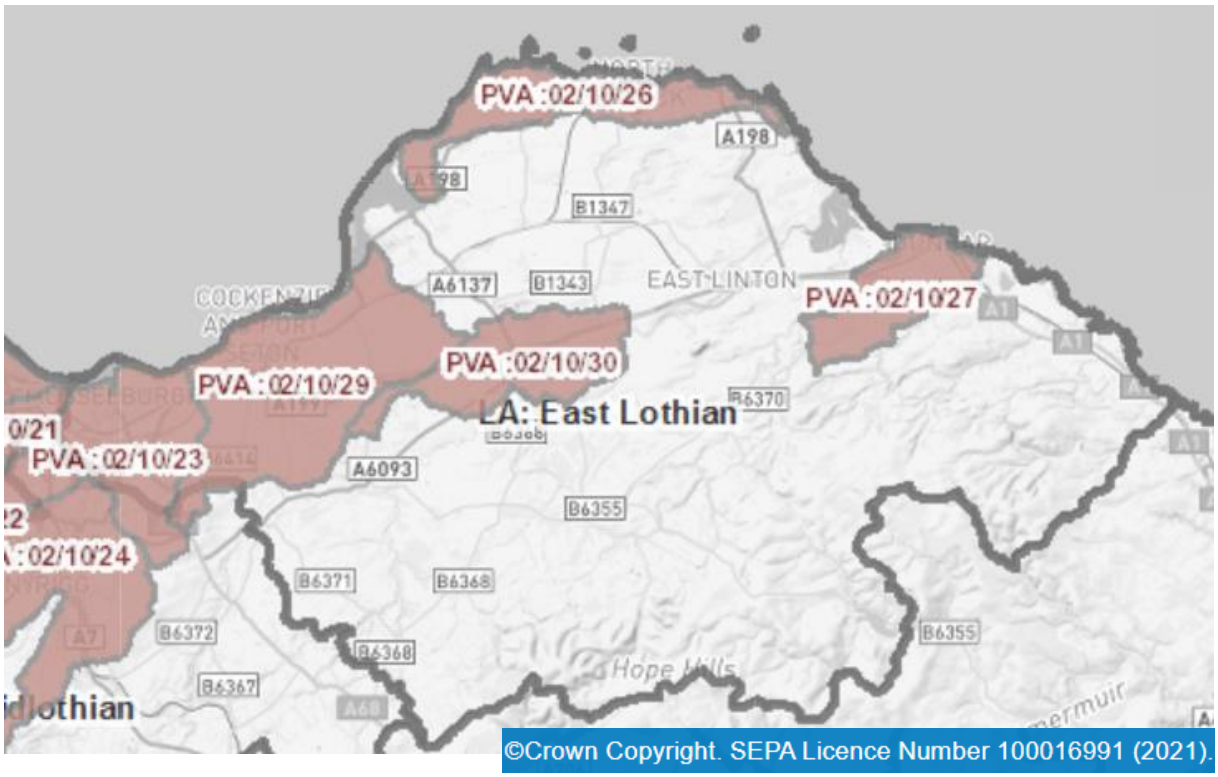


Figure 26 SEPA Potentially vulnerable areas

10.9 Both flooding and water quality are potentially affected by run-off rates. The risk of run-off arises from natural conditions such as type and texture of soil or steepness of slope[67]. Run-off affects water quality through the water picking up potential pollutants. These include organic materials,

[67] See DEFRA "Runoff and soil erosion risk assessment" at Countryside Stewardship Runoff and soil erosion risk assessment (publishing.service.gov.uk)

nutrients, chemicals or sediment. The maps below shows the risk of the soil becoming saturated, causing water to flow off the land and carry potential pollutants into watercourses.

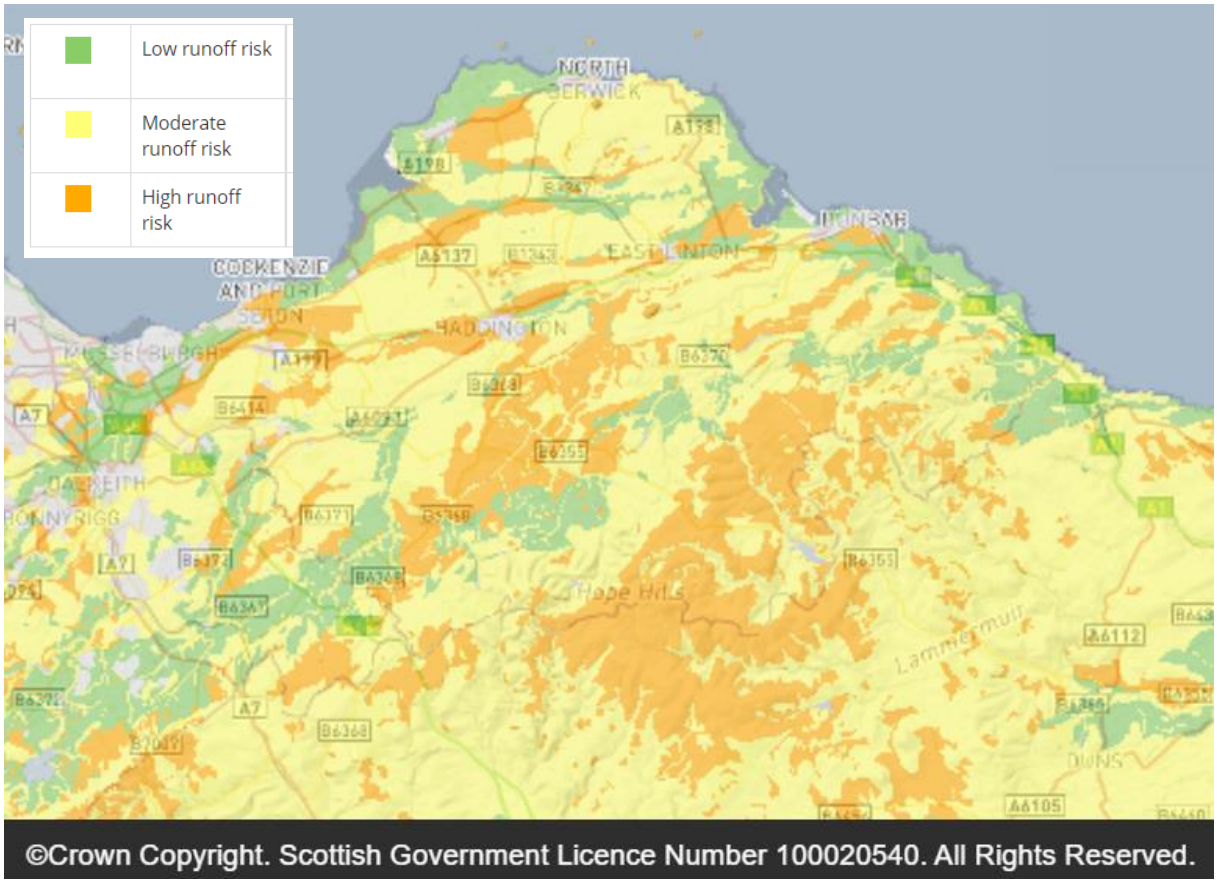


Figure 27 Run off risk[68]

10.10 Run-off also affects how a river will respond to rainfall, with catchments where the soil run-off is high being more prone to peaks (flashy) while river catchments where soil run off is low will tend to maintain their flow even in dry spells.

10.11 SEPA and East Lothian Council are working to address flooding, with actions set out in the Forth Estuary Local Plan District | Flood Risk Management Strategies (sepa.org.uk). Works in planning include a large scheme at Musselburgh. Risk of flooding from all sources is likely to increase due to climate change.

10.12 Woodland creation in a water catchment can help reduce flood risk downstream. Haddington has historically occasionally suffered from flooding from the Tyne: planting within the upper reaches of this river could help reduce the risk. Using planting to reduce flooding will also support

[68] Lilly, A., Baggaley, N. & Donnelly, D. (2012). Map of soil organic carbon in topsoils of Scotland. Map prepared for EU project GS-SOIL - Assessment and strategic development of INSPIRE compliant Geodata-Services for European Soil Data. ECP-2008-GEO-31800 at https://soils.environment.gov.scot/maps/thematic-maps/map-of-topsoil-organic-carbon-concentration/

adaptation to climate change including flood risk from increased frequency of intense rainfall events.

10.13 The effect of trees on flood risk are not well studied to date however SEPA note that modelling data suggests that in particular floodplain woodlands may have an effect on more frequent flood events and local catchments of less than 100 km2. Opportunity mapping to identify priority locations to restore environmental system function, avoid unintended consequences and promote integrated catchment management was carried out by Forest Research for England and Wales, with a pilot project in Scotland at the Tay, however this information is not available for East Lothian.

10.14 It is possible for poorly located trees to worsen flood risk, for example if they slow the movement of water near a pinch point, or if they fall into rivers and become debris that blocks the river. Care is needed at project level to avoid this.

10.15 The TWSEL includes a section on flood risk in Resilience and Climate Adaptation. Action 4 notes that the Council will work with SEPA and others to identify where woodland retention, creation and management could most support reduction in flood risk. Action 5 notes that Council will work with farmers and landowner to encourage hedgerow and tree planting to reduce water run-off onto roads. Policy 6 Water Management and Slope Stability encourages use of woodland and trees to reduce flood risk. The effect of the TWSEL is likely to be positive.

Water Quality

10.16 Tree planting can also be used to improve water quality and riverbank morphology by preventing erosion, filtering pollution and regulating watercourse temperature. However, forestry operations can adversely affect water quality through sediment and other pollutants entering watercourses.

Natural water quality

10.17 The ecological and morphological status of the water environment should be retained or improved. Water quality can be affected by both diffuse and point source pollution. Diffuse pollution can come from atmospheric deposition of sulphur dioxide and oxides of nitrogen, urban development and numerous other sources. Point source pollution can come from agriculture, inadequate sewage treatment, industry, contaminated land and others. Historical land drainage works and current urban development can cause physical impacts on river morphology and floodplain wetlands. Many of the smaller watercourses in East Lothian are highly engineered, which leads to a loss of natural morphology and biodiversity of the watercourse and its margins.

10.18 East Lothian has four rural diffuse pollution priority catchment areas within cycle 2 (continued into cycle 3) (SEPA, 2021) of the RBMP. Of the rivers within the River Tyne area the River Tyne (from the Birns Water to the estuary) is identified as having moderate water quality caused by diffuse pollution. Of the rivers within the East Lothian Coastal area, the West Peffer/Mill Burn is identified as having poor water quality and East Peffer, as having moderate water quality caused by diffuse pollution. Within the River Esk (Lothian) area the South Esk has moderate water quality. No rivers within the Whiteadder Water area are identified as having poor or moderate water quality.

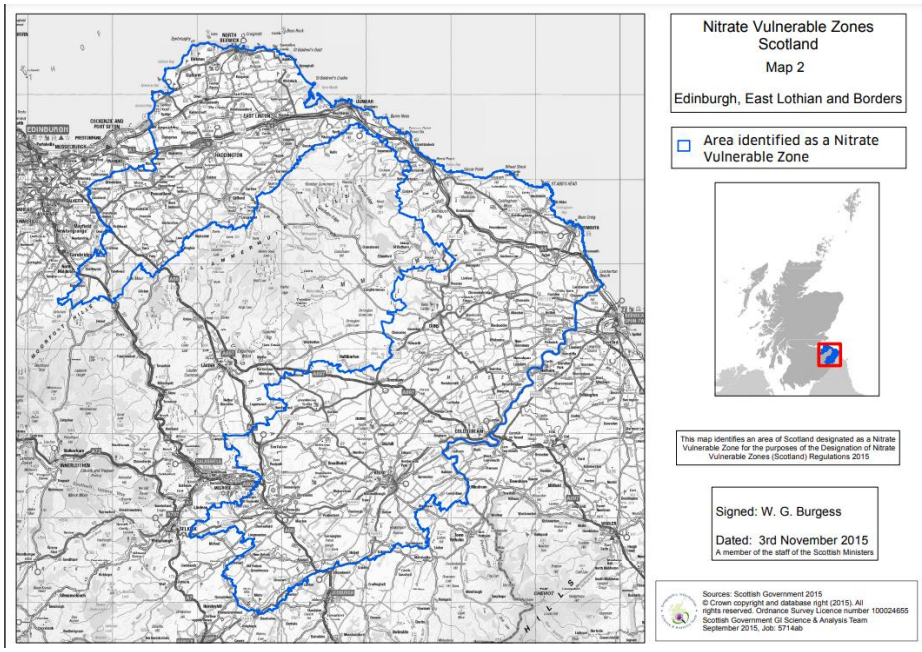
10.19 As described in the River Basin Management Plan for the Scotland (RBMP) (SEPA, 2015) a range of different sources can contribute to rural diffuse pollution. The main cause is silt,

bacteria and nutrients from livestock excreta, and fertilisers and pesticides used in agriculture that are then caught up in rainwater run-off from land.

10.20 There are numerous watercourses and water bodies within East Lothian and/or into which land in East Lothian drains. SEPA monitors watercourses above a certain size for their water quality. Information on the overall ecological status of all water bodies in Scotland, including groundwater, can be found at https://www.environment.gov.scot/our-environment/water/ . Some of the watercourses in the area have been shown by SEPAs river monitoring classification scheme to have 'Poor' or even 'Bad' status; few have 'Good' status, and none 'Excellent'. Figure 2Figure 28 shows the status of river water bodies monitored under the Water Framework Directive regulations.

Figure 28; River Classifications SEPA from https://map.environment.gov.scot/sewebmap/

10.21 East Lothian is in the Edinburgh, East Lothian and Borders Nitrate Vulnerable Zone. This is due to agricultural diffuse pollution.



10.22 Trees and woodland and forestry activities can potentially affect water quality in a number of ways. Forestry activities such as preparation for planting and harvesting can potentially adversely affect water quality through sediment run off when the soil is disturbed. Use of chemicals and pesticides can affect water quality. Over-shading can adversely affect the ecological status of watercourses by over-shading, as lack of light reduces biological activity.

10.23 Woodland can also have positive effects. Riparian woodland can reduce run-off of sediment and nitrates from agricultural production into watercourses. Nitrogen run off is lower from woodland than arable or pastureland, as it is not applied to the crop in quantity, while new woodland can act as a buffer. Woodland planting can be used around watercourses to reduce the amount of nitrate leaching from surrounding fields (Woodland Trust 2012). Woodland can reduce the effect of airborne nitrogen deposition by planting in the lee of emitting sources, which 'catches' the pollutant. It can also improve the ecological status of water bodies through provision of shade balanced with sunlight penetration, helping regulate water temperatures.

10.24 The Scottish Pollutant Release Inventory is a database of annual mass releases of specified pollutants, including to water. Since the closure of Cockenzie Power Station, the only facility with reported discharges to water was Dunbar Sewage Treatment Works. As this discharges into the sea, it is not expected there would be any interaction with actions or policy of the TWSEL.

10.25 TWSEL includes a section Resilience and Climate Adaptation – Use Trees to Improve the Water Environment that focusses on water quality improvement. Policy 6 Water Management and Slope Stability encourages use of woodland and trees to reduce water quality. Target 2B seeks to encourage riparian planting up to a level where water quality benefits are achieved. This riparian woodland will also help intercept soil run-off. The effect of the TWSEL is likely to be positive for water quality.

Drinking Water

10.26 Public water in East Lothian is supplied by the Whiteadder, Rosebery, Glencorse or Castle Moffat reservoirs. In addition, there are some private water supplies, mainly in the Lammermuirs. Drinking Water Protection Areas have been identified to protect water supplied by Scottish Water.

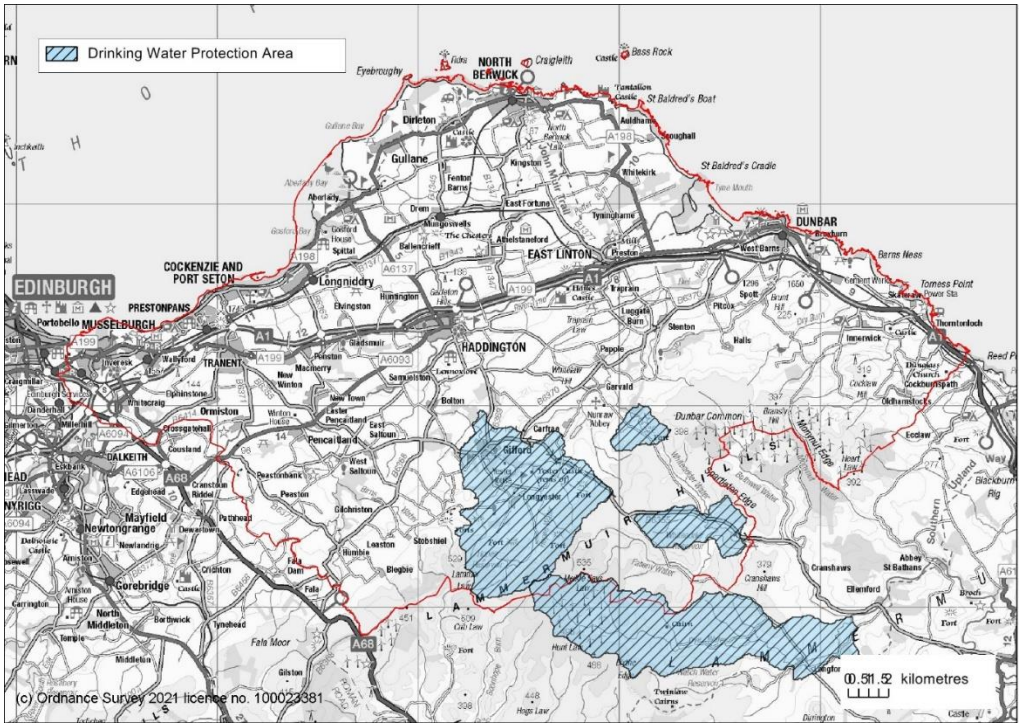


Figure 29 Drinking Water Protection Areas

10.27 Woodland creation around reservoirs has advantages and disadvantages. On the plus side, woodland can help control soil erosion, which improves water quality and extends the useful life of the reservoir. Filtration through forest soils will also support good water quality. On the down side, as trees also absorb water, less may be available for use. Commercial and coniferous forestry can also lead to problems as fertiliser and ground disturbance can adversely affect water quality. There is also a possibility of acidification and eutrophication[69].

10.28 Scottish Water have information, Guidance for Forestry Activities Near Scottish Water Assets[70] that sets out how the water supply should be protected during forestry activities, and extra precautions that should be taken. Forestry Scotland considers this in their approvals process[71]. However, smaller scale proposals would not be covered by this.

10.29 Scottish Water in their Net Zero Routemap[72] state that they intend to improve peatlands in their water catchments, and increase tree planting on the land they own. This is in line with the aims of the TWSEL.

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[69] See Natural Water Retention Measures website at http://nwrm.eu/measure/afforestation-reservoir-catchments (European Commission Service Contract)

[70] Scottish Water, 2017, "Guidance on Forestry Activities near Scottish Water Assets", available from https://www.scottishwater.co.uk/Help-and-Resources/Document-Hub/Key-Publications/Sustainable-Land-Management

[71] Scottish Water and Scottish Forestry "Guidance on Forestry Activities near Scottish Water Assets" 2017 available at https://www.confor.org.uk/media/246711/guidance-on-forestry-activities-near-sw-assets-final.pdf

[72] Scottish Water, undated, 'Net Zero Routemap' available at https://www.scottishwater.co.uk/Help-and-Resources/Document-Hub/Key-Publications/Net-Zero-Emissions

Sewer issues/Bathing Water

10.30 The traditional sewage system collects both wastewater and surface water in a combined sewer. If too much surface water enters the system at one time, the sewer is overwhelmed, leading to unplanned discharge of water including foul water. This ends up in the sea, where it can affect coastal and bathing water quality. Woodland creation can help address this by placing trees where they can slow surface water runoff.

10.31 Over the next 25 years, Scottish Water faces three main challenges for its assets: the impact of climate change, ageing assets and reducing the emissions that contribute to the global climate crisis. Sewers and other water infrastructure in East Lothian were generally built for a smaller population than they will be expected to serve. Both flooding and drought can affect the operation of drainage infrastructure, and climate change predictions are for both to increase. Scottish Water's Vision is that wastewater will be collected, treated and recycled in ways that add value and protect the environment[73].

10.32 Infrastructure such as sewers can have a very long life with proper maintenance, though other assets such as treatment works may require replacement in the foreseeable future. Scottish Water's current level of asset replacement is well below the long-term required replacement rate. Scottish Water is making plans to transition to a sustainable maintenance and replacement programme[74].

10.33 Scottish Water's drainage assets generally have some capacity but this may be stretched with increased rainfall. The sewer is required for removal of sewage; allowing surface water to enter this asset does not make best use of it, which is the situation at present. New development in the area is required to provide SUDS to prevent additional surface water entering the sewerage system. Without action to promote natural drainage, considerable investment in a piped solution would be required. This is uneconomic and unsustainable. It is also a higher risk solution as if something goes wrong it is harder to identify where the issue lies, leading to the potential for pollution.

10.34 There are several bathing waters around the coast of East Lothian, shown in Figure 30 . Up to date information about their status is available from SEPA at https://www2.sepa.org.uk/bathingwaters/

[73] Scottish Waters 25-year strategy "Our Future Together" https://readymag.com/ScottishWater/SustainableFutureTogether/5/

[74] "A Sustainable Future Together" – Scottish Water

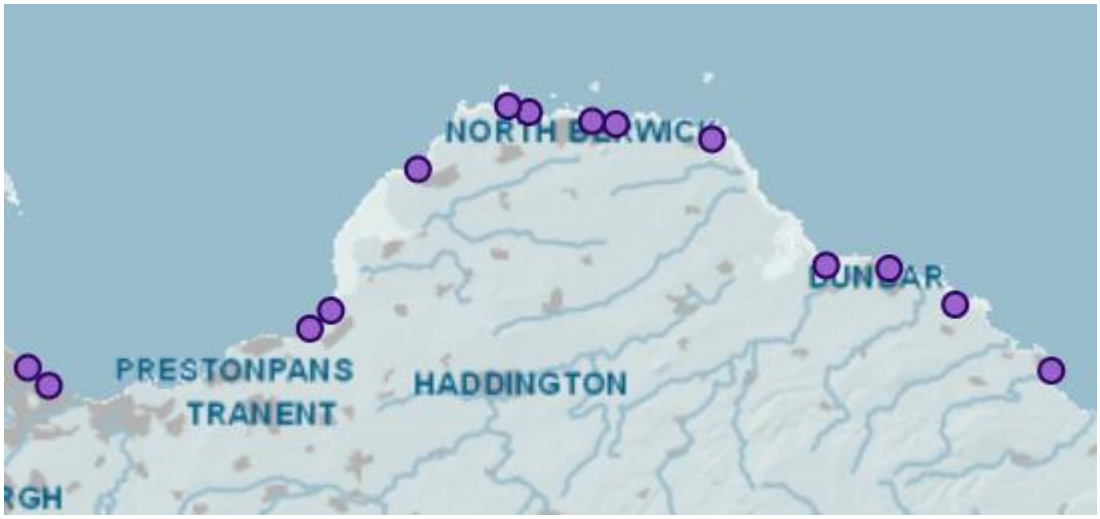

Figure 30 Bathing waters in and around East Lothian.

10.35 SEPA produces a profile for each Bathing Water, which includes risk to water quality. In most of East Lothian's bathing waters, there is a risk to bathers' health for 1-2 day following heavy rain. This comes from combined sewer overflows (Broad Sands, Dunbar, Dunbar East, Gullane, Longniddry, North Berwick both Milsey Bay and West – which is also at risk from treated sewage effluent - and Seton Sands) and agricultural runoff (Yellow Craig and Thorntonloch) and diffuse inputs (Whitesands). Only Seacliff was described as having no risks to water quality. Fisherrow is has recently been reinstated as a designated Bathing Water, having previously been found 'poor' for five consecutive seasons. Water quality there was affected by diffuse pollution from agricultural and urban sources, sewage and other discharges.

10.36 With no action, discharge from the sewer system is likely to become more frequent due to increased frequency of heavy rainfall (predicted under climate change). This will adversely affect water quality, including bathing water quality. The Council has been working with other agencies including Scottish Water and SEPA to examine options for natural flood management in the area around Blindwells/ Tranent/ Prestonpans/Cockenzie and Port Seton. This resulted in the Climate Evolution SPG, which outlines solutions for this complex area, aiming to reduce the amount of surface water entering Scottish Water's sewer here. A key proposal is the delivery of a catchment based sub-regional water management and sustainable drainage network, including the re-opening and re-naturalising of culverted watercourses. This could enable the removal of surface water from the combined sewer, which would help to address localised flooding and unplanned discharge.

10.37 The TWSEL encourages tree planting in urban areas, including street trees, and contains targets for canopy cover (Target 4A). Achieving the TWSELs urban tree canopy targets will reduce pressure on the drainage system. Target 7 supports structural planting around Cockenzie/Blindwells, which will also help reduce surface water entering the sewer there. Woodland created for the Climate Forest (Target 1, Action 2) TWSEL has the potential for reducing surface water entering the combined sewers slowing down surface water movement and absorbing pollutants. This will support natural surface water management in areas where surface water still enters the sewerage system to relieve pressure on sewers and help with the existing issue of untreated water leaving the sewer in an unplanned way.

Water availability

10.38 Trees have high water consumption and can reduce yields to surface and groundwater. This can have an effect on water availability, including for crops and drinking water. Trees can also reduce the amount of rain that reaches the soil as rain lands on and evaporates from their leaves. While this is positive for flooding, it may reduce yield.

10.39 Abstraction of water from watercourses, for example for agriculture, can lead to reduced recreational, amenity and biodiversity value of the water environment. Farm woodland and shelterbelts can help retain water in soil and reduce evaporation from farmland, potentially reducing the need for abstraction.

10.40 Re-naturalising watercourses and riparian planting/woodland creation should slow evaporation of water in the area, which would retain the flow of streams.

10.41 Climate change could also bring increasing competition between different uses for water which could affect its quantity and predicted extended times of drought could exacerbate this. In drought conditions extra water may be needed and therefore used to help establish new trees.

10.42 The TWSEL will result in an increase of woodland coverage of between 1 – 3 %. The direction of change on water availability arising from these new trees is uncertain. However, given the scale it is unlikely to significantly alter the current position.

Likely Significant Effects - Water

10.43 The following table shows the SEA objectives for Water and summarises the impact of the TWSEL.

SEA Objective, Water: Protect and improve the water environment and reduce flood risk			Theme 1 – Climate Mitigation	Theme 2 – Resilience and adaptation	Theme 3 – Biodiversity	Theme 4 – Community	Theme 5 - Economy	Theme 6 – Cultural Heritage	Theme 7 – Landscape Character
SEA Sub-objective/ questions for assessment. Does the plan….?	KEY								
	Positive	+							
	Neutral	0							
	Unknown	?							
	Mixed/Variable	//							
	Negative	-							
Reduce flood risk			+	+	0	+	+	0	+
Protect or enhance water quality			+	+	+	+	+	0	+
Maintain quantity of water			+	+	0	//	-	0	0

Commentary

10.44 There are few adverse effects expected from any of the Themes on flood risk or water quality. Creating the climate forest (Target 1, Action 20) overall is expected to help reduce flood risk and improve water quality. Riparian woodland creation (Target 2B) will help improve water quality through shading, and may also slow floodwaters, reducing flooding downstream. Policy 6 Water Management and Slope Stability seeks to use woodland and trees to improve water quality and flood risk. The TWSEL supports (Policy 9 Stock and Seed Sourcing) natural regeneration over planting, which will reduce potential silt run off into watercourses when planting.

10.45 Promotion of woodland based tourism and recreation could have a slight adverse effect on water quantity as tourist needs will require to be serviced. TWSEL encourages local tree fruit and nut growing, which could give rise to a water requirement.

Mitigation of potential adverse impacts of the Strategy - Water

10.46 **External mitigation:** The UK Forestry Standard[75] has provisions on water as well as a supporting guideline, which will help mitigate some effects. Adherence to the standard is required for payment of government grants for woodland creation and forest management. The Scottish Forestry approval system includes consideration of Scottish Water requirements on working within drinking water source catchments. This includes avoidance of refuelling, storage or handling of fuels, oils, or hazardous materials within source catchments, or if that is not possible, keeping a 50m buffer, and management of sediment and debris[76].

10.47 The policies of the development plan will mitigate against proposals that might affect water quality or flood risk by controlling the details of design for proposals where planning permission is required. National Planning Framework 4 contains updated policy on flood risk, aiming to avoid proposals that would increase the risk of surface water flooding to itself or others. Reduction in floodplain capacity is to be avoided. East Lothian Local Development Plan 2018 Policy NH9: Water Environment provides that where relevant, new development should protect and, where appropriate, enhance the water environment, in line with the Water Framework Directive 2000 (WFD) and the Water Environment and Water Services (Scotland) Act 2003 (WEWS).

10.48 **Project level mitigation**: Consideration should be given to the potential of the project to increase or decrease flood risk. For riparian planting, the effect on water temperature should be considered.

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75 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/687147/The_UK_Forestry_Standard.pdf

76 See Scottish Water/Forestry Commission note 2017 "Guidance on Forestry Activities near Scottish Water Assets" September 2017, here; file:///Z:/151018GuidanceOnForestryActivitiesNearSWAssets.pdf

Conclusion – Water

10.49 The effects of the TWSEL on water are expected to be positive. Flood risk will be reduced through planting in catchments, and in areas such as around Blindwells where there are issues of excess surface water entering the combined sewers. Riparian planting will help with both flooding and water quality.

Secondary, Synergistic and Cumulative effects

10.50 **Positive** Changes to the water environment will improve biodiversity value. Lessening the risk of flooding can help avoid the physical damage to species and habitats, as well as flushing of pollutants and sediments that it can cause. Positive cumulative effects are expected with the Forth Estuary Flood Risk Management Plan, and the Fisheries Management Plan for the Forth Catchment and River Basin Management Planning

10.51 **Mixed:** Increasing woodland habitat is likely eventually to help re-establish beaver in East Lothian. Generally, beaver bring positive effects for water quality and flooding. However they can cause localised small-scale flooding issues as well as damage to property and sometimes woodland.

Residual adverse impacts

10.52 None expected

11 AIR

Introduction

11.1 Good air quality is essential to maintain human health, the climate, habitats and ecosystems. A range of substance from a variety of sources affect air quality, with sulphur dioxide, nitrogen dioxide, ground level ozone and particulates being the most significant for human health and the environment. Air quality across most of Scotland is generally good, though levels of some pollutants still exceed objectives, mainly in urban areas[77]. In those places, Air Quality Management Areas have been declared, including in Musselburgh in East Lothian. The main sources of pollutants are industrial and transport emissions, along with some agricultural processes such as intensive poultry farming.

11.2 Tree planting has the potential to have a significant positive impact on air quality, through removal of some pollutants. Trees can also separate sources of pollution from sensitive receptors, avoiding harm.

11.3 Existing air pollution can affect tree health. This may be a consideration for the strategy, such as choice of species, but it is not a result of it.

11.4 Through Scoping the following issues were considered. The Scoping Table below shows, with reasons, what existing issues are considered relevant. The greenhouse gas balance of the TWSEL effects on air temperature are considered under 'Climate' below. Wildfires cause air pollution, and consequently can have adverse impact on human health. Potential for wildfire is considered here but also under 'Climate'.

[77] See Scottish Government, Air Quality in 2018, here http://www.scottishairquality.scot/assets/documents//Air_quality_scot_2018_Final_v2.pdf

Scoping Table 6: AIR	
Issue	**In/Out**
Protect Air Quality	
Emissions to air from forestry operations	**Out**
Emissions to air related to woodland recreation	**In**
VOCs - see under 'Improve air quality in urban areas' below	**In**
Fires	**In**
Improve air quality	
Filtering pollutants from the air	**In**
Improve air quality in urban areas	**In**
Buffer emissions to air from point source emitters and roads – see under 'Improve air quality in urban areas' above.	**In**

Baseline Air Quality

11.5 Although air quality is better now than at any time since the Industrial Revolution, it is estimated that across the UK poor air quality reduces life expectancy of every person by 7-8 months[78]. Evidence of harm from poor air quality, especially from traffic emissions, is building. Increased levels of sulphur dioxide and nitrogen adversely affects biodiversity – 'acid rain' poisoning lakes in Scandinavia far from the source of pollution was an extreme example. Most semi-natural habitats and over two thirds of native wildflowers require low levels of nitrogen[79]. Historic environment assets are affected by acidic rainfall, which erodes them faster. Climate change is also likely to affect air quality, as can some of the actions taken to mitigate it, notably use of wood burning stoves. Ground level ozone can affect both human health and plant growth.

Scottish Trends

11.6 Air quality is measured across the UK. Information on air quality can be found on the Scottish Government website at www.scottishairquality.co.uk/ and the National Atmospheric Emissions Inventory at https://naei.beis.gov.uk/. Information about pollutants at Local Authority level is available from at https://naei.beis.gov.uk/laco2app/ .

11.7 The European Union developed a set of objectives and standards for several ambient air pollutants that can harm human health. The standards are a compromise between the evidence of harm and what was considered practical to achieve in terms of feasibility and cost. The substances monitored are volatile organic compounds, nitrogen oxides, carbon monoxide, Lead and polycyclic aromatic hydrocarbons and sulphur dioxide. Scotland has set higher standards for

[78] See Scottish Government Air Quality In Scotland Website, accessed 31/03/2020 http://www.scottishairquality.scot/air-quality/

[79] SNH State of Nature Report 2019 (now Naturescot)

both PM10 and PM2.5 (particulates) than required by the EU. The Scottish Government also monitors Ozone (O3). This is a secondary pollutant that forms through reaction of oxides of nitrogen and volatile organic compounds in sunlight. Ozone is not included in local air quality management regulations (see below) as it is relatively mobile. This means it is difficult for local authorities to control.

11.8 Scottish trends for emissions of all pollutants are shown below[80], with details of sources for nitrous oxides, ozone and PM10s and PM2.5s. This shows that levels of all pollutants have fallen since 2005. Sulphur dioxide shows the greatest fall, the result of the closure of coal fired power stations at Cockenzie and Longannet. The Covid-19 pandemic had a noticeable effect in 2020. Nitrous oxide emissions have also declined, due to both power station closures and reductions in road traffic emissions. Wood burning has increased substantially in the last 10-15 years in Scotland. This has led to an increase in emissions of PM10 and carbon monoxide from the residential and other combustion sector. Wood burning also releases dioxins and has become one of the main sources of emissions of this pollutant.

11.9 Downward trends for air pollutants are expected to continue, due to policy and legislation to reduce vehicle emissions. The use of wood fuel is an issue for the TWSEL due to its air quality effects.

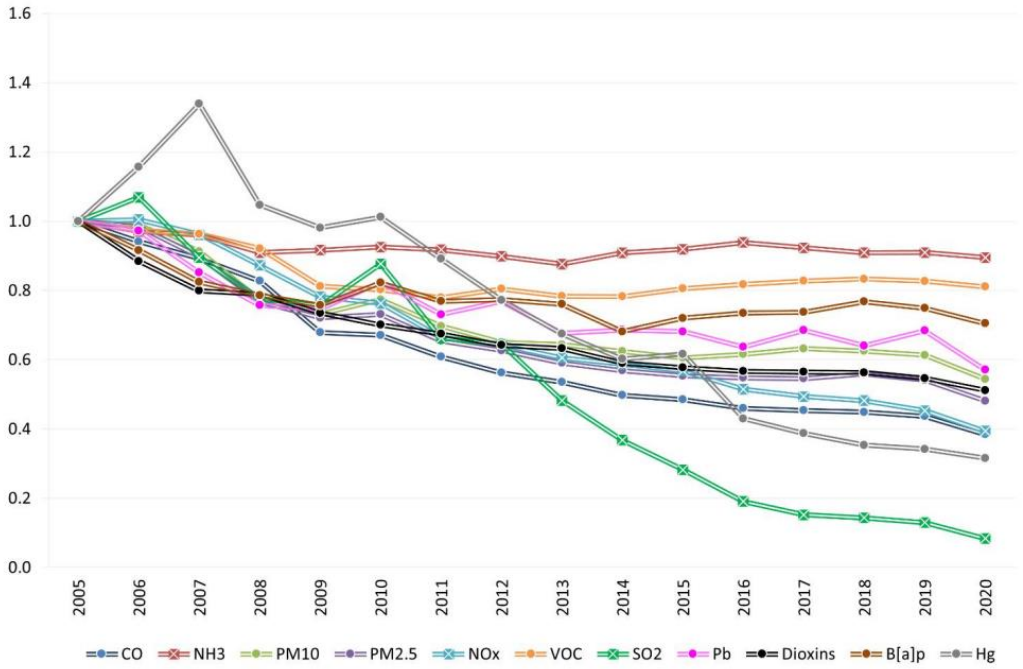
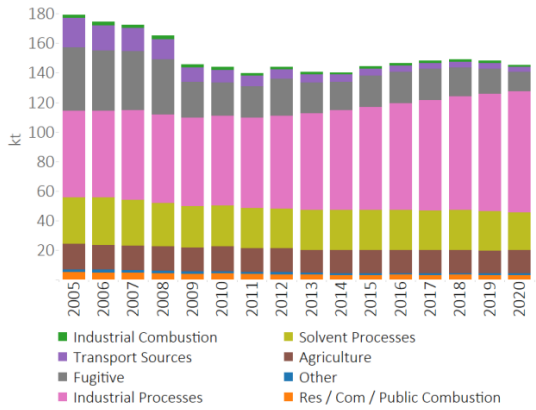


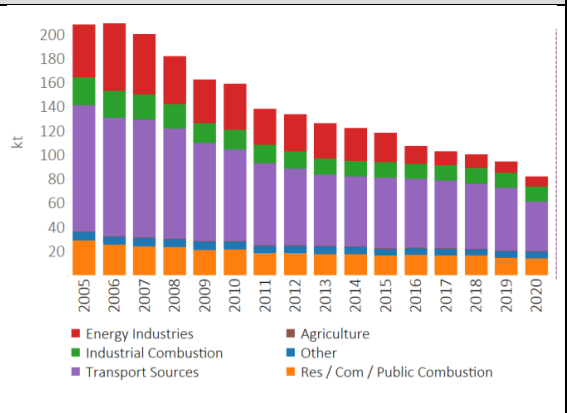
Figure 31 Trend of main air pollutants in Scotland, 2005 – 2020

[80] Figures in this section from DEFRA "Air Pollutant Inventories for England, Scotland, Wales and Northern Ireland, 2005-2020" https://uk-air.defra.gov.uk/assets/documents/reports/cat09/2210251052_DA_Air_Pollutant_Inventories_2005-2020_FINAL_v1.2.pdf

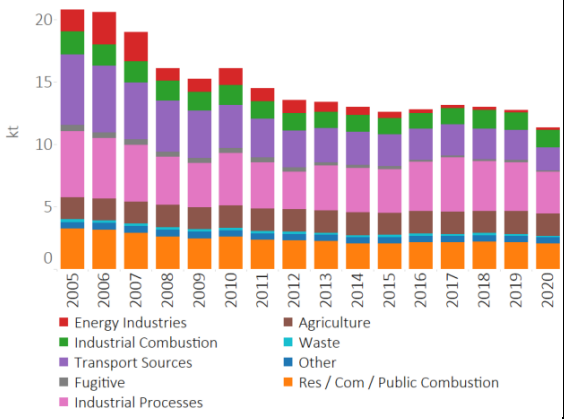
Air pollutants in Scotland, from the Air Pollutant Inventories for England, Scotland, Wales and Northern Ireland, 2005-2020



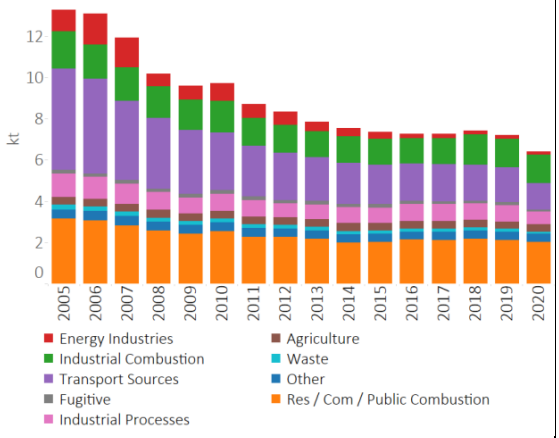
Non-methane VOCs



Nitrous Oxide emissions



PM10s



PM2.5s

Local air quality

11.10 Local authorities must keep air quality in their area under review to determine whether air quality objectives will be achieved. If it is likely they will not be, the authority must declare a Local Air Quality Management Area, and develop an Air Quality Strategy to bring pollutants within the levels set. By far the majority of Air Quality Management Areas in Scotland have been declared because of emissions from road traffic, in the form of nitrogen dioxide and PM10s.

Figure 32: Musselburgh Air Quality Management Area

11.11 East Lothian Council declared an Air Quality Management Area in Musselburgh High Street following a progress report in 2013 showing the NO_2 annual mean Air Quality Objective had been exceeded. Emissions from buses were the largest contributor. A package of measures was identified that reduced overall traffic, queuing and bus numbers. Further information on the AQMA including a copy of the Order, the Air Quality Action Plan and Progress reports are on East Lothian Council's website here:

https://www.eastlothian.gov.uk/info/210568/environmental_health/12172/pollution/4 .

11.12 In Musselburgh Air Quality Management Area and Tranent High Street, specific measures were included in the Local Transport Strategy and East Lothian Local Development Plan 2018 to address the existing situation and a predicted increase of traffic arising from the plan. Air quality there is improving, and objectives have continued to be met in Musselburgh AQMA and elsewhere. The most recent report (2022) concludes that it is unlikely that the nitrogen dioxide objective will be exceeded in future years, and recommends that the Council consider revoking the Air Quality Management Order.

11.13 In East Lothian, there has been a general downward trend of nitrogen dioxide concentrations between 2014 and 2018. There have been no exceedances of the Annual Mean Nitrogen Dioxide Objective recorded at any East Lothian location, including within Musselburgh AQMA, since 2016. There were no exceedances of the Air Quality Objective for PM10s. East Lothian Council does not monitor PM2.5, sulphur dioxide (SO2), Carbon Monoxide, Lead and 1,3-Butadiene as exceedances are not expected.

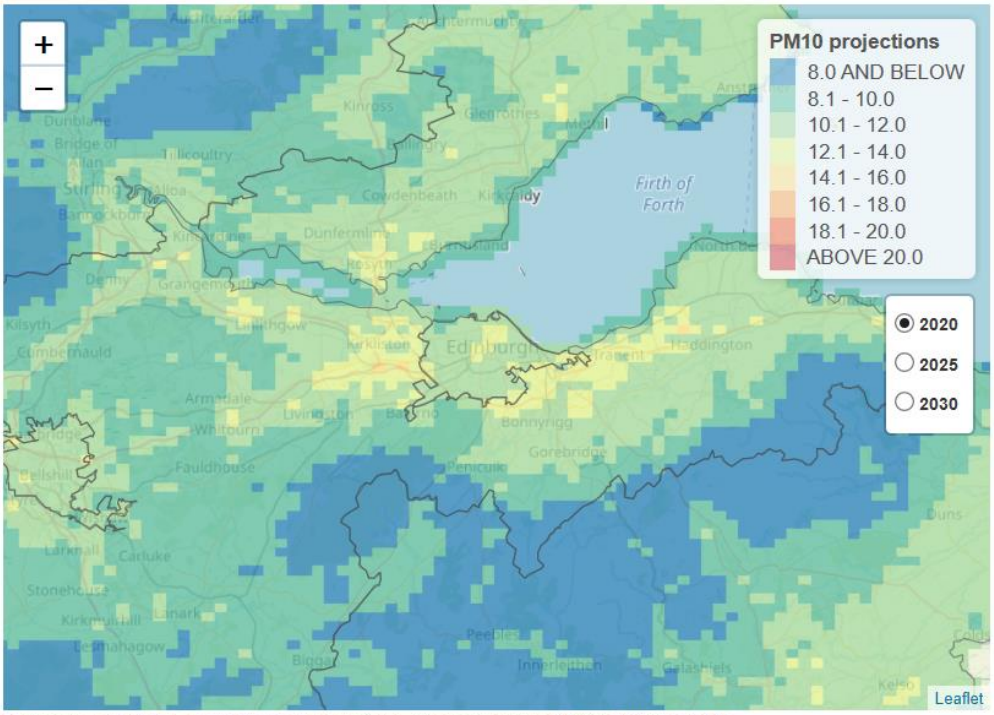
11.14 Particles are of concern even at low levels, as there is not thought to be any safe level[81][82]. The following figure is an extract of DEFRA projections of background PM10 for 2020, available on

[81] SWECO for East Lothian Council, 2022, "Detailed Assessment of Musselburgh AQMA" available at https://www.eastlothian.gov.uk/downloads/file/33067/detailed_assessment_of_musselburgh_aqma_2022

[82] This includes increasing risk of dying from Covid-19 virus, see "Exposure to air pollution and COVID-19 mortality in the United States". Xiao Wu, Rachel C. Nethery, Benjamin M. Sabath, Danielle Braun, Francesca Dominici. medRxiv 2020.04.05.20054502; doi: https://doi.org/10.1101/2020.04.05.20054502

www.scottishairquality.scot along with other air quality data. This shows that areas in the west of East Lothian are likely to have higher than average levels of PM10, as is the area south of Dunbar.

nur



© Crown copyright. All rights reserved Defra, licence number 100022861 [2019].

Figure 33: Estimated annual mean background PM10 maps for 2020

11.15 The Scottish Pollutant Release Inventory is a database of annual mass releases of specified pollutants, including to air, from SEPA regulated industrial sites. A range of sites across East Lothian report. The Inventory is available here: https://informatics.sepa.org.uk/SPRI/ . The facilities that reported emissions to air in 2021 were Appin Poultry Farm, Drem; Dunbar ERF, Dunbar; Tarmac Ltd, Dunbar Plant; Top and Park Unit, Ruchlaw Mains Farm; Viridor Waste, Dunbar, Oxwell Mains.

Issues - Protecting Air Quality

Emissions to air from forestry operations

11.16 There are likely to be some emissions to air from forestry operations including from transport, operation of machinery, and timber processing. This considered to be small scale due to the small scale of commercial forestry in East Lothian, and has been Scoped out.

Emissions to air related to woodland recreation

11.17 Increasing the attractiveness of woodland could lead to increased trips to visit the woodland. Some of these trips are likely to be by car. The TWSEL aims to increase accessible woodland, which would reduce the need to travel by car. TWSEL Policy 16 Design for All encourages managers and designers of new and existing woodland to maximise provision for access by active and sustainable transport modes to and through woodland. It also asks for consideration of all levels

of ability. This will help provide the conditions for reducing car transport. Nonetheless, people are still likely to choose to travel to woodlands by car. While cars are still using petrol or diesel as fuel, this would lead to an increase in air pollution. Compared to overall travel in East Lothian, any increase would be small. As the locations of new woodland are not identified, and numbers visiting them or their means of transport would be speculative, the net impact cannot be further quantified.

Fires

11.18 Wood burning in domestic stoves and other uses can have an adverse impact on air quality. The TWSEL does not promote the use of wood for fuel at this time because of this issue. However, increased availability of wood from woodland and tree management may make this option more appealing and consequently lead to an increase in wood burning for fuel.

11.19 Garden fires can also contribute to poor air quality. The Strategy does not directly encourage homeowners to plant trees, but it encourages an increase in urban tree canopy which would imply this. Homeowners may then clear their gardens by burning leaves and/or branches that have been pruned. Mitigation could include encouragement of home composting and continued uplifting of garden waste.

11.20 A wildfire is an uncontrolled vegetation fire which requires a decision or action regarding suppression. They can have devasting impacts on people, property, wildlife, infrastructure and others. Wildfires can have an acute short-term effect on air quality. They also cause the release of climate forcing gases. In East Lothian wildfires currently occur mainly in grassland or from out-of-control muirburn. Changing climate may bring more frequent longer lasting drought conditions and temperatures in summer, increasing risk of wildfire.

11.21 Increasing the amount of woodland would mean more to burn. Woodland creation and tree planting may mean that woodland and trees is located closer to other natural or built assets. This may make these assets more likely to be affected if there is a fire. Management practices can also affect fuel load, which affects how a fire is maintained and spreads once it starts.

11.22 Good forest and woodland planning and management can help mitigate risk of wildfires. The UK Forestry Standard advises that managers should plan for forest resilience while considering the risks to woodland, and specifically fire. The TWSEL includes Policy 7: Sustainable Woodland Management that seeks to encourage woodland management that reduces the risk of wildfires.

11.23 The Scottish Fire and Rescue Service recommends that householders form a safety plan including a safety zone extending out for at least 10m around their home as free as possible from combustible material (which would include trees)[83]. This may conflict with other aims for planting such as sheltering a building.

11.24 Retention of existing and creation of new woodland can also help mitigate climate change however, which is itself likely to increase the risk of wildfire.

[83] Scottish Fire and Rescue service website accessed 30/09/2021 https://www.firescotland.gov.uk/your-safety/wildfires.aspx

Issues - Improving Air Quality

General Air Quality Improvement

11.25 Trees remove gaseous pollutants from the air such as sulphur dioxide, carbon monoxide, and ozone, so increasing the number of trees increases the amount of pollutants removed. TWSEL supports the existing Council objective of creating a Climate Forest of 2 million new trees (Target 1, Action 2). This will benefit local air quality but also air quality overall as air pollutants can travel over a large area.

11.26 There are also some sites that emit air pollutants reporting under the Scottish Pollutant Release Inventory. Action 20 seeks planting adjacent to industrial sites. This may help reduce the dispersal of emissions to air.

Improving Air Quality in Urban Areas

11.27 Trees and hedges can affect urban air quality in two main ways. Firstly, they can act as a physical barrier to movement of air and so can trap particles. This can potentially be a benefit or a hazard. Secondly, they can remove some pollutants due to their biological processes; however, they also have the potential to emit chemicals that react and form ozone.

Particulates and vehicle emissions

11.28 For air quality to harm human health there must be a source and a receptor. Preventing the pollution from the source reaching the receptor will reduce or avoid harm. Road traffic is a major existing source of air pollution. Development coming forward through the East Lothian Local Development Plan 2018 is predicted to increase traffic levels overall. How this will affect air quality will depend on the actual increase in traffic that occurs as well as changes to emissions from each vehicle e.g. a switch to electric powered cars or ultra-low emission vehicles.

11.29 Particulates are a particular concern as there is thought to be no safe level. Trees can trap particulates, which are deposited on the tree surfaces instead of being held in the air. Most particulates will then be washed into soil by rain, though they can be re-suspended and transfer back into the air. Locating trees and hedges between a source of particulates, such as a road, and receptors, can therefore help prevent harm.

11.30 Urban areas have both a more dense population and generally higher vehicle emission levels. The layout of urban areas can mean air movement is reduced and pollutants are trapped. This can mean that air quality in urban areas is worse than in rural areas, while the number of receptors is greater. Tree planting in the right place can help shield people from particulate emissions. Conversely, although trees themselves do not emit particulates, planting them in the wrong place can trap air where sensitive receptors (people) are. For example, a tree canopy over a road lined with buildings with few gaps between (see Figure 24 of the TWSEL) may prevent movement of air.

11.31 TWSEL includes Action 20, which prioritises tree planting, and hedges in urban areas, woodland expansion along strategic road corridors and hedges along roadside edges where there will be benefits for air quality. This should help trap emissions of particulates near the source. Action 20 also encourages tree and hedge planting around facilities used by vulnerable people, such as hospitals, care homes, schools and sports fields. The inclusion of Figure 24 demonstrates where

trees should not be planted, guide planters away from places they will trap particulates and other pollutants where people can breathe them in.

11.32 The intention of the strategy is therefore that urban trees at least do not worsen existing harm from particulates.

Ozone

11.33 Ozone is a gas formed by a reaction of volatile organic compounds and nitrogen oxides in sunlight. This gas can trigger a variety of health problems. The relationship between trees and formation of ozone is complex. Trees can both remove and significantly contribute to ozone formation; this is also affected by the cooling/shading effect of trees. The net effect is dependent on the species of tree, its physiology, the surrounding air chemistry and climate[84].

11.34 The following chart, from Fitzky et al, 2019, shows which species are higher and lower emitters of different pre-cursors to ozone formation. In this chart, ISO is isoprene, MT is monotropene, SQT is sesquiterpenes and OVOC is oxygenated volatile organic compounds. The potential emission rates are shown as none (white); low (green); medium (yellow) and high (red). Gray is no data available.

KEY: Standard emission potentials (μg g DW^{-1} h^{-1}; at 30°C leaf temperature and 1,000 μmol m^{-2} s^{-1} PPFD) of isoprene (ISO), monoterpene (MT), sesquiterpenes (SQT), and oxygenated volatile organic compounds (OVOC) of frequent tree species in urban areas of northern/central (N/C) and southern (S) Europe. Potential emission rates are grouped in no (white), low (green), medium (yellow), and high (red) emission classes. ISO: low < 10, high > 30.1; MT and OVOC: low < 2, high > 5.1; SQT: low < 0.5, high > 1.1; with medium categories with values in-between. A color gradient indicates emission rates crossing the defined classes; gray indicates: "no data available."

[84] Fitzky Anne Charlott, et al "The Interplay Between Ozone and Urban Vegetation—BVOC Emissions, Ozone Deposition, and Tree Ecophysiology" in Frontiers in Forests and Global Change, Vol 2, 2019 at URL=https://www.frontiersin.org/articles/10.3389/ffgc.2019.00050

Genus	Species	Distribution area	ISO	MT	SQT	OVOC	References
Acer	*sp.*						c, n
	platanoides	N/C					c, t
	pseudoplatanus	N/C					w
Aesculus	*hippocastanum*	N/C					u
Betula	*pendula*	N/C					g, h, l ,r
Carpinus	*betulus*	N/C					a, m
Celtis	*occidentalis*	S					d, e
Fagus	*sylvatica*	N/C					l, o°, t
Fraxinus	*sp.*						t
	excelsior	N/C					a, c
	ornus	S					c
Picea	*abies*	N/C					f, l
Pinus	*sylvestris*	N/C					a, j, l, v
	pinea	S					y
Platanus	*acerifolia*	N/C, S					b
	orientalis	N/C, S					a, c, b
Populus	*sp.*						t
	nigra	N/C, S					c
	tremula	N/C, S					a, c
Prunus	*avium*	C					c, f
	serotina	N/C					c, f
Quercus	*ilex*	S	*				b*, l, p, t
	pubescens	N/C					t, y
	robur	N/C	•				b, l, o°, t
Robinia	*pseudoacacia*	N/C, S					b, c, r, t
Sophora	*japonica*	S					b, k
Tilia	*cordata*	N/C					c, t
	platyphyllos	N/C					c
Ulmus	*minor*	S					c

11.35 Going forward, as emissions of nitrogen dioxide from vehicles fall, emissions from urban trees may gain more attention in ozone formation. Choosing species with lower emission potential now may reduce problems in the future. The TWSEL identifies this issue and includes the information above, encouraging species choice that lessens ozone production.

11.36 Trees within urban areas can also regulate air temperature, which is likely to become increasing salient with predicted climatic changes (see 'Climate – Heat Stress and Shelter'). Climate change could lead to a greater number of days when ozone (a climate forcing gas) is formed as this reaction occurs in sunlight, and tree planting could reduce this. The overall effect of further tree planting in urban areas on ozone formation is therefore largely uncertain.

11.37 Urban trees also remove some other pollutants from the air, including nitrogen dioxide and sulphur dioxide. The benefits of trees in the urban areas of Tranent, Prestonpans and Longniddry are estimated[85] as follows:

[85] Unpublished ELC data using methodology shown at https://canopy.itreetools.org/survey.php

Pollutant removed annually	Tranent	Prestonpans	Longniddry
Carbon Monoxide (lbs)	78	55	72
Nitrogen dioxide (lbs)	423	297	391
Ozone (O3) (tonnes)	2.1	1.48	1.95
Particles - PM2.5 (lbs)	205	144	189
Particles - PM10	1410	992	1304
Sulphur dioxide (lb)	266	187	246

Likely Significant Effects – Air

11.38 Taking into account the issues identified above, SEA objectives for Air have been identified. The following table gives the objectives and summarises the impact. Impacts of air borne tree pollen as an allergen is considered under 'Human Health'. A potential shift towards active travel would benefit air quality: this is considered under Human Health: Creation of Vibrant Communities.

SEA Objective, Climatic Factors To protect and enhance air quality and reduce exposure to poor air quality			Theme 1 – Climate Mitigation	Theme 2 – Resilience and adaptation	Theme 3 – Biodiversity	Theme 4 – Community	Theme 5 - Economy	Theme 6 – Cultural Heritage	Theme 7 – Landscape Character
SEA Sub-objective/ questions for assessment. Does the plan….?	KEY								
	Positive	+							
	Neutral	0							
	Unknown	?							
	Mixed/Variable	//							
	Negative	-							
Help improve local air quality, particular in areas of elevated air pollution			+	+	0	+	0	0	+

Commentary on Air Indicator

11.39 Proposals for tree planting/woodland creation proposals (Target 1, Action 2 and others) are generally expected to have positive impacts on local air quality overall, as trees intercept particulates and remove other forms of air pollution. Trees planted in urban areas (included in Theme 7: Landscape, and Theme 4: Community, Action 20) that provide physical barrier between the source of air pollution, such as traffic, and receptors, such as residents, are encourage. Action 20, as noted above, aims to encourage planting where it will support urban air quality and discourage it where it will not. However, the picture is complicated with regard to formation of ozone, as noted above. Current state of knowledge on this topic may mean choices that worsen air quality are inadvertently made and the impact is therefore uncertain.

11.40 An increase in woodland cover, in combination with predicted climatic changes, has the potential to increase the risk of wildfire, which is a source of severe localised poor air quality. Policy 7: Sustainable Woodland Management aims to make sure this is taken into account in woodland creation schemes however, some increased risk in the long term is probably not entirely avoidable.

11.41 The strategy seeks to use locally grown seeds and stock, and to encourage links between local plant suppliers, timber growers and processors. Section 9, Economy, includes Action 23 encouraging local producers to work together through a local timber forum. This will reduce transport emissions to air.

Mitigation of potential adverse impacts of the Strategy

11.42 **Embedded mitigation:** Increased potential for wildfire may result from the implementation of the strategy. Policy 7 Sustainable Woodland Management seeks to reduce the risk of wildfire through design of woodland. Tree planting in urban areas has the potential to trap polluted air by receptors: the Strategy seeks to avoid this through Action 20. Providing more woodland could increase emissions from vehicles travelling to woodland. Policy 16 Design for All aims to reduce travel emissions by providing for sustainable travel access.

11.43 **External mitigation:** Scottish Ministers have a duty under the Forestry and Land Management (Scotland) Act 2018 to promote sustainable forest management. Scottish Ministers must have regard to this duty when considering felling applications. Scottish public authorities must also promote sustainable forest management insofar as it is consistent with the exercise of their functions. For proposals that require planning permission, NPF4 Policy 23 does not support development proposals that are likely to have significant adverse effects on air quality. Development proposals are required to consider opportunities to improve air quality and reduce exposure to poor air quality. This will help mitigate some potential impacts to air.

11.44 The UK Forestry Standard advises managers to consider the risks to woodland from fire.

11.45 **Project level mitigation:** impacts on air quality of location of tree planting and choice of species should be considered (Action 20)

11.46 **Further mitigation:** The risk of wildfires from an increased amount of woodland combined with a changing climate could be mitigated further public education on fire risk. Home composting and recycling could be encouraged to mitigate potential impacts to air from garden fires.

Secondary, Synergistic and Cumulative effects

11.47 **Positive** The TWSEL is expected to improve air quality, along with many other plans. These include the Musselburgh Air Quality Management Plan, similar AQMA Management Plans for areas nearby within Edinburgh City Council area, and potentially Edinburgh's Low Emission Zone. Within East Lothian the Transport Strategy and Active Travel Improvement Plan aim to reduce emissions from transport. This will also benefit Human Health. NOx emissions can cause inflammation of the airways due to short-term exposure; long-term exposure may affect lung function and respiratory symptoms. NOx enhances the response to allergens in sensitive individuals. Exposure to particulates can lead to respiratory and cardio-vascular illness and mortality as well as other ill-health effects. Emissions of NOx can alter climate and particulates

can have warming or cooling effects on climate both locally and globally. Climate change can increase the production of ground level ozone. NOx is a contributor to acid rain which cumulatively can damage buildings and cultural heritage assets. Cumulatively, the effect of plans that reduce these pollutants is likely to be significant.

Conclusion – Air

11.48 Impacts on Air Quality are likely to be mostly positive. Increased hedge and tree planting, and woodland creation, will lead to reduction in gaseous pollutants, and increased trapping of particulates. Risk of severe, short term poor air quality from wildfires is likely to increase, even with careful planning. There may also be impacts from increased vehicular travel to visit woodlands, and from the emissions of ozone formation precursors in urban areas. The Strategy does not encourage wood burning for fuel, but the increased availability of wood from increased amount of trees and woodland management may increase this regardless.

Residual adverse impacts

- Increased long-term potential for increased severity of wildfire, with consequent negative effect on air quality.
- Vehicle emissions from additional travel to woodland
- Potential for increased emissions from wood burning for fuel and garden fires
- Urban trees may contribute to ground level ozone formation

12 CLIMATIC FACTORS

Introduction

12.1 It is now widely recognised that the climate is in crisis. The emission of greenhouse gases from both human and natural sources affects the climate. Overall the UK and the planet as a whole is warming. Countries agreed at the 2015 UN Climate Conference in Paris that they should try to limit temperature increase to 1.5 degrees above pre-industrial levels. Crossing this threshold risks unleashing more severe climate impacts. These include droughts that are more frequent, heatwaves and rainfall. The UK government, Scottish First Minister and East Lothian Council have declared a climate emergency.

12.2 The UN set up the Intergovernmental Panel on Climate Change (IPCC) to provide scientific advice on climate change, and to put forward mitigation and adaptation actions. In 2018 the IPCC warned that global temperature rise must be kept to under 1.5°C above pre-industrial levels to minimise catastrophic global impacts on society, human health and wellbeing, the economy, food production and the natural environment. Recent reports from the World Meteorological Organisation suggest there is a 50:50 chance of average global temperature reaching this level in the next 5 years[86]. The IPCC warn the situation warn the situation is now serious. The overwhelming priority is therefore to mitigate climate change.

[86] See UN website Climate: World getting 'measurably closer' to 1.5-degree threshold | UN News accessed 27-05-2023

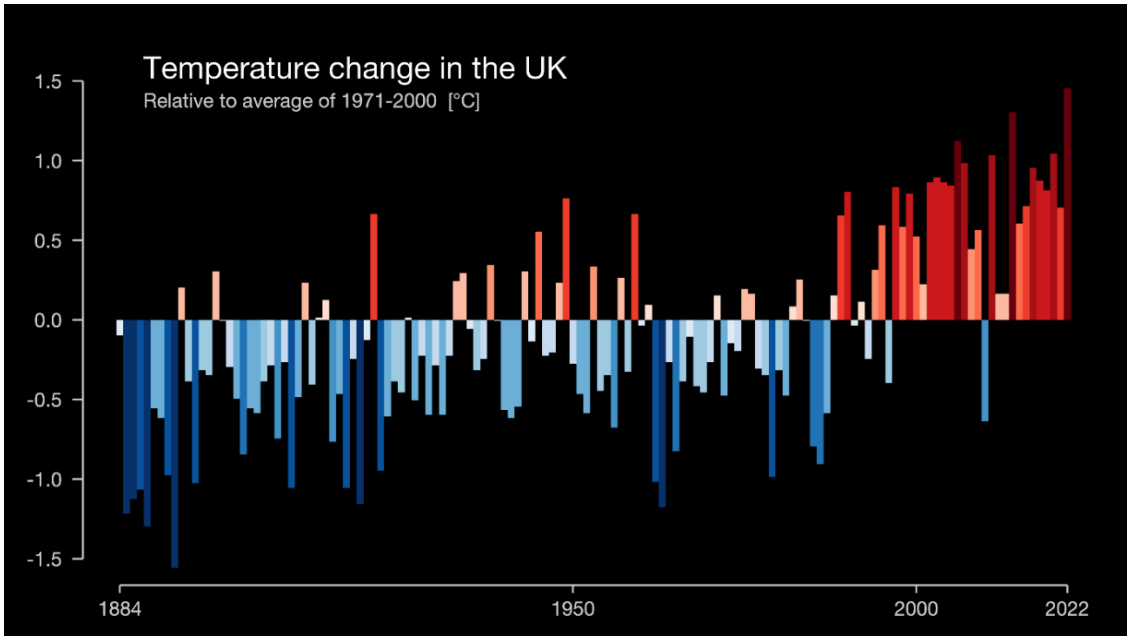


Figure 34: Temperature change in the UK, from www.showyourstripes.info

12.3 The balance of greenhouse gases (carbon dioxide, methane, particles, water vapour and others) from both human and natural sources to the atmosphere affects the climate. The main human emissions are from transport, energy generation, industry, waste management and agriculture. Plant and algal growth absorb carbon dioxide, one of the main greenhouses gases. Trees are particular good at this as they are large and can lock carbon in timber and wood products beyond their lifespan. Peatland is also effective as carbon is trapped within the peat. Limiting human induced global warming requires limiting cumulative greenhouse emissions, especially of carbon dioxide and methane. Retaining and increasing trees and other natural carbon sinks such as peatland areas will also contribute.

12.4 The IPCC 6th Assessment Report (IPCC, 2021) report found that human induced climate change is already bringing many weather and climate extremes, with evidence of observed changes strengthening. Global surface temperature will continue to increase until at least mid-century under all emissions scenarios considered. It will therefore also be necessary to adapt to coming climatic changes, *regardless* of success in reducing emissions. This should be done in a fair way, while maintaining or improving quality of life.

12.5 In 2021, the UK government produced its "Net Zero Strategy: Build Back Greener" [87] noting "by the middle of this century the world has to reduce emissions to as close to zero as possible, with the small amount of remaining emissions absorbed through natural carbon sinks like forests, and new technologies like carbon capture." The Strategy sets out the government's plans for reducing emissions, while 'hoovering up' any remaining emissions with greenhouse gas removals. The Scottish Government has set new climate change targets of net zero emissions by 2045. To help

[87] HM Government, 2021 "Net Zero Strategy: Build Back Greener" at https://www.gov.uk/government/publications/net-zero-strategy

achieve this, the Scottish Government strategy, Climate Change Strategy Update[88] includes a target of 12,000 hectares of woodland annually in 2020/21 up to 18,000 hectares annually in 2024/25. A target of 250,000 hectares of peatland restoration by 2030 is also set.

12.6 The Council set out how it intends to tackle the climate emergency locally in our Climate Change Strategy 2020–2025[89]. That strategy commits the Council to embark on an ambitious programme to plant native trees across East Lothian. This has resulted in the Climate Forest proposal, which aims to plant two million trees in East Lothian. The East Lothian Green Network Strategy also includes the intention to contribute to maximising carbon storage potential through land use. It aims to do this by increasing tree and woodland cover, as well as conserving peatland and saltmarsh.

12.7 The Scoping Table below shows what existing issues are considered relevant to this strategy. Wildfires and flooding are relevant for climate change but considered under 'Air' and 'Water' respectively. Circular economy issues are considered under 'Material assets'.

Scoping Table 7: CLIMATIC FACTORS	
Issue	**In/Out**
Mitigate Climate Change	
Impact on carbon emissions from land use change i.e. tree planting (threat and opportunity)	**In**
Timber and wood for industry and manufacturing	**In**
Climate forcing emissions related to woodland recreation (threat)	**In?**
Impact on emissions from use of renewable heat/renewable generation	**??**
Circular Economy – scoped in but considered under 'Material Assets'.	**In**
Adapt to climate change	
Design of open space; effect on temperature, shade and shelter (Scoped in but considered under 'Health' - see Expansion of woodland and more trees in urban areas: opportunity)	**In**
Heat stress and shelter of buildings	**In**
Shelter of land and livestock	**In**
Potential for changes to health and growth of trees	**In**
Arrival of new pests or diseases	**In**
Coastal erosion and sea level rise	**In**

[88] Scottish Government "Securing a green recovery on a path to net zero: climate change plan 2018–2032 – update" available from https://www.gov.scot/publications/securing-green-recovery-path-net-zero-update-climate-change-plan-20182032/

[89] https://www.eastlothian.gov.uk/climatechangestrategy

Wildfires – scoped in but covered in 'Air'	**In**
Flooding - scoped in but covered in 'Water'	**In**

Climate Change Mitigation

Baseline – Climate Change Mitigation

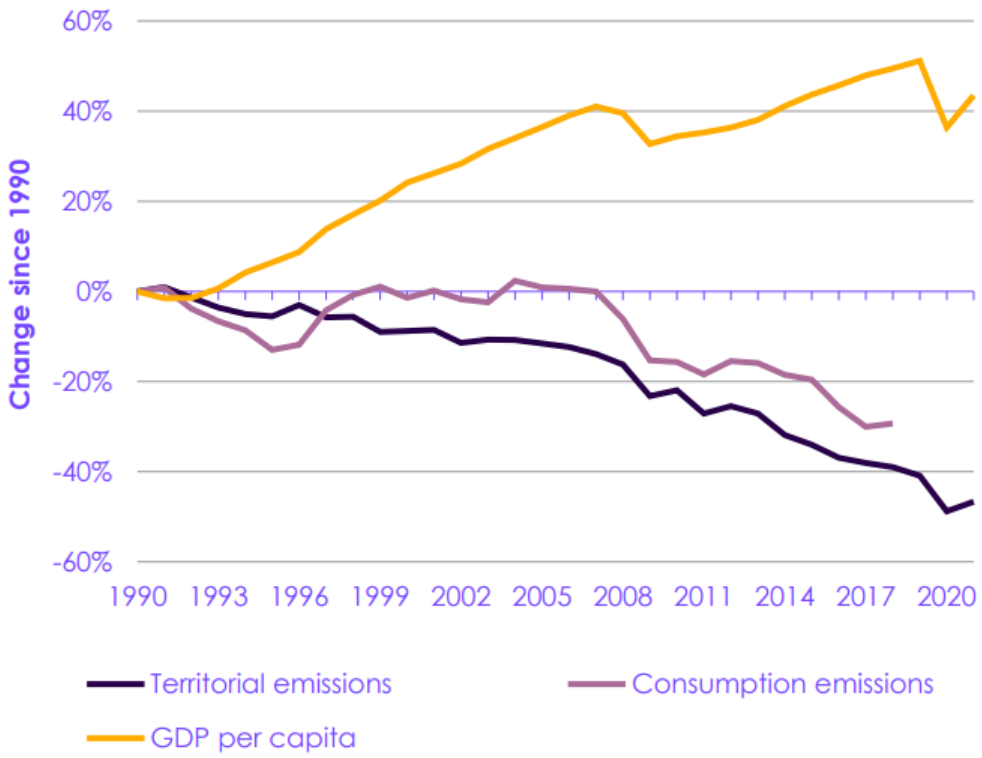
National picture

12.8 The Climate Change Committee is an independent, statutory body established under the Climate Change Act 2008. Its purpose is to advise the UK and devolved governments on emissions targets and to report to Parliament on progress made in reducing greenhouse gas emissions and preparing for and adapting to the impacts of climate change. Its recent reports include "Progress in reducing emissions: 2022 Report to Parliament" and 'Scottish Emission Targets – first five yearly review & Progress in Reducing Emissions in Scotland – 2022 Report to Parliament" (the 'Scottish Report').

12.9 The Climate Change Committee's 2022 Report to the UK government, notes that this is a pivotal point for the UK in reaching net zero. The CCC notes that though emissions rose in 2021, they remain 10% below 2019 (see Figure 35 below). The CCC considers that in most areas the emissions reduction ambitions are credible, with a need now to focus on delivery. However there are policy gaps in some areas to drive this, and progress lags ambition. The CCC considers the approach does not include significant ambition to reduce consumer demand for high carbon activities, such as through low carbon diet or aviation demand. The TWSEL supports this by encouraging local fruit and nut growing. Providing more woodland locally may help reduce demand for overseas holidays.

12.10 There are also issues around how the full range of costs and benefits of transition to net zero will be shared fairly. Tree planting targets should not be met at the cost of unwelcome changes to living environment of those in lower SIMD areas (where the Council may have more control of

land) for example. The TWSEL includes provision for community consultation that aims to avoid this.



Source: BEIS (2022) *Provisional UK greenhouse gas emissions national statistics 2021*; BEIS (2022) *Final UK greenhouse gas emissions national statistics: 1990 to 2020*; Defra (2021) *UK's Carbon Footprint 1997-2018*; ONS (2022) *GDP & population data*; CCC analysis.

Figure 35 The UK's Historic Emissions and GDP: Extract from CCC's 2022 Progress Report to Parliament showing UK progress in emission reduction, 1990-21.

12.11 The following table shows the Climate Change Committee's view of UK progress against key targets. As can be seen from this, the Committee considers targets for new woodland are off

track, as are those for peatland restoration. Crop yields are slightly off track. A reduction in meat consumption is on track, due to changing consumer demand rather than government action.

Table 1
Summary of progress against key indicators

Surface transport	Electricity supply	Buildings	Manufacturing and construction	Agriculture and land use
BEV car sales	Offshore wind, installed	Energy demand	Sector territorial emissions	Agriculture CH_4
EV cars sales	Onshore wind, installed	Energy efficiency retrofits	Sector consumption emissions	Agriculture N_2O
BEV van sales	Solar PV, installed	Non-res buildings energy intensity	Carbon intensity of energy	New woodland
EV van sales	Grid emissions intensity	Low-carbon heat supply	Material and product use	Woodland management
ICE car intensity	Unabated gas generation	Heat pump installations	Steel: energy efficiency	Peat restoration
ICE van intensity	Low-carbon flexible capacity	Heat pump costs	Paper: energy efficiency	Energy crops
Charge points	Nuclear	Electricity to gas price ratio	Low-carbon energy use	Farmer action
Car km	Flexible demand	Heat networks	Industrial hydrogen project pipeline	Crop yields
Van km	Onshore networks	Retrofit coordinators	Industrial CCS project pipeline	Livestock numbers
HGV km	Offshore networks	Willingness to replace boiler	Average embodied carbon of buildings	Meat consumption

Key:
On track
Slightly off track
Significantly off track
Too early to say
Data not reported
No benchmark or target

Notes: An indicator is on track if it is going in the right direction at an appropriate rate. This is determined either by comparing to a quantified pathway/benchmarks using data from 2019, 2020 and 2021, where available.
EV = electric vehicle, BEV = battery-electric vehicle, ICE = internal combustion engine.

Figure 36 Summary of progress against CCCs indicators, from CCC's 2022 Progress Report to Parliament

12.12 The Climate Change Committee's Scottish Report noted that the 2020 interim target of a 56% reduction on 1990 emissions was achieved. However, this was largely due to travel restrictions during covid-19 pandemic without which it is unlikely to have been met. The Committee considers Scotland is not delivering on key milestones such as energy efficiency in homes and peatland restoration, and that a quantified plan for emissions reductions is urgently needed.

12.13 The report notes the Scotland has set high ambition to increase new woodlands. Despite recent success in increasing planting, low rates of planting in the 1990s are influencing Scotland's greenhouse gas emissions. The net CO2 sink has generally declined, having peaked in 2012. Fast growing conifers make up most of the new planting in Scotland.

12.14 The report notes that Scotland is falling behind on its afforestation targets. It is also falling behind on peatland restoration. The report considers that both of these aspects are likely to have adverse effects on the ability of Scotland to meet its climate change targets. TWSEL encourages both tree planting and peatland restoration.

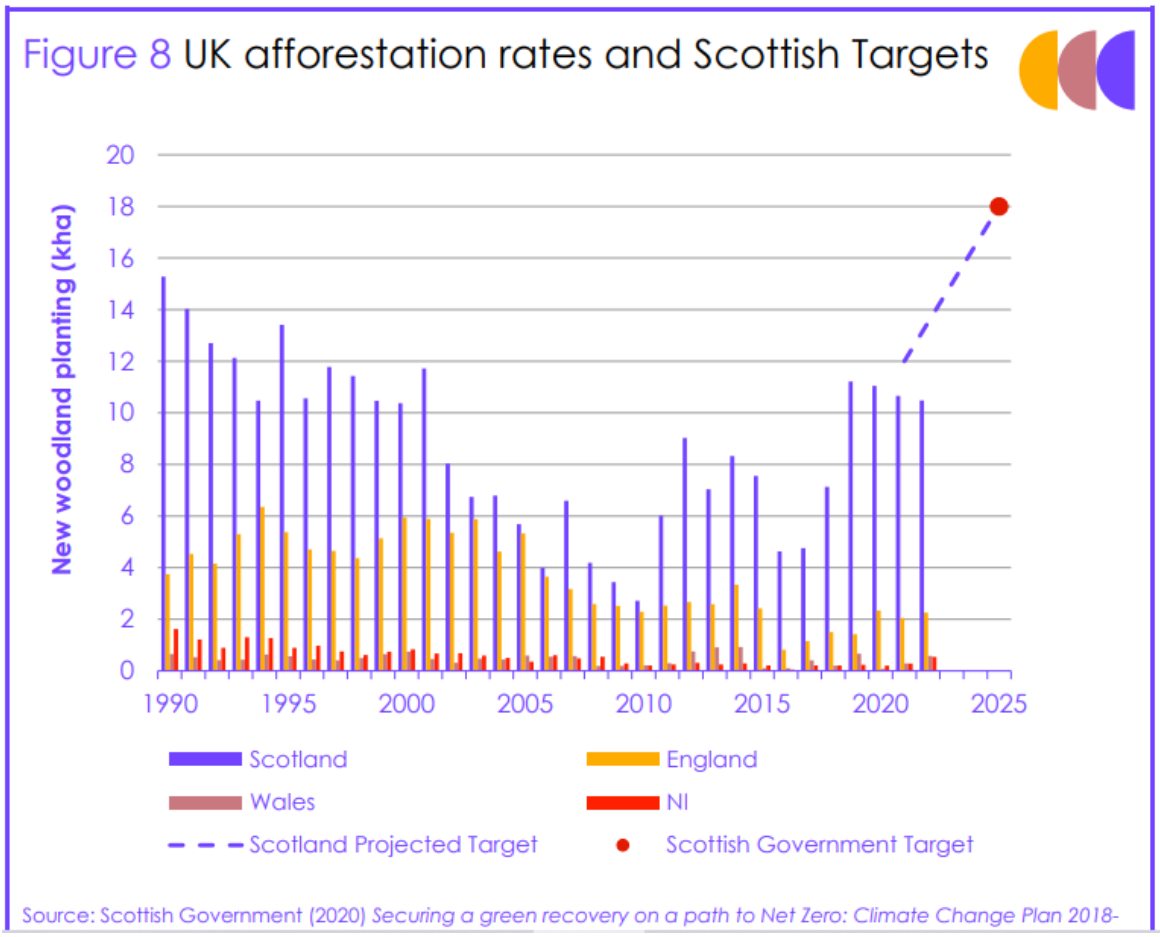


Figure 37 New Woodland Planting in Scotland, in CCC (2022)

12.15 The CCC report notes that agroforestry and hedgerows can increase carbon stocks on farms while allowing agricultural production to continue. The TWSEL supports woodland creation (Target 1) including both an increase in woodland creation on farmland and retention and increase of hedgerow planting. It also seeks to avoid afforestation on land suitable for peatland restoration (Policy 15). This will support moving towards getting targets for woodland creation and peatland on track. Promotion of fruit and nut growing in a small way helps to supports a lower meat diet.

East Lothian baseline

12.16 The main sources of climate change emissions in East Lothian and elsewhere are from energy use (domestic, commercial and industrial) personal sources (consumption of food and its effects, and consumption of goods produced elsewhere) and transport, with a smaller contribution from land management and production of waste, including waste water treatment. Further information can be obtained through national statistics published by the Department for Business, Energy and Industrial Strategy here: [UK local authority and regional carbon dioxide emissions national statistics - GOV.UK (www.gov.uk)](). Land use, land use change and forestry is a category of greenhouse gas emissions accounting that covers emissions and removals of greenhouse gas

from direct human land use activity. This sector has the potential not only to avoid emissions but to remove carbon dioxide from the atmosphere. The Scottish Government's aim is that the 'Land Use, Land Use Change and Forestry' sector will increasingly act as a net carbon sink[90].

12.17 The following figures are excerpts from Department for Business, Energy and Industrial Strategy, 2021. East Lothian has higher than average CO_2 emissions in total, as well as higher than average net emissions for the land use, land use change and forestry sector.

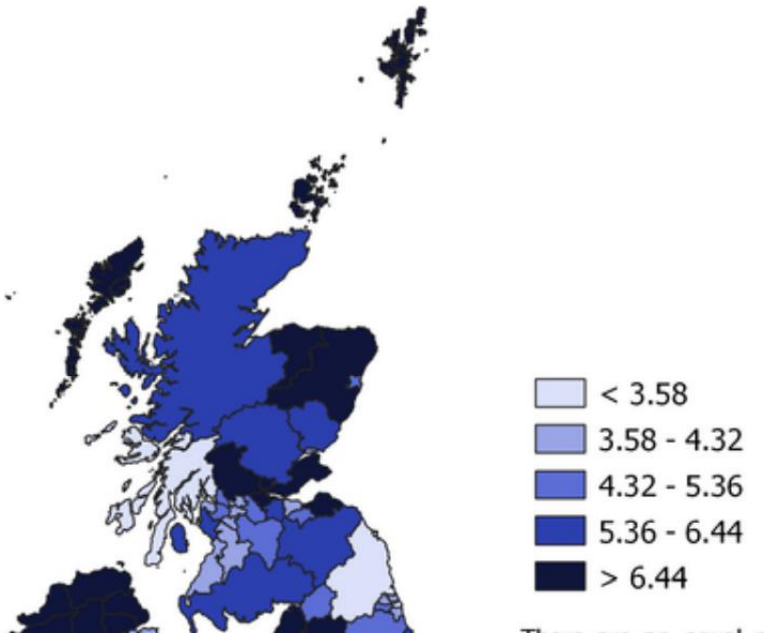


Figure 38: Net emissions of Carbon Dioxide per capita by Local Authority (tonnes CO_2 per capita, 2019) from BEIS, 2021

12.18 Figure 39 shows CO_2 emissions from Landuse, land Use change and forestry. Although East Lothians net emissions from this sector are higher than average, they have been decreasing[91].

[90] East Lothian Climate Change Strategy https://www.eastlothian.gov.uk/downloads/file/29179/climate_change_strategy_2020-2025

[91] Source 2005 to 2017 UK local and regional CO2 emissions – data tables (alternative format), from https://www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-to-2017

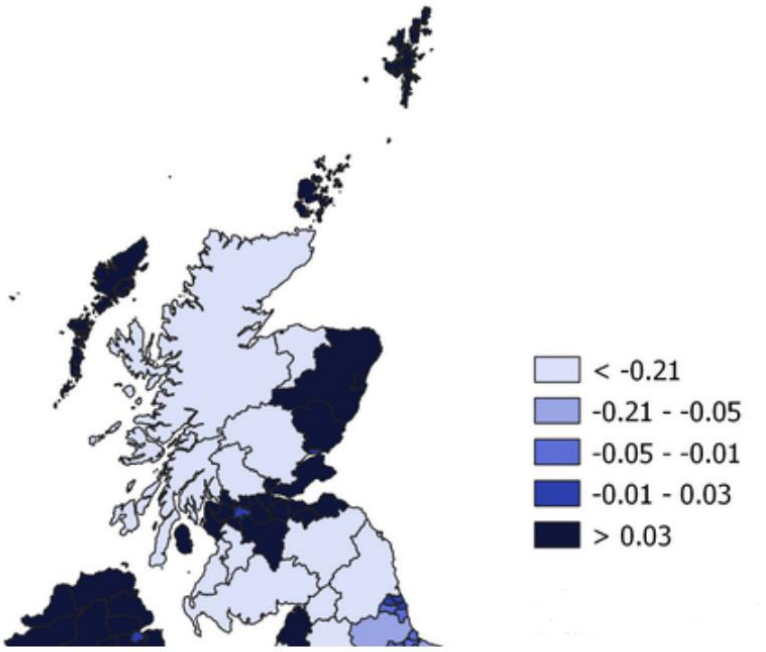


Figure 39: Land Use, Land Use Change an Forestry CO_2 net emissions per capita by Local Authority (tonnes CO2 per capita) 2019, from BEIS, 2021

12.19 The following Figures are from Mapping greenhouse gas emissions & removals for the land use, land-use change & forestry sector A report of the National Atmospheric Emissions Inventory 1990-2020, a report for BEIS. East Lothian has quite a low level of removals of CO_2 from forestry overall, which relates to its low level of woodland cover. Carbon stored in soil can change through drainage, either through export of organic carbon, methane emission from ditches or nitrogen dioxide. Forests planted on mineral or organo-mineral soils which have slow natural drainage and are prone to waterlogging are assumed to be artificially drained and N_203 emissions are reported for this. Fertilisation, leading to emissions of N_20, occurs on the first rotation of forests planted on nutrient poor soils and is applied in the years of planting and again three years later. Forest

fertilisation emissions and emissions due to drainage are lower than average for Scotland in East Lothian, reflecting lower forest planting and coverage. There were no forest wildfires in 2020

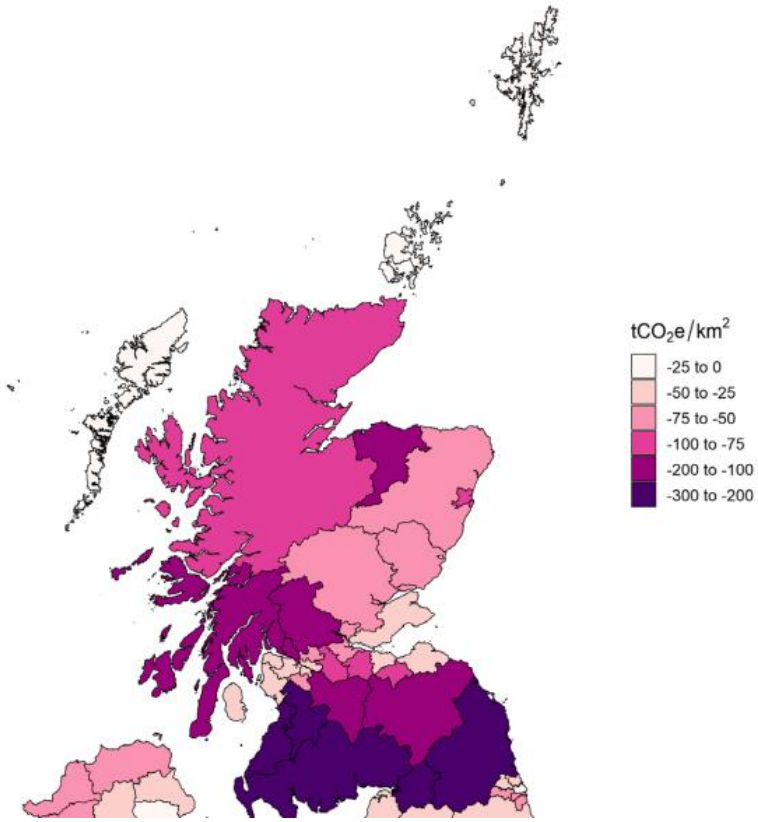


Figure 40 Distribution of forest carbon dioxide removals from the atmosphere by local authority area expressed as tCO2 per km2.

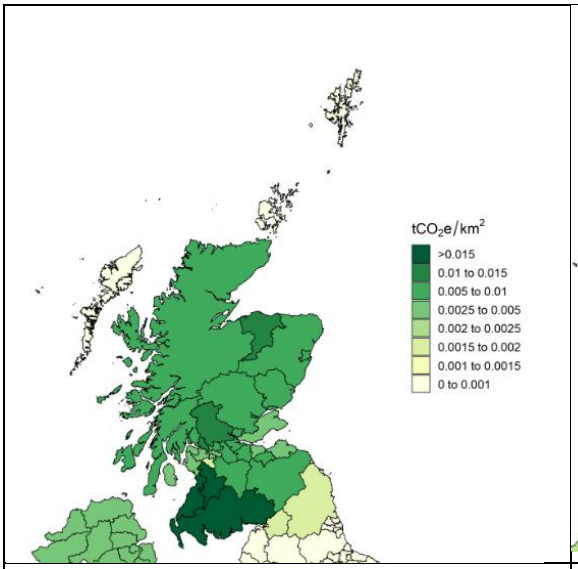


Figure 41 Emissions/removals of nitrous oxide arising from forest fertilisation per local authority area (tCO_2e/km^2) in 2020

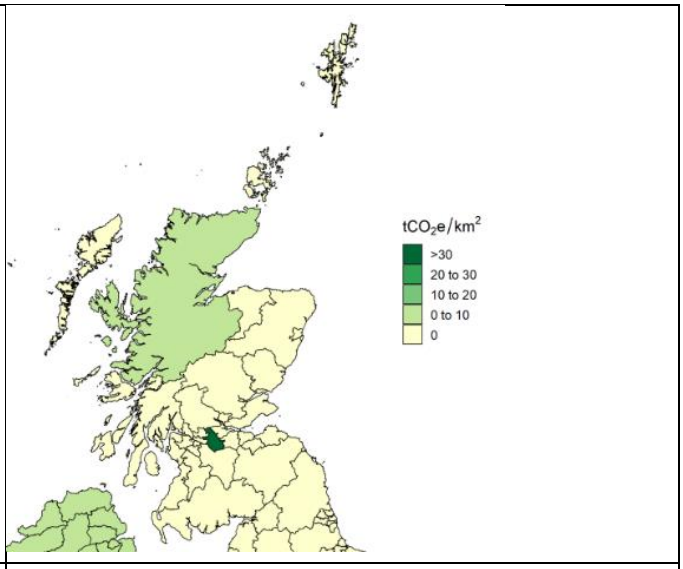


Figure 42 Emissions of CO2, methane and nitrous oxide due to forest wildfires per local authority area (tCO_2e/km^2) in 2020

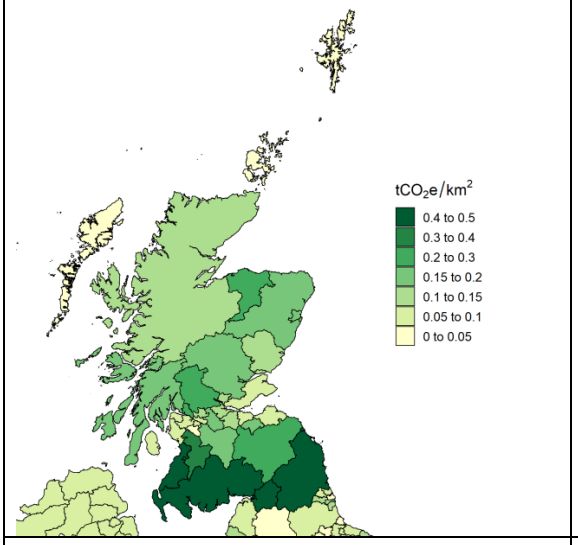


Figure 43 Nitrous oxide emissions due to drainage of mineral soils under forests per local authority area

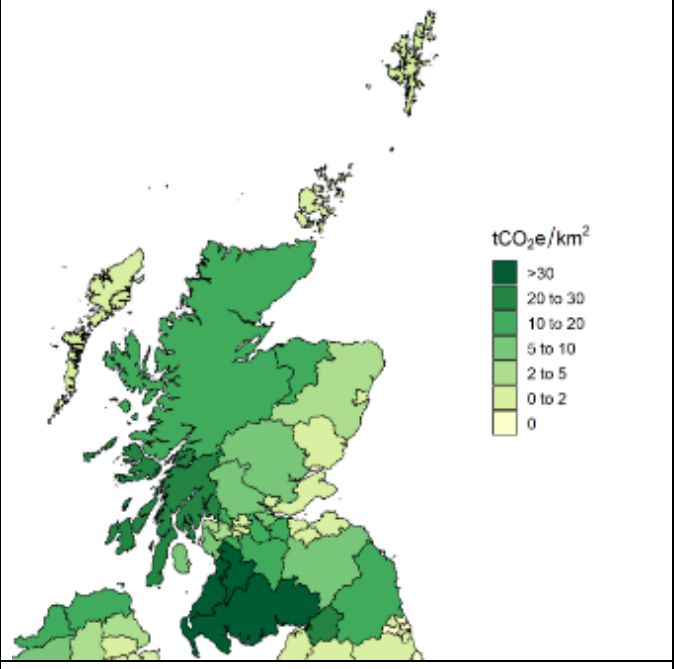
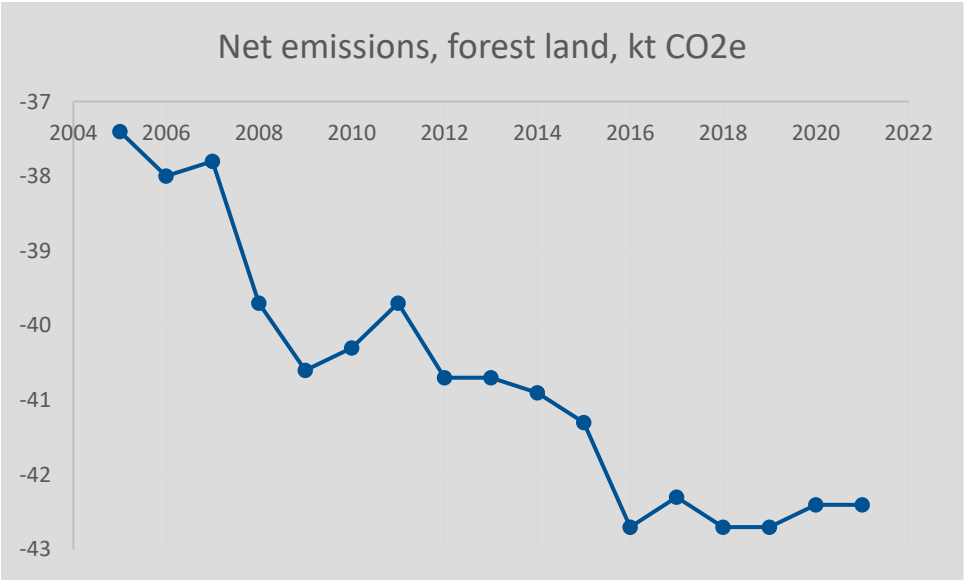


Figure 44 Indirect CO2 (from particulate and dissolved organic carbon), methane and nitrous oxide emissions due to drainage of organic soils under forests per local authority area (tCO_2e/km^2) in 2020

8.1 Net emissions from forested land are given in the national statistics series at: https://www.gov.uk/government/statistics/uk-local-authority-and-regional-greenhouse-gas-emissions-national-statistics-2005-to-2021 . This shows that forested land has improved overall in terms of sequestering CO2 since 2005, however this has levelled out since around 2015.



Issues – Climate change mitigation

Land use change

8.2 Climate change emission reduction is expected to be one of the main benefits arising from the TWSEL. This was the main driver behind the Council promoting the Climate Forest. Trees absorb carbon dioxide in growth. A tree can absorb between 10 and 40kg of CO2 per year depending on a number of factors such as its size and species (Eco Tree, undated) however over its first 20 years this averages only 10kg per year (One Tree planted, 2022). Trees can also emit methane, a powerful climate forcing gas, at least some of the time. The main source seems to be from wetland trees in the tropics, with non-wetland trees emitting less, especially in cooler areas. This does not outweigh their overall positive contribution though[92].

8.3 The TWSEL supports retention of existing woodland (Policy 1) recognising that it takes time for a young tree to sequester as much carbon as a mature one. The Scottish Government's Control of Woodland Removal Policy restricts removal of woodland. However, it can be acceptable in some circumstances. Development of renewable energy is a type of development that may justify removal where replacement planting is carried out. More recent renewable energy development in East Lothian has included replacement planting. The TWSEL supports this policy and encourages replacement planting to take place in East Lothian. Retaining existing woodland has a positive impact on climate.

8.4 Tree planting has the potential for short-term release of climate forcing gas in preparation of soil for planting and fertilisation. Forestry operations that drain carbon rich soils can result in organic matter being lost from the soil, reducing the carbon stored there. There are also related impacts (travel of workers to the site, tools, use of chemicals). This is usually outweighed by the amount of carbon that will be absorbed by the trees or woodland in their growth, through formation of forest soils and/or eventual use of wood in wood products[93]. Mitigation through use of different planting techniques in order to reduce emissions is possible. TWSEL encourages this by supporting natural regeneration over planting and use of planting techniques to limit soil disturbance (Policy 3: Woodland Creation, Policy 9: Seed and Tree Stock Sourcing).

8.5 Although trees are well known for sequestering carbon, the contribution of other habitats (saltmarsh, peat, grassland) should also be kept in mind when planning projects. Trees are not always the most climate friendly use of a site. TWSEL recognises this by inclusion of policy protecting these habitats (Policy 14: Protection of the Natural Environment, Policy 15: Peatland).

8.6 The TWSEL aims to reduce net CO_2 emissions from land use, land use change and forestry, and so influence emissions overall. If successful, woodland creation under TWSEL will lead to around 1-3% more woodland cover in East Lothian. Although this appears relatively small scale, the increase is in line with Scottish Government targets and will contribute to meeting Scottish Government

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[92] See Fred Pearce, "Scientists Zero in on Trees as a Surprisingly Large Source of Methane" June 24, 2019, Yale School of the Environment at https://e360.yale.edu/features/scientists-probe-the-surprising-role-of-trees-in-methane-emissions

[93] See reports from Forest Research accessed from their website here (16/09/2021) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/687147/The_UK_Forestry_Standard.pdf

targets. The strategy is likely to have an overall positive effect on emissions from land use and land use change through promotion of woodland creation, promotion of climate sensitive planting methods and protection of other habitats that sequester carbon.

Timber and wood for industry and manufacturing

8.7 Use of timber and wood for construction and manufacturing can cut carbon emissions by replacing the more carbon intensive materials that would otherwise have been used. The product retains carbon within it while it is in use.

8.8 Forestry (and tree) operations can produce climate-forcing emissions through transport of workers to the site and use of machinery to process the wood. Decarbonisation of Scotland's transport sector[94] including phasing out of petrol and diesel cars by 2032, a transition to ultra-low emission electric and hydrogen vehicles, and encouragement of active travel may help reduce the emissions of forestry/woodland related transport. Decarbonisation of the electricity supply will also reduce emissions from manufacturing.

8.9 The TWSEL promotes the use of wood and wood products and this supports the circular economy (Policy 5: Wood Products). In Policy 20: Productive Woodland, the TWSEL generally supports the continuation of coniferous production on existing sites, and hardwood production elsewhere. However, the strategy takes a multi-functional approach to woodland, which reduces the focus on timber production. The timber production potential of the area is therefore less likely to be maximised. This means that less carbon will be stored in timber products, some of which lock it up for a considerable time. The carbon balance of this is difficult to judge as woodlands where wood decays in place do also sequester carbon.

Woodland recreation

8.10 Visitors to countryside sites often travel by car. NatureScot's Research Report 1227 – Scotland's People and Nature Survey 2019-20[95] reported on a survey of people using outdoor recreational sites. This included questions about their mode of transport. An extract from this report is shown below, and shows that while an increasing number of visits were made on foot, and some by bicycle or bus, car travel remains a significant proportion of journeys. As the survey includes greenspace in towns and cities, it is likely that visits to countryside sites are more often made by car.

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[94] As set out in East Lothian Council's Climate Change Strategy https://www.eastlothian.gov.uk/climatechangestrategy

[95] Report available from NatureScot Research Report 1227 - Scotland's People and Nature Survey 2019/20 - outdoor recreation, health, and environmental attitudes modules | NatureScot

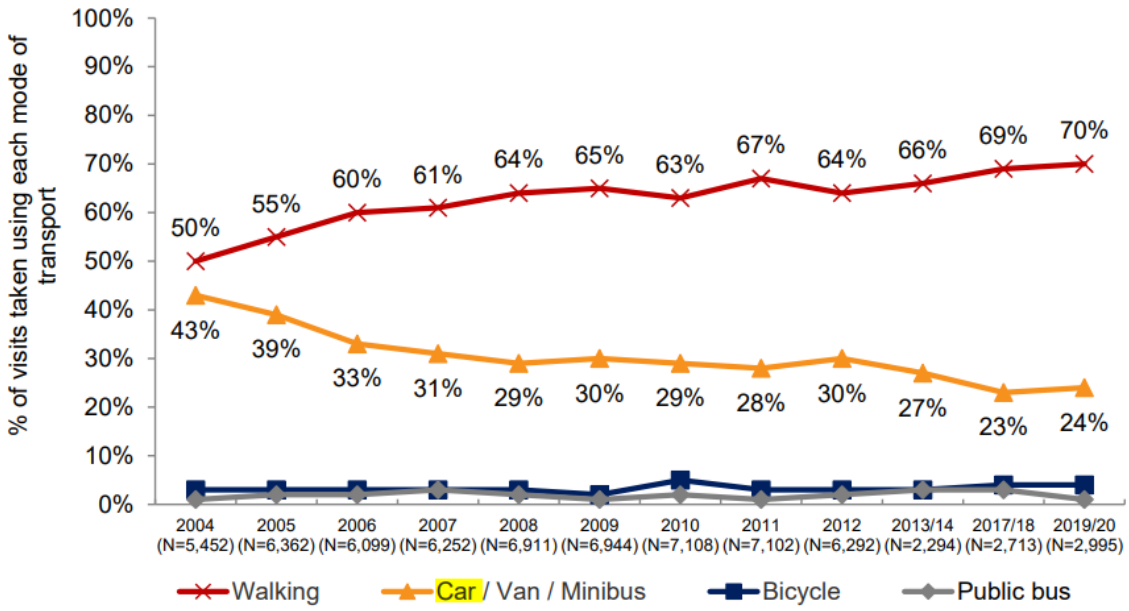

Figure 45 Means of transport used to reach destination of outdoor visits 2014- 2017-18 (Scotland)

8.11 One of the main aims of the TWSEL is to reduce carbon emissions, as well as to benefit human health, by increasing the accessibility of woodland. It aims to do this both by expanding woodland in accessible locations, and improving access to existing woods. Target 4B aims to increase access to trees and woodland for all by improving access to meet the Woodland Trust's Access Standard (smaller woods within 500m, and large ones within 4km). TWSEL includes policy on sustainable travel to try to influence how people travel to woodland. This will mean it is more possible for more people to walk or cycle to woodland. However, it is not possible to predict whether people will do so. In addition, improving how accessible woodlands are may draw people from further afield. It is considered likely that increasing the accessibility of woodland will increase recreation travel by non-sustainable modes, although it is not the intention of the Strategy. However, the recognition that people should be able to access woodland by sustainable means should mean that efforts to improve woodland access are made in places that are or could be made accessible by sustainable means. This makes it more likely that these modes would be used. In this way, the approach of the TWSEL will help reduce carbon emissions compared to encouraging access elsewhere.

8.12 The overall level of emissions related to means of accessing woodland may not be large however surface transport is one of the areas where action on climate change is lagging. The impact on climate of recreational travel will also depend on changes in private car fuelling (e.g. change to electric vehicle) and efficiency. The Tree and Woodland Strategy does not influence these factors. The overall impact of the TWSEL on recreational journeys by private vehicle is difficult to quantify. Increasing accessibility of recreational woodland is likely to result in more car journeys, but perhaps shorter ones than if there was not a focus on areas close to where people live.

Wood as fuel

8.13 In the UK as a whole, about 70% of domestic energy (in tonnes of oil equivalent) is used for space and water heating. Much of East Lothian is on the gas grid, though some solid fuel and oil fuelled heating remains, while older houses usually retaining chimneys even if unused. Some houses

have recently installed wood burning stoves. Use of wood source fuel is climate neutral (excluding transport impacts), and can replace fossil fuel use. Encouraging renewable heat is an important element of Scotland meetings its renewable energy targets. Both NPF4 and the East Lothian Local Development Plan 2018 encourage appropriate renewable energy development in the right locations as well as the provision of low and zero carbon technologies in new development. East Lothian Council's Climate Change Strategy includes aims to explore renewable energy generation. The Council is also required to produce a Local Heat and Energy Efficiency Strategy by 2024.

8.14 Woody biomass is no longer being promoted by Scottish Forestry as a fuel crop. The TWSEL does not support wood burning due to its effect on air quality and release of carbon. However, wood is used in domestic stoves, and there may also be some other small scale use of wood as fuel. There is some local supply of logs, both from commercial operators and sold as a side product by those carrying out work on trees. The cost of living crisis may increase use of wood fuel, with logs being taken informally from woodlands, with or without the consent of the landowner. The TWSEL is likely to increase the availability of wood as fuel due increased amount of trees and woodland, of which we encourage appropriate management. This will lead to more excess woody material as a by-product. The Council does not have information on the level of demand for wood fuel. If the demand is not met by local supply and fuel is imported to East Lothian, this will result in carbon emissions from transport.

8.15 The TWSEL plans to increase in woodland creation and tree planting. There is also support for softwood production on existing sites and hardwood production elsewhere. This may not be primarily to produce fuel logs but they are likely to be a by-product. This has the potential to increase local supply of wood fuel. This is positive for climate where its use replaces fossil fuel use. The choice not to further encourage wood fuel production could lead to more emissions from transport if logs are imported into East Lothian to meet demand. It is not clear if not encouraging use of wood fuel is positive or negative for climate. This would require appraisal of balance of supply and demand of fuel and what the alternative fuel use and destination of the wood would be.

Baseline – Adaptation

Climate change projections

8.16 Changes to the climate are slow due to a lag in the system; what we are experiencing now is the result of emissions up to a point around 40 years ago. An amount of climate change to which we will have to adapt is therefore inevitable regardless of any action on mitigation. Severe changes cannot be ruled out[96].

8.17 Climate change predictions are available from the Met Office[97]. Predictions for East Lothian are for a warmer, wetter winters with periods of more intense rainfall and warmer, drier summers.

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[96] Climate Ready Scotland, Scottish Climate Change Adaptation Programme, 4th Progress Report https://www.gov.scot/binaries/content/documents/govscot/publications/progress-report/2018/05/climate-ready-scotland-scottish-climate-change-adaptation-programme-fourth-annual/documents/00535998-pdf/00535998-pdf/govscot%3Adocument/00535998.pdf

[97] https://www.metoffice.gov.uk/research/approach/collaboration/ukcp/index

There is likely to be a longer growing season, linked to warmer weather. Extreme weather events are more likely.

Table 4 Climate Projections, Scotland East, 2020s to 2080s (UK Climate Projections 2017 Met Office Table 10.1)					
		2020s	2050s	2080s	Trend
Winter	Mean temperature	1.1°C (0.2°C – 2.0°C)	1.7°C (0.7°C – 2.9°C)	2.2°C (1.0°C – 3.7°C)	Warmer
	Precipitation	4% (-2% - 12%)	10% (1% - 20%)	12% (1% - 25%)	Wetter
Summer	Mean temperature	1.4°C (0.2°C – 2.0°C)	2.3°C (1.1°C – 3.9°C)	1.1°C (1.8°C – 5.7°C)	Warmer
	Precipitation	-6% (-17% - 7%)	-13% (-27% - 1%)	-17% (-33% - 0%)	Drier

8.18 Adaptation Scotland has identified some of the most important impacts of climate change[98]. They note that globally, climate change may have an impact on food production, though a warming climate and longer growing season has the potential to improve conditions for growing here (see 'Soil', above). Warmer, wetter conditions may allow more pests and diseases to establish and spread (see also 'Human health', above). Summer droughts may mean different uses (agriculture, domestic, industry and the natural environment) are in competition for water, which could affect both is quality and quantity. A warmer climate could lead to demand for more outdoor activity, and differently designed outdoor spaces (see Human Health, above). The requirements for design of urban layout to avoid different climatic effects may change, including avoidance of overheating.

8.19 The Climate Change Committee report on adaptation to climate change. The most recent report is 'Is Scotland Climate ready? – 2022 Report to Scottish Parliament'. The report finds that progress in delivering adaptation has stalled, though there are some areas where good progress is being made. Relevant areas where recommendations are made to the Scottish Government include:

- adaptations in the Housing to 2040 Strategy and route map to consider future increases in extreme weather, including overheating. Although the recommendation is for housing specifically, trees in urban areas can help regulate temperature and provide shade in urban areas, which can help cool houses and mitigate for high temperatures within homes
- Resilience of people to pathogens, and risks to people from vector borne diseases
- Flood alleviation
- Water demand
- Business opportunities from climate change adaptation, including new tourism opportunities

The CCC also recognises the desirability of a Just Transition. The Just Transition Commission set up by the Scottish Government has a working definition of the concept. This is: "Governments

[98] https://www.adaptationscotland.org.uk/why-adapt/impacts-scotland

design policies in a way that ensures the benefits of climate change action are shared widely, while the costs do not unfairly burden those least able to pay, or whose livelihoods are directly or indirectly at risk as the economy shifts and changes". The TWSEL Resilience theme covers adaptation issues.

Coastal erosion and sea level rise

8.20 Linked to climate change is expected sea level rise. Rising sea levels combined with expected stormy weather will also speed up coastal erosion and accretion processes, with land potentially being lost to erosion. Further information is available from NatureScot on their Dynamic Coast webpages, here: Dynamic Coast. Coastal flooding is likely to increase in vulnerable areas; other flooding issues are also an important part of adaptation. This is considered in the 'Water' section.

Issues – Climate Change Adaptation

Heat stress and shelter of buildings

8.21 Trees can help shelter individual buildings to reduce the need for heating in winter and coolling in summer. This will be of benefit now, but also help better adapt to predicted climatic conditions. This feeds back into helping with mitigation as it also reduces the requirement for use of energy to heat or cool the building. Trees can also reduce the temperature of urban areas generally.

8.22 Heat stress can cause illness and fatalities. Those with chronic illness, or who are very old or poor, are more susceptible to the effects of heat. High temperatures can make the symptoms of respiratory illnesses worse. In urban areas, heat can build up as hard surfaces such as concrete absorb heat in the day to release it at night, extending exposure time (known as the heat island effect). Heat waves are also likely to become more common with climate change. Trees can help combat the heat island effect by reducing the heat reaching the hard surfaces, thereby reducing heat build up. They also help in heatwaves where they can provide shade and a cooling effect. This supports climate mitigation and adaptation goals.

8.23 Outdoor space within towns here may not currently be designed for an increase in heat or sudden downpours. In particular there is a low tree canopy cover in the urban areas of Prestonpans and Tranent. East Lothian Council's Climate Change Strategy[99] identifies managing the natural environment to provide climate adaptation benefits whilst protecting our natural heritage assets as a key challenge for adaptation. The TWSEL has targets to increase canopy coverage (Target 4A) within settlements and lowest 30% SIMD areas to a minimum of 30% canopy.

8.24 The effect on heat stress compared to without the strategy is expected to be positive.

Shelter of land and livestock

8.25 Livestock may also have more need for shelter to address more intense rainfall and heat stress. Trees can help provide this shelter. Increased heat and longer, drier summers may also result in an increase in wind blown soil erosion. TWSEL supports an increase in farm woodland, which could help provide shelter and reduce soil erosion (Target 5 and Policy 21: Woodland Creation within Farmland). The effect is therefore expected to be positive.

[99] https://www.eastlothian.gov.uk/climatechangestrategy

Potential for changes to health and growth of trees

8.26 Some tree species may perform better than others in the conditions of a changed climate. Lack of, or too much, water causes difficulties for living organisms including trees and the understorey plants and fungi of woodlands. Increased storminess could increase windthrow (when the wind knocks a tree over). There is also the potential to harness the effects of climate change (such as a longer growing season) positively for species growth and distribution.

8.27 In the face of changing and uncertain conditions, a diversity of species supports resilience as it is less likely that a large proportion of trees will be lost to pest or climatic conditions that are unsuitable for them. There is information on woodland types in the National Forestry Inventory and the Native Woodland Survey of Scotland available here: East Lothian Native Woodland Survey: https://scotland.forestry.gov.uk/images/corporate/pdf/fcs-nwss-east-lothian.pdf and National Forest Inventory: https://www.forestresearch.gov.uk/tools-and-resources/national-forest-inventory/ contain information on the current species mix of East Lothian's woodland. This is summarised in the TWSEL. The Forestry Commission has produced research[100] on forests at risk of drought. Most of East Lothians forests were not considered at high risk though some were considered at Moderate risk.

8.28 Pests and diseases encouraged by warmer, wetter conditions could impact on the health of existing forestry, woodland and individual trees. The UK Plant Health Risk Register monitors pests and organisms, including those that infect trees.

8.29 The TWSEL supports species diversity in woodland through Policy 7 on Sustainable Woodland Management. Policy 9 Stock and Seed Sourcing also encourages the growing of trees which are well adapted to East Lothian's conditions. Natural regeneration, supported by this policy, should also encourage diversity. Actions 21 and 22 support planning for and managing the councils own trees, which will help identify issues with our tree estate, such as over reliance on a single species, and plan to address this. Target 2A is to improve resilience of East Lothian's environment including by securing functional native woodland connections through the area to support migration of species under climate change. Policy 10: Addressing Fragmentation supports this target. The TWSEL also encourages biosecurity measures to reduce the spread of disease. The effect of the Strategy is likely to improve the adaptive capacity of East Lothian's trees and woodland to climate change.

Likely Significant Effects – Climate

8.30 Taking into account the issues identified above, SEA objectives for Climatic Factors have been identified. The following table gives the objectives and summarises the impact:

SEA Objective, Climatic Factors To reduce harm from climate change by mitigation and adaption	Theme 1 –	Theme 2 – Resilience	Theme 3 – Biodiversit	Theme 4 –	Theme 5 -	Theme 6 –	Theme 7 –

[100] Sarah Green et al "Potential impacts of drought and disease on forestry in Scotland" Forestry Commission (2009) available at https://www.forestresearch.gov.uk/research/potential-impacts-of-drought-and-disease-on-forestry-in-scotland/ accessed 6/10/20221

SEA Sub-objective/ questions for assessment. Does the plan….?	KEY								
	Positive	+							
	Neutral	0							
	Unknown	?							
	Mixed/Variable	//							
	Negative	-							
Mitigate Climate Change			+	+	+	+	//	0	+
Support climate change adaptation			+	+	+	+	+	0	+

Commentary on Climate Indicators

8.31 The 'Climate' and 'Resilience' themes focus on supporting climate mitigation and adaptation and the outcomes should therefore be positive. The original driver behind the Climate Forest (Target 1, Action 2 within the TWSEL) was to address climate change, and this new woodland will absorb carbon dioxide from the atmosphere and lock it up as carbon within the trees. Retention of existing woodland is probably even more important, due to the time taken for new trees to reach maturity. Policy 1 Retention of the carbon value of woodland, trees and hedges brings stronger policy on avoiding loss of existing woodland and should therefore be positive for mitigation. Encouragement of sustainable management of woodland is also positive as this helps store carbon within the woodland. The 'Resilience' theme also includes actions on flooding (Actions 4 and 5) and Policy 6: Water Management and Slope Stability, which are positive for adaptation. Use of trees to improve the water environment, enhance the soil resource and regulated the urban climate are also encouraged. The Strategy considers tree and woodland resilience and provides policy and guidance on this. This is directed specifically at helping East Lothian's trees and woodlands adapt to climatic changes.

8.32 The proposed Ash Dieback Action Plan will involve trees being actively removed while still holding carbon. This will result in some emissions from transportation and tree work, while the carbon within the tree may be released more than if the tree died in situ. This may lead to more emissions than doing nothing. Removal is however necessary for safety reasons and to reduce spread of disease. Some level of removal is likely to happen without the strategy. The plan to replace ash trees will however lead to positive effects.

8.33 Under the 'Biodiversity; theme, connecting woodland habitat (Policy 10, Addressing Fragmentation) supports mitigation through encouraging woodland creation. It supports adaptation by allowing for climate migration of woodland species. The development of a Hedgerow Plan (Action 13) will also support both SEA objectives. Over the longer term, restoration of native woodland on PAWS sites (Target 3E, Action 9) will benefit both mitigation and adaptation, through retaining woodland and increasing its diversity. However, choice of faster growing conifers would have had more immediate impact on absorption of carbon dioxide. It may

also be more likely that the carbon of such trees would be retained as timber, though this is not certain. Some native broadleaves also have timber potential. Peatland restoration is supported rather than tree plantation on suitable sites (Policy 15: Peatland Restoration), which is positive for climate mitigation. The approach to control of deer (Policy 12: Deer and Deer Fencing) also supports climate mitigation as deer can be very damaging to woodland, hindering its potential as a carbon store.

8.34 Support for local fruit and nut growing could have a positive effect both on mitigation, through supporting a plant based, locally grown diet, and also adaptation through diversifying food sources. Action 20 on encouraging communities to prepare local place plans and Policy 21 Community Collaboration, which supports equality impact assessment, should help make sure planting and woodland creation are taken forward in line with Just Transition aims.

8.35 As noted above there could be an increase in travel in private vehicles to access woodland, if new areas are created. This is not the intention of the Strategy, which seeks to increase woodland in accessible areas. However, these are not the only places woodland will be increased, and some increase in travel by private vehicle is likely. This may also arise from Action 15, which supports promotion of woodland based tourism and recreation.

Mitigation for the adverse effects of the Strategy

8.36 **Embedded mitigation:** Climate change mitigation and adaptation were one of the main drivers of the strategy and consequently the Strategy includes actions in support of this aim. The aim of woodland expansion could result in emissions from planting. There also a need to reduce the 'peak' of climate forcing emissions as well as the total amount. There is the potential for short-term increase in emissions from the woodland creation targets included in this Strategy, due to soil disturbance and vehicle emissions linked to planting. The TWSEL aims to reduce this by support for natural regeneration (Policy 9: Seed and Tree Stock Sourcing).

8.37 **External mitigation:** East Lothian Council's Climate Change Strategy[101] sets out actions that the Council will take across many areas. The Climate Change Strategy is a live document, and will evolve in response to changing national and local policy. This document is likely to influence how the Council manages its land. The UK Forestry Standard[102] has provisions on Climate Change, which will help mitigate some potential emissions from forestry; adherence to the standard is required for payment of government grants for woodland creation and forest management.

8.38 East Lothian Council Plan 2022-27 includes as one of three over-arching objectives "respond to the climate emergency". Many public bodies, including the Council, have a duty in exercising their functions, to act in the way best calculated to contribute to Scotland's Climate Change Targets, and in a way that it considers is most sustainable[103] . This means the Council must consider climate

[101] https://www.eastlothian.gov.uk/climatechangestrategy

[102] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/687147/The_UK_Forestry_Standard.pdf

[103] Climate Change (Scotland) Act 2009

change targets and sustainability in looking after its own tree estate and through its actions as regulator.

8.39 **Project level mitigation:** At project level, the climate impacts should be considered including aspects such as choice of location, species, planting/creation techniques and soil types. Variations in design and/or location may help reduce emissions.

Secondary, Synergistic and Cumulative effects

8.40 **Positive:** There are likely to be cumulative positive long-term benefits to climate with the Scottish Climate Change Strategy, East Lothian Climate Change Strategy and many others on climatic factors due to sequestration of carbon dioxide in growing trees from woodland creation and planting of trees. The extra contribution of the TWSEL is likely to be minor, however the receptor is very sensitive.

8.41 **Negative:** There are many other sources of climate forcing emissions globally, arising from plans, projects and actions by individuals or organisations. The Strategy may give rise to some climate forcing emissions as noted above; these include short term emissions for long term benefit, such as from tree planting. Short term emissions are important as a higher overall peak in emissions could lead to known and unknown 'tipping point' type changes. Although it is the intention to reduced emissions, there may be some areas where there is an increase, for example car journeys to visit woodland. This will have cumulative adverse impact with all other sources of emissions globally. This will, in accumulation with all other sources of emissions, lead to the well known secondary and synergistic effects on other receptors which will occur due to climatic change (see information from the Intergovernmental Panel on Climate Change).

Conclusion – Climate Change

Climate Change Mitigation

8.42 The TWSEL aims to help achieve Scotland's Climate Change targets. Woodland creation is an area currently identified as lagging in terms of Scottish Government targets, and the TWSEL will help address this. The Strategy also encourages use of timber and wood products, which store carbon. There may be a small increase in car travel for recreation.

Adaptation

8.43 The effect of the TWSEL on adaptation is expected to be strongly positive. The Resilience them is specifically aimed at this, both in using woodland and trees to increase the resilience of the area overall, and considering how to make the woodland itself resilient to our changing climate. The TWSEL will benefit the resilience of the area by supporting woodland creation where it can help reduce flood risk, reduce heating and/or provide shade and shelter in urban areas. The strategy aims to increase the connectivity and species diversity of woodland, supporting its adaptation and allowing for climate migration of species northwards and uphill.

Residual adverse impacts

- Potential for climate forcing emissions from an increase in car borne visitors for woodland recreation

13 MATERIAL ASSETS

13.1 Material assets can cover a wide variety of assets and includes built assets such as roads, railways, paths and electricity supply, water supply and wastewater management, as well as some aspects of land, including prime agricultural land and forest as a timber resource.

13.2 The Scoping Table below shows the issues considered relevant to this strategy. Land has value as a material asset, however both contamination and degraded land (vacant and derelict) and the food production capability of land are considered under 'Soil' above. Use of trees to shelter buildings to reduce the need for heating and coolling could save the use oil, gas &c, which are material assets. This is considered under 'Climatic Factors' due to the climate forcing potential of use of energy for space heating. Public spaces and greenspaces in urban areas are material assets, which trees could enhance. This is considered under 'Population'.

Scoping Table 8: MATERIAL ASSETS	
Issue	**In/Out**
Promote the effective and sustainable use of forests and woodland	
Management of the forest resource	**In**
Timber building materials and wood and wood products as material (see 'Climatic Factors – Timber and Wood')	**In**
Safeguard and enhance existing natural and built resources	
Transport network	**In**
Scottish Waters drainage assets (see under 'Water')	**In**
Built environment	**Out**
Efficient use of land (Scottish Land Strategy aim)	**In**
Mineral reserves	**In**
Promote the circular economy	
Treatment of waste from forestry operations	**In**

Baseline and Issues – Material assets

Effective and Sustainable Use of Forests and Woodland

Management of the Forestry Resource

13.3 Timber is a valuable resource. There are areas of commercial softwood plantation at either end of the Lammermuirs, and also some hardwood production in more lowland areas. The Scottish Forestry Map viewer shows information relevant to commercial forestry, as well as felling licences. See Scottish Forestry Map Viewer (arcgis.com)

13.4 The TWSEL contains policy encouraging the use of wood and wood products (Policy 5: Wood Products) and continued production of wood and wood fibre from existing productive woodlands (Policy 20: Productive Woodland), other than in areas where peatland restoration would be possible. TWSEL supports inclusion of a greater variety of species in line with the UK Forestry Standard, as the opportunity arises. The TWSEL also supports retention and protection of existing woodland in Policy 1.

13.5 While the strategy supports timber production on existing sites and where it can be produced in woodlands with multifunctional benefit, it does not seek significant expansion of forestry for primarily commercial purposes. If successful, the strategy is likely to result in timber production that is not significantly different from now, with perhaps a small increase in hardwood production. The effect is therefore considered neutral.

Safeguard and enhance existing natural and built resources

Transport Network

13.6 The transport system is essential to allow people to access goods and services and get to where they need or want to go.

Railways

13.7 Management of trees and vegetation alongside the railway is essential for its safe operation, as well as preventing damage to the line and overhead cables. Fallen leaves, branches or trees are a serious risk to the safe operation of the railway. Growing trees can also interfere with overhead railway power lines. Network Rail manages trees and plants growing within the railway corridor – between the railway and the boundary fence - to protect the asset and ensure its safe operation. They can also seek an Order from the Council where neighbouring trees are a hazard, requiring the landowner to make the tree(s) safe. Network rail aim to carry out its work with a respect for the habitats growing alongside the line, and look to NatureScot and the Woodland Trust for advice[104].

Trunk Roads

13.8 Trunk roads are the responsibility of Transport Scotland. In East Lothian, the A1 is the only trunk road. Transport Scotland have a duty to manage and maintain landscape areas within transport corridors to reflect local conditions and requirements without compromising safety. They must

[104] Network Rail website access 23/03/2023 https://www.networkrail.co.uk/running-the-railway/looking-after-the-railway/vegetation-management/

also protect wildlife and habitats that come into contact with their transport networks. Their policy is to enhance and protect natural heritage, and to build in adaptability to change.

Local Roads

13.9 Traffic from forestry operations and woodland recreation is very unlikely to significantly affect the operation of the transport network, though there may be noticeable forestry traffic on some local roads.

13.10 Increased tree planting alongside local roads could affect their safe operation due to an increase in falling and fallen leaves, trees and branches. Trees in the road verge can be a road safety hazard, while trees or shrubs can also affect sightlines. Leaves can also cause blocked gullies, which can increase erosion from flooding and consequently damage the road. Tree roots may also cause damage to footways and roads. In urban areas, fallen leaves and sticks can be a safety hazard to footway users. The existence of trees alongside the footway may affect actual or perceived safety for some users, reducing its usefulness as a route.

Effect of the TWSEL on the Transport Network

13.11 The TWSEL supports an increase in trees and woodland overall (Target 1, Action 2). It supports planting along road corridors for air quality and noise mitigation purposes (Action 20) as well as planting generally in urban areas. Target 4A seeks increasing tree canopy cover in urban areas. Action 5 provides for working with farmers and landowners to help reduce water run-off onto the Council's roads through woodland creation. The Strategy notes that road safety must be taken into account at project level, avoiding tree planting on verges.

13.12 Network Rail, Transport Scotland and the Council will continue to manage their assets to avoid an adverse impact from trees. Provided care is taken at the project level, or even with the planting of individual trees, there should be no direct harm to transport infrastructure. However there could be adverse indirect effects, resulting more from poor planning or maintenance at project level. Increased canopy cover is likely to lead to increased leaf drop. This could lead to issues of blocked drains and perhaps an increase in pedestrian accidents. If the increase in urban tree canopy is badly planned or maintained, pedestrian routes in particular could be perceived as dark or unattractive to use.

13.13 There should be positive effects from reducing surface water run off to roads (Action 4) and on the appearance of the road network from increased tree cover.

13.14 Overall the effect is likely to be mixed.

Built Environment

13.15 Trees can potentially cause damage to elements of the built environment including buildings, footpaths and service infrastructure both above and below ground. Wayleaves are often in place to allow service providers to reduce tree growth if necessary. Careful species and site choice can help avoid problems. Root barriers can be used to prevent root damage to structures and services from planted trees.

13.16 Although the TWSEL promotes an increase in canopy coverage and other planting in the urban area (Target 4), if good practice is followed as recommended, there should not be damage to the

built environment. Any damage that does occur is likely to be small scale and localised, and related to the specific details of the project rather than strategic direction.

13.17 This topic has therefore been scoped out.

Efficient use of land

13.18 Much of the land in East Lothian is highly suitable for a number of purposes - highly accessible and therefore attractive for development, well placed as a recreational asset and much of it is prime agricultural land. Some parts of East Lothian are supporting habitat for qualifying interest species of European Sites. The East Lothian Local Development Plan 2018 aimed to balance these competing priorities through allocation of development land, along with indicating through designations such as Green Belt and Countryside Around Town areas where development should not generally occur.

13.19 Land has varying capability for agricultural purposes, depending on the characteristics of the environment and soil. The James Hutton Institute classified land according to those of its characteristics that affect potential productivity – such as climate, soil, gradient, wetness, droughtiness and erosion potential - which cannot be changed through land management. This nationally consistent system has been and is useful in planning for and protecting agricultural land, however it is a static model. Climate change is expected to make more land become suitable for a wider range of crop growing

13.20 The TWSEL aims to integrate woodland expansion with retention of agricultural land and its food production capacity. Target 4 seeks an increase in farm woodland where this aligns with agricultural production. Policy 18: Woodland Creation within farmland states that woodland creation in Class 1 – 4.2 land should aim to complement and improve agricultural production. This should support effective use of land. Areas deficient in accessible woodland are also identified. This will help use land efficiently for recreation. The constraints mapping exercise overall shows guides woodland creation to suitable areas, supporting the efficient use of land.

Minerals

13.21 Mineral reserves are a finite resource. While woodland might not sterilise them it can make extraction more expensive and less acceptable in terms of environmental harm.

13.22 The western part of East Lothian lies on the Lothian coalfield. Despite considerable mine working effort in this area in the past, both deep and opencast, some shallow coal deposits may remain. There are a small number of coal-fired generation plants in the UK, though all are due to close before 2025. There is also some domestic use of coal. Coal burning has strong climate forcing effects as well as other emissions to air. Coal extraction can also cause environmental and amenity issues. It is unclear if it would be possible to extract the coal resource remaining in this area while meeting environmental and amenity objectives. While coal continues to be used however it may be that the most sustainable solution is to extract this in the UK rather than import. NPF4 allows for extraction of conventional fossil fuels in exceptional circumstances.

13.23 There are some other mineral resources in East Lothian, notably aggregate at Markle and Bangley Quarry, sand and gravel at Yester and possibly Skateraw, and limestone at Barns Ness. NPF4 policy is that development is only supported where there is an overriding need for the development and prior extraction of the mineral cannot reasonably be undertaken; or if

extraction of the mineral is impracticable or unlikely to be environmentally acceptable. A landbank of mineral supply should be maintained if possible within the market area in which they are to be used.

13.24 Woodland creation is not development, though it may make it less acceptable to extract minerals as valuable habitat and landscape features can be created. Within the life of this strategy, any woodland created will be only up 10 years old. It will therefore unlikely to have significant environmental value such that removal of minerals in the lifetime of the strategy would be unacceptable, however it might be less acceptable to extract them as the woodland matures. It is unlikely that owners of minerals with a foreseeable prospect of extraction would seek to create woodland on these sites. The effect on potential mineral supply is considered to be negative, but not significant. Woodland would not harm the minerals themselves.

Promote the Circular Economy

13.25 The circular economy where products are kept in use for as long as possible, and the material within it treated as a resource to be recovered, recycled and reused. This stands in contrast to the linear economy where goods are made, used and disposed of. Timber is a renewable resource that generates little waste that cannot be reused. For example brash that arises from forestry operations can be re-used for ecological benefit, while machine waste can be used in animal bedding.

13.26 Tree planting uses some products which are not easy to recycle. Plastic used in tree planting and forestry is a resource however it can end up being a waste stream. TWSEL Policy 4 encourages following the waste hierarchy in use of materials in tree and forestry operations, and treatment of waste arisings. This aims to lead to a reduction in use of single use products, especially those that are difficult to recycle, such as plastic tree tubes. This supports Scottish Forestry Strategy Priority 6, which includes increasing efficiency, productivity and the value generated from forest products and services.

13.27 Wood products at the end of their life, such as old newspapers or timber from demolition, should also be considered as a resource. The TWSEL notes the Council's continuing actions with regard to wood waste it produces and paper and cardboard waste it collects. Use of timber products, which can then be recycled, is also encouraged. Policy 4 encourages following the waste hierarchy in forestry and woodland creation and operations. Policy 5 encourages the use of timber and timber products.

13.28 Together with the innovation supported through Scottish Forestry Strategy, and Scotland's Zero Waste Plan, the strategy is expected to be positive effects on the use of forestry by-products previously treated as waste, and the circular economy.

Likely Significant Effects – Material Assets

13.29 Taking into account the issues identified above, SEA objectives for Material Assets have been identified. Vacant and derelict land is considered under 'Landscape'. The following table gives the SEA objectives and summarises the impact of each Theme:

SEA Objective, Material assets: Manage, maintain or promote the efficient, effective or appropriate use of material assets			Theme 1 – Climate Mitigation	Theme 2 – Resilience and adaptation	Theme 3 – Biodiversity	Theme 4 – Community	Theme 5 - Economy	Theme 6 – Cultural Heritage	Theme 7 – Landscape Character
SEA Indicator/ questions for assessment. Does the plan….?	KEY								
	Positive	+							
	Neutral	0							
	Unknown	?							
	Mixed/Variable	//							
	Negative	-							
Help to ensure forests and woodlands are sustainably managed			+	+	+	+	0	+	+
Promote the circular economy			+	0	0	+	+	0	0

Commentary on Material Assets Indicators

13.30 Policy 7 of the TWSEL explicitly encourages sustainable woodland management in line with the UK Forestry Standard so the effect on this indicator overall should be positive. Policy 3 Woodland Creation encourages land managers creating new woodland to seek to reduce the carbon impacts in how the woodland is created. Actions 6 and 7 the adoption of an ash dieback plan and the management and replacement of ash trees in accordance with this, increases the likelihood that these trees will be managed in a sustainable way. Continuous cover management is encouraged, as is consideration of the potential for decreasing risk from wildfires and pests and disease. Policies and actions within the Biodiversity Theme are positive, as they aim to protect and enhance woodland of high nature conservation value. Addressing fragmentation will help sustain native woodland quality.

13.31 The 'Community' Theme includes an action for the Council to produce a tree management strategy for its own trees, and this will help support sustainable management of our own trees. The Cultural Heritage theme includes actions to encourage recognition and protection of trees with cultural heritage value. This contributes to the sustainable management of these trees.

13.32 The TWSEL includes actions that will have positive effects on promoting the circular economy. This encourages preservation of wood and other resources as material assets. Actions include Action 3: The Council will explore ways of increase use of wood and wood products, particularly locally sourced timber. Use of wood means fewer non-renewable resources are used. Policy 5 gives general support for the use and retention of timber and wood products, as well as the use of wood products that are from recycled material. Policy 4: Reducing Climate Forcing Emissions from Tree Planting and Forestry Operations promotes the waste hierarchy of prevent, reuse, recycle, recover, dispose. This aims to treat material as a resource rather than waste and make the best use of it possible. Policy 17 supports continued production of wood and wood fibre from

existing productive woodlands, so supporting a source of wood products. Action 18 proposes that the Council will draw up a tree management strategy for our own trees, which will include how to manage our tree and woodland resource to support the circular economy.

Mitigation – Material Assets

13.33 **External mitigation:** where proposals require planning permission, the policies of the development plan protect transport infrastructure. This would include proposals for tree planting as part of development. Policy T2: General Transport Impact requires that development has no adverse impact on road safety; the convenience, safety and attractiveness of walking and cycling; public transport operations, both existing and planned, including convenience of access and travel times; or the capacity of the surrounding road network to deal with traffic unrelated to the proposed development.. Policy T4: Active Travel Routes and Core Paths as part of the East Lothian Green Network Strategy protects the existing core path and active travel networks and ensures that new development does not undermine them.

13.34 There is statutory provision for wayleaves for infrastructure provided by statutory undertakers which allows them to protect their equipment from tree growth. This operators of electricity lines and similar assets can remove tree growth where it is likely to affect their asset. The existence of wayleaves prevents tree planting where it may cause such damage. The Council as Roads Authority can take action against trees or other vegetation that is a road safety hazard.

13.35 **Project level mitigation:** Woodland creation and tree planting proposals should consider potential for damage to existing material assets, including drinking water supply, roads and the built environment, taking into account the future growth of both roots and above ground parts of the tree.

Secondary, Synergistic and Cumulative effects

13.36 There will be indirect effects on the circular economy from reduction of flooding which will lead to less disposal of flood damaged items.

Conclusion – Material Assets

13.37 The effects of the TWSEL on material assets are varied. No negative effects were identified on the indicators though these do not cover effects on the transport, electricity or water management network. Sustainable management of woodland should increase, and the circular economy benefit, with a reduction in material being disposed at lower levels of the waste hierarchy. The effect on the transport network overall is likely to be neutral. There is a possibility of some local issues arising from leaves or others. However, the appearance of road routes including pedestrian routes should improve. This is likely to increase the use of pedestrian routes. However, there may also be occasions where an increase in trees are perceived as making pedestrian routes appear less attractive or unsafe, reducing their functionality.

13.38 Despite the inclusion of guidance on how to avoid damage to structures from tree planting, there is likely to be some increased level of damage to buildings and hard surfacing from trees and tree roots. This could come from planted trees where mistakes are made about their siting or that grow differently from expected, or where tree or hedge maintenance was intended but stops. There could also be an increase in local damage arising from self-seeded trees arising from an increase in woodland cover and urban canopy cover in particular.

Residual adverse effects: Material assets

- An increase in local damage to structures and hard surfacing due to an increase in self-seeded trees
- Increased urban tree canopy cover may make some pedestrian routes appear to some people to be less attractive or unsafe
- There may be an increase in maintenance of the transport network including gully/drain clearance required due to more leaves

14 CULTURAL HERITAGE

Introduction

14.1 Cultural Heritage is "an expression of the ways of living developed by a community and passed on from generation to generation. It can include customs, practices, places, objects, artistic expressions and values, aesthetic, historic, scientific, social or spiritual aspects[105]". It is everything created by people over time[106]. It includes the physical evidence for human activity that connects people with places, linked with the associations we can see, feel and understand. It includes built and natural features as well as intangible heritage. Cultural heritage is central to our everyday lives and our sense of place, identity and wellbeing.

14.2 Some parts of the heritage are recognised by designation which brings a level of protection, including Scheduled Monuments, Listed Buildings and Conservation Areas. Battlefields and Inventory Historic Gardens and Designed Landscapes also have a level of protection. Some woodland and individual trees also have a value as part of the cultural heritage, some of which are protected through Tree Preservation Orders.

14.3 The Historic Environment section of Scotland's Environment website[107] sets out pressures and challenges on the Historic environment. These include: development pressures, land use, maintenance, climate change (both mitigation and adaptation), sustainability, sea level rise and coastal change, pollution and visitors. The Historic Environment Scotland Policy[108] also notes the need to create and maintain place, and to recognise and manage the historic environment in a way that reflects our whole society as well as economic and societal change, and change in skills. It also mentions the need to take a holistic approach to the environment.

14.4 There is the potential for woodland creation and tree planting to affect some historic assets. Designed landscapes and battlefields are the mostly likely as they are large-scale designations

[105] Historic Environment Policy for Scotland Historic Environment Policy for Scotland | Historic Environment Scotland

[106] From Scotland's Environment website accessed 28/09/2021 at https://www.environment.gov.scot/our-environment/people-and-the-environment/historic-environment/

[107] Scotland's Environment Website accessed 5/10/2021 at Historic environment | Scotland's environment web

[108] Historic Environment Policy for Scotland Historic Environment Policy for Scotland | Historic Environment Scotland

often containing areas where woodland could be created. The balance of trees and built elements is also important for many of East Lothian's Conservation Areas. There is legislation in place which protects Scheduled Monuments, and Listed Buildings being structures are not suitable for planting. Direct effects on these assets would therefore not occur regardless of the policies and actions of the strategy. There is the potential for indirect effects on all of these assets however. The TWSEL also has the potential to affect the historic environment through effects on historic landscapes and townscapes overall.

14.5 The Scoping Table below shows, with reasons, what existing issues are considered relevant to this strategy.

Scoping Table 9: CULTURAL HERITAGE	
Issue	**In/Out**
Mitigate the effects of development and visitor pressure	
Potential for the TWSEL to mitigate the impact of new built development on the traditional setting of towns and villages [this is also an issue for landscape]	**In**
Visitor pressure on trees as heritage assets	**In**
Avoid Land use change and tree planting harming the cultural heritage	
Potential for direct visual effects and indirect 'setting' effects on designated historic environment assets including Conservation Areas, Listed Buildings, Battlefields, Scheduled Monuments and local and Inventory Gardens and Designed Landscapes	**In**
Potential for change to historic landscapes overall	**In**
Potential for loss of undesignated (including unknown) archaeology	**In**
Potential for effects on intangible Heritage	**??**
Avoid physical damage (maintenance)	
Potential for physical damage to designated historic environment assets including Listed Buildings, buildings in Conservation Areas and Scheduled Monuments	**Out**
Preservation of heritage and ancient woodland and trees	**In**
Climate change/pollution	
Climate change and pollution are a threat to some elements of the historic environment. The TWSEL will mitigate climate change (see Climatic Factors) and air and water pollution (see 'Air' and 'Water') but will not otherwise affect these threats to the historic environment.	**In**

Baseline and Issues – Cultural Heritage

14.6 East Lothian has been settled and exploited continuously since at least the Neolithic period (c.5000 BC), leading to a rich and varied heritage. There are a high number of known Historic Assets, both designated and undesignated, and a high potential for further unrecorded remains of all periods to be present. The area also has a significant amount of intangible heritage value in

the form of local stories and traditions as well as references in art and literature. Evidence and remains of prehistoric farming, medieval industry, conflict, industrial and agricultural innovation and expansion as well as settlement from all periods survive within the area.

14.7 There are numerous designated assets throughout East Lothian: Listed Buildings, Conservation Areas, both Inventory and Local Gardens and Designed Landscapes, and Scheduled Monuments. The map below is intended to give an indication of East Lothian's rich heritage. Further information on the assets can be obtained from Historic Environment Scotland at: Pastmap, here: https://pastmap.org.uk/ and their portal: http://portal.historicenvironment.scot/ .

14.8 Over time, some historic environment assets will naturally deteriorate even with no human intervention. Buildings will come into and out of use, landscapes will alter through management and landuse change. Climate change will deteriorate sites and sometimes there will be active damage from people.

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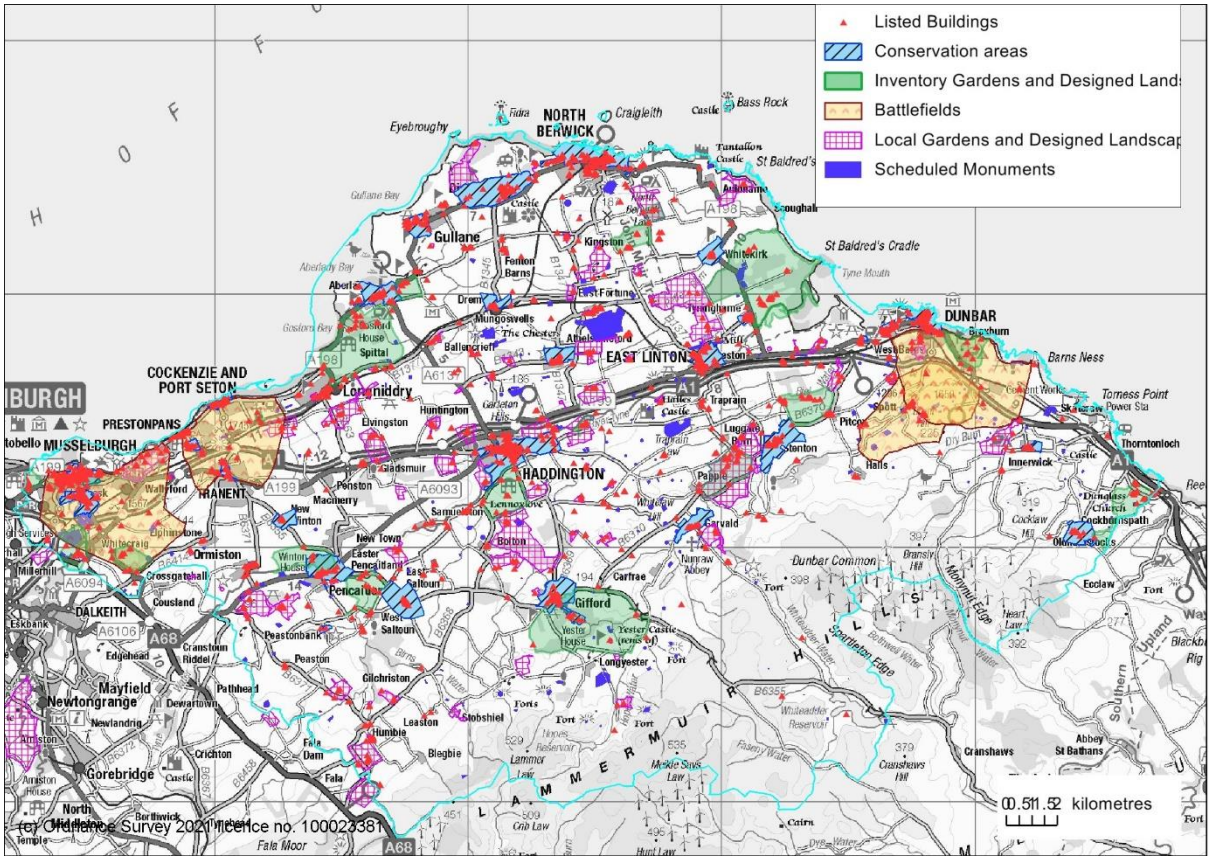

Figure 46: Designated Historic Environment Assets

Mitigate the effects of development and visitor pressure

Traditional setting of towns and villages

14.9 Changes to the economy and population and population distribution in Scotland have led to development pressure for housing and economic development in East Lothian. This has resulted in the growth of many of its traditional towns and villages, in some cases very considerable

growth. This development brings change to the setting of towns and villages and their townscape, for example new housing areas may lack the mature trees of the original towns and villages, and alter the traditional setting of the settlement. The TWSEL refers to the SPG on Design Standards for New Housing Areas. This aims to promote a harmonious relationship between new development and trees. Increasing tree canopy coverage (Target 4) is likely to help these new areas integrate into the landscape, so reducing the impact of new development on the traditional setting of towns and villages

14.10 Woodland creation could also affect the traditional setting of towns or villages where it changes an important element of the setting. For example, when a traditionally agricultural village is set among agricultural land, this shows the reason for the settlement being where it is and is part of its historic character. Trees may also obscure views of the built elements of towns and villages, harming their traditional setting in the landscape. This should be considered a project level.

14.11 The TWSEL contains guidance on tree planting in each town and village which aims to help reinforce its individual character, including its setting where relevant. It also refers to Conservation Area Appraisals which are being produced and will help identify places where tree planting should not occur, which in some cases includes setting.

14.12 Overall the effect will depend on what comes forward at project level and is difficult to predict overall.

Visitor pressure on trees as heritage assets

14.13 Some of East Lothian's trees are heritage attractions, while trees are an important part of Designed Landscapes which also draw visitors. Traditionally tourism is seen as a natural ally of the historic environment. However, this can be a double-edged sword if not properly considered. Heritage tourism can bring significant revenue into an area (heritage tourism day visitors brought in £171m to East Lothian in 2017/18. However, without considering the pressure of visitors in terms of aspects like erosion of sites, or visitor experience then this can quickly turn into a negative. Heritage which is biological such as trees may need particular consideration.

14.14 The TWSEL supports the celebration of heritage trees and woodland. Increasing prominence of heritage trees will increase visitor numbers to view these. Increasing visitor access or numbers could have a negative impact on the historic tree itself.

14.15 The TWSEL includes Action 26, which is to develop a series of tree trails for our towns and villages. The Strategy notes that any promotion of individual notable trees will have to be done carefully to avoid damage from visitors, and because many are on private land. The promotion of tree trails may help steer visitor pressure towards more robust sites. The TWSEL does advocate celebration of Notable Trees but by noting that promotion would have to be carefully done it is hoped that damage would be avoided. Overall the impact is considered to be neutral.

Avoid Land use change and tree planting harming the cultural heritage

Direct visual effects and indirect 'setting' effects on designated historic environment assets

14.16 Direct visual effects on a designated historic environment asset occur when the change takes place within the asset itself, for example within a battlefield landscape, a Conservation Area, or an Inventory or Local Garden or Designed Landscape. Indirect or 'setting' effects occur where

there are changes to the wider environs of an asset that affect how we appreciate and understand it.

14.17 Tree planting has the potential to have both direct and setting effects on some assets due to alterations in woodland cover and composition, or perhaps even the planting of an individual tree. There is the potential for both positive and negative effects.

14.18 Four major battles included on the National Inventory of Historic Battlefields have been fought in East Lothian. The Battlefields cover relatively large areas and have a high degree of intangible value for the area. The key landscape characteristics of a battlefield help us to understand how the landscape influenced the events of the battle particularly, and how the same features, topography, and landuse can be experienced today. For some of these battlefield landscapes the intervisibility of the certain points or openness of certain areas are important to the understanding of the battle.

14.19 Both Pinkie and Prestonpans battlefields have a high value to the area and beyond in terms of intangible heritage. The Battle of Prestonpans in particular has international recognition in terms of its cultural reach with numerous poems, songs and artistic works being associated with it. Dunbar 1 and 2 are perhaps less well recognised but also have some intangible value.

14.20 There are 25 Inventory Gardens and Designed Landscapes, as well as 151 recognised Local Gardens and Designed Landscapes. Some of these also cover relatively extensive areas, and often include woodland and tree plantings as part of the design. There is the potential for tree planting to directly impact on these sites if planted within the boundaries. Some of the gardens and designed landscapes include views and vistas to specific features of the surrounding landscape, which planting could adversely affect. However, it is also possible that the view or vista could be enhanced by planting to obscure modern intrusions. TWSEL also has the potential to improve Gardens and Designed Landscapes by encouraging restoration of the woodland and tree planting features of the original design. Policy 25 Protection of the Historic Environment seeks to protect Gardens and Designed Landscapes.

14.21 The TWSEL seeks restoration of PAWS, of which a number are within Historic Gardens and Designed Landscapes. If these sites were restructured this could have effects on the integrity of the site. In Victorian times explorers brought back plants from all over the world and the woods and tree planting as part of the designed landscapes were often a mixture of native and non-native. The potential for harm should be mitigated by Policy 25: Protection of the Historic Environment, which seeks to protect Historic Gardens and Designed Landscapes.

14.22 There are about 300 Scheduled monuments in East Lothian. These include numerous prehistoric forts, cairns, castles, standing stones; medieval remains such as Preston Tower and Seton and Dunglass Collegiate churches, coal mine at Birsely Brae and pottery and lime kilns, various enclosures, curcuses and ring ditches, pit alignments, as well as later remains such as East Fortune airfield. Tree planting has the potential to directly or indirectly harm Scheduled Monuments. Self-seeding from woodland or woodland understorey plants also has the potential to affect the monuments.

14.23 Any purposeful planting within a Scheduled Monuments requires consent from Historic Environment Scotland, which would not be granted were it to be harmful. The risk of direct harm

from tree planting is therefore not an issue for the TWSEL. The risk of self-seeded trees at monuments is likely to increase with increased woodland coverage in the vicinity. This could harm the monuments.

14.24 For some Scheduled Monuments increased woodland cover could harm their setting, such as where an open landscape is a feature of their setting, or where outlook is an important part of understanding of the monument. For example the lookout on North Berwick Law was positioned to watch for Napoleonic invaders in the Forth, and trees blocking this view would reduce this understanding. The Tithe Barn at Whitekirk would traditionally have kept an open setting to help avoid rodent damage to the stored grain. There also may be potential for some monuments to be enhanced by increased woodland cover, for example where the woodland would have been part of its original setting, or where it screens modern development.

14.25 The TWSEL shows Scheduled Monuments as 'Sensitive' in the opportunity mapping, highlighting that any planting in such areas would need to be very carefully considered, if it is suitable at all. Policy 24 Scheduled Monuments and Archaeological Sites and Policy 25 Protection of the Historic Environment seeks to protect cultural heritage assets.

14.26 East Lothian has 2662 Listed Buildings, located throughout the area though sparser in the Lammermuir area. Some of these Listed Buildings have extensive settings, which can be important both for understanding the building itself and for sense of place. As with Scheduled Monuments, there is potential for tree planting and woodland creation to affect the setting of Listed Buildings positively or negatively. There is also potential for an increase in self-seeding with an increase in trees and woodland, including in towns and villages where many of our listed buildings are. However this risk is mitigated by the responsibility of owners of listed buildings for their maintenance.

14.27 There are 32 Conservation Areas in East Lothian. Some of the Conservation Areas include the landscape setting of the village[109]. While tree removal within Conservation Areas is subject to control, there is no control over tree planting. Tree planting and an increase in self-seeded trees in the urban areas of Conservation Areas or their landscape setting could potentially affect their historic character. The TWSEL advises that the tree planting within these areas should accord with the character of the area and the individual Conservation Area Character Statement, and some of the advice in the towns and settlement section covers Conservation Areas. This should help avoid the inappropriate planting of trees that harm Conservation Areas, insofar as the strategy can influence this.

14.28 Each asset and its setting (where applicable) is different. There is the potential for some of the assets to receive a direct visual effect from tree planting in that it would be physically possible to plant there, including in Conservation Areas, Battlefields and Designed Landscapes. It may be possible to enhance some assets or their settings using tree planting. For example, there may be places where there have historically been trees that could be replaced, or where trees have died or are coming to the end of their life, and would benefit from succession planting.

[109] Conservation Areas with landscape settings are Inveresk, Glenkinchie, New Winton, Pencaitland, East Saltoun, Gifford, Drem, Athelstaneford, Dirleton, Whitekirk, Stenton and Oldhamstocks

14.29 The TWSEL includes Policy 25 Protection of the Historic Environment, which provides that woodland creation, management, expansion or tree planting &c should aim to enhance the historic environment. The mapping includes Scheduled Monuments as Sensitive while Gardens and Designed Landscapes and Battlefields are mapped as Potential. 'Potential' does not mean that it is the intention that woodland will cover these areas but that it may be possible to increase woodland cover taking account of the constraint.

14.30 Even small scale planting of individual trees or woodland could affect cultural heritage assets, and there are generally no controls over this. There is enthusiasm for tree planting at the moment as individuals respond to the climate and nature emergencies. The TWSEL aims to guide this to locations where it will enhance rather than harm the cultural heritage. Its effects should therefore be positive overall.

Change to historic landscapes and townscapes overall

14.31 Changing a landscape which has not had significant tree cover, certainly in living memory, and reaching back to prehistoric times, has implications for the perception of the historic character of the area overall. Land use and land cover is constantly changing in response to people's need, for example current need to address climate change is leading to more woodland creation. The landscape shows evidence of our former needs and desires, for example planting Scot's pine for pit props, hedges to define field boundaries, yew trees in churchyards or the design of policy grounds of Estate Houses. Tree cover may also help understanding of previous events (such as battlefields). All of these go to make up the landscape as we see it now, often with strong historic element. Large-scale tree planting could affect the historic landscape overall.

14.32 Undesignated landscapes also have a historic value of place; local townscapes and landscapes. Although not cultural heritage 'assets' as such, street layout, settlement pattern, place names and styles of architecture forms part of the historic environment and can contribute to placemaking. Tree planting and woodland creation has the potential to affect the historic value of the landscape and townscape overall.

14.33 This is further discussed in 'Landscape'.

Loss of undesignated (including unknown) archaeology

14.34 In addition to the designated sites within the area there are over 600 other historic assets. These range from cropmarks through to industrial remains. This includes sites such as Scotland's earliest rail track. There is also the potential for as yet unidentified remains to exist throughout most of East Lothian (with the exception of areas affected by opencast mining). Tree planting, even on a small scale, has the potential to affect archaeological remains. The remains can be harmed by poorly planned and sub-standard cultivation, desiccation, root damage and disturbance, visitor erosion, burrowing animals, or chemical changes to the surrounding environment.

14.35 Larger scale afforestation is subject to screening for Environmental Impact Assessment, where this potential would be taken into account, and it is likely that prior to any large scale planting pre-determination fieldwork may be required. Archaeological potential would also be considered in assessing applications for grants for woodland planting. However, smaller scale planting may not consider the effect on remains, and it can also be that remains are not protected as intended when schemes are consented.

14.36 The TWSEL in Policy 24: Scheduled Monuments and Archaeological Sites encourages the identification and recording of archaeological remains. Where consent or government funding is required for woodland creation, the UK Forestry Standard will require consideration of archaeology, which will mitigate the impact of an increase in woodland creation. The TWSEL highlights the issue, which may reduce inadvertent loss of unknown remains. However the encouragement of woodland creation may still lead to some losses.

Intangible heritage

14.37 Tangible and intangible heritage are interlinked. By its very definition the intangible element is less obvious than the physical assets or landscapes but it is equally as important to how we appreciate the character of the area. The Intangible heritage aspects can be harder to identify and protect than physical assets.

14.38 There are stories around some of the trees in East Lothian – the hawthorn tree behind which Colonel Gardner hid at the battle of Prestonpans, the Yew under which John Knox and George Wishart are said to have preached at Ormiston Hall, the yew at Whittingehame where Bothwell allegedly plotted the murder of Queen Mary Queen of Scots husband, Darnley. There are many trees planted around East Lothian as commemoration or memorial.

14.39 The TWSEL aims to protect notable trees which are linked to events and so support the intangible element. It also supports the passing on of traditional skills and knowledge. Policy 22 supports the retention of Notable Trees. These include trees with a historic interest. Action 26 is to develop a series of tree trails celebrating East Lothian's tree heritage. Action 27 encourages recording of trees with cultural value. The TWSEL supports the legacy of The Queens Green Canopy which has commemorative value; the Climate Forest itself also has cultural and societal associations.

14.40 Overall the effect is likely to be positive.

Climate change

14.41 One of the emerging pressures on the Historic Environment is our changing climate and related sea level rise. The full impact of this is not yet understood but we are seeing impacts upon both built and buried heritage. The impact of TWSEL is expected to have positive effects on climate change (see Climate section above). Although its contribution is small, combined with the effect of many other strategies and actions, this will be positive for historic assets.

14.42 The TWSEL supports tree planting at the coast as part of coastal mosaic habitat, which may have some potential to reduce coastal erosion including that caused by sea level rise, though clearly there are limits to what can be achieved in this way. Both climate change mitigation and coastal erosion are considered in 'Climatic Factors'.

Avoid Physical Damage (maintenance)

Physical damage to designated historic environment assets

14.43 It is not the intention of the TWSEL to deliberately physically harm designated built assets through planting, although this could arise by self-seeding, which is more likely with more trees. Root barriers can be used to prevent root damage to structures and services from planted trees.

It is not possible to predict the extent or location of this and consideration of individual assets is Scoped Out.

Preservation of heritage woodland and trees

14.44 Woodland and trees in East Lothian tell a tale of life in former times just as do elements of the built heritage. Ancient woodland is part of our heritage as well as having value for biodiversity. As Steven and Carlyle noted of Scotland's native woodlands "to stand in them is to feel the past"[110]. Some individual trees also have considerable heritage value, for example the Ormiston Yew, and the Whittingehame Yew.

14.45 The TWSEL echoes the protection given to ancient woodland in National Planning Framework 4 and the Control of Woodland Removal Policy. Policy 1: Retention of woodland, trees and hedges/hedgerows supports retention of ancient woodland, and this is also identified as Woodland Of High Nature Conservation Value, adding to its protection. TWSEL Action 27 encourages the recording of important individual historic, ancient and veteran trees. These trees may also benefit from increased awareness of their value through their inclusion in the Strategy. The use of traditional techniques such as hedge laying and coppicing are encouraged. Overall, the TWSEL should help preserve heritage woodland and trees.

[110] Steven, H.M and Carlisle, A. (1959) "The Native Pinewoods of Scotland". Oliver and Boyd, Edinburgh

Likely Significant Effects – Cultural Heritage

14.46 With regard to the issues identified above, the following SEA objectives for Cultural Heritage have been identified and the impacts appraised by theme:

SEA Objective, Cultural Heritage: Preserve or, where appropriate, enhance East Lothian's historic environment	KEY		Theme 1 – Climate Mitigation	Theme 2 – Resilience and adaptation	Theme 3 – Biodiversity	Theme 4 – Community	Theme 5 - Economy	Theme 6 – Cultural Heritage	Theme 7 – Landscape Character
SEA Sub-objective/ questions for assessment. Does the plan….?	Positive	+							
	Neutral	0							
	Unknown	?							
	Mixed/Variable	//							
	Negative	-							
Avoid adverse impacts on heritage assets, including archaeological sites and monuments			-	+	//	//	0	+	//
Protect and deepen the appreciation of East Lothian's historic woodlands and notable trees			0	0	+	+	+	+	+

Commentary on Cultural Heritage Indicators

14.47 The TWSEL aims to protect heritage assets through Policy 25: Protection of the Historic Environment which notes that woodland creation, management, expansion or tree planting should aim to enhance and not harm the historic environment. The mapping of constraints to woodland expansion includes some of these assets to show that there are sensitivities that need to be considered. This will help avoid harm.

14.48 However, when many of East Lothian's historic assets (Listed Buildings, Conservation Areas, Gardens and Designed Landscapes, Battlefields, (though many Scheduled Monuments are earlier)) were originally created, the landscape was less treed than it is now. East Lothian is rich in historic assets (and other constraints to planting) and the new woodland planting has to go somewhere. It is therefore almost inevitable that if more trees are inserted into landscape and townscape, the setting of some heritage assets will change from how they were originally. Views or vistas from them may also be affected. The potential for harm to settings from woodland creation is the main reason for scoring the 'Climate' theme as 'negative' and other Themes that

include woodland creation (for habitat connectivity, or recreation) as 'mixed'. For Gardens and Designed Landscapes, and Battlefields, the assets themselves may experience change though some of this, such as replacement of coniferous planting with native woodland, is likely to be positive.

14.49 There could be direct physical damage to some cultural heritage assets arising from self-seeding from greater woodland coverage, or from trees that are poorly positioned or maintained.

14.50 Action 7 is for a plan for the landscape scale replacement of Ash trees. This will take heritage assets into account in replacement planting, and help restore some of the traditional woodland lost to this disease. The effect of this on heritage assets is therefore likely to be positive.. Restoring PAWS to native woodland (Target 3) is also likely to benefit heritage assets, as this woodland is not native and its alien and often regimented appearance can adversely affect assets such as Designed Landscapes, as well as setting of heritage assets. Action 28 promotes positive management of Gardens and Designed Landscapes, which should be positive for this asset.

14.51 Most of the Themes have positive effects on protecting and deepening the appreciation of East Lothian's historic woodlands and notable trees, the 'Cultural Heritage' Theme being the main one. Part of the aim of the 'Cultural Heritage' section is to celebrate the role of trees and woodland as part of our cultural heritage. The 'Cultural Heritage' theme Target 6 is to improve recognition and protection of trees with cultural heritage value. The development of tree trails (Action 26), recording of important historic trees (Action 27), and promotion of positive management of historic gardens and designed landscapes (Action 28) support this indicator. Protection of ancient woodland, which is pursued by the Strategy is important as it is necessary to allow people to experience being within it, deepening their appreciation of this woodland type.

14.52 The Biodiversity Theme includes Policy 8: Protecting the Biodiversity Value of East Lothian's Woodland. This is positive for this indicator as it encourages appropriate management of historic woodland types such as orchards and parkland woodland. Retaining such woodland means it can be appreciated. Completing the Ancient Woodland Survey for East Lothian (Action 8) also supports this, as does mapping hedgerows (Action 12) and developing a plan for them (Action 13). Mapping of orchards, parkland and wood pasture as part of Action 8 will help improve the recognition of these historic treed areas. Positive effects were identified from the Landscape theme, including from Action 31 which supports managed replacement of trees important to townscape character.

14.53 Within the Economy Theme, promotion of woodland based tourism and recreation (Action 15) and tourism enterprises linked to woodland (Action 16) is also likely to increase appreciation of East Lothian's historic woodland and notable trees. The Community Theme includes an action to promote access and enjoyment of woodland for all (Action 17) which again supports this indicator. Action 18 within this theme encourages those preparing Area Partnership Plan and Local Place Plans to include proposals for trees in their area. This should help identify and protect trees that have historic meaning to people in East Lothian's communities.

Mitigation – Cultural heritage

14.54 **External mitigation:** There are some specific existing projects and proposals for enhancement of the historic environment. Historic Environment Scotland has a programme of funding for

historic Town Centres, the Conservation Area Regeneration Schemes, which funds works in those areas. A council driven project to improve the heritage infrastructure at Prestongrange Industrial Heritage Museum currently underway. The East Lothian Council Area Partnerships also take action locally to improve various aspects of the historic environment, as do some voluntary groups. Scotland's Garden and Landscape Heritage aim to promote and protect Scotland's garden and designed landscape heritage.

14.55 The UK Forestry Standard[111] has provisions on the Historic Environment as well as a supporting guideline, which will help mitigate some effects. Adherence to the standard is required for payment of government grants for woodland creation and forest management.

14.56 Where proposals require planning permission, legislation and/or the policies of the East Lothian Local Development Plan 2018 and National Planning Framework 4 protect cultural heritage assets including Scheduled Monuments, Battlefields, Gardens and Designed Landscapes, and Listed Buildings, and for some assets, their settings, as well as archaeological sites. The development plan also contains policy on loss of trees and woodland on development sites (Policy NH8). Any works within the boundary of a Scheduled area also require consent from HES, including planting; separate consent is also required for some works to listed buildings and their settings. Some trees with historic associations are protected through Tree Preservation Orders or their location within a Conservation Area. Ancient woodland has policy protection from felling or development.

14.57 The Council also has powers to require the repair of Listed Buildings, and has exercised these to secure the repair of Harlaw House, Prestonpans, however resource and other issues mean use of these powers is a last resort.

14.58 **Embedded mitigation:** Policy 25: Protection of the Historic Environment.

14.59 **Project level mitigation:** The effect on setting of the heritage assets should be considered. Consideration should be given to protection of undesignated archaeology in carrying out tree planting and woodland creation. It is also important that there is community involvement to make sure that the history of the place continues to connect with those who live there, and that the heritage value of trees is not lost. Reference is made in the Strategy to Conservation Area Statements and Appraisals and these should be referred to as they become available. This will help make sure that new planting reflects the historic value of Conservation Areas.

Secondary, Synergistic and Cumulative effects

14.60 **Positive** Any positive effect on climate change, cumulatively with other plans will help avoid damage to cultural heritage assets from extreme weather events and sea level rise. Improvements to air quality, cumulatively with other plans, will also help avoid damage to assets from e.g. acid rain.

111 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/687147/The_UK_Forestry_Standard.pdf

Conclusion – Cultural Heritage

14.61 The Cultural Heritage section of the strategy aims to 'celebrate the role of trees and woodland as part of our cultural heritage and protect our cultural heritage assets from harm from trees'. The TWSEL has policy on notable trees, protection of the historic environment and archaeology. It also supports the passing on of traditional skills and knowledge. Detailed advice at settlement level and the production of Conservation Area appraisals will help make sure the traditional setting and valued historic elements of towns and villages are not harmed by trees. Through the constraints mapping, the Strategy has identified as 'sensitive' or 'potential' those designated assets where tree planting and woodland creation could cause most harm.

14.62 As East Lothian was formerly less treed, increased tree and woodland creation could bring changes which may be or be perceived by some as being negative on aspects of the cultural heritage. Alteration to some heritage assets or their settings may occur. This may be direct in the case of battlefields, Conservation Areas and Gardens and Designed Landscapes, or indirect, which could also affect Listed Buildings and Scheduled Monuments. There may be some change to the traditional setting and townscape of some of our towns and villages which affects their traditional appearance

14.63 The Strategy encourages site specific project work to identify constraints. It notes that, in line with the UK Forestry Standard Historic Environment section, proposals for woodland planting and restructuring should take account of the historical character and cultural values of the landscape and policies associated with historic landscapes, battlefield sites, and gardens and designed landscapes. Together this should minimise any residual adverse impacts on setting of some heritage assets from woodland creation or tree planting in towns and villages.

14.64 The 'Cultural Heritage' theme, and the actions specifically aim to benefit the cultural heritage in relation to trees and woodland. This includes improving recognition, recording and protection of trees with cultural heritage value, and promotion of positive management of Gardens and Designed Landscapes. The Strategy also aims to strengthen protection of Ancient Woodland, which can sometimes include signs of historic management and in itself is an important part of our heritage. Traditional types of woodland such as parkland, orchards and hedgerows are also promoted. There are likely to be some positive effects on the historic landscape from actions under other themes, including through implementation of replacement planting for ash dieback, which would otherwise cause significant impacts to this historic appearance of some parts of the landscape.

14.65 Overall, the effect on cultural heritage is likely to be positive.

Residual adverse effects Cultural Heritage

- An increase in trees and woodland will bring landscape change: as the area was less treed when most cultural heritage assets were created, this could impact on them

15 LANDSCAPE

Introduction

15.1 Landscapes play a large part in forming identity and distinctiveness of place. Good landscapes support quality of life and encourage us outdoors. They also have economic value for tourism, attracting economic development and helping promotion of brands. Poor and degraded landscapes restrict social and economic opportunity, and adversely affect quality of life. Landscapes can change when open ground, woodlands, wetlands and other habitats are fragmented or replaced by buildings, roads, utilities, and other forms of development. Woodland creation or removal can also significantly alter landscape.

15.2 The spirit of a landscape comes from the play between its geology and topography, vegetation cover and land use. Nowhere stays the same forever. Good landscapes can become degraded, poor ones improved. Places must evolve to balance the needs of environment, community, and economy. Professor Brian Mark Evans warns "Landscape change is slow and pernicious: it is cumulative, and when finally obvious to all is hard, if not impossible, to reverse[112]". Pressures on the landscape in Scotland (summarised from Scotland's Environment – Landscape[113]) include both climate change itself and our policy response to it, including the emphasis on onshore renewables, flooding, loss of land to the sea, impact of changing temperatures, drought, and potential spread of pests and pathogens. The national (and local) target for increasing tree cover will also have a significant impact. Land use, and intensification of land use and management is a pressure, including a move towards agricultural monoculture driven by focus on maximising yields and producing cheap food. Incremental and ongoing development is also altering the landscape; housing, expansion of settlements, upgrading roads, telecoms and others.

15.3 Landscape is one of the Themes of the TWSEL, with the aim to "use trees to help retain and enhance the distinctiveness of landscape and settlement character within East Lothian".

15.4 The Scoping Table below shows, with reasons, what existing issues were considered relevant to this strategy. The impact on Inventory Gardens and Designed Landscapes and Local Designed

[112] Quoted in "Landscape for Scotland" Landscape Institute (undated) https://scotland.landscapeinstitute.org/wp-content/uploads/2017/12/Landscape-for-Scotland-2017.pdf

[113] Summarised from Scotland's Environment – Landscape at land-landscape.pdf (environment.gov.scot)

Landscapes is recognised as relevant for landscape, however this is considered under 'Cultural Heritage'.

Scoping Table 10: LANDSCAPE	
Issue	**In/Out**
Protect and enhance the quality of landscapes and townscapes	
Protect the special qualities and features of Special Landscape Areas	**In**
Protect the interest of the Green Belt and Countryside around Towns areas	**In**
Preserve TPO trees and woodland	**In**
Protect and enhance the distinctiveness of local and regional landscape character	**In**
Protect and enhance the distinctiveness of townscape and settlement character	**In**
Address vacant and derelict land	**In**
Conserve geological heritage	
Avoid impact on sites designated or identified for their geological interest: Geological SSSIs, Geological Conservation Review Sites and Local Geodiversity Sites	**In**
Avoid loss of visual appreciation of geological features	**In**

Baseline and Issues

Protect and enhance the quality of landscapes and townscapes

Special Landscape Areas

15.5 Special Landscape Areas replaced Areas of Great Landscape Value as the local landscape designation in 2018. There are 32 Special Landscape Areas – most of the coast and Lammermuir area is designated, along with areas of river valley and agricultural land in the lowlands. Overall, these areas cover a significant proportion (just under half) of East Lothian. The purpose of the designation is to safeguard and improve particularly valued landscapes and landscape features; to protect some of the most important landscape settings for recreation and tourism; and to promote understanding and awareness of the distinctive character and special qualities of the landscapes.

15.6 The Special Landscape Area series as a whole was designated with the intention of ensuring that each of the main landscape types that characterise East Lothian were represented and to include:

- all significant rare features or a representative part of an extensive feature;
- the places with the strongest scenic and sensory qualities;
- areas with important viewpoints or landmarks, or are important in views;
- historic landscapes and those with strong cultural association.

15.7 East Lothian's Special Landscape Area SPG includes an appraisal of each of its Landscape Character Areas. It includes a Statement of Importance for each Special Landscape Area describing its special qualities and features, issues for that area and giving guidance for development. The Statements of Importance include Management Guidelines to enhance the areas.

15.8 In some SLAs, woodland creation would be welcome to reinforce character, while in others openness is an important feature which could be harmed by creation of woodland in inappropriate places. Inappropriate species choice also has the potential for harm. If this occurred this would not only harm the SLA itself but also the effectiveness of the SLA designation in achieving its aims overall.

15.9 The TWSEL does not identify Special Landscape Areas as sensitive on its mapping. Instead the TWSEL aims to avoid harm to these landscapes by drawing out relevant advice from their Statements of Importance within the Landscape Theme. This should help guide woodland creation to locations where it would enhance the Special Landscape Areas. The TWSEL also includes Policy 27 which provides that the interest of Special Landscape Areas should be taken into account in woodland proposals. This should help avoid harm. Overall, the effect of the TWSEL on SLAs is expected to be positive.

Green Belt

15.10 The purposes of the Green Belt were set out in the East Lothian Local Development Plan 2018 and are now shown in NPF4. These are that:

- Development is directed to the right locations, urban density is increased and unsustainable growth is prevented.
- The character, landscape, natural setting and identity of settlements is protected and enhanced.
- Nature networks are supported and land is managed to help tackle climate change.

A purpose from the East Lothian Local Development Plan 2018 which is not contradictory to this is to provide opportunities for access to open space and the countryside.

15.11 A Report, "Edinburgh Green Belt, Landscape Character Assessment" was carried out in 2008. The purpose of the report was to characterise the landscapes within the Greenbelt and inform decisions on its boundaries. Relevant landscape issues identified in this were included in the Landscape Character Area review section of the Special Landscape Area SPG. Issues included:

Newhailes The role of perimeter woodland and parkland trees in the integrity of the landscape, and of the perimeter woodland in supporting the identity of Musselburgh and Joppa, and landscape separation between them and Newcraighall as a robust landscape and physical boundary. The study noted that woodland links to the surrounded areas could be enhanced.

Musselburgh Golf Course The mature trees and open green space close to the River Esk and Musselburgh are of scenic value and these provide an attractive landscape setting to the historic settlement of Inveresk. Planting could be simplified and a more naturalistic character to the course created as this would enhance the visual association with the River Esk and improve scenic value. Broadleaved trees of a more substantial scale should be planted to replace small ornamental species. While the core of this landscape is largely screened from view from major roads, it is seen

from the railway. Tree belts on the southern periphery of the golf course are visible from the A1. Scots pine tree belts provide a screen against the A1 and recent housing development. Woodland here connects to the network associated with the River North Esk. Small-scale potential to link internal generalist woodland to the wider Forestry Habitat Network.

Falside Hill Slopes These farmed north-west facing hill slopes have a distinctly open character. The smooth elongated slopes of Falside Hill provide a distinct backdrop to settlement aligned against the Firth of Forth and the flat farmland which forms their immediate hinterland. The hedgerows are intermittent in places and there is little woodland and few field trees. Potential enhancement includes management of roadside trees and hedgerows, as well as planting of additional trees, hedgerows and woodlands. The area contains only small isolated areas of broadleaved and generalist network connecting to Carberry policies. The role of the area in providing accessible open space could be enhanced through general landscape improvements such as tree/woodland planting, creating viewpoint seating areas and safe footpaths along minor roads. There is limited forestry habitat network potential other than to Carberry.

Smeaton farmland The landscape is characterised by large open arable fields and extensive views toward Edinburgh. The landscape is relatively unwooded and the large disused tip located towards Carberry is the most distinctive landscape feature. The individual landscape features of hedgerows and field boundaries, and the small areas of woodland are not highly maintained. At Thornybank the boundary is partly reinforced by the wooded edge and there is some woodland at the edge of Whitecraig. The area contains a key link along the Penicuik – Musselburgh foot and cycle way, which includes some broadleaved specialist woodland. There are also pockets of fragmented woodland generalist network. Links between the fragmented areas of woodland could be enhanced to create a connection to Carberry.

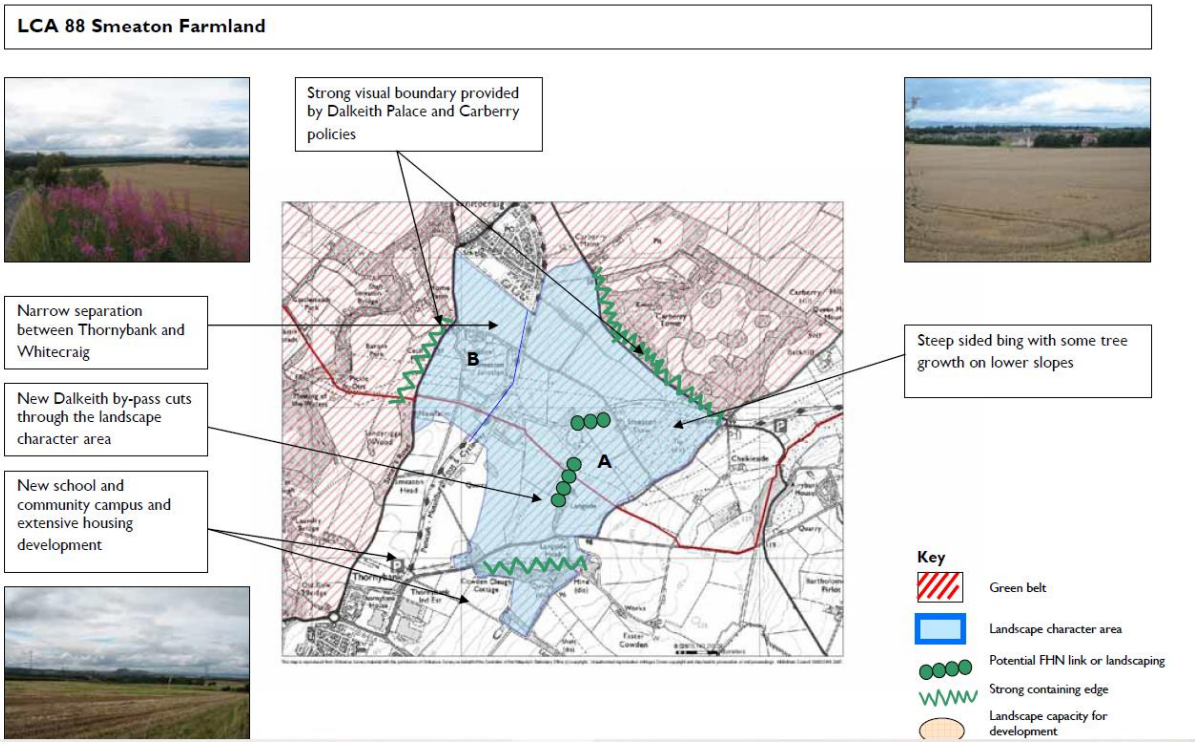

Figure 47 Smeaton Farmland, extract from Edinburgh Green Belt Study (SESPLAN, 2008)

Wallyford Farmland This extensive area of intensive farmland, is dissected by major communications including the A1 and East Coast Railway and has a fragmented character where it abuts settlement, limiting its integrity. The arable farmland is well managed though hedgerows are intermittent in places. There is little woodland and few field trees, other than extensive woodland planting undertaken to provide a robust containing edge to settlement edges. There is little connectivity with the native woodland habitat network. The role of the area in providing accessible open space could be improved through general landscape enhancement of farmland and planting of woodlands which could deaden noise from transport corridors. Enhanced connection along the A1 would improve the connectivity of this area.

Old Craighall Farmland Potential for enhancement includes restoration of railway sidings and former tips, as well as planting of new woodlands, especially designed to strengthen settlement boundaries. Further woodland coverage alongside the A1 road would substantially increase the size of the woodland habitat network in the area; to neighbouring areas in the north (Brunstane) and southwest (Dalkeith Policies).

15.12 TWSEL Policy 27 requires that the landscape interest of the Green Belt should be taken into account. Woodland creation is generally in line with Green Belt objectives in particular supporting nature networks and enhancing the natural setting of settlement. Action 28 promotes positive management of Garden and Designed Landscapes , such as Newhailes. Inventory and local Gardens and Designed Landscapes are identified as 'Sensitive' on the TWSEL mapping. This will help draw attention to their special qualities as designed landscapes. Promotion of woodland creation for habitat migration, marked as 'ELC Strategic Connections' will enhance the landscape of the Green Belt, as will Woodland Expansion of the Central Scotland Green Network woodland network. Overall the effect on Green Belt is likely to be positive.

Countryside around Towns areas

15.13 Countryside Around Towns (CAT) areas were designated for the first time in 2018. Further guidance on these areas is given in ELC's Countryside and Coast SPG[114] . The three main objectives for CAT areas are to conserve the landscape setting, character or identity of the particular settlement; to prevent the coalescence of settlements; and, where it can, provide opportunity for green network and recreation purposes. The Council has designated CAT areas around Tranent/Prestonpans/Cockenzie Port Seton/Longniddry, Ormiston, Haddington, Aberlady, Gullane, Dirleton, North Berwick, East Linton, and West Barns/Belhaven.

15.14 Pressure for development is an issue for both Green Belt/CAT areas, and is the main reason for their designation.

15.15 Tree planting in the CAT areas is likely to be positive for their objectives as it can support recreation, help prevent visual coalescence and if well sited and designed can improve landscape. However, care is needed at project level to make sure woodland creation does not

[114] East Lothian's Countryside Around Towns SPG, here: https://www.eastlothian.gov.uk/downloads/file/28998/countryside_and_coast_spg

obscure key views or alter important aspects of the setting. Safety and perceived safety should be taken into account to avoid deterring recreation by making the countryside appear less welcoming.

15.16 Many of the CAT areas include areas of farmland, which can be an important element of the landscape setting of the area. Policy 21: Woodland Creation within Farmland suggests that woodland creation should aim to complement and improve agricultural production. As these arable fields are mostly prime agricultural mass planting here would be unlikely to fit with this policy. Where the CAT includes a Garden or Designed Landscape, Policy 25 provides that woodland creation should aim to enhance this feature. This will also support the landscape of the CAT.

15.17 At Dunbar, there is a small CAT between Belhaven and West Barns. The TWSEL supports woodland creation in this area as it is within the Secondary zone for Core Woodland (Native Woodland mapping). Woodland creation here would help with the CAT objective of preventing coalescence.

15.18 At East Linton, there are important views over farmland. The TWSEL supports woodland creation around the Tyne, which would not harm the setting of East Linton; views of the Preston Mill across the floodplain and from Pencraig Hill should be considered at project level. The North Berwick CAT mainly consists of farmland and the North Berwick Law. The TWSELs Native Woodland mapping supports woodland creation around the eastern part of the base of the Law. Tree growth here would not harm the landscape setting of North Berwick or the Law. At Dirleton the Native Woodland mapping encourages woodland creation as a secondary opportunity Native Woodland zone to the south of Dirleton Castle and on the western entry to the village. Woodland creation to the south of the Castle would have the potential for adverse effect on the landscape setting of the village.

15.19 At Haddington 'ELC Strategic Connections' are shown. Woodland in association with the Tyne and other riparian areas, and Gardens and Designed Landscapes is encouraged. This would enhance the CAT landscape.

15.20 Gullane CAT mainly consists of arable farmland. This area is included within the area where coastal mosaic is encouraged at the strategic level. Much of this area is sensitive due to SSSI designation but some appropriate woodland creation may be possible within this. This would accord with the landscape aims of the CAT.

15.21 Around Blindwells, Riparian Zones are shown, and this area is also a focus for structural planting in association with development at Cockenzie/Blindwells. Additional woodland planting will enhance the area around Blindwells. This will enhance the landscape setting of the surrounding towns and villages.

15.22 Overall, provided care is taken at project level, the TWSEL is likely to either benefit or at least not harm CAT objectives.

TPO trees and woodland

15.23 Trees and woodlands covered by Tree Protection Orders are protected from being felled or having other works undertaken without permission from the Council. These trees are therefore

not expected to be at risk from felling. Lack of good tree management is an issue for some of the TPO areas. The TWSEL encourages better tree management. It should avoid changes to hydrology and drainage through tree planting that cause harm to TPO trees and woodland.

15.24 Tree Preservation Orders bring a considerable level of protection for trees from direct action against them. The main threat to TPO trees is damage. This can come from damage to its roots or damage to its trunk and crown through inappropriate development too close to the tree which can include changes to watercourses. Lack of appropriate management of woodlands can also be a threat leading to trees growing too close together and suppressing or out competing each other. The third threat is diseases such as ash dieback disease.

15.25 The TWSEL will not affect the protected status of TPO trees as they are protected by existing legislation. Policy 7: Sustainable Woodland Management encourages good management of woodlands which includes some TPO trees. The TWSEL includes advice on managing ash dieback and links to the Ash Dieback Strategy. The TWSEL is therefore expected to be positive for TPO trees.

Local and regional landscape character

15.26 The European Landscape Charter values all landscapes. It is important to retain diversity and distinctiveness of different landscape types at local, regional and national level. Landscape character assessment helps this process by picking out the key characteristics defining the landscapes. NatureScot have recently carried out a National Landscape Character Assessment Review (NLCAR) describing the landscape types[115].

15.27 The Council has also carried out a recent Landscape Character Area (LCA) boundary review published as part of the Special Landscape Area SPG. The Council's Landscape Character Area Review identified Landscape Character Areas in more detail than the National Landscape Character Assessment Review. The Landscape Review includes Management Guidelines for each area some of which are relevant for planning of tree planting. For example the Guidelines for the Northern Coastal Margins include to seek to ensure long-term management of key estate landscape features, retain the wide-open character of sandy beaches and their immediate hinterlands including at Gosford and Seton sands, including avoiding extensive woodland plantation, which could affect this character.

15.28 The East Lothian Landscape Character Area Review also defined some regional landscape features/elements that characterise Eastern Coastal areas of Lowland Scotland, the Central Lowlands and the Southern Uplands of South Scotland. Retention and reinforcement of these features will help maintain the distinctiveness of these areas in relation to the rest of Scotland and the UK. The aim is to avoid an adverse impact on these features and to strengthen this regional character where possible.

15.29 The pressures on the landscape identified in Scotland's Environment – Landscape mostly apply in East Lothian. There is pressure from built development and land use. Much of the land is in agricultural use, often in larger fields. Although there is some variety – there is usually wheat, barley and rape grown, along with some vegetables – this is perhaps less so than in former times.

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115 See https://www.nature.scot/professional-advice/landscape/landscape-character-assessment/landscape-character-assessment-scotland where there is a link to the Scottish Landscape Character Types Map

There has been some commercial forestry with limited species choice, though the UK Forestry Standard now requires greater species mix. There is also pressure from incremental and ongoing development, both urban development driven by proximity to Edinburgh, and renewable energy development. Issues identified through the National Landscape Character Assessment Review and/or the East Lothian Landscape Character Area Review include:

- intrusive infrastructure such as high voltage power lines;
- maintaining the setting of major transport routes;
- pressure for residential expansion and the need to integrate this into the landscape;
- high visual sensitivity arising from the openness of the agricultural plain giving a high degree of intervisibility;
- the need to manage recreational activity and visitor pressure;
- large scale loss of trees to disease.

15.30 Woodland creation could alter the landscape character of some areas. This could either weaken or strengthen landscape character overall and has the potential to be a significant effect. Native woodland creation is generally seen as beneficial for the landscape as it adds interest and diversity. Reinstatement of traditional field boundaries, roadside planting and woodland planting in scale with landscape character would generally be beneficial.

15.31 The TWSEL can help address the issues identified above in a number of ways.

- The major transport routes run east west through East Lothian similar to the climate migration corridor proposed in Target 2 and Target 7A for structural planting in the Innerwick area suggests including investigation of the potential of strengthening woodland along the A1 / railway corridor.

- Target 5 to create 300 hectares of new small farm woodlands and shelterbelts which align with and support agricultural production can help to integrate residential development into the landscape and help reduce intervisibility across the agricultural plain. Target 4 to improve and increase access to woodlands will provide woodland suitable for recreation, thereby reducing recreational activity and visitor pressure on more sensitive woodlands and/or the coast. Where these are close to settlement they may also help integrate this into the landscape. Action 25 to encourage the development of small scale low impact tourism enterprises linked to appropriate woodlands also helps spread recreational activity to less sensitive areas.

- Action 7, the plan for landscape scale replacement of Ash trees, will help to address large scale loss of trees to disease.

15.32 A comment was received through public consultation on the draft ER that interpretation should be kept to a minimum. Interpretation can reduce the natural appearance of wooded areas, which can for some people affect their enjoyment of the woodland. Although interpretation can have benefits, it clearly has to be designed carefully. The inclusion of an interpretation plan, rather than ad hoc interpretation, is likely to lead to a more coherent approach which is likely to make the interpretation used more effective. However, there may be more interpretation that there would otherwise have been, and some people may experience this as detrimental to landscape character.

Townscape and settlement character

15.33 Tree planting in and around urban areas could help improve townscape and settlement character.

15.34 East Lothian has a variety of settlements from market towns, coastal villages, planned agricultural settlements and former fishing and mining villages. There has been considerable residential expansion in the last 50 years. In terms of townscape, some of the urban environments are of poorer quality than others, including some of our lower SIMD areas. Trees can improve environmental quality when well sited so as not to cause overshadowing or other issues. However, places do have their own distinctive identity and it may be that trees are not appropriate for all areas.

15.35 There is considerable existing and planned urban development in the area. Some existing urban development is poorly integrated into its surroundings or has landscaping which is yet to mature. The Council's Design Standards for New Housing Areas SPG aims to improve standards of design and landscape setting for new development and is referred to in the TWSEL. The East Lothian Green Network Strategy seeks design for the countryside that defines different identities for each town, and to provide attractive greenspace around towns however the timescales for this are anticipated to be medium-long term.

15.36 The TWSEL provides guidance on character and tree planting in each settlement and village. The TWSEL also has an Action (32) to create a managed programme of replacement of street trees important to townscape character. Together these have the potential to guide and improve townscape.

15.37 Information on tree canopy coverage in different settlements and SIMD areas is contained within the TWSEL. The setting of the target of 30% canopy cover is also expected to focus effort on those places that have the least canopy coverage. This will help improve the townscape of those settlements and areas long term.

Vacant and derelict land

15.38 Vacant and Derelict land can affect the overall appearance of the area, as well as impacting those who live nearby. The Green Action Trust reports that almost a third of Scotland's population lives within 500m of a derelict site, rising to 55% for deprived communities[116]. East Lothian does not have such an issue with vacant and derelict land as some other parts of Scotland. At 2007 East Lothian had 59ha of vacant and derelict land. The 2022 Vacant and Derelict Land Survey shows that this this figure has increased to just over 82ha. Whilst a number of vacant and derelict sites have been brought back in to use since 2007, the overall area of such land has increased. This is largely due to the closure of the Cockenzie Power Station, but also Edenhall Hospital.

15.39 People living in the lower SIMD areas are more likely than average to live within 500m of a vacant or derelict site. 12644 out of 55279 addressable properties are within 500m of a vacant or

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[116] See https://greenactiontrust.org/transforming-scotlands-approach-to-vacant-and-derelict-land/ accessed 14/02/2023

derelict site, just under 23% (not all of these are homes). 4116 of these are within the lowest 30% of SIMD areas. There are 10512 addressable properties within the lowest SIMD areas. Therefore 39% of addressable properties within lower SIMD areas are within 500m of VDL.

15.40 As land values in East Lothian remain high some of these sites are likely to be re-developed in the foreseeable future. The Council owns some of the sites including at the former Cockenzie Power Station, which has recently received levelling up funding for site preparation. Climate Evolution provided a high level vision for the Blindwells/Cockenzie area. This included some woodland creation at the former Cockenzie Power Station site. Wayleaves for electricity pylons may in practice act as a constraint, as will development coming forward to connect offshore windfarms.

15.41 TWSEL draws attention to Vacant and Derelict sites by showing them on its mapping, noting that some of these sites may have potential for temporary greening or even long term tree growth. This may help focus attention on these sites. The TWSEL has a Target to provide structural planting in the Cockenzie and Blindwells area through Action 31 to Develop and implement a landscape framework and planting programme for this area. This will have the benefit of helping provide a use for a large area of derelict land whilst also providing landscape setting for new development at Blindwells .

Conserve geological heritage

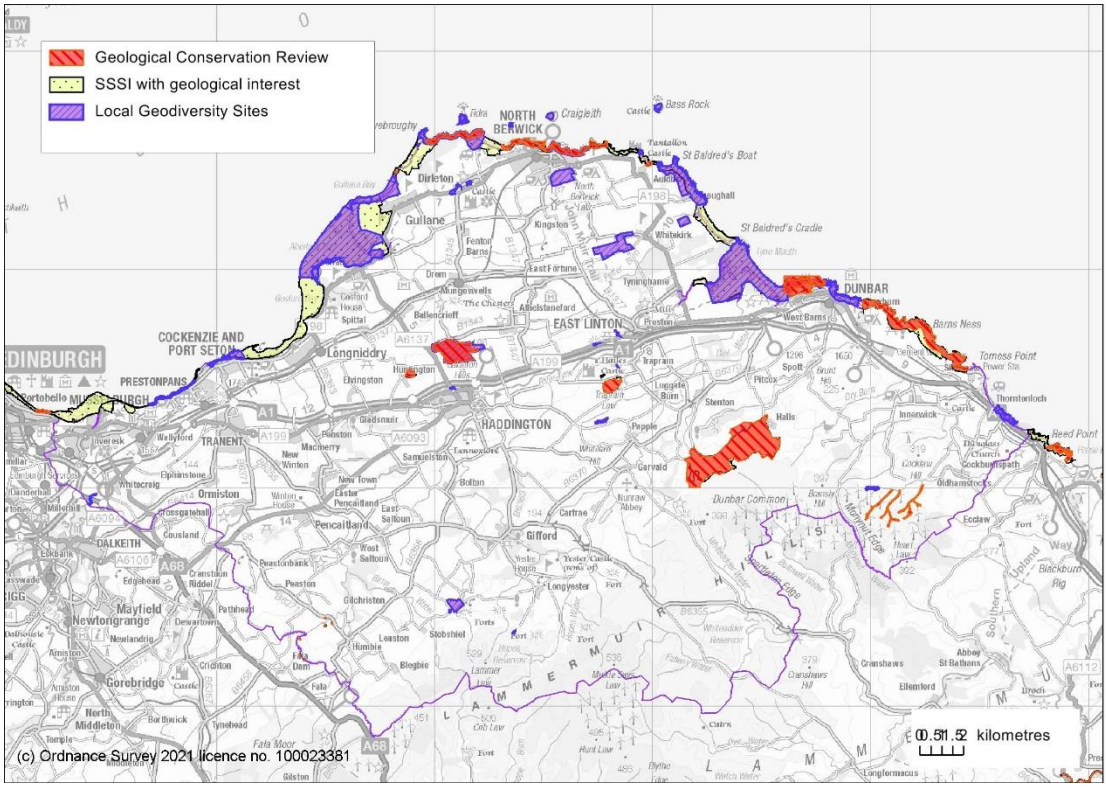
Designated Geological sites

15.42 East Lothian contains nationally important geological sites recognised through designation as SSSI. A Geological Conservation Review was undertaken under the Nature Conservancy Council to identify those sites of national and international importance needed to show all the key scientific elements of the Earth heritage in Britain. The original aim was to designate these as SSSI – and some of them already were – however although the review was completed the designation aspect was not taken forward. The Council therefore recognises these sites through planning policy however they do not have the statutory protection given to SSSIs. There is therefore some risk that planting could damage their interest. This would be regrettable as these sites are part of a series.

15.43 The Council has also designated sites with local interest, Local Geodiversity Sites. Although these sites have some protection through planning policy, there would be no restriction on planting there (though some are coastal sites where trees would not grow). This is would be likely to harm their interest.

15.44 Woodland near geological sites could also increase unwanted self-seeding which could damage or obscure the geological interest.

15.45 Geological sites are shown below (there is some overlap between all three of these types of site). Further information on the interest and condition of SSSIs and Geological Conservation Review sites can be found on NatureScot's Sitelink pages, here: https://sitelink.nature.scot/home . Further information on East Lothian's Local Geodiversity Sites is available here: http://nora.nerc.ac.uk/id/eprint/509518/ Appendix 1 gives details of the interest of SSSI sites.



15.46 NatureScot have identified some existing pressures on these sites. These include forestry operations and invasive species, tidal erosion, recreation and disturbance, dumping and storage of material and water quality, agricultural operations, lack of proactive management, undergrazing and trampling.

15.47 The TWSEL identifies SSSI, GCR and Local Geodiversity Sites as 'Sensitive' on its mapping. This will help protect these sites by steering woodland creation towards other areas. The Strategy includes Policy 14: Protection of the Natural Environment, which requires that woodland management, expansion, creation, removal or restructuring should enhance and not harm the interest of designated sites which includes Earth Science SSSIs and Local Geodiversity Sites. The TWSEL contains policy on combating invasive tree and shrub species, encouraging management of this in line with national priorities. Increasing accessible woodland, as promoted through the TWSEL, may help reduce recreational pressure on sensitive geological sites.

15.48 There remains some risk that an increase in woodland will also increase self-seeding into sensitive geological areas.

Tree Preservation Orders (TPO

15.49 See 'cultural heritage' section.

Likely Significant Effects – Landscape

15.50 With regard to the issues identified above, the following SEA objectives for Landscape have been identified and the impacts appraised by theme:

SEA Objective, Landscape: Protect and enhance East Lothian's landscapes and townscapes			Theme 1 – Climate Mitigation	Theme 2 – Resilience and adaptation	Theme 3 – Biodiversity	Theme 4 – Community	Theme 5 - Economy	Theme 6 – Cultural Heritage	Theme 7 – Landscape Character
SEA Sub-objective/ questions for assessment. Does the plan….?	KEY								
	Positive	+							
	Neutral	0							
	Unknown	?							
	Mixed/ Variable	//							
	Negative	-							
Protect the diversity and value of East Lothian's Landscapes			+	+	+	0	//	+	+
Improve and reinforce townscape character and sense of place			+	+	+	//	0	+	+

Commentary on Landscape Indicators

15.51 All Themes are positive for 'Protecting the diversity and value of East Lothian's landscapes other than 'Community' which has neutral effects and 'Economy' which is mixed. Positive effects arise from those Themes which include woodland creation, as trees in the right place are generally seen enhancing landscape. The 'Landscape' Theme aims specifically at protecting landscape character, including its diversity. This Theme includes Target 7, which provides for landscape scale structural planting and tree planting to enhance green networks. Policy 26: Protection and Enhancement of Landscape provides that woodland expansion or tree planting, woodland removal or restructuring should not harm landscapes and landscape character, in particular designated areas with a landscape dimension including Special Landscape Areas, the Coast, and Green Belt.

15.52 The promotion of broadleaves and native woodland including different types of native woodland (Policy 3: Woodland Creation and others) supports diversity of landscape character as different types of woodland are found in East Lothian's different landscape character areas. The planning and management of Ash Dieback Plan (Actions 5 and 6) under the 'Climate' Theme supports both Objectives, as this will benefit both landscape and townscape through appropriate tree planting to mitigate for the loss of ash trees. Promotion of native woodland expansion and connectivity (Target 2A, climate theme, Target 3A and 3B, biodiversity theme, and Action 10) will improve the diversity of the landscape. Protection of other types of valued habitat networks such as grassland, wetland and saltmarsh (Policy 14, Protection of the Natural Environment, Biodiversity Theme) helps ensure these attractive and varied types of landcover are not lost to tree planting. Promotion of restoration of peatland over tree planting (Policy 15: Peatland) also ensures diversity of landscape character. Restoration of PAWS to native woodland (Action 9) and protection of ancient woodland (Policy 8: Protecting the Biodiversity Value of East Lothian's Woodland) will also retain and bring increased interest to the treescape. Hedgerows break up expanses of agricultural

land, particularly large expanses of monoculture arable land, helping make the landscape look more intricate. Planning for hedgerows (Action 13) should increase their length and quality, in line with Management Guidelines suggested for Special Landscape Areas.

15.53 Large swathes of single species non-native coniferous plantation in Scotland as a whole has had a considerable impact on the landscape. There has been criticism of this for its lack of variety, an appearance (monoculture, straight edges and rides) which does not reflect the natural condition of the landscape and close planting which makes access to the landscape very difficult. In East Lothian the main softwood plantation is at either end of the Lammermuirs, at Monynut Forest and Heatherly Rig/Brown Dod Wood. There is also softwood planted in smaller woodlands and shelter belts intended as a crop, some of which has not over time been managed for production. The TWSEL supports continuation of productive woodland on these sites, which is likely to be coniferous due to the characteristics of the sites, and this will have continuing adverse impact on landscape.

15.54 Although the TWSEL supports existing productive woodland it does not support new solely softwood plantations due to adverse visual landscape impact (Policy 20: Productive Woodland). The strategy also encourages restructuring of existing softwoods to improve landscape value

15.55 The TWSEL does not support continued softwood production on ancient woodland sites, nor on peatland, in line with national policy. This will have benefits for landscape character as well as biodiversity and climate.

15.56 Target 5 for creation of farmland woodland, supported by Policy 21, will have positive benefits for landscape character through increased diversity of the agricultural landscape.

15.57 Theme 5, Community, will generally have positive benefits for both indicators. Increasing urban canopy coverage will primarily benefit townscape Where this helps integrate built elements there will also be landscape benefits. The Council owns and maintains a considerable number of trees, and the development of a Tree Management Strategy (Action 18) will help maintain a healthy well-managed tree stock including succession planting. Consideration of townscape character will be included in this. Policy 19 on managing Council owned trees resists cutting back or felling trees other than for exceptional overriding reasons such as safety.

15.58 Theme 6, Cultural heritage, should have positive effects particularly for townscape. Encouraging the identification and protection of Notable Trees (Target 6, Action 27, Policy 22) is positive. The support for positive management of Gardens and Designed Landscapes (Action 28) will also result in improvements to these areas, which are a landscape as well as a cultural heritage designation. The discouragement of plaques in association with memorial trees in countryside and natural areas is positive for the landscape as it maintains the natural appearance of areas (Policy 23).

15.59 Resisting the inclusion of woodland into garden ground is positive for townscape (Policy 2). Trees within garden ground do not have the usual protection from felling, and can therefore be lost.

Mitigation – Landscape

15.60 **Embedded mitigation** Woodland expansion under the strategy has the potential to harm valued non-woodland landscapes such as the open landscapes at the coast. Policy 26: Protection and

Enhancement of Landscape seeks to avoid this, including through protection of the interest of designated landscapes. The production of a Tree Management Strategy (Action 18) will also help protect urban treescapes in the Council's own work.

15.61 **External mitigation:** The UK Forestry Standard[117] has provisions on Landscape which will help mitigate some potentially adverse impacts, some of which were included in this standard to address past practices no longer encouraged. This includes a requirement to include variety in species planted. Adherence to the standard is required for payment of government grants for woodland creation and forest management.

15.62 Where proposals require planning permission, the policies of the Local Development Plan on landscape and design will guide proposals. Supplementary Planning Guidance on Special Landscape Areas (which includes guidance on all landscapes) and Countryside and Coast[118] (and any successors) provide further guidance.

15.63 **Project level mitigation:** The TWSEL contains advice in its Community section about issues to consider when planting in urban areas. This will help avoid adverse impact on townscape. The TWSEL refers to Conservation Area Statements and Appraisals as sources of advice at project level, and these should be referred to as they become available. This will help make sure new planting reflects and enhances townscape. Projects should consider the guidance in Special Landscape Area SPG especially Statements of Importance of Special Landscape Areas. The height of mature trees should be considered when planting near a noted viewpoint to avoid obscuring important views. Views of important features within the setting of towns should be considered

Secondary, Synergistic and Cumulative effects

15.64 **Positive:** The Strategy is likely to have cumulative positive benefit for landscape along with the protective policies of the East Lothian Local Development Plan 2018 and the East Lothian Green Network Strategy.

Conclusion

15.65 Improving Landscape is one of the aims of the Strategy, and the TWSEL is expected to have a positive effect.

Residual adverse effects on Landscape

- Potential for a small increase in self-seeding of trees into geodiversity sites

[117] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/687147/The_UK_Forestry_Standard.pdf

[118] https://www.eastlothian.gov.uk/downloads/file/28998/countryside_and_coast_spg

16 ENVIRONMENTAL PROTECTION OBJECTIVES OF RELEVANT HIGHER TIER PPSs

16.1 A wide range of international, national and other local level plans, programmes and strategies (PPSs) contain policy and objectives relevant for the TWSEL. The main relevant Strategy is the Scottish Forestry and Woodland Strategy, which sets out the Scottish Governments vision and ten priorities for woodland in Scotland overall. National Planning Framework 4 (NPF4) sets out a plan for the development of Scotland as a whole, in tandem with the third Scottish Land Use Strategy sets out Scottish Ministers vision for the country. The Scottish Government's Control of Woodland Removal Policy is critical in the ability of the TWSEL to plan to retain woodland. At a local level, the environmental aims of the East Lothian Council Plan, Local Development Plan and Green Network Strategy are important.

16.2 Relevant legislation includes the Climate Change (Scotland) Act 2009 (as amended), the Conservation (Natural Habitats, &c.) Regulations 1994 (commonly known as the 'Habitats Regulations'), the Town and Country Planning (Scotland) Act 2019, and others. Appendix 2 sets out the relevant PPSs together with a brief summary of what each is intended to achieve and their implications for the TWSEL.

16.3 How the TWSEL have taken these PPS and statute into account is set out in the tables below[119].

Scottish Forest Strategy

16.4 The Scottish Forestry Strategy follows the principle of 'the right tree, in the right place, for the right purpose'. The overall objectives are that by 2032 Scotland's woodland cover will have increased to 21% by 2032, and the use of Scottish wood products in construction to 3 million cubic meters. 3000-5000 ha of new native woodland is intended to be created annually, with the restoration of around 10,000ha to native woodland.

16.5 The following table shows how the TWSEL takes the aims of the Scottish Forestry Strategy into account

Table 4: How the TWSEL takes the aims of the Scottish Forestry Strategy into account

Scottish Forestry Strategy Priority	TWSEL Proposals, policy and actions	Assumed mitigation	Responsibility
1. Promote and develop the concept of sustainable forest management as it applies to Scotland.	Policy 7 Sustainable Forest Management Policy 3 Woodland Creation (supports the UKFS) Action 12 Produce a Tree Management Strategy for Trees on our own Action 20 Encourage those undertaking Local Place Plans to include tree and woodland policy	UK Forestry Standard (UKFS) and related legislation, i.e. Forestry EIA etc.	Scottish Government Scottish Forestry

[119] Scottish Government Circular 6/2013 Development Planning paragraph 12 - 14

Table 4: How the TWSEL takes the aims of the Scottish Forestry Strategy into account			
Scottish Forestry Strategy Priority	**TWSEL Proposals, policy and actions**	**Assumed mitigation**	**Responsibility**
	Promotion of Woodland Carbon Code accreditation. Promotion of PEFC/FSC accreditation		
2. Sustainably expand the area of all types of woodlands and forests across Scotland and ensure harvested sites are replanted appropriately.	Action 1 Offsetting our carbon emissions locally Action 2: Climate Forest and Target 1 Policy 3 Woodland creation Action 4 Water quality Action 5 Water run off Action 7 Ash replacement Policy 6 Water Management and slope stability Target 3 Double native woodland Policy 10 and Target 4 Fragmentation	UKFS	Scottish Government Private companies Land owners and Managers Local Authorities
3. Ensure wood fibre availability from Scotland's forests is predictable and increases over time.	Policy 11 Productive woodland Action 46 on supply chain Action 45 on managing woods as a source of specialist material	UKFS	Scottish Government Private companies Land owners and managers
4. Protect forests and woodlands from damage caused by new or existing pests and diseases, promote the sustainable management of wild deer and build resilience to support adaptation to climate change.	Actions 16 – 19 (resilience) Action 22 on continuous cover management Action 23 on promotion of planting in support Policy 3 on Wildfire and disease Action 25 on management to improve resilience on council owned land Action 26 – biosecurity Action 27 raise awareness of tree disease Action 28 – Council ash Policy 3a Flood Management Policy 7 on deer	UKFS Plant Health (Forestry) legislation	Scottish Government Private companies Land owners and managers
5. Increase community ownership and management of forests and woodlands.	Action 72 – support community woodland groups Action 73 – help communities understand their rights	UKFS	Scottish Government Community organisations Non-governmental organisations

Table 4: How the TWSEL takes the aims of the Scottish Forestry Strategy into account			
Scottish Forestry Strategy Priority	**TWSEL Proposals, policy and actions**	**Assumed mitigation**	**Responsibility**
	Action 74 – maintain and publicise a list of community orchards		
6. Increase efficiency, productivity and the value generated from forest products and services and help develop forestry's role in creating a low-carbon economy, by supporting technological innovation, improving the capacity and skills of those working in the sector, and developing existing and new markets.	Promotion of wood and wood products: Actions 9 - 12 Action 47 (joint marketing) Action 48A (encourage wood and tree businesses Promotion of individual action as consumers (Section 8)	UKFS Planning system Energy consents	Scottish Government Private companies Planning Authorities Local Authorities Professional bodies
7. Increase the natural capital value of Scotland's woodlands and forests by improving the condition of native woodlands and forests, and increasing the positive impacts of forest and woodland management on biodiversity, air, water, soils, flood management, landscapes and the historic environment, mitigating the risks of negative impacts.	Policies and actions included in Section 6 (biodiversity) Action 70 (air quality) Water quality – Action16, 17 Soils – Action 20 (erosion of loams) Action 21 (benefits of farm forestry) Flood (see above in resilience) Landscapes – guidance in section 10 Historic environment – section 9	UKFS	Scottish Government Private companies Land owners and managers Non-governmental organisations Environmental regulators Local Authorities
8. Increase the use of Scotland's forests and woodlands to improve health and well-being, help people better understand forestry, and support wider Scottish Government activity to help children become confident and resilient members of Scottish society.	Section 8 community – Accessibility Actions 54, 55 Action 61 (hutting) Recreation Actions 56, 57,58 Action 60 (play)	UKFS	Scottish Government Forest users Forest Owners and managers Local Authorities Non-governmental organisations
9. Enhance forestry's contribution to sustaining viable rural communities and increase the positive impact of forest and	More efficient agriculture: Policy 12 and Actions 49 ad 50. Tourism: Actions 51 and 52	UKFS Planning system	Scottish Government Planning Authorities Local Authorities Forest users

Table 4: How the TWSEL takes the aims of the Scottish Forestry Strategy into account			
Scottish Forestry Strategy Priority	**TWSEL Proposals, policy and actions**	**Assumed mitigation**	**Responsibility**
woodland management on other businesses, especially in agriculture and tourism.			Forest owners and managers Private companies/Users Non-governmental organisations
10. Increase the positive contribution that urban forestry makes in Scotland's towns and cities.	Landscape: Character and setting of development section Urban forest 8.25 on. Action 62, Policy 21	UKFS Planning system	Scottish Government Planning Authorities Forest owners and managers

Other Plans, Policies and Strategies

16.6 The following Plans, Policies and Strategies have been considered as relevant in preparing the TWSEL.

KEY	
✓	Helps achieve main plan, policy or strategy aims
//	Helps achieve some aims, but hinders others
=	Neutral
?	Uncertain
x	Does not meet a main plan, policy or strategy aim

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
BIODIVERSITY, FLORA AND FAUNA					
	Nature Conservation (Scotland) Act **(2004)**	Introduced a new general duty on public bodies to further the conservation of biodiversity. Made changes to the system for conserving SSSI's including regulating land management operations. Protection of wildlife through amendments to law on species	The TWSEL should aim to conserve biodiversity by conserving habitats and species and raising public awareness of the importance of biodiversity. The TWSEL should avoid adverse impacts on SSSIs and protected wildlife. The TWSEL should take account of the Scottish Biodiversity Strategy.	The TWSEL aims to conserve biodiversity through support for the delivery of the Global Biodiversity Framework by restoring and connecting woodland without harm to other habitat, considering genetic diversity including its adaptive potential, using and managing woodlands	✓

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
		protection and wildlife crime with measures that apply wherever such species occur, not just in a specific place like SSSI. Provision for the preparation of a Scottish Biodiversity Strategy, to which public bodies must have regard.		sustainably, reducing pollution risk, minimising the impact of climate change and increasing the connection of people to nature especially in urban areas. The TWSEL aims to support SSSIs through encouraging good management of woodland SSSIs. The TWSEL has taken account of the Scottish Biodiversity Strategy (see below).	
	Wildlife and Countryside Act 1981 (as amended)	Promotes the protection of wildlife, the countryside, National Parks and the designation of protected areas and public rights of way. Gives protection to many specified animals and plants, as well as broad protections such as to nesting birds. It requires that the risks posed to wildlife by tree work and work in woodland are carefully assessed. The Act was amended in 1985 with the effect of requiring Forestry Commissioners to achieve a reasonable balance between productive forestry and natural environment factors.	The TWSEL should support the aims of this act by promotion of the UK Forestry Standard. This includes a guideline on biodiversity which has due regard for this legislation. The TWSEL should take account of its aims in planning the location of new and management of existing woodland.	The TWSEL supports the aims of this act through promotion of the UK Forestry Standard. This includes a Guideline on biodiversity which references this legislation.	✓
	Wildlife and Natural Environment (Scotland) Act 2011	Affects the way land and the environment is managed. The Act also	The TWSEL must ensure relevant environmental legislation can be met,	The TWSEL includes information on reporting wildlife crime.	✓

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
		amended earlier environmental legislation, including the Wildlife and Countryside Act 1981 and the Deer (Scotland) Act. Among other things the Act strengthens protection for badgers, requires three yearly reports by public bodies on their compliance with the biodiversity duty and introduced new provisions on introducing non-native species, and further protection of birds and leporids.	including promoting awareness of wildlife crimes that might be committed in tree planting/felling or management operations. It should help meet the council's biodiversity duties and that wherever relevant associated steps are recorded in the biodiversity duty reports.	The TWSEL includes policy on re-structuring Plantation on Ancient Woodland Sites, much of which is non-native. The Strategy notes (para 6.64) that naturally regenerating sites will require to be managed to avoid establishment of non-native tree species. Policy 11 supports appropriate management of Invasive species, including non-native invasive species.	
	Protection of Badgers Act 1992	Covers various offences related to harming badgers, including intentional or reckless interference with a badger sett.	Activities that would result in interference with a badger sett must be avoided.	Policy 14 provides that woodland management, expansion, removal or restructuring should avoid harm to protected species. This would include badgers.	✓
	The Conservation (Natural Habitats, &c.) Regulations 1994 (commonly known as the 'Habitats Regulations')	Regulations originally derived from the EU Habitats Directive. Provides the basis for sites that are important for nature conservation – the European sites; and gives strict protection to certain species including otter, great crested newt, bats, and marine mammals.	The TWSEL must meet the terms of legislation and avoid harm to protected habitats and species.	Policy 13 restates the requirements of legislation, that proposals that are likely to have a significant effect on a European Site must undergo assessment under these regulations. The SPAs are shown as sensitive on the mapping. There are no SACs within East Lothian. The need to consider the birds that are the qualifying interest of the SPA is also noted in paragraph	✓

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
				6.102, which promotes coastal mosaic.	
	Environment Strategy for Scotland	The Vision is "One Earth. One Home. One shared future. By 2045; By restoring nature…our country is transformed for the better" Notes the scale and urgent action needed to halt global biodiversity loss. The natural environment should be restored and resilient. Makes the link between ecological and climate action. An outcome is that Scotland's Nature is protected and restored with flourishing biodiversity and clean and healthy air, water, seas and soils. The strategy notes that our ability to survive and thrive is fundamentally dependent on the health of our natural world, which provides basic life support for humanity including clean air and water, fertile soils, pollination, buffering from extreme weather; material goods e.g. food.	Aim to avoid biodiversity loss and seek opportunities to restore nature. Biodiversity should be planned and supported to be resilient. Action on biodiversity should be mindful of the climate challenge. Proposals and the plan overall should not adversely affect biodiversity, on land or at sea. The strategy should recognise the ecosystem services of the natural world and seek to support and work with them.	The TWSEL seeks to expand native woodland and improve connectivity (Targets 1, 2, 3). The Strategy recognises the risks to woodland of climate change and promotes resilience (Target 2) including diversity of species. Policy 14 provides for protection of the natural environment including non-woodland habitat networks. Ecosystem services of flood risk management are recognised through Policy 6: Water Management and Slope Stability, and Actions 4 and 5, which consider how to work together to use woodland to reduce flood risk and improve water quality.	✓
	Scotland's Biodiversity - It's in Your Hands 2004 & **2020 Challenge for Scotland's Biodiversity 2013.**	Sets out Scottish aims relating to biodiversity over 25-year period. Seeks to go beyond a previous emphasis on protecting individual sites to achieve conservation at a broader	The TWSEL should aim to conserve Scotland's biodiversity for future generations by conserving habitats and species and raising public awareness on the importance of biodiversity.	The TWSEL aims to conserve and expand native woodland habitat while respecting other habitat networks as above. The strategy also aims to connect people to	✓

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
	A strategy for the conservation and enhancement of biodiversity in Scotland.	scale. Aims to halt loss and reverse decline of key species, to raise awareness of biodiversity value at a landscape or ecosystem scale, and to promote knowledge, understanding and involvement amongst people.		woodland by increasing the accessibility of woodland (Target 4B, Action 15, Action 16 and Policy 16: Design for All).	
	National Planning Framework 4 **Biodiversity** **PAN 60 Planning for Natural Heritage** **(2000)**	Policy Intent: To protect biodiversity, reverse biodiversity loss, deliver positive effects from development and strengthen nature networks. Policy Outcomes: • Biodiversity is enhanced and better connected including through strengthened nature networks and nature based solutions.	Biodiversity and Landscape: these priorities should be taken into account and progressed as far as possible within the TWSEL. The TWSEL should not adversely affect designated natural heritage sites, and should aim to support conservation and appreciation of natural heritage at a landscape scale.	The TWSEL intends to expand woodland biodiversity without harm to other designated sites or habitat networks. Annex E Guidance for Developers aims to support the provisions of NPF4 Policy 3 by stating what the Council expects from developers in terms of trees and woodland.	✓
	Scotland's Third Land Use Strategy 2021 - 2026 – Getting the Best from our Land	Sets out the Scottish Governments vision, objectives and policies to achieve sustainable land use, aiming to provide a more holistic understanding of our land, the demands we place on it and the benefits arising. Land Use Strategy Objectives: 1. Land based businesses working with nature to contribute more to Scotland's	The TWSEL should consider how best to support ecosystem functions and services.	The TWSEL seeks sustainable land use through pursuing nature-based solutions for flood risk, and air quality management (Action 21). The use of trees to provide shade and shelter is also encouraged (mapping section on Urban Tree and Woodland Planting, Urban Tree Canopy section.	✓

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
		prosperity 2 Responsible Stewardship of Scotland's natural resources delivering more benefits to Scotland's people. 3 Urban and Rural communities better connected to the land, with more people enjoying the land and positively influencing land use. The use of an ecosystems approach continues, this recognises that all aspects of the environment, including humans, are interrelated and should not be viewed in isolation, and continues to seek landscape scale change. Notes that natural assets underpin ecosystem services and that we need our land for habitats and species, trees, peatbogs and others. Notes that Sustainable land use means our land will fully contribute to the fight against biodiversity loss. Recognition of the importance of effective deer management in tackling biodiversity loss. Changes expected over the plan period are: Increase in urban woodland		Section 8 Economy includes encouragement for land base businesses. Land managers are encouraged to manage woodlands in a sustainable way (Sustainable Woodland Management section, The TWSEL aims to increase access to woodland, better connecting communities to their land. Ecosystems services (flood risk management, air quality and others) are encouraged. The Strategy aims for our land to contribute to the fight against biodiversity loss. The Strategy recognises deer management as an issue (para 6.83 and following; Policy 12, Deer and Deer fencing. The TWSEL aims to integrate forestry with agriculture (Target 5, the creation of 300ha of farm woodland, Policy 21, Woodland Creation within Farmland. The TWSEL aims that more of our land will be forested (Target 1, Policy 1: Retention of woodland,	

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
		More of our land will be forested and this will increasingly be integrated with agriculture. Enclosed farmland and semi-natural land will contain better quality peat habitats and wider range of wildlife thriving in wild areas.		trees and hedges/rows and Policy 3 Woodland Creation) Policy 15 provides for protection and enhancement of peatland.	
	Scotland's Forestry Strategy **(publication postponed due to Covid-19)** The Scottish Forestry Strategy Implementation Plan (2015-18) and Progress Report (2014-15) Scotland's Forestry Strategy 2019-2029 Environmental Report	See also Table 4 above. The vision is for Scotland to have more forests and woodlands, sustainably managed and better integrated with other land uses. Objectives include improving the resilience of Scotland's forests and woodlands and increasing their contribution to a healthy and high quality environment and increasing their use to enable more people to improve their health, well-being and life chances.	Aims to conserve and enhance biodiversity including expanding woodlands, which should be addressed by the TWSEL. Population & Human Heath: aims to improve health and wellbeing by providing biodiversity and green infrastructure benefits; The TWSEL should enhance this. Climatic Change: aims to reduce impact on and adapt to climate change.	TWSEL plans for an increase in woodland (Target 1). Policy 7 provides for Sustainable Woodland Management. Target 4 of TWSEL aims to increase access to trees and woodland and increase canopy in urban areas Target 2 of TWSEL aims to increase resilience of woodlands Target 7 of TWSEL aims to improve high quality environment by woodland creation. The TWSEL includes Policy 26, which supports protection and enhancement of landscape.	✓
	A Fisheries Management Plan for the Forth Catchment – review of actions, reprioritisation and update for 2015-2020	Strategy to promote a self-sustainable Forth fishery. Includes objectives of tackling Invasive non-native species at catchment level (including giant	The TWSEL should consider invasive species and the impact on river morphology.	The TWSEL includes Policy 11: Invasive Species.	✓

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
		hogweed); monitor the impacts of point source pollution; reduce diffuse pollution of water; work cooperatively to restore natural morphology of rivers and remove fish barriers; stop excess water flow entering the river system through management of land use pressures		The mapping shows riparian area of 30m either side of most of East Lothian's watercourses, where planting is encouraged (subject to project level constraints and effect of shading). Opportunities for combatting run-off at catchment scale are identified.	
	The Pollinator Strategy for Scotland 2017-2027	The Strategy aims to address the causes of declines in populations, diversity and range of pollinator species; and to help them thrive in future.	The TWSEL should support objectives to halt and reverse the decline in native pollinator populations e.g. by targeting land use and management incentives in areas where there will be greatest benefit and minimal impact on pollinator habitats.	TWSEL includes Policy 14: Protection of the Natural Environment, which includes protection of grassland habitat networks. This should avoid harm to pollinating plants there.	✓
	Local Biodiversity Action Plan: **East Lothian (2008 – 2013)** **(not available online)**	The Local Biodiversity Action Plans translate national targets for species and habitats into effective local action, stimulates local working partnerships into tackling biodiversity conservation, raises awareness, identify local resources, identify local targets for species and habitats, ensure delivery and monitor progress.	Although this strategy is dated, it is still the most recent Biodiversity Action Plan. The TWSEL should support the aims of the LBAP and avoid adversely affecting key habitats and species as identified there. Although this strategy is out of date, it contains useful information about priorities and habitat in East Lothian. Its priorities are now contained in the Green Network Strategy SPG and the East Lothian	The TWSEL includes Policy 14: Protection of the Natural Environment, which seeks to avoid woodland management, expansion, creation, removal or restructuring harming designated sites or other habitat networks, or East Lothian Priority Habitats. These habitats were selected based on their inclusion in the Local	✓

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
			Biodiversity Action Plan will be updated in due course.	Biodiversity Action Plan so this aligns.	
	East Lothian Green Network Strategy SPG	The SPG sets out how the Central Scotland Green Network will be delivered in East Lothian. It aims to contribute to reversing the decline in quantity and quality of biodiversity, and protect geodiversity. It aims to protect and enhance the water environment, and reduce pollution issues, and strengthen landscape character and diversity. It includes actions for the Western Sector, Urban, Coast, Countryside and Nature Network.	The TWSEL should consider how it could contribute to reversing the decline in quantity and quality of biodiversity. Human health. Water. The TWSEL should consider natural solutions to water management and reducing pollution. Climatic factors. The TWSEL should consider how climate change could be mitigated through landuse, and how the design can be adaptive to climate change.	Target 3 of TWSEL aims to improve biodiversity value of East Lothian's woodland habitats in line with the Green Network SPG Target 7 of the TWSEL aims to improve landscapes through woodland creation. Target 2 aims to improve resilience of environment through woodland creation Policy 6 supports water management to protect and enhance water environment Policy 14 includes for protection of geodiversity and natural environment.	✓
	POPULATION				
	Scotland's National Strategy for Economic Transformation, 2022	Sets a framework for a more competitive and fairer Scotland. It forms the strategic plan for existing and future Scottish Government policy. It prioritises boosting investment and	The TWSEL should support the implementation of this strategy in terms of the provision of a circular economy and	The objective of Theme 5 – Economy in the TWSEL is that trees and woodland will contribute	✓

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
		innovation, supporting inclusive growth and maintaining our focus on increasing internationalisation.	opportunities for employment and tourism.	towards sustainable and inclusive economy. The TWSEL encourages farm and woodland diversification.	
	Fairer Scotland Action Plan 2016	Aims to change deep-seated, multi-generational, deprivation, poverty and inequalities. One of the key ways they will do this is by eradicating child poverty. Includes actions to help people to have a say in their local areas; deliver warm, affordable homes; make society fairer; enabling more people to have access to affordable, healthy, nutritious food;	The TWSEL should engage with local people, and support the other aims of the strategy.	Policy 18 in the TWSEL is that proposals for tree planting in and around urban areas should be taken forward in a collaborative approach and seek consensus from all sectors of the community. It recommends equality impact assessment to identify issues. Action 17 also promotes access to and enjoyment of woodlands for all	✓
	East Lothian Council Plan	Has a vision of an "even more prosperous, safe and sustainable East Lothian, with a dynamic and thriving economy, that enables our people and communities to flourish". The overarching objective is "reducing inequalities within and across our communities".	The TWSEL should aim to support investment and incomes, reduce inequalities.	The objective of Theme 5 – Economy in the TWSEL is that trees and woodland will contribute towards sustainable and inclusive economy. Action 17 also promotes access to and enjoyment of woodlands for all Target 4 aims to increase access to woodlands by all and increase canopy coverage for all by a working target of 30%	✓

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
	East Lothian Economic Development Strategy 2012-2022 (refreshed)	Set out the council's strategy for economic development. The Strategy contains environmental objectives including increasing the proportion of East Lothian residents working in East Lothian, and to be Scotland's most sustainable local economy.	The TWSEL should support the environmental objectives of the strategy in looking to provide local, sustainable employment.	Action 24 of the TWSEL aims to Encourage and enable smaller producers to work together in joint marketing, promotion and equipment sourcing through a local timber forum. The TWSEL encourages sourcing of locally grown stock which may require expansion of local businesses. The TWSEL supports recycling of timber waste locally Action 3 encourages the use of locally sourced timber	✓
	East Lothian Poverty Action Plan 2021-2023	Aims to tackle the causes and effects of poverty in East Lothian and reduce the gap between the poorest and the richest people Includes to extend community engagement and decision making and increase community and individual resilience	The TWSEL should aim to reduce inequalities.	Policy 18 in the TWSEL is that proposals for tree planting in and around urban areas should be taken forward in a collaborative approach and seek consensus from all sectors of the community. It recommends equality impact assessment to identify issues. Action 17 also promotes access to and enjoyment of woodlands for all	✓

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
	East Lothian Green Network Strategy	Supports the aims of the Economic Development Strategy by providing a high quality landscape and recreational setting. It aims to help people feel they live in resilient communities, and not in isolation, to feel safe in and take pride in their environment. Provides that green infrastructure should be designed to be accessible to all.	The TWSEL should provide a high quality landscape and recreational setting. It should support resilient design, and bear in mind the need for green infrastructure to be accessible for all. The TWSEL should consider how it can reduce the impacts of inequality and create resilient communities.	Target 4 of the TWSEL aims to increase access to trees and woodlands for all. Policy 18 in the TWSEL is that proposals for tree planting in and around urban areas should be taken forward in a collaborative approach and seek consensus from all sectors of the community. It recommends equality impact assessment to identify issues. Action 17 also promotes access to and enjoyment of woodlands for all Target 7 of the TWSEL aims to improve landscapes through woodland creation	✓
	HEALTH				
	Water Environment and Water Services (Scotland) Act 2003	Enabling legislation in Scotland for the Water Framework Directive. Sets out measures for the protection of the water environment. Describes pollution in relation to the water environment in terms of substances resulting from human activity that may give rise to harm, including harm to the health of human beings.	The TWSEL should avoid and address pollution in the water environment in terms of substances that may give rise to harm to human health. This is relevant in this area in terms of pollution of bathing water from the waste water system.	TWSEL policy 6 aims to use woodland and trees to improve water quality. Supported by Action 5, which encourages multi-group working to identify where woodland creation can most improve water quality.	✓

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
				Target 2B aims to increase riparian woodland	
	Flood Risk Management (Scotland) Act 2009	Introduces a framework to reduce the adverse consequences of flooding; transposes EU Floods Directive; updates legislation on flooding; amends reservoirs legislation. Describes flood risk as the combination of the probability of a flood and of the potential adverse consequences, associated with a flood, for human health, the environment, cultural heritage and economic activity.	Some parts of this area are vulnerable to flooding, mainly from surface water. The TWSEL should avoid increasing flood risk and where possible reduce it.	Policy 6 states Planting of new trees and woodland must avoid increasing flood risk. It also encourages woodland creation where the most benefit for flood risk is identified. Action 5 encourages multi-group working to identify where woodland creation can support reduction in flood risk Target 2B aims to increase riparian woodland	✓
	National Planning Framework 4	The National Spatial Strategy's vision includes that Scotland's future places will have homes and neighbourhoods that are healthier, affordable and vibrant places to live. Inequality should be address. Cleaner, safer and greener places and improved open spaces will build resilience and provide benefits for people and health. Local living, active travel links and green infrastructure that brings nature into towns and cities are key to this.	The TWSEL should aim to support the provision of vibrant places, reduce inequalities, have regard to the role of green networks, and address vacant and derelict land. The TWSEL should support the aims of local living through woodland creation in and near towns. The health impacts of trees and woodland both positive and negative should be recognised, especially where there is the potential to influence health inequalities.	Positive and negative effects from trees are recognised. Areas where certain trees should not be planted within urban areas are identified around 'vulnerable' sites in the Urban mapping. Vacant and derelict sites are identified in the mapping. Target 7 includes improving landscapes by structural planting in the Cockenzie area.	✓

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
		Lifelong Health and Wellbeing is a cross cutting outcome of NPF4. Links between health and the natural environment recognised.		Target 4 aims to increase access to trees and woodlands for all, both in canopy coverage and access to local woodlands for recreation The lowest SIMD areas are identified to enable these to be targeted for improved canopy coverage and woodland access.	
	PAN 65 Planning and Open Space (2008)	Provides advice on the role of the planning system in protecting and enhancing existing open spaces and providing high quality new spaces.	Landscape and Townscape: The TWSEL should enhance open space.	Theme 7 objective is to use trees to help retain and enhance the distinctiveness of landscape and settlement character within East Lothian	✓
	Scottish Government Cleaner Air for Scotland Strategy (2015)	Sets out proposals to further reduce air pollution to protect human health and comply with legal requirements relating to air quality. There are links between poor air quality and ill health.	The TWSEL should look at how it can address air pollution and contribute towards targets in the strategy.	ACTION 21 Where appropriate, plant street trees and hedges in urban areas, including in Air Quality Management Areas and around sensitive sites including hospitals, schools, care homes and play areas and sports fields; woodland expansion along strategic road corridors and adjacent to industrial sites; and hedges along roadside edges Action 14 Develop a Hedgerow Plan for retention, replacement, increase and management of	✓

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				hedgerows and hedgerow trees including in urban areas for air quality.	
	Review of Public Health in Scotland 2015	Identifies environmental factors (water, air and general environment) as a key determinant to health. Advocates addressing environmental determinants of health and health inequalities. Notes the importance of tackling poverty and inequalities given the clear links between social deprivation and poorer health outcomes. Priorities are inequalities, inactivity, nutrition, obesity and poor mental wellbeing, concurrent with the demography of an ageing population.	The TWSEL should aim to improve environmental quality and reduce inequalities.	TWSEL aims to improve environmental quality and reduce inequalities by improving the quality of the urban environment through increased tree canopy cover, focussing on SIMD areas, and increasing access to recreational woodland. Policy 18, Target 4, Action 14, Action 21, Action 17, Action 16, Action 15, Action 18.	✓
	Equally Well, 2008	A public health strategy for Scotland with a focus on health inequalities. A key principle is reducing people's exposure to factors in the physical and social environment that cause stress, are damaging to health and wellbeing and lead to health inequalities. Recommends providing physical environments that allow for activity, and promote healthy weight, tackling poverty.	As above	As above	✓

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	Good Places Better Health	The Scottish Government's strategy on health and the environment. The approach recognises that the physical environment has a significant impact on the health of Scotland's people and that action is required to create health-nurturing environments for everyone	The TWSEL should aim to provide a health-nurturing environment.	As above.	✓
	Scotland's Environment Strategy	Includes outcome 'Our healthy Environment supports a fairer, healthier, more inclusive society" while another notes the importance of clean and healthy air. The strategy makes the link between human health and the health of the natural world.	The TWSEL should ensure that the plan overall links into areas of deprivation and is inclusive. The strategy should look for opportunities to improve air quality and avoid exposure of sensitive receptors to bad air quality. The strategy should recognise and look for nature-based solutions to health issues.	As above. The TWSEL aims to use trees to improve air quality and reduce exposure to poor air quality. The strategy seeks to avoid an increase in ground level ozone through careful choice of species, and to avoid trees with high pollen producing potential near sensitive receptors.	✓
	Public Health Priorities for Scotland, COSLA and The Scottish Government	Priority 1 A Scotland where we live in vibrant, healthy and safe places and communities: Priority 2 A Scotland where we flourish in our early years: Priority 3 A Scotland where we have good mental wellbeing Priority 4 A Scotland where we reduce the use of and harm from alcohol, tobacco and other drugs: Priority 5 A Scotland where we have a sustainable, inclusive economy with equality of outcomes for all: Priority 6 A Scotland where we eat	The TWSEL should look to improve the vibrancy, health and safety of the area; consider play; contribute to mental wellbeing, and support physical activity. These aims can be supported by well-planned woodland and trees in urban areas.	As above. The TWSEL contains guidance to help with the planning of woodland and trees in urban areas.	✓

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
		well, have a healthy weight and are physically active			
	Active Scotland Delivery Plan	Outcomes are: • We encourage and enable the inactive to be more active • We encourage and enable the active to stay active throughout life • We develop physical confidence and competence from the earliest age • We improve our active infrastructure – people and places • We support wellbeing and resilience in communities through PA & sport • We improve opportunities to participate, progress and achieve in sport	The TWSEL should: *improve opportunities for physical activity by creation of accessible woodland. *improve opportunities for outdoor play and challenge which help develop physical confidence *use tree and woodland planting and planning of woodlands to improve active infrastructure	The TWSEL contains a target for increasing accessible woodland – Target 4B to increase access to trees and woodland for all, and others e.g. Action 31 encouraging landscape planting in the Blindwells area. This will also give more opportunity for outdoor plan and challenge. The TWSEL notes that opportunities for tree planting and enhancing green networks alongside paths and active travel routes are being taken forward by the Central Scotland Green Network, but does not specifically promote tree planting along routes. (There is some potential for this to give rise to equalities issues as some groups may be put off use of the path by tree planting alongside).	✓
	Health and Social Care Delivery Plan (2016) – Scottish Government	The Delivery Plan aims to promote and support healthier lives from the earliest	The TWSEL should provide access to healthy environments.	The TWSEL has a target to increase accessible woodland, and to	✓

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	East Lothian Integrated Joint Board Strategic Plan	years, reducing health inequalities and adopting an approach based on anticipation, prevention and self-management.		increase urban tree canopy coverage, which should improve the healthiness of urban environments.	
	East Lothian Core Paths Plan **(2010)**	Core Paths Plans look to promote themes of: • green spaces • human health and well being • Accessibility • inclusion • biodiversity	The TWSEL should contribute towards improving the health and wellbeing of East Lothian by promoting core paths and accessibility to the countryside and green spaces.	The TWSEL promotes accessible woodland, taking core paths into account.	✓
	Central Scotland Green Network **Vision for Central Scotland and Action Plan**	The Central Scotland Green Network aims to make a step change to environmental quality across central Scotland through five themes: • A place for growth: creating and environment for sustainable economic growth • A Place in Balance: creating an environment more in balance, to thrive in a changing climate • A Place to feel good: creating an environment which supports health lifestyles and well-being	The TWSEL should contribute towards delivering the aims of the Central Scotland Green Network through creating an environment for business to invest, providing attractive green space and including space for nature.	The TWSEL considers attractiveness of the environment through its 'Landscape' Theme, including providing a landscape framework in the Blindwells/Cockenzie area, which should support inward investment. Increasing urban tree canopy cover should also increase the attractiveness of towns and villages for investment.	

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		• A Place to Belong: creating an environment that people can enjoy and where they choose to live • A Place for Nature: creating an environment where nature can flourish			
	Strategic Noise Action Plan for the Edinburgh Agglomeration (2014)	This plan is one in a suite of six draft noise action plans produced under the terms of the Environmental Noise Directive (END). The three main objectives of the Directive are as follows: • To determine the noise exposure of the population through noise mapping • To make information available on environmental noise to the public To establish Action Plans based on the mapping results, to reduce noise levels where necessary, and to preserve environmental noise quality where it is good	The TWSEL should not add to noise levels and seek to preserve noise quality where it is good.	The TWSEL (air quality section, para 7.67) supports tree and hedgerow planting where most benefits for air quality can be achieved. Action 21 is to plant street trees and hedges around sensitive sites including hospitals, schools, care homes and play areas and sports fields; woodland expansion along strategic road corridors and adjacent to industrial sites. Planting/woodland creation on these sites is likely to reduce noise to sensitive receptors. Being able to see trees also reduces the perception of noise, regardless of actual noise levels, and this will help achieve the objectives of this plan. The Strategy does not recognise candidate Quiet Areas however.	✓
	East Lothian's Green Network Strategy SPG	The Strategy takes the five themes of the Central Scotland Green Network	The TWSEL should consider how it could contribute to the improvement of physical	The TWSEL contains Target 4A for tree canopy cover in towns and	✓

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		and applies them to the East Lothian context. The ELC Green Network Strategy identifies action in this geographical area as a priority. The Strategy recognises the role of the Green Network in health and includes among other things, action to improve the core paths, increase trees and plants in towns, and provide multifunctional open space.	and mental health through provision of green infrastructure and recreation improvements.	villages. This will help promote mental health through provision of green infrastructure. Target 4B seeks more people having access to woodland, which will also help this.	
	East Lothian Open Space Strategy 2018	Set out East Lothian's approach to planning for and maintaining the quantity, quality and accessibility of open space within the area. The related audit shows where there are shortfalls in quantity or quality of open space.	The TWSEL should have regard to the findings of the Open Space audit, and if applicable follow the standards in the Open Space strategy.	Increasing canopy coverage is likely to lead to an increase in trees in open spaces, which should improve their quality. The TWSEL will not provide any new open space.	=
	East Lothian Play Policy	Aim: All children and young people will have access to a range of opportunities to play in East Lothian's built and natural environment and their right to play will be recognised and supported by adults. Principles include that adults should positively promote and support children and young people's right to play.	The TWSEL should consider how play could be incorporated into the strategy.	Target 4b to increase accessibility of woodland supports play as woodland can be a rich play environment. Increasing tree canopy coverage (Target 4A) may also add to the play environment. Action 21 intends to plant trees around play areas and sports fields where this would help improve air quality. This may contribute to helping children with breathing problems access play.	✓

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	SOIL				
	National Planning Framework 4 Prime agricultural land and carbon rich soils	Policy Intent: To protect carbon-rich soils, restore peatlands and minimise disturbance to soils from development. Policy Outcomes: • Valued soils are protected and restored. • Soils, including carbon-rich soils, are sequestering and storing carbon. • Soils are healthy and provide essential ecosystem services for nature, people and our economy.	The TWSEL should seek to avoid loss of prime and locally valued agricultural land. It should encourage and not prevent the restoration of peatland. It should support the capacity of soils to store carbon and provide ecosystem services for nature, people and the economy.	Target 5 seeks the creation of 300 ha of new small farm woodlands that align with agricultural production. Policy 21 states that woodland creation in farmland should aim to complement and improve agricultural production or water quality. Agricultural land, both prime and subprime, are shown as constraints on the Constraints Mapping.	✓
	PAN 33 Development of Contaminated Land (Revised Oct 2000)	Document provides advice with regards to the development of contaminated land, which any developments will need to adhere to.	Soil: should follow this guidance on planting in areas of contaminated land.	Trees can be used for phytoremediation of contaminated land. The TWSEL does not address this specifically, however an increase in tree planting may include some planting on contaminated sites.	=
	Scottish Soil Framework (2009)	The main aim of the Framework is to promote the sustainable management and protection of soils consistent with the economic, social and environmental needs of Scotland. Activities identified for focus include:	Soil: The TWSEL should promote the sustainable management of soils, including consideration of erosion, greenhouse gas emissions from soil, biodiversity in soil and its use as agricultural land. The TWSEL should	The TWSEL contains a section within the Resilience theme on the use of trees to protect and enhance the soil resource. This notes (para 5.16) that as part of the East Lothian Climate Forest the Council	✓

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		• soil organic matter stock protected • soil erosion reduced • greenhouse gas emission from soils reduced • soil's capacity to adapt to changing climate enhanced • soil biodiversity as well as above ground biodiversity • protected soils making a positive contribution to sustainable flood management	investigate ways of conserving or enhancing soil quality.	will encourage the expansion of farm hedgerows, woodlands and shelter belt planting as a means of sustainable soil management (see Section 9 Economy – Rural Diversification and Section 7 Biodiversity – Hedgerows and Hedgerow Trees).The TWSEL seeks to protect peatland through Policy 15. Policy 9 seeks natural regeneration as the preferred form of woodland creation, which avoids soil disturbance and retains its structure. Target 2 is for increasing riparian planting; as well as protecting water quality this will also reduce soil loss. Woodland creation in support of agriculture (Target 5) will also help avoid loss of soil to wind erosion.	
	Scotland's Third Land Use Strategy 2021 - 2026 – Getting the Best from our Land	Soil is recognises as a natural capital asset. Healthy soils have a role in storing carbon and are essential for the long term sustainability of our land and securing a sustainable source of food for generations to come. Restoring peatland is vitally important. Forestry should meet the UKFS including increasing positive impacts of forests	TWSEL should recognise soil as an asset and seek to protect it. The role of soil in storing carbon should be retained and enhanced. The food production value of soil should protected and enhanced. Woodland creation should not prevent peatland restoration. Forestry should aim to be positive for soil. Increasing riparian	The TWSEL recognises the important of peatland as a carbon store and seeks to protect it through Policy 15. The food production capacity of agricultural land is recognised, and this is mapped as a constraint. Target 5 seeks woodland in support of agricultural production, while	✓

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		and woodlands on soils. Increasing riparian tree cover can improve water management in upstream areas and reduce flooding and soil erosion further downstream.	woodland cover to reduce soil erosion should be considered.	Policy 21 seeks to avoid woodland creation that impacts on the food production capability of land. Riparian planting (Target 2B) and planting to reduce flooding (Action 4, Action5) should both reduce soil erosion also.	
	National Peatland Plan, 2015	Aims to secure the sustainable use, management and restoration of peatlands, including priority habitat bog woodland.	TWSEL should have regard to the aims of this strategy in planning where to plant trees.	Policy 15 supports peatland creation or restoration over woodland creation in suitable areas. Central Scotland Green Network heath/fen habitat is also recognised as a constraint to woodland creation.	✓
	East Lothian Contaminated Land Strategy	ELC Strategy for inspection of land to identify contaminated land based on the source-receptor-pathway model with a bias towards protection of public health and enhancing the well-being of communities. The Strategy aims to support economic development through the provision of attractive sites and the re-use of brownfield land.	The TWSEL should consider to this strategy.	The TWSEL does not address this specifically; however an increase in tree planting may include some planting on contaminated sites.	=
	East Lothian Climate Change Strategy 2020 - 2025	The Climate Change strategy seeks primarily to mitigate and adapt to climate change. The Strategy recognises the role of soil in absorbing rainfall, helping to avoid flooding. It	The TWSEL should recognise the role of soil in preventing flooding, and aim to avoid loss of topsoil.	Policy 21 Woodland Creation within Farmland accepts woodland creation to reduce flooding, including surface water runoff to roads. This will help reduce the loss	✓

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		notes that the next Local Development Plan will evaluate development location to avoid loss of topsoil.		of topsoil. The Strategy contains a section on the use of trees to contribute to reducing flood risk. This includes the value of tree roots in soil stability.	
	WATER				
	The Marine (Scotland) Act (2010)	The Marine (Scotland) Act provides a framework which will help balance competing demands on Scotland's seas. It introduces a duty to protect and enhance the marine environment and includes measures to help boost economic investment and growth in areas such as marine renewables	The TWSEL should aim to reduce adverse impact from water pollution on the marine environment.	Policy 6 supports the use of woodland and trees to improve water quality. Action 5 is to work with SEPA, neighbouring authorities and stakeholders to identify where woodland retention, creation, and management could most improve water quality. The Marine environment is not explicitly considered.	✓
	Water Environment and Water Services (Scotland) Act 2003 **And** Water Environment and Water Services (Scotland) Act 2003 (Designation of Scotland River Basin District) Order 2003	Protects the water environment including groundwater, surface water and wetlands, for, or in connection with the implementation of the Water Framework Directive.	Water Status: The TWSEL should support this plan through the promotion of sustainable flood management and promotion and adherence to the UK Forestry Standard, which includes a guideline on forests and water.	The TWSEL 'resilience' Theme includes a section on the use of trees to contribute to reducing flood risk. Policy 6 encourages the use of woodland and trees to reduce flood risk, which is a form of sustainable flood management. Actions 4 and 5 also promote this.	✓

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				The UK Forestry Standard is noted and promoted.	
	The Water Environment (Controlled Activities) (Scotland) Regulations, 2018	Outlines different levels of authorisation to allow for proportionate regulation of the water environment.	The TWSEL should take cognisance of the regulations in planning for planting and related activities. The potential need for authorisation under these regulations should be noted where applicable.	The TWSEL does not mention the Controlled Activity Regulations. The legislation will still apply.	=
	Flood Risk Management (Scotland) Act 2009	The Scottish Ministers, SEPA and responsible authorities must exercise their flood risk related functions with a view to reducing overall flood risk through: promotion of sustainable flood risk management, acting with a view to raising public awareness of flood risk, and acting in the way best calculated to contribute to the achievement of sustainable development.	Water Status: flood risk management across Scotland is important; The TWSEL should not create flood risk and should actively promote sustainable flood risk management.	Policy 6 aims to use trees to reduce flood risk so promotes sustainable flood risk management. Policy 6 also notes that planting of new trees and woodland must avoid increasing flood risk. An increase of tree canopy cover in urban areas (Target 4A) and riparian planting (Target 2) is also likely to reduce flood risk by sustainable means.	✓
	National Planning Framework 4	Policy Intent: To strengthen resilience to flood risk by promoting avoidance as a first principle and reducing the vulnerability of existing and future development to flooding. Policy Outcomes: • Places are resilient to current and future flood risk. • Water resources are used efficiently	Tree planting and woodland creation in the right place can reduce flood risk. TWSEL should look to reduce flood risk.	Policy 6 aims to use trees to reduce flood risk so promotes sustainable flood risk management. Policy 6 also notes that planting of new trees and woodland must avoid increasing flood risk. An increase of tree canopy cover in urban areas (Target 4A) and riparian planting	✓

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		and sustainably. • Wider use of natural flood risk management benefits people and nature.		(Target 2) is also likely to reduce flood risk by sustainable means.	
	East Lothian Local Development Plan 2018 Strategic Flood Risk Assessment (2018)	Sets out the approach to strategic flood risk management within the East Lothian Local Development Plan 2018, including the identification of where Flood Risk Assessment will be needed for sites. The SFRA notes that East Lothian Council seeks to achieve more sustainable solutions for flood protection schemes and is working with relevant agencies on this, to help establish suitable, beneficial and evidenced measures for natural flood management. Upstream flood storage for the River Tyne is a potential contributor to reducing flood risk in Haddington	The TWSEL will need to follow the East Lothian Local Development Plan 2018 Strategic Flood Risk Assessment as appropriate.	The TWSEL encourages the use of woodland and trees to reduce flood risk through working with others (Actions 4 and 5) and Increased woodland creation in river catchments (through riparian and other planting, Target 1, Target 2B) which would usually be expected to reduce flooding downstream.	✓
	The river basin management plan for the Scotland river basin district 2021 - 2027 River Basin Management Plan – Solway and Tweed	• Identifying areas of the water environment for protection and improvement • Identifying where current or historic activities are • constraining the quality of the water environment and the biodiversity it supports	The TWSEL proposals should prevent deterioration and enhance the status of the water environment; promote sustainable water use; reduce pollution; and contribute to the mitigation of floods and droughts	Policy 6 supports the use of woodland and trees to improve water quality and reduce flood risk. Action 5 is to work with SEPA, neighbouring authorities and stakeholders to identify where woodland retention, creation, and	✓

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
		Details the actions required to ensure waters of special value (e.g. drinking, biodiversity, shellfish, bathing) are up to standard and maintain the quality where they are already met; support economic regeneration of settlements whose livelihoods is dependent on coastal or marine activities and features.		management could most improve water quality. The TWSEL aims to encourage use of species which are resilient to expected climatic conditions, including hotter drier weather in summer.	
	Flood Risk: Planning Advice (updated 2015)	Supports and integrated approach to Flood Risk Management. Recognises desirability of avoiding new development in areas of flood risk but also that it may sometimes not be possible.	The TWSEL should support an integrated approach to flood risk management	Policy 6 supports the use of woodland and trees to improve water quality and reduce flood risk. It notes that woodland creation or tree planting must not increase flood risk.	✓
	Forth Estuary Flood Risk Management Plan	Sets out the agreed goals or objectives of local flood risk management; and the specific actions that will deliver these actions over the short to long term. Actions in this area (10/23) include a Flood protection study, strategic mapping and modelling, maintenance of flood protection and flood warning, self help, awareness raising and use of planning policies.	The TWSEL may be able to support the objectives of this plan through encouraging woodland creation in appropriate places. However decisions on how best to manage flooding are not within the scope of this strategy.	Policy 6 aims to use trees to reduce flood risk. Policy 6 also notes that planting of new trees and woodland must avoid increasing flood risk. An increase of tree canopy cover in urban areas (Target 4A) and riparian planting (Target 2) is also likely to reduce flood risk by sustainable means.	
	SEPA Scotland's National Water Scarcity Plan	The water scarcity plan sets out how water resources will be managed prior to and during periods of prolonged dry	The TWSEL will need to take account of the National Water Scarcity Plan.	The TWSEL contains targets for riparian planting. This can help slow evaporation of water,	✓

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		weather. This is to ensure the correct balance is struck between protecting the environment and providing resource for human and economic activity.		meaning more is available for abstraction while allowing water to remain in the channel for biodiversity and amenity purposes. The TWSEL does not specifically consider its contribution to water availability.	
	Better Bathing Waters , Scottish Government	Regulations provide that waters that are popular for bathing are given special protection to ensure they are safe for people to swim in. The strategy sets out how it will meet water quality standards, ensure public participation in decisions and provide information on bathing water.	The TWSEL should support the water quality of bathing waters.	Policy 6 supports the use of woodland and trees to improve water quality. Planting trees to reduce the flow of surface water into the waste water system can help avoid overflow events where untreated wastewater is discharged into the sea (see Water section, Scottish Water wastewater assets for more).	✓
	East Lothian Green Network Strategy SPG	The strategy aims to adapt to climate change by reducing flooding, and by providing adaptive environments.	The TWSEL should aim to reduce flooding by providing an adaptive environment.	Policy 6, Actions 4 and 5 and Targets 2 and 4A aim to address this as noted above.	✓
	AIR				
	Clean Air Programme for Europe (2013)	Includes measures to ensure that existing ambient air quality targets are met by 2020 and new air quality objectives set to reduce emissions by 2030. It notes air pollution is the	The TWSEL should seek to support compliance with air quality standards.	The TWSEL has a section within Community Theme starting paragraph 7.54 to use tree planting to enhance air quality. Action 21 supports this by encouraging tree	✓

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
		number one environmental cause of premature death in the EU, mainly due to particulate matter and ozone. Eutrophication is also an issue. Measures are focussed on improving compliance with existing standards, reducing emissions at source and targetting pollutants that also contribute to climate change.		planting between roads and sensitive receptors. Design guidance is given to avoid trapping pollutants from vehicles near where people are, and advises on species choice to avoid ground level ozone production. This supports compliance with air quality standards.	
	Air quality plan for nitrogen dioxide (NO2) in UK (2017) Air Quality Plan for tackling roadside nitrogen dioxide concentrations in Edinburgh Urban Area (UK0025)	Statutory air quality plan for nitrogen dioxide (NO_2), setting out how the UK will be reducing roadside nitrogen dioxide concentrations. Implemented locally by the Edinburgh Urban Area plan; measures include promoting park and ride, walking and cycling, electric charging of vehicles to support modal shift targets.	The TWSEL should support actions taken and plans to reduce NO2.	The TWSEL promotes accessible woodland, which may help reduce the use of private vehicle for travel to visit woodland. However, increasing the amount of woodland that welcomes the public may increase private vehicle travel overall. The TWSEL does not have much influence over overall levels of traffic, however it does encourage planting of trees in locations where this pollutant can be intercepted, which supports the aims of this plan.	✓
	Clean Air Strategy 2019 **(UK)** **and**	The Clean Air Strategy 2019 sets out the air quality strategy for the UK with objectives and targets, and notes that the UK government will work closely with devolved administrations. The	Air Quality: The TWSEL should use placemaking to reduce exposure to pollutants through use of green infrastructure	As 'Clean Air Programme for Europe', above.	✓

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
	Scottish Government Cleaner Air for Scotland Strategy (2015) **(Air quality targets are set at a UK level however air quality is largely a devolved matter)**	Strategy is implemented by the Cleaner Air for Scotland Strategy. Actions include: reducing peak levels of air pollutants especially in local communities: driving down background levels of preventable air pollution; behaviour change in relation to transport; reducing transport emissions by supporting the uptake of low and zero emission fuels and technologies, and supporting modal shift towards low emission modes and active travel; reducing the need to travel through spatial planning and digital technologies; using intelligent traffic system management to use assets efficiently; consider workplace car parking levies with ULEV exemptions; reviewing speed limits for air quality; look into 'last mile' logistics; Placemaking: integrate greenspace into new and existing development to act as a buffer against noise and air emissions; plan for active travel; Climate change; energy efficiency, renewable energy, low emission fuels; public engagement			

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
	Local Air Quality Management Guidance, 2016 **(Part of the Environmental Act 1995)**	Sets out duties requiring local authorities to review and assess air quality in their area from time to time, the reviews forming the cornerstone of the system of local air quality management.	Air Quality: sets out requirements to reduce air pollution which the TWSEL should contribute to if possible Human Health and Safety: looks to maintain and improve air quality for the benefit of human health to which the TWSEL should make a contribution.	The TWSEL encourages use of trees to reduce exposure to air pollution, and use of species to avoid ground level ozone production (section 'Use Tree Planting to Enhance Air Quality', community theme.	✓
	Musselburgh Air Quality Management Plan	Sets out actions to tackle NOx in Musselburgh. As well as coordination with the East Lothian Local Development Plan 2018 and Local Transport Strategy actions include enforcement against idling; SCOOT signalling changes and SUSTRANS active travel study; awareness campaign on the impact of emissions; bus stop relocation; promotion of green travel plans; electrification of buses; longer trains and platforms at Musselburgh station	The TWSEL should support the aims of the Musselburgh Air Quality Management plan	Action 21 mentions planting street trees and hedges where appropriate in Air Quality Management Areas. The aim is to reduce exposure to air pollutants. The TWSEL also encourages species choice that avoid supporting production of ground level ozone.	✓
	CLIMATIC FACTORS				
	The Paris Agreement	Agreement to reduce emissions to contribute to the reduction of greenhouse gas. Commitment to limit global warming to less than 2°C and to take action to minimise climate change.	The TWSEL should help contribute towards Scotland meeting its commitments and also through its support for the delivery of the Scottish Government's Climate Change Plan.	The Climate Change Mitigation section of TWSEL aims to increase the contribution that East Lothian's existing and future woodlands make to achieving net zero carbon in line	✓

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		Calls for action to conserve and enhance sinks of greenhouse gases, including forests.		with East Lothian Council and Scottish Government targets. The Strategy aims to retain existing trees and woodland, and create new woodland of 2 million trees. There are other actions in the strategy that contribute to this target (see 'Climatic factors' chapter above).	
	Climate Change (Scotland) Act 2009	The Act • sets a target for the year 2050, an interim target for the year 2030, and to provide for annual targets, for the reduction of greenhouse gas emissions; • makes further provision about mitigation of and adaptation to climate change; • makes provision about energy efficiency; • makes provision about the reduction and recycling of waste	The TWSEL should promote and contribute towards targets for reduction in greenhouse gas emissions and support adaptation to climate change. It should consider energy efficiency and reduction and recycling of waste.	The TWSEL will contribute to targets for reduction in green house gas emissions by woodland creation and others as above in the 'Climatic Factors' section above. The TWSEL contains a section on 'Resilience which promotes using trees to help adapt to climate change, and also choosing trees that are adaptive to a changing climate.	✓
	Climate Change (Emissions Reduction Targets) (Scotland) Act 2019	Act of the Scottish Parliament to amend the Climate Change (Scotland) Act 2009. The Act set new targets for the reduction of greenhouse gases emissions of net zero by 2045 with an interim target of 75% by 2030; required Scottish Ministers to prepare a Climate Change plan; and embedded the 'just	The TWSEL must take account of the targets set in the Act, aiming to reduce greenhouse gas emissions, and recognise that these should be achieved in a way that reduces inequality and promotes fair work.	The TWSEL aims to create woodland in line with the amount required across Scotland to meet targets in Scotland's Climate Change Strategy. The Strategy aims to reduce the effect of inequality by promoting increased tree canopy coverage in areas in the bottom 30% of Scottish	✓

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
		transition' i.e. reducing emissions in a way which tackles inequality and promotes fair work.		Index of Multiple Deprivation Areas, and to increase access to woodland which also promotes equality.	
	The Environment Strategy for Scotland: Vision and Outcomes	Strongly links the crisis in climate and nature, and seeks nature based solutions to climate mitigation and adaptation. The vision is for "One Earth. One home. One shared future. By 2045: By restoring nature and ending Scotland's contribution to climate change, our country is transformed for the better - helping to secure the wellbeing of our people and planet for generations to come." The strategy states that in Scotland we will play our full part in responding to the global climate crisis.	The TWSEL should recognise both the climate and biodiversity crisis.	The TWSEL recognises the climate and biodiversity crisis and contains actions to help play a part in addressing both. See Climatic Factors and Biodiversity sections above and in the TWSEL.	✓
	National Planning Framework 4	The twin global crises of climate and nature are at the heart of NPF4. Recognises the importance of both mitigating and adapting to climate change. NPF4 sets out a National Spatial Strategy, which is that 'Scotland's future places will be net zero, nature-positive places that are designed to reduce emissions and adapt to the impacts of climate change, whilst protecting, recovering and	The TWSEL should aim to mitigate and adapt to climate change. It should support energy efficient development. This could be done by encouraging use of trees in layouts to reduce energy use. Trees could also be used to mitigate the climatic effects of development which has unavoidable emissions. For adaptation, the TWSEL should aim to promote climate resilient woodland, and plan to reduce vulnerability to flooding. In	The TWSEL contains a Theme on Climate mitigation, which includes retention and sustainable management of emissions. The TWSEL includes Tree Design Action Group graphics which advise on use of trees to provide shelter, however other than this the Strategy does not explicitly advocate for use	//

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		restoring our environment". NPF4 recognises that this will require rapid transformation across all sectors of the economy and society. The Strategy encourages low and zero carbon design and energy efficiency, development that is accessible by sustainable travel and expansion of the renewable energy sector. Building resilience to the future impacts of climate change is also crucial. Policy 1 Climate Mitigation and Adaptation has the intention to "encourage, promote and facilitate development that minimises emissions and adapts to the current and future impacts of climate change". The outcome is that emissions from development are minimised and our places are more resilient to climate change impacts.	preparing the TWSEL we should consider whether we can promote the use of wood or wood products as fuel. We should consider how trees can be used as part of energy efficient design. • coordinate with development plan policy on protecting and enhancing woodlands; • reduce vulnerability to flooding • influence patterns of production and consumption to contribute to a low carbon future e.g. by promoting use of wood products	of trees as part of energy efficient layouts. Increased tree canopy cover is promoted and one of the reasons for this is that it can improve the energy efficiency of buildings by reducing wind chill. The Council has also produced Supplementary Planning Guidance for New Housing Areas, which covers all aspects of design, energy efficiency being only one aspect of good design, albeit an important one. Wood fuel was not promoted in the TWSEL due to issues with air quality. For Flooding see the 'Water' section above.	
	Climate Change Plan (2018-2032)(3rd Report) and Securing a Green Recovery on a Path to Net Zero: Climate Change Plan 2018-2032 - update	Sets out the Scottish Government's decarbonisation plans to 2032. The Update follows the Covid-19 pandemic, with the Scottish Government committed to a 'green	The TWSEL will need to take account of the Climate Change Plan and Update. The TWSEL should be part of nature-based solutions, and aim to increase green jobs, adaptation and resilience, action to	The TWSEL seeks nature-based solutions for flooding and soil erosion through woodland creation. An increase in woodland is likely to lead to green jobs in managing woodland and looking after trees, as	✓

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		recovery'. The Update sets out emissions reduction pathways over 7 sectors: Electricity, Buildings, Transport, Waste and the circular economy; Industry, Agriculture and Land use, land use change and forestry. Negative Emissions Technology is also added. A key consideration is the importance of leadership in the public sector, with the expectation that public services will lead by example. Public bodies must report on their targets for achieving net zero, and how their spending aligns with emissions reduction. The focus is on • Whole System Energy Approach • Land Use, Nature Based Solutions and the link to Biodiversity • Circular Economy • Transport Demand • The Planning System and National Planning Framework 4 (NPF4) • Wellbeing and National Outcomes The CCPU emphasises the importance of community and place-based climate change action, with land use and	maintain positive behaviours and delivering a place based approach. The TWSEL should support the circular economy.	well as other woodland related enterprise. The Resilience Theme addresses adaption. Provision of accessible woodland and increasing tree canopy coverage in towns supports positive active travel behaviours by provision of local woodland and an attractive environment which encourages walking and cycling. The TWSEL supports the circular economy through support for wood products, which can be recycled if not re-used.	

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		nature based solutions having a critical role. The importance of the circular economy is also key. Recovery from Covid-19 should be just and fair and take the opportunity to design a better future. There is commitment to increasing the number of green jobs, adaptation and resilience, action to maintain positive behaviours and delivering a place-based approach.			
	Scotland's Energy Efficiency Programme (SEEP) and **Heat Policy Statement** And **Biomass Action Plan for Scotland (2007)**	Aims to improve energy efficiency in homes, non-domestic buildings and across Scotland. Sets out goal of decarbonising heat. The Heat Policy Statement sets out policy for how we use, distribute and generate heat, with an ambition of achieving 1.5TWh of Scotland's heat demand to be delivered by district or communal heating by 2020. The Biomass Action Plan for Scotland sets out a coordinated programme for the development of biomass sector in Scotland.	There may be opportunities for the TWSEL to contribute to renewable heat through provision of biomass. The TWSEL should take account of the Biomass Action Plan.	The TWSEL does not promote the use of wood fuel at this time because of the potential for impact on air quality. As such, it does not promote the growing of tree species for biomass. The Strategy does provide encouragement in the form of Tree Design Action Group diagrams, for use of trees in sheltering buildings, but this is not otherwise included.	//

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	Climate Ready Scotland: climate change adaptation programme 2019-2024	Scottish Government's statutory five-year programme for adapting to climate change. It sets out the Scottish Government's policies and proposals for the next five years to increase the capacity of Scotland's people, communities, businesses and public sector to adapt to climate change. Outcomes include Outcome 1, that communities are inclusive, empowered, resilient and safe in response to changing climate; Outcome 2: the people in Scotland who are most vulnerable to climate change are able to adapt and climate justice is embedded in policy; Outcome 4: Our society's supporting systems are resilient Outcome 5: Our natural environment is valued, enjoyed, protected and enhance and has increased resilience to climate change	The TWSEL should look for opportunities to adapt to climate change including adapting to flooding, and considering provision of shade and shelter for buildings, people, and livestock. The TWSEL should consider how those most vulnerable to the effects of climate change can be supported (outcome 2). It should consider how to value, enjoy and protect the natural environment, and bring increased resilience to climate change.	The TWSEL aims to use trees to reduce flood risk (adaptation) in the 'Resilience' theme. Target 5 aims to increase farmland woodland, which could include that which provides shade and shelter for livestock. The Strategy also supports the retention of existing woodland, some of which has that function. Target 4A is to increase tree canopy cover in towns and larger villages to 30%. This will provide shade for both people and urban buildings. Developers are encouraged to follow Tree and Design Council advice on integrating trees into the urban environment, and a graphic is reproduced indicating use of trees to provide shelter. TWSEL supports those most vulnerable to the effects of climate change by promoting increased canopy coverage in areas in the lowest 30% on the Scottish Index of Multiple Deprivation. This will help these areas adapt by cooling and providing shade.	✓

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				Policy 14 Protection of the Natural Environment seeks to avoid harm to existing biodiversity and geodiversity.	
	East Lothian Climate Change strategy	The strategy aims: To engage, support and work with all relevant agencies, partners and communities to reduce Council services to net zero by 2045; To set out a coordinated approach, framework, outcomes, priorities and action plan for the implementation of climate change mitigation and adaptation across East Lothian; To contribute to the development of a sustainable, resource efficient and equitable East Lothian, with a thriving low carbon economy, a healthy and diverse natural environment, and flourishing low carbon communities that are resilient to the effects of future climate change; To prepare our communities for the impacts of climate change and adapt to future predicted changes in our climate locally.	The TWSEL should do what it can to reduce Council services to net zero by 2045. It should contribute to a sustainable, resource efficient and equitable East Lothian. It should support the low carbon economy. It should help maintain a healthy and diverse natural environment It should help communities become low carbon and resilient to the effects of future climate change.	The TWSEL Action 1 is to investigate opportunities for offsetting its own unavoidable carbon emission through creation of new multifunctional woodland locally. If successful, this will help reduce Council services to net zero. The TWSEL supports resource efficiency through support for the circular economy and use of wood and wood products which will often replace more material and carbon intensive products. The TWSEL supports an increase in native woodland, and aims to protect non-woodland habitat and species, which helps maintain a healthy and diverse natural environment. The 'resilience' section includes actions which will help communities become more resilience included by seeking	✓

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				nature-based solutions to flooding, provision of shade and others.	
	East Lothian Green Network Strategy SPG	The Strategy aims to help people make choices which have less climate impact and mitigate climate change through landuse.	The TWSEL should support and encourage climate friendly behavioural choices for example by providing recreational areas close to homes, as well as mitigating climate change.	Target 4B seeks to increase access to trees and woodland for all. The TWSEL seeks to mitigate climate change in the 'Climate Mitigation' section.	✓
	MATERIAL ASSETS				
	National Planning Framework 4 **Zero waste** **Circular Economy** **Minerals**	Conserving and recycling assets is one of the six spatial principles: "We will make productive use of existing buildings, places, infrastructure and services, locking in carbon, minimising waste, and building a circular economy". Resource efficiency is included as one of the six qualities of a successful place ('Sustainable') with reference to climate resilience and integrating nature-based solution. Supports planning for zero waste, including the waste hierarchy. Policy is included to maintain the operation and safety of the Strategic Transport Network	The TWSEL should aim to support the zero waste aspirations and take the waste hierarchy into account. This means thinking about how forestry waste is disposed and encouraging use of forest products to replace products that are harder to recycle. The TWSEL should also aim to support the circular economy through promotion of consideration of the whole life cycle of wood.	TWSEL Policy 4 notes that use of materials in tree and forestry operations should follow the waste hierarchy. The Strategy promotes the sustainable use and reuse of wood and wood products. Policy 5: Wood Products supports the use and retention of timber and wood products over less sustainable materials.	✓

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	A National Mission with Local Impact: Infrastructure Investment Plan for Scotland 2021-2 to 2025-5 **Scottish Government's Infrastructure Commission for Scotland's Blueprint for Scotland**	The Infrastructure Investment Plan outlines a coherent, and strategic approach to delivering our National Infrastructure Mission. The Plan demonstrates the vital role infrastructure has to play in helping businesses and communities to adapt and recover from the COVID-19 pandemic Sets out why, how and what strategic, large-scale investments the Scottish Government intends to take forward over the next 20 years for transport, education, health, water, waste management, sports, business, flood prevention and regeneration. Aims to deliver a wellbeing economy with sustainable and inclusive growth for all. The Vision is that infrastructure supports Scotland's resilience and enables inclusive, net zero and sustainable growth. The Strategy contains an investment hierarchy of 1. Maximise the useful life of existing	The TWSEL should support a well-being economy with inclusive growth for all. The role of woodland in supporting infrastructure for addressing flood risk, active travel networks and 20-minute neighbour hoods should be considered and included. The TWSEL should make sure that new woodland does not impact on existing assets which would then have to be repaired or replaced. The TWSEL should consider the role of woodland in addressing heat and cold in buildings to avoid the need for new infrastructure in buildings.	The TWSEL supports the use of trees to help reduce flood risk. Active travel is supported through use of trees to improve the urban environment (Target 4A). Action 4 seeks to work with farmers and landowners to reduce water run-off onto roads, which can damage them. The Councils Ash Dieback Plan, referred to in the Strategy but not part of it, will consider risks to roads. Design advice (paragraph 7.47) notes that tree planting proposals adjacent to roads and railways should be designed to avoid adverse impacts on these assets, and that trees and hedges should not be planted in the road verge for road safety reasons. Tree canopy targets for urban areas (Target 4A) will help moderate temperatures of buildings to reduce need for new infrastructure within buildings.	✓

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		assets. 2. Repurpose and co-locate 3. Replace, create or build new assets. Aims include decarbonising transport and supporting active travel, decarbonising heat, supporting a circular economy, boosting resilience and adaptation and investing in natural capital including woodland creation. T seeks better local places by supporting 20-minute neighbourhoods and high quality social infrastructure including water and waste water infrastructure.			
	Making Things Last: A Circular Economy Strategy for Scotland	Aims to increase the circularity of Scotland's economy with a focus on food and drink, remanufacture, construction and the built environment, and energy infrastructure	The TWSEL should look for opportunities to promote the circular economy.	The TWSEL notes in para 8.1 that productive forestry, sustainable use of woodland and manufacture of wood products support the circular economy and green economy. The TWSEL encourages the waste hierarchy in Policy 4, and the use of wood products in Policy 5). Hardwood timber production is supported, as well as softwood production on existing sites.	✓
	Getting The Best From Our Land: A Land Use Strategy For Scotland 2016 - 2021	Sets out Scotland's approach to land as a resource, with principles including that where land is highly suitable for a primary use (for example food production, flood management, water	The TWSEL should recognise the suitability of land for primary use.	The TWSEL recognises the value of peatland for carbon sequestration (Policy 15) and other non-woodland habitat for their biodiversity value (Policy 14). The	✓

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		catchment management and carbon storage) this value should be recognised in decision making.		importance of prime agricultural land for food production is recognised through constraints mapping, which includes this. Golf courses, which are important for exercise and recreation are also recognised on this mapping, along with land that has significant natural or cultural heritage value.	
	Zero Waste Plan (2010)	Sets out a vision for a zero-waste society in which all waste is seen as a resource; waste is minimised; valuable resources are not disposed of in landfills and most waste is sorted, leaving only limited amounts to be treated.	The TWSEL should support measures to improve resource efficiency and implement zero waste objectives.	TWSEL Policy 4 supports the waste hierarchy and (Policy 5) the sustainable use of wood products.	✓
	Scottish Water Delivery Plan 2015 – 2021 and Delivery Update 2019	Sets out Scottish Waters priorities for delivery of drinking water and wastewater network.	The TWSEL should avoid adverse impacts on Scottish Water infrastructure.	The TWSEL recognises the role that trees can have in reducing surface water runoff, reducing pressure on water assets. The strategy supports structural planting in the Blindwells/Cockenzie area (Target 7A) which will reduce pressure on wastewater assets there.	✓
	25 Year Water Resource Plan (2015) Scottish Water	Scottish Water sets out its strategy to ensure that all customers have a secure supply of clear, fresh, safe drinking water to 2031/32 and beyond. The key	The TWSEL should avoid adverse impacts on Scottish Water infrastructure	See comment on 'Scottish Water Delivery Plan' above.	✓

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		environment challenges for Scottish water is to adapt to pressures on water resources due to climate change and environmental constraints.			
	Fitting Landscapes – Transport Scotland	Transport Scotland policy on the landscape design and management of our transport corridors. The vision is "To promote the more sustainable design, implementation, maintenance and management of the transport estate and ensure that the landscapes we create and manage are of high quality, well integrated, bio-diverse, adaptable and deliver a meaningful contribution to national sustainability targets." The aims are: to ensure a high quality of place; enhance and protect natural heritage; use resources wisely; build in adaptability to change. The policy was developed to assist with maintaining a safe and reliable road network, promoting and sustaining healthy growth, assisting transport corridors to integrate as far as possible into surrounding landscapes, encouraging high quality design and place making, minimising driver	The TWSEL should take account of the design and management objectives of this policy as they apply to the A1 and East Coast Main line railway in particular. The policy notes that it is important that transport corridors are designed and managed not only to meet functional objectives but also to fit with the landscape through which they pass.	The A1 is a major transport route and also provides a barrier to woodland connectivity in East Lothian. The TWSEL seeks a connection for climate migration which will have to address the challenges posed by the A1. The soft landscaping does also provide some woodland connectivity alongside this linear feature. The aims of Fitting Landscapes align with those of the TWSEL in terms of biodiversity connectivity and improvement to landscape distinctiveness. Para 6.75 notes that new hedgerows and hedgerow trees must consider road safety implications. Target 2A of the TWSEL seeks functional native woodland corridors through East Lothian to support migration of species under climate change. Target 3B seeks to improve connectivity of woodland habitat. This fits with Fitting Landscapes	

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		visibility issues and problems with vegetation encroachment, protecting and enhancing biodiversity and reducing habitat fragmentation; and ensuring the soft estate is as sustainable and self-reliant as possible.		vision of ensuring the landscapes they create are biodiverse and adaptable.	
	CULTURAL HERITAGE				
	Historic Environment (Scotland) Act 2014	Set up Historic Environment Scotland and amended previous legislation on elements of the historic environment.	The TWSEL should be aware of legislation regarding changes and harm to listed buildings and Scheduled monuments.	The TWSEL encourages consideration of the effects of the mature size of a tree on historic assets including listed buildings. Policy 25 seeks to avoid harm to listed buildings from woodland creation or tree planting. Policy 24 seeks to protect Scheduled Monuments.	✓
	Historic Environment Policy for Scotland (2019)	Contains policy for managing the historic environment. This includes that decisions affecting any part of the historic environment should be informed by an inclusive understanding of its breadth and cultural significance; that its understanding and enjoyment as well as its benefits are secured; that unavoidable detrimental impacts should be minimised; that opportunities for enhancement should	The TWSEL should seek to protect and enhance the historic environment based on an inclusive understanding of it, and with regard to intangible as well as tangible heritage. It should minimise any unavoidable impacts.	The TWSEL contains a Cultural Heritage Theme which seeks to protect and enhance cultural heritage assets, including heritage trees and woodlands, and intangible heritage such as woodland skills and lore. Policies 24 and 25 seek to protect heritage assets from harm.	✓

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		be identified; and that decisions on it should contribute to sustainable development of communities and places; be informed by an inclusive understanding of the potential consequences for people and communities. It highlights intangible heritage as an underdeveloped area.			
	National Planning Framework 4 Historic assets and places	**Policy Intent:** To protect and enhance historic environment assets and places, and to enable positive change as a catalyst for the regeneration of places. **Policy Outcomes:** • The historic environment is valued, protected, and enhanced, supporting the transition to net zero and ensuring assets are resilient to current and future impacts of climate change. • Redundant or neglected historic buildings are brought back into sustainable and productive uses. • Recognise the social, environmental and economic value of the historic environment	Cultural Heritage: The TWSEL should avoid negative impact on historic environment assets and places. The TWSEL should seek to enhance historic assets where this is possible for example Historic Gardens and Designed Landscapes. The TWSEL should be informed by considerations including the character of settlements and areas of countryside as well as individual historic assets and look to accommodate planting in a way that enhances their historic value. The TWSEL should aim to involve people in understanding and celebrating the cultural heritage.	See comments on Historic Environment Policy for Scotland, above. The TWESL considers the character of settlements through specific guidance for towns and larger villages. The TWSEL also supports character appraisals for Conservation Areas. Action 28 encourages identification and recording of important individual historic, ancient and veteran trees including through citizen science.	✓
	PAN 2/2011: Planning and Archaeology	Sets out the considerations in determining the importance of archaeology and recommends seeking	There may be unknown archaeology and undesignated remains in this area as well as designated assets, and The TWSEL	TWSEL Policy 24 seeks archaeological assessment where planting, felling or restructuring	✓

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		professional advice when this issue arises.	should take these into account relative to their importance, informed by professional opinion.	might affect an archaeological site. The TWSEL also promotes the UK Forestry Standard, which includes this.	
	Our Past Our Future: The Historic Environment Strategy for Scotland **(a Scottish Government strategy)**	Sets out a vision for the historic environment. The priorities are: Delivering the transition to net zero Empowering resilient and inclusive communities and places Building a wellbeing economy Outcomes include reducing emissions from the historic environment and improving its climate resilience; communities having more opportunities to participate in decision making about the historic environment; the historic environment is more diverse and inclusive; the historic environment makes a responsible contribution to Scotland's economy and there is improved well-being through engagement with the historic environment.	The TWSEL should seek to support these aims.	The TWSEL aims to protect and enhance the historic environment (Policy 25: Protection of the Historic Environment) and record archaeological sites where this cannot be done (Policy 24). The constraints mapping recognises some cultural heritage designations. The Cultural Heritage Theme sets out other ways the Strategy will support these aims. The cultural heritage value of trees is recognised; this can help improve well being through engagement with historic trees, woodlands and skills. Promotion of trees with cultural heritage significance may help engage people in heritage who would not engage with built environment based heritage.	✓
	Managing Change in the Historic Environment: Guidance Notes	A range of guidance notes that set out the principles that apply to developments of different types that affect the historic environment. They	Some of the Managing Change series are relevant including on Conservation Areas, Listed Buildings, Historic Gardens and Designed Landscapes, and Battlefields.	The TWSEL recognises that trees have the potential to damage cultural heritage assets either physically or in terms of setting.	✓

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		should inform planning policies and the determination of applications. This includes guidance on considering setting and change.	The TWSEL should take these into account when planning planting proposals.	Policy 25 Protection of the Historic Environment aims to make sure this is taken into account where the Council has control. The TWSEL encourages those planting trees or creating woodland to consider this and includes links to some of the 'Managing Change' documents.	
	LANDSCAPE				
	European Landscape Convention	The aim of the convention is to promote landscape protection, management and planning, and to organise European cooperation on landscape issues. To be achieved by: • recognising landscapes in law as an essential component of people's surroundings, an expression of the diversity of their shared cultural and natural heritage, and a foundation of their identity • establishing and implementing landscape policies aimed at landscape protection, management and planning through the adoption of the specific measures set out in Article 6	Landscape and Townscape: The TWSEL should support the articles of the European Convention on Landscape in particular noting the 'all landscapes' approach.	The TWSEL contains a Theme on Landscape character which aims to use trees to help retain and enhance the distinctiveness of landscape and settlement character within East Lothian. Policy 26 Protection and Enhancement of Landscape provides that woodland expansion and tree planting should enhance and not harm landscapes and landscape character. Several 'spotlight' areas are singled out as needing a coordinated approach. The TWSEL notes (para 10.2) that "The Council takes an 'all landscapes' approach. All landscapes are valued as everyone	✓

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		• establishing procedures for the participation of the general public, local and regional authorities, and other parties with an interest in the definition and implementation of landscape policies • integrating landscape into regional and town planning policies and in cultural, environmental, agricultural, social and economic policies, as well as in any other policies with possible direct or indirect impact on landscape In addition member parties should adhere to Article 6- Specific Measures which includes: awareness raising, training and education, identification and assessment.		has a right to live in and enjoy vibrant surroundings." Communities are encouraged to set their own tree canopy coverage targets and include policies on trees in Local Place Plans. This supports participation in landscape decision making.	
	Creating Places (2013)	Policy statement sets out the overarching policy on design including architecture and place. The document contains an action plan that sets out the work that will be taken forward to achieve positive change.	The TWSEL should seek to create a sense of place through good planning and design.	Trees are generally considered to enhance both urban and rural areas. The TWSEL seeks an increase in woodland creation and tree planting. This is expected to improve quality of place.	✓
	Green Infrastructure: Design and Placemaking	Provides an overview of the policy context for green infrastructure and sets out design issues and techniques for integration into place-making.	The TWSEL should take account of the good practice shown in this guidance where relevant. It should consider how tree planting can form a green	The TWSEL seeks multiple benefits from woodland creation. The Strategy seeks to address fragmentation of woodland to	✓

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		Confirms that 'green infrastructure' includes 'blue' infrastructure such as SUDS, wetlands, watercourses and open water. Notes that Green infrastructure can deliver on functions and services such as shelter, access and travel, drainage, pollution mitigation and food production, and that this approach has the benefit of enhancing habitats and creating attractive places. It notes that linking such areas into green networks can lead to further benefits at the strategic level. Green infrastructure should be considered at every scale. Consideration should be given to how the scheme will integrate with existing roads, paths and surrounding development.	infrastructure network with multiple benefits at the strategic scale.	achieve a more resilient habitat network across the area. This will improve biodiversity but also allow for climate migration of species which can help make the woodland more resilient, helping to retain it as a landscape feature. Connectivity is also considered at a more local scale through the guidance given on individual settlements.	
	Natural Heritage Futures and Update SNH (now Naturescot)	Produced as a non-proscriptive visionary document describing the regional distinctiveness of the Eastern Lowlands and looking at what they could become in the future. The vision includes river systems responding naturally to rainfall and a variety of habitats flourish in the diverse environments created by natural flooding; low ground is dominated by productive arable farming, but the	The TWSEL should look to this document for inspiration, although it is not intended to be prescriptive it sets out a vision for Eastern Lowland Scotland as a whole.	The TWSEL seeks more riparian planting (Target 2) which will help river systems respond more naturally to rainfall as this is likely to be the land cover that would be around most of them naturally. The TWSEL recognises the important of arable agriculture and does not support woodland creation there unless it supports food production or water management objectives.	v✓

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		diversity of the landscape has increased. Native woodlands have expanded with networks of broadleaves, open space, paths and tracks contribute to multi-benefit woodland management. Safer countryside access routes have been developed. The urban fringe of Edinburgh and smaller towns is well integrated through landscaping of high wildlife value. Transport infrastructure contributes to habitat.		TWSEL Target 3A seeks a doubling of native woodland with Target 3N to improve connectivity of broadleaf and yew habitat.	
	People, Place and Landscape – Joint Position Statement by SNH (now Naturescot) and HES	The vision is that "All Scotland's landscapes are vibrant and resilient. They realise their potential to inspire and benefit everyone. They are positively managed as a vital asset in tackling climate change. They continue to provide a strong sense of place and identity, connecting the past with the present and people with nature, and fostering wellbeing and prosperity." Actions include engaging people in decisions about landscape, strengthening the role of landscape in planning	The TWSEL should consider how the landscape can become vibrant and resilient, as well as encouraging management to tackle climate change. The landscape should provide a strong sense of place and identity.	TWSEL encourages (Target 1) an increase in woodland cover to tackle climate change. Choice of species to consider future climatic conditions is encouraged. Sustainable woodland management is encouraged. This will help the landscape become more resilient.	✓

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	Scottish Landscape Character Types and Descriptions -SNH **(now Naturescot)**	The aim of Landscape Character Assessments is to classify landscape within certain areas, to identify the forces for change which may affect their distinctive character, give guidelines for conservation/enhancement of the different types of landscape and to find opportunities for landscape conservation, restoration or enhancement	Landscape and Townscape: The TWSEL should seek to support conservation and enhancement of different types of landscape in East Lothian.	The TWSEL encourages different types of woodland cover in different areas. The TWSEL contains a map showing the potential for native woodlands in different areas (Figure 25). The commentary to this explains what type of woodland is sought in different areas. This will support the distinctiveness of different landscape types through encouragement of woodland which is suitable for that area.	✓
	East Lothian's Special Landscape Areas SPG (2018)	This SPG describes the Landscape Character Areas of East Lothian, with guidance on how their character can be strengthened. It provides Statements of Importance for each of the Special Landscape Areas designated in the East Lothian Local Development Plan 2018 including the qualities and features which led to their designation, guidelines for development and management recommendations.	Landscape: The ELFSW should seek to reinforce the landscape character of the different areas of East Lothian, and avoid harm to Special Landscape Areas, in line with this guidance.	Policy 26 Protection and Enhancement of Landscape seeks to protect Special Landscape Areas. Para 10.3 draws attention to this guidance.	✓
	East Lothian Green Network Strategy SPG	The Strategy supports the aims of the Economic Development Strategy by aiming to provide a high-quality landscape and recreational setting.	The ELFSW should aim to provide a high-quality landscape and recreational setting.	The TWSEL contains a section on the character and setting of towns and villages, noting that trees can be important for the setting and	✓

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				amenity of many East Lothian settlements. Comments are made on setting in Appendix A; Trees and Woodlands in Settlements	
	ELC Countryside and Coast SPG 2019	The SPG gives guidance on the operation of East Lothian Local Development Plan 2018 policy towards the Countryside and Coast, within the framework set by that plan, including the Countryside Around Towns areas. It aims to improve design in coastal areas through guidance on character of the different coastal areas. The main objectives for the CAT areas are: protection of the landscape setting of settlements; prevention of coalescence of settlements to retain the distinctive identities of separate communities; provision of green networks and recreation.	The TWSEL should take account of the design guidance with this SPG.	The TWSEL seeks to create a coastal mosaic habitat around the coast (Action 14, Vision diagram). Setting of towns is considered in Appendix A, which took the Countryside around Town areas into consideration.	✓
	OVERARCHING				
	Forest Principles (UNCED 1992)	Introduced the 'Forest Principles' which lay the foundation for later policy developments, seeking to balance and harmonise competing demands on forest resources.	TWSEL should support these principles, with reference also to their expression in the Scottish Forestry Strategy.	The TWSEL supports sustainable forest management and the multifunctional role of forests and the UK Forestry Standard, which derive from the Forest Principles.	✓

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	Control of Woodland Removal Policy (Scottish Government and Forestry Commission, 2009)	Provides a strategic framework for appropriate woodland removal, the maintenance and expansion of forest cover, the achievement of an appropriate balance between forested and non-forested land, support for climate change mitigation and adaptation.	The TWSEL should support this Policy by seeking suitable sites for replacement planting where woodland is removed for good planning reasons. The TWSEL should recognise the aim of minimising permanent woodland removal.	Policy 1: Retention of woodland, trees and hedges refers to the Control of Woodland Policy. The TWSEL aims to retain existing woodland as far as possible.	✓
	The Right Tree in the Right Place – Planning for Forestry and Woodlands (Forestry Commission 2010)	Provides advice to planning authorities on planning for forestry and woodlands. It supports a significant expansion in woodland cover.	The TWSEL should aim to significantly expand woodland cover, in the right places.	The TWSEL followed the advice of this document in producing the constraints mapping which will inform grant funding decisions. Target 1, which reflects an existing Council ambition, aims to significantly expand woodland cover, and the remaining guidance and policy of the TWSEL aims to steer it to the right place.	✓
	East Lothian Council Plan 2022-27	The East Lothian Council Plan 2017-2022 sets a vision for "an even more prosperous, safe and sustainable East Lothian, with a dynamic and thriving economy, that enables our people and communities to flourish" The objectives are: recovery and renewal from Covid; reduce poverty and inequality; respond to the climate emergency; grow our economy; grow	The TWSEL should contribute to delivering the vision and objectives of the Council Plan.	The TWSEL contains a section on Economy which will support a more prosperous East Lothian. The Climate Mitigation and Biodiversity Themes contribute to a more sustainable East Lothian, while the Resilience and Community Themes contain policy and action to help our communities flourish.	✓

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
		our people; grow our communities; grow our capacity.			
	East Lothian Local Development Plan 2018	Sets out the spatial strategy for the use and development of land within the area and includes an associated developer contributions framework for infrastructure delivery.	The TWSEL should take account of the provision for development and policy towards trees contained in the development plan.	The TWSEL seeks to increase protection of trees in relation to development; however it is not the development plan and it is for the decision maker to determine if it is a material consideration for any planning application.	✓
	East Lothian Green Network Strategy SPG	The Strategy supports the aims of the Economic Development Strategy by aiming to provide a high-quality landscape and recreational setting. It proposes action within lower SIMD areas and projects in the Western Area to improve active travel links and promotion of heritage (subject to impacts on the Firth of Forth SPA).	The TWSEL should implement the Green Network Strategy by providing a high-quality landscape setting for development and improving connectivity.	The TWSEL sets out issues and opportunities for each settlement which will help provide a high-quality landscape setting for development. Appendix E provides advice for developers which also supports this aim.	✓
	East Lothian Plan 2017-27 **(Local Outcome Improvement Plan)**	The Plan: is intended to tackle inequalities of outcome, particularly for groups of people who do less well than others because of socio-economic inequality; is focused on what partner organisations can achieve by working together, over and above what they already do as single organisations. It is	The TWSEL should contribute to achieving the environmental outcomes set out, including helping people to find jobs, growing local business, strong resilient communities with a high quality environment; tackling poverty and health inequality.	The TWSEL should increase the number of green jobs related to woodland, and support farming incomes. Increasing tree canopy coverage should improve the urban environment, while creation of the climate forest will improve the rural landscapes. These improvements support a healthy	✓

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
		based on the following themes: prosperous; community minded; fair.		environment and should increase active travel.	
	Fa'side Area Partnership Plan (working document)	The themes are Sustainable Economy, Resilient People and Safe and Vibrant Communities. Within this, the priority areas for action are: 1. Improving our Town and Villages 2. Supporting a thriving local economy 3. Improve travel options and reduce traffic congestion throughout the Area 4. Increasing opportunities for physical activity in day-to-day life 5. Supporting families to create healthy environments for children 6. Making it easier to choose healthy and locally grown food 7. Improving Community information, facilities and resources 8. Ensuring all Residents of Fa'side feel Safe and Secure in their Community 9. Becoming a more supportive and inclusive community	The TWSEL should have regard to the environmental objectives and priority areas for action.	Increasing tree canopy coverage should improve towns and villages, and this is particularly so in the Fa'side area where canopy cover is low. Improving the accessibility of woodland (Target 4B) will give more opportunity for physical activity in daily life. Action 23 encourages local fruit and nut growing. At project level, the potential for trees to reduce feelings of safety in the environment must be considered.	✓
	Preston Seton Gosford Area Partnership Plan	This plan shares the common themes of all East Lothian Community Partnership Plans of Prosperous, Community Minded and Fair. 1: Encourage social enterprise and small business development in the area. 5: Capitalise on the area's rich cultural and industrial heritage to increase	The TWSEL should have regard to the environmental objectives and priority areas for action of this plan.	The TWSEL economy section includes Action 25, promoting woodland based tourism, and Action 26, small scale low impact tourism business. Action 24 is to encourage and enable smaller producers to work together in joint marketing. There should be some	✓

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
		visitors and increase employability skills. 6: Promote the sense of a village identity and cultural heritage in the communities of Prestonpans, Longniddry, Cockenzie & Port Seton and develop the understanding that the area is made up of a variety of local neighbourhoods, each with their distinct needs and identities. 7: Protect green spaces and connect people with their natural environment within and between communities to increase health and wellbeing. 12. Our communities are better able to make healthy choices, reduce isolation and access the services they need in order to maintain a positive level of physical and mental health. 14. Improve access to the places, spaces and facilities for everyone. 18. Help ensure roads and pavements are safe and accessible. 19. Actively encourage people to walk and cycle and use the path networks within and between our communities.		job creation in association with trees and woodland management. The Cultural Heritage theme includes actions supporting cultural heritage. Guidance on each settlement has consider their individual character. Improving tree canopy coverage will help connect people to their natural environment. A better urban environment is likely to reduce isolation by encouraging use of public space. The Strategy encourages fruit and nut growing, which can help with both physical and mental health. Tree planting and management at project level should consider the effect on roads and pavements.	
	Dunbar and East Linton Area Partnership Plan	This plan shares the common themes of all East Lothian Community Partnership	The TWSEL should have regard to the environmental objectives and priority areas for action of this plan.	The TWSEL Economy section includes actions which support rural employment. Increasing	✓

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
		Plans of Prosperous, Community Minded and Fair. 4. The work, social and recreational needs of village residents will be met locally 1. Ward Communities are places encouraging a Low Carbon Lifestyle and are prepared for the effects of Climate Change. 6. Encourage increased use of public transport and active modes of travel and ensure our roads are safe. 8. Our communities are supported to enable people to make health choices and maintain a healthy lifestyle and vulnerable / isolated people are supported		accessible woodland helps support use of active travel to recreational destinations. The Climate Mitigation and Resilience sections aim to use woodland to mitigate and adapt to climate change.	
	Haddington and Lammermuir Area Partnership Plan	This plan shares the common themes of all East Lothian Community Partnership Plans of Prosperous, Community Minded and Fair. 2: Promote the HAL area's heritage and culture 3: The town centre looks appealing, vibrant and safe for everyone who visits or works there	The TWSEL should have regard to the environmental objectives and priority areas for action of this plan.	The TWSEL in its Cultural Heritage chapter encourages promotion of woodland heritage as well as protection of heritage assets from tree planting and woodland creation. While canopy coverage targets are included, the TWSEL includes recognition that some Conservation Areas which may included parts of Haddington Town	✓

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
		5: Encourage increased use of active modes of travel 7: People are enabled to live at home and access opportunities in their communities for as long as possible 8: Our communities are better able to make healthy choices, reduce isolation and access the services they need in order to maintain a positive level of physical and mental Health		Centre, do not have trees as part of their character and that they may not be appropriate there. The target for accessible woodland will help people access opportunities within their communities. This, and increased urban canopy coverage, supports mental health and active travel, which is a healthy choice.	
	Musselburgh Area Partnership Plan	This plan shares the common themes of all East Lothian Community Partnership Plans of Prosperous, Community Minded and Fair. 1. Support town centre regeneration in Musselburgh by encouraging the implementation of the Musselburgh Town Centre Strategy (MTCS) and other initiatives. 2. Fisherrow Harbour and waterfront area is restored and enhanced as a local asset and opportunity for economic development. 5. Increased use of active modes of travel (i.e. walking and cycling) for trips	The TWSEL should have regard to the environmental objectives and priority areas for action of this plan.	The TWSEL supports increased urban tree canopy coverage, but also recognises there are places such as some Conservation Areas where the character of the area does not include trees. This is in line with town centre regeneration and enhancement of Fisherrow Harbour and waterfront. Increased tree canopy coverage targets should improve the urban environment which helps encourage use of active travel modes. Canopy coverage targets also support tree planting in green spaces, which is generally seen as enhancement, and improves them	✓

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
		within the Musselburgh area and cross boundary connections. 6: Green spaces are protected and enhanced for community recreation. 9. Free and fun fitness opportunities are available and existing green spaces (parks and the natural landscape) are accessible and used by families and people 11. Encourage measures that will lead to improved air quality in Musselburgh High Street to help reduce health inequalities		as a free opportunity for fun and fitness. The TWSEL supports use of tree planting to support air quality, and provides design advice on how this can be achieved.	
	North Berwick and Coastal Area Partnership Plan	This plan shares the common themes of all East Lothian Community Partnership Plans of Prosperous, Community Minded and Fair. 2. We want to make it easier for everyone to get around the area. We want to make sure our streets and pavements are safe and fully accessible. 3: We believe each of our communities has a unique sense of place and identity to be valued and protected. This derives from two assets:	The TWSEL should have regard to the environmental objectives and priority areas for action of this plan.	Increased tree canopy coverage targets should improve the urban environment which helps encourage use of active travel modes. Trees can sometimes bring issues of damage to pavements, or the dropping of leaves on them. While care with location and species choice can reduce this, some effect remains likely. The TWSEL aims to increase woodland and improve accessibility of woodland. The TWSEL recognises the importance of retaining the	//

	Name of Plan	Environmental Requirements of Plan	Implications for TWSEL	Comments	Complies?
		Firstly, our diverse high quality, attractive natural environment including coastal, countryside and woodland, and secondly our historic built areas. These are enjoyed by both locals and visitors alike. We wish to support initiatives which protect and enhance these.		character of areas of cultural heritage value such as Conservation Areas, including where trees are not part of this historic character.	

17 OVERALL CONCLUSION

17.1 The TWSEL contains Themes specifically aimed at Biodiversity, Landscape and Climate Change, Cultural Heritage, and Landscape, and significant benefits in these areas are expected. Woodland biodiversity will benefit from increased protection of woodland, expansion of woodland and more connections between woodland areas. Increased woodland planting will mitigate climate change and help us adapt to inevitable climate changes. Cultural heritage will benefit from recognition of notable trees. Landscape will be enhanced by woodland creation.

17.2 The main potential for adverse effects is:

- For biodiversity, there is likely to be an increase in invasive species that live in woodland, due to the expansion of woodland.
- The TWSEL aims to increase access to woodland, and to focus this on those woodlands that can best cope with more visitors. However, there could be some increase in damage to woodland biodiversity from increased recreational access
- An increase in tree canopy coverage generally makes an area more pleasant to be in. However, there for some people or in some places this increase in tree cover may reduce their enjoyment of their home or area.
- Increasing woodland cover, and encouraging people to use woodland, could lead to an increase in vector borne disease, mainly from ticks. There could also be an increase in tree pollen allergy
- TWSEL encourages woodland on agricultural land where it will support agricultural production. This will lead to the loss of some of this land.
- More trees especially in towns will bring more fallen leaves and seeds which can grow in unwanted places. This could potentially lead to an increase in damage to or maintenance needs of structures and roads.
- An increase in trees and woodland will bring landscape change. This will generally make the landscape more diverse and interesting. However, at the time when most cultural heritage assets were created, there were fewer trees. Sometimes, therefore, tree planting may affect cultural heritage assets or their setting, and impact on how people understand them.

17.3 The TWSEL complies with most of the environmental objective of relevant Plans, Policies and Strategies. In particular it complies with the Scottish Forestry Strategy, National Planning Framework 4 and the Scottish Climate Change Policy and Update and will help implement their main environmental objectives. The main policy that it does not comply with is Scotland's Energy Efficiency Programme and Biomass Strategy, as it does not seek any increase in wood fuel. This is in support of air quality objectives.

18 MONITORING

18.1 The environmental impacts of larger proposals coming forward under the strategy will be examined by Scottish Forestry through applications for grants or permission, and where necessary, for planning permission from the Council. Where relevant applications will be accompanied by Environmental Impact Assessment, Transport Assessment, Habitat Regulation Appraisal, Landscape and Visual Impact Assessment, Flood Risk Assessment and others.

18.2 The overall landscape impacts will be monitored along with the effects of the East Lothian Local Development Plan 2018.

18.3 East Lothian Council is currently considering how to collect data on climate change emissions. The amount of tree planting coming forward may be included as part of this work.

18.4 Proposals for monitoring are:

Topic	Monitoring measures
Biodiversity	NatureScot site condition reports for woodland features of SSSIs Collate information from Countryside Rangers/others on damage to woodland arising from access Collation of outcomes of planning applications on ancient woodland sites
Population	% of properties in lowest 30% SIMD that meet Woodland Trust accessibility standard
Human Health	Number of deaths and serious injuries caused by trees – NHS statistics Number of road accidents involving deer
Soil	Area of prime and sub-prime agricultural land which has changed to woodland
Water	SEPA water quality data Area of woodland in the riparian zone (30m from the river)
Air	Numbers of people suffering tree pollen allergy (check with Public Health Scotland)
Climatic Factors	Change in area of woodland Collation of outcomes of planning applications involving change of use of woodland Area of woodland retained in use as such? Avoidance of peat/saltmarsh?
Material assets	ELC Reports of damage to assets attributable to trees Road accidents related to trees
Cultural Heritage	Number of notable, veteran and ancient trees recorded through citizen science
Landscape	Are landscape masterplans in place

18.5 SEPA continue to monitor various aspects of air, water and soil quality, but not the impact of the TWSEL.

18.6 NatureScot monitor the condition of SSSIs and European sites. The British Trust for Ornithology coordinate the Wetland Bird Survey along the coastline. This survey monitors the numbers of birds at the coast. This will show the overall condition of the sites but not any impact of the TWSEL specifically. East Lothian Countryside Rangers work extensively along the coast and will informally monitor changes arising from recreational pressure or otherwise. Changes arising from projects coming forward under the TWSEL may be picked up informally through this mechanism. East Lothian Council is open to reports from members of the public or organisations, some of whom take an interest in the birdlife of the coast and the quality of the coastal experience generally. East Lothian Council respond to any issues raised.

18.7 A monitoring report will be prepared after 3, 7 and 9 years, and either reported to Cabinet or placed into the Members Library Service.

19 REFERENCES

Sources are also given as footnotes throughout the document above.

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APPENDIX ONE – Condition of SSSIs

A1 The following table shows the status, trend and pressures for qualifying interests of the SSSIs. This information is available at NatureScots Sitelink website: https://sitelink.nature.scot/home .

Feature	Status (updated)	Trend	Pressures within SSSI
BANGLEY QUARRY			
Mineralogy of Scotland	Unfavourable (2015)	Declining	Invasive Species – Scots pine, scrub
BARNS NESS COAST			
Lower Carboniferous [Dinantian - Namurian (part)]	Favourable (2002)	Maintained	None
Coast - saltmarsh	Favourable (2015)	Declining	Natural event
Coast – sand dunes	Unfavourable (2016)	Recovering	Invasive species – Nettles, Senecio jacobaea, Thistles
Coast – Shingle	Favourable (2016)	Recovered	Infrastructure
BASS ROCK			
Gannet (Morus bassanus), breeding	Favourable (2014)	Maintained	None
Seabird colony, breeding	Favourable (2016)	Declining	Climate Change Game/ fisheries management
DANSKINE LOCH			
Fen woodland	Unfavourable (2009)	Declining	Invasive species No proactive management Water management
FORTH ISLANDS			
Cormorant (Phalacrocorax carbo), breeding	Unfavourable (2016)	Declining	None
Puffin (Fratercula arctica), breeding	Unfavourable (2016)	Declining	Climate Change Game/ fisheries management Invasive species
Seabird colony, breeding	Favourable (2017)	Declining	Game/ fisheries management
FIRTH OF FORTH			
Arthropoda (excluding insects and trilobites)	Favourable (2016)	Maintained	None

Feature	Status (updated)	Trend	Pressures within SSSI
Beetle assemblage	Unfavourable (2000)	Declining – to be denotified	Invasive species, Over grazing, Recreation/disturbance Under grazing
Bar-tailed godwit (Limosa lapponica), non-breeding	Favourable (2015)	Maintained	Recreation/disturbance – dog walking, walking
Carboniferous - Permian Igneous	Unfavourable (2008))	No change Management measures are in place that should, in time, improve the feature	Recreation/disturbance
Coastal Geomorphology of Scotland	Favourable (2017)	Maintained	Natural event – tidal erosion
Cormorant (Phalacrocorax carbo), non-breeding	Favourable (2015)	Maintained	Game/ fisheries management
Common scoter (Melanitta nigra), non-breeding	Unfavourable (2015)	Declining	None
Curlew (Numenius arquata), non-breeding	Favourable (2015)	Maintained	Climate Change Recreation/disturbance - Dog walking, Walking
Dunlin (Calidris alpina alpina), non-breeding	Favourable (2015)	Declining	None
Eider (Somateria mollissima), breeding	Favourable (2013)	Recovered	No proactive management Recreation/disturbance - Dog walking/Walking
Eider (Somateria mollissima), non-breeding	Favourable (2015)	Declining	Recreation/disturbance Dog walking
Golden plover (Pluvialis apricaria), non-breeding	Unfavourable 2015)	Declining	None
Goldeneye (Bucephala clangula), non-breeding	Unfavourable (2015)	Declining	Climate change
Great crested grebe (Podiceps cristatus), non-breeding	Unfavourable (2015)	Declining	Natural event
Grey plover (Pluvialis squatarola), non-breeding	Favourable (2015)	Declining	Climate Change Recreation/disturbance - Dog walking, Walking
Knot (Calidris canutus), non-breeding	Unfavourable (2015)	Declining	Climate Change Recreation/disturbance
Lapwing (Vanellus vanellus), non-breeding	Favourable (2015)	Declining	None

Feature	Status (updated)	Trend	Pressures within SSSI
Long-tailed duck (Clangula hyemalis), non-breeding	Unfavourable (2015)	Declining	None
Lower Carboniferous [Dinantian - Namurian (part)]	Unfavourable (2008)	No change	Dumping/ storage of materials Water quality
Lowland neutral grassland	Unfavourable (2009)	Declining	Invasive species Other
Mallard (Anas platyrhynchos), non-breeding	Favourable (2005)	Declining	Climate Change Recreation/disturbance
Maritime cliff	Unfavourable (2002)	Declining	Agricultural operations Invasive species No proactive management Under grazing
Mineralogy of Scotland	Favourable (2002)	Maintained	None
Mudflats	*Condition Not Assessed*		None
Northern brown argus (Aricia artaxerxes)	Favourable (2014)	Maintained	Invasive species Recreation/disturbance
Oystercatcher (Haematopus ostralegus), non-breeding	Favourable (2015)	Maintained	None
Palaeozoic Palaeobotany	Favourable (2008)	Maintained	None
Permian - Carboniferous Fish/Amphibia	Favourable (2008)	Maintained	None
Pink-footed goose (Anser brachyrhynchus), non-breeding	Favourable (2015)	Maintained	None
Quaternary of Scotland	Favourable	Maintained	Natural event Tidal erosion
Red-breasted merganser (Mergus serrator), non-breeding	Unfavourable (2015)	Declining	None
Red-throated diver (Gavia stellata), non-breeding	Favourable (2015)	Maintained	None
Redshank (Tringa totanus), non-breeding	Favourable (2015)	Maintained	Recreation/disturbance
Ringed plover (Charadrius hiaticula), breeding	Unfavourable (2013)	No change	Invasive species Natural event Other

Feature	Status (updated)	Trend	Pressures within SSSI
			Recreation/disturbance
Ringed plover (Charadrius hiaticula), non-breeding	Favourable (2015)	Maintained	None
Saline lagoon	Favourable (2008)	Declining	Agricultural operations Ploughing No proactive management Over grazing Cattle Trampling Water management
Saltmarsh	Unfavourable (2015)	Recovering	Infrastructure Invasive species Over grazing Trampling Water management
Sand dunes	Unfavourable (2012)	No change	Invasive species - Sea buckhorn Recreation/disturbance Under grazing
Sandwich tern (Sterna sandvicensis), passage	Favourable (2015)	Maintained	None
Scaup (Aythya marila), non-breeding	Unfavourable (2015)	declining	None
Shelduck (Tadorna tadorna), breeding	Favourable (2013)	Maintained	Agricultural operations Flood defence/coastal defence works Other Recreation/disturbance
Shelduck (Tadorna tadorna), non-breeding	Favourable (2015)	Maintained	None
Slavonian grebe (Podiceps auritus), non-breeding	Unfavourable (2015)	declining	None
Transition grassland	Favourable (2004)	Maintained	Agricultural operations – drainage ditches, ploughing, spreading Invasive species - common reed No proactive management Over grazing - cattle

Feature	Status (updated)	Trend	Pressures within SSSI
Turnstone (Arenaria interpres), non-breeding	Favourable (2015)	Maintained	None
Upper Carboniferous [Namurian (part) - Westphalian]	Favourable (2002)	Maintained	None
Vascular plant assemblage	Favourable (2015)	Recovered	Invasive species - sea buckthorn
Velvet scoter (Melanitta fusca), non-breeding	Favourable (2015)	Maintained	None
Wigeon (Anas penelope), non-breeding	Favourable (2015)	Maintained	None
GARLETON HILLS			
Carboniferous - Permian Igneous	Favourable (2012)	Maintained	None
KEITH WATER			
Quaternary of Scotland	Unfavourable (2012)	Declining	None
LAMMER LAW			
Blanket Bog	Unfavourable (2014)	No change	Burning Over grazing Water management
Juniper scrub	Unfavourable (2015)	Declining	Burning Over grazing
Upland habitat - Subalpine dry heath	Unfavourable (2005)	Declining (management measures in place should improve the feature)	Burning Over grazing
Upland assemblage – upland habitat	Favourable (2005)	Maintained	None
LAMMERMUIR DEANS			
Fluvial Geomorphology of Scotland	Favourable (2016)	Maintained	None
Subalpine calcareous grassland	Favourable (2012)	Declining	None
Upland mixed ash woodland	Unfavourable (2014)	Recovering	Over grazing - Deer, Sheep
Valley Fen (wetlands)	Favourable (2004)	Maintained	None
NORTH BERWICK LAW			

Feature	Status (updated)	Trend	Pressures within SSSI
Lowland calcareous grassland	Unfavourable (2014)	No Change	Undergrazing Overgrazing
PAPANA WATER			
Upland Mixed Ash Woodland	Favourable (2008)	Maintained	Invasive Species Under grazing
RAMMER CLEUGH			
Quaternary of Scotland	Favourable (2008)	Maintained	Forestry operations Invasive species
Upland Oak Woodland	Unfavourable (2003)	Recovering	None
TRAPRAIN LAW			
Carboniferous - Permian Igneous	Unfavourable (2012)	Declining (management measures in place should improve the feature)	Natural event
Lichen Assemblage	Favourable (2017)	Maintained	None
WOODHALL DEAN			
Upland Oak Woodland	Unfavourable (2006)	Declining	Over grazing - Deer

APPENDIX TWO: BASELINE DATA SOURCES

A2.1 This table shows main background baseline information and trends, similar to the approach taken in the Scottish Forestry and Woodland Strategy SEA.

Topic	Baseline Information	Key Data	Trends	Source
Biodiversity	Native Woodland of East Lothian (2013)	The area of native woodland in 2013 was 1405 ha, 19.3% of the total woodland area or 2.1% of the total land area of East Lothian. The main types are lowland mixed deciduous woodland, wet woodland and upland birchwoods. The most common native tree species in the upper canopy are ash and pedunculate oak; sycamore is the most common non-native species. Woodland canopy averages 77% across all native woods, with native species making up 81% of the canopy. INNS occupy 1.9% of native woodland areas, with rhododendron the chief threat. Native woods have 90% of the total area in the lowest two categories of herbivore impact assessment; just over a third is in good health for biodiversity.	There were 2266 ha of broadleaved woodland in 2011, rising to 2445 ha by 2020 (National Forest Inventory). Not all of this will be native as it includes e.g. sycamore.	Forestry Commission Scotland and NatureScot "Native Woodland Survey of Scotland – East Lothian"
Biodiversity	Ancient Woodland	There are 893 ha of woodland now present on ancient woodland sites, of which 34% is native woodland, and another 8% nearly native. Some 22% of PAWS are native; Scots Pine, sycamore and Sitka spruce are the main components (43%) of the PAWS canopy.		As above
Biodiversity	Forestry and Woodland Cover in Scotland and the UK	Woodland in the UK is estimated to be 13% of the total land area in the UK, 10% in England, 15% in Wales, 19% in Scotland and 9% in Northern Ireland. Conifers account for around half of the woodland area of the UK, and three quarters in Scotland.	13.3 thousand hectares of new woodland were created in the UK in 2020-2021, with conifers accounting for 55% of this area.	Scottish Forestry Open data at https://open-data-scottishforestry.hub.arcgis.com/ Forest Research statistics at https://www.forestresearch.gov.uk/tools-and-resources/statistics/forestry-statistics/

Biodiversity	UK Biodiversity Priority Habitat types	Lowland mixed deciduous, native pine woodlands, upland birchwoods, upland mixed ashwoods, upland oakwood, wet woodland, wood pasture and parkland		NatureScot Habitat definitions
	HabMoS – EUNIS land cover	Coastal habitats; constructed, industrial, and other artificial habitats; grasslands and lands dominated by forbs, mosses, or lichens; habitat complexes; heathland, scrub, and tundra; inland surface waters; inland unvegetated or sparsely vegetated habitats; marine habitats; mires, bogs, and fens; montane habitats; regularly or recently cultivated agricultural, horticultural, and domestic habitats; woodland, forest, and other wooded land		Map | Scotland's environment web (Add EUNIS land cover Layer and NVC to Annex 1 and EUNIS)
Biodiversity	Designated protected areas	3 SPAs, 15 SSSIs, 1 Ramsar site	Trend data for Scotland shows the proportion of features in favourable condition has increased from 71.4 to 76.4 between 2005 and 2023	NatureScot Sitelink https://sitelink.nature.scot/home
Biodiversity	Deer population in woodland habitats (2016)	Species Red deer: between 85 000 and 105 000 Roe, Sika, and fallow deer: between 125 000 and 145 000	Trend data is uncertain (2019 from SFS SEA); across private woodlands, estimates indicate the population could be stable or falling slightly; on National Forest Estate land, figures suggested the population for all deer species combined dropped by 24% between June 2001 and June 2016	SNH (now NatureScot) Deer Management in Scotland: Report to the Scottish Government from Scottish Natural Heritage 2016

Biodiversity	Pressures on Biodiversity	IPBES: Climate Change, Pollution, INNS, direct exploitation of organisms, changing use of sea and land (planet pressures); and People's disconnect with nature, and lack of value and importance of nature (people pressures). These global drivers also affect Scotland's nature and its most special natural features.		Key pressures on biodiversity (NatureScot) IPBES (2021) Global Assessment Report on Biodiversity and Ecosystem Services NatureScot State of Nature Scotland Report 2019
Population	Overall numbers (2020)	On 30 June 2019, the population of East Lothian was 107,090. This is an increase of 1.2% from 105,790 in 2018. Over the same period, the population of Scotland increased by 0.5%.	Between 2018 and 2028, the population of East Lothian is projected to increase from 105,790 to 113,403. This is an increase of 7.2%, which compares to a projected increase of 1.8% for Scotland as a whole.	East Lothian Council Area Profile at East Lothian Council Area Profile (nrscotland.gov.uk)
Population	Population change	Between 1998 and 2019, the population of East Lothian has increased by 21.2%. This is the highest percentage change out of the 32 council areas in Scotland. Over the same period, Scotland's population rose by 7.6%.	Between 2018 and 2028, the population of East Lothian is projected to increase from 105,790 to 113,403. This is an increase of 7.2%, which compares to a projected increase of 1.8% for Scotland as a whole.	East Lothian Council Area Profile at East Lothian Council Area Profile (nrscotland.gov.uk)

Population	Age structure	In terms of overall size, the 45 to 64 age group was the largest in 2019, with a population of 31,333. In contrast, the 16 to 24 age group was the smallest, with a population of 9,729. In 2019, more females than males lived in East Lothian in 4 out of 6 age groups. Between 1998 and 2019, the 25 to 44 age group saw the largest percentage decrease (-5.4%). The 45 to 64 age group saw the largest percentage increase (+45.6%).	The average age of the population of East Lothian is projected to increase as the baby boomer generation ages and more people are expected to live longer. Between 2018 and 2028, the 45 to 64 age group is projected to see the largest percentage decrease (-2.8%) and the 75 and over age group is projected to see the largest percentage increase (+32.6%). In terms of size, however, 45 to 64 is projected to remain the largest age group.	East Lothian Council Area Profile at East Lothian Council Area Profile (nrscotland.gov.uk)
Population	Deprivation	In 2020 8 out of East Lothian's 132 datazones fell within the 20% most deprived. This is 0.65% of the national share; and 6.06% of datazones.	In 2016 6 of East Lothian's datazones were in the most deprived 20%, however the geographical distribution was similar with the lowest areas being in the west of the area (Tranent, Prestonpans, Elphinestone).	Scottish Government Index of Multiple Deprivation website
Population	Labour market	In the year to September 2022 78% of the working age population of East Lothian was economically active; with just over the Scottish average for women and just under for men. The difference between male and female rates of pay is higher in East Lothian than in Scotland as a whole.	Employment in Scotland dropped from around 74% in 2008 to around 70%, rose gradually back to that level before dipping again during the pandemic. East Lothian rates have mostly followed this pattern though from a higher base, and with a steep drop in 2017.	Nomis - Official Labour Market Statistics (nomisweb.co.uk)
Human Health	Physical activity	Almost 70% of adults in East Lothian reported they had participated in walking for at least 30 minutes in the last four weeks. This percentage is in line with Scottish figures.	The numbers of adults reporting they had participated in walking for at least 30 minutes has not changed significantly over the last 10 years, though this is a rise of around 10% on earlier years.	Scottish Household Survey data at: https://scotland.shinyapps.io/sg-scottish-household-survey-data-explorer/

Human Health	Physical Activity by protected characteristics	Recreational walking is quite popular across different age groups. Only in the age group 75+ is there a significant drop-in activity. In 2014, among 16-24-year-olds about 68% had walked for at least 30 minutes for recreational purposes in the last four weeks. This increased to 71% for those aged between 35 and 44, 69% for people aged between 45 and 59 and 60% for 60 – 74. The age group of people above 75 scored only 34%. Retirement and primary to secondary transitions are key moments to influence physical activity behaviours.	Key at risk groups across all Active Scotland outcomes include the elderly, those within limiting conditions or disabilities, those with lower socio-economic status, teenage girls and women of Asian origin. Inequality between teenage boys and girls in physical activity has narrowed since 2008, driven by girls becoming more active; but only when school activity is included.	Active Scotland Outcomes: Indicator Equality Analysis
Human Health	Life Expectancy	In East Lothian, life expectancy at birth for females was 82.6 years in 2019-21, and 78.9 years for males. This compared to the Scottish figure of 80.8 years for females, and 76.5 years for males.	The trend until 2017-9 was increasing, from 80.1years for females and 75.6 years for males in 2001-3 (Scottish comparison figures 78.9 years and 73.5 years). The rise for females/males was 3.1%/4.3% over the period, the 9th/11th highest percentage change of all 32 Scottish Council areas. There was a downturn starting 2017-19 for both females and males, which may be Covid. Female/male life expectancy at age 65-69 has risen by 12.1%/14.5%, the third/15th highest increase of all Scottish Council areas.	National Records of Scotland, East Lothian Profile https://www.nrscotland.gov.uk/files/statistics/council-area-data-sheets/east-lothian-council-profile.html#:~:text=In%20East%20Lothian%2C%20life%20expectancy,%2D03%20and%202019%2D21.

Human Health	Cause of Death – males	In East Lothian, the leading cause of death for males in 2021 was Ischaemic heart diseases (13.8% of all male deaths), followed by dementia and Alzheimer's disease (7.9%), Lung cancer (6.9%), Cerebrovascular disease (6.0%) and Chronic lower respiratory diseases (5.2%).	Dementia is on the rise and projected to increase substantially in the next 20 years	East Lothian Area profile at National Records of Scotland East Lothian Council Area Profile (nrscotland.gov.uk) And East Lothian By Numbers – Health and Social care
Human Health	Cause of death – females	In East Lothian, the leading cause of death for females in 2021 was dementia and Alzheimer's disease (14.5% of all female deaths), followed by lung cancer (7.3%), Cerebrovascular disease (6.8%) and Ischaemic heart diseases (6.4%). In Scotland overall, the leading cause of death for females was also dementia and Alzheimer's disease (14.2%), followed by ischaemic heart diseases (8.6%).		
Soil	Soil characteristics	In general, Scotland's soils are young, acidic, carbon rich, and nutrient poor compared to those found elsewhere in UK and mainland Europe. East Lothian's soils are richer than the average for Scotland, and there is a greater percentage of prime agricultural land	There has been some loss of prime agricultural land, mainly to built development, with further development on such soils planned through allocated sites within the East Lothian Local Development Plan 2018.	Making the case for the environment: Soil
Water	Water quality	Water quality is now in good or better condition in 87% of Scotland's water environment.	This is up from 82% when SEPA published the second RBMPs. The upgrade in water quality reflects improvements made through Scottish Water's investment programme and the sustained hard work by all stakeholders to improve rural land management practices and reduce diffuse pollution. (SEPA, 2021)	A wide range of information on water quality is available from SEPA. Water | Scottish Environment Protection Agency (SEPA)

Air	Air quality	Air quality is affected by releases from human activities such as energy generation, transport and industry, as well as some natural sources such as volcanic activity and tree transpiration.	Both concentrations and emissions of the main air pollutants in Scotland have declined significantly over the last three decades[120]. This is due to tighter regulation, improved fuel quality, cleaner vehicles and a focus on sustainable transport. Between 2005 and 2020, NOx have decreased by 61%, PM by 52% and SO2 by 92%.	SEPA https://www.environment.gov.scot/our-environment/air/air-quality/ Air Quality in Scotland website https://www.scottishairquality.scot/
	Air quality	Poor air quality affects biodiversity. Many pollutants have had long term impacts so despite air quality improvements the influence on sensitive habitats remains substantial; the impacts of nutrient enrichment and acidification remain[121].	There has	The UK Air Pollution Information System (APIS) provides a searchable database and information on pollutants and their impacts on habitats and species. https://www.apis.ac.uk/
Climatic Factors	Climate emissions of the local authority area	In 2019 emissions according to BEIS for East Lothian were 1.6 kt CO2 emissions per km2, or 10.5 tonnes per capita. This compared to figures of 0.4 kt per km2 and 5.7 tonnes per capita for Scotland as a whole.	Figures for 2005 for East Lothian (Scotland) 2.0 (0.6) tonnes per km2 and 15.5 (9.3) t per capita for Scotland as a whole. Per capita emissions in 2021 were 68% of those in 2005 (Scotland 62%).	BEIS statistics on emissions under the control of local authorities https://www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-to-2019
Material assets	Location of main transport infrastructure	The A1 trunk road crosses East Lothian east to west, with a network of local and minor roads concentrated in the north of the area. The East Coast mainline railway runs in a similar route to the A1, between Edinburgh and the boundary with Scottish Borders. A branch line to North Berwick leaves this route at Drem.	A further section of the A1 was dualled early in the century. There are no current plans to dual the remainder as far as we are aware. With regards to the railway, a new station is being built at East Linton. A safeguard for upgrading part of the track west of Longniddry is included in the Local Development Plan.	OS mapping https://explore.osmaps.com/?lat=55.956988&lon=-2.900695&zoom=8.6864&style=Standard&type=2d

[120] Scottish Government 2023, Environmental Standards Scotland Air Quality Investigation – Scottish Government Improvement Plan

[121] Nature Scot Experimental Indicators commentary, website https://www.nature.scot/doc/official-statistics-marine-and-terrestrial-species-indicators-experimental-statistic accessed 18-05-2023

Material assets	Water infrastructure	East Lothian has high drinking water quality. Drinking water should meet parameters for turbidity, aluminium, iron, manganese, E. coli (faecal coliforms) and total trihalomethanes. All Scottish Water supplies met this other than the area served by Castle Moffat, which fell short of compliance by just under 3% for iron (2022).	Across Scotland, aging assets and climate change mean a doubling of investment will be required over the next 20 years[122].	Current projects and issues can be seen on Scottish Waters website here: https://www.scottishwater.co.uk/In-Your-Area/Latest-In-Your-Area Drinking water quality information is available here: https://www.nature.scot/doc/official-statistics-marine-and-terrestrial-species-indicators-experimental-statistic
Cultural Heritage	All assets			Further information on all nationally designated assets is available from Historic Environment Scotland. Searchable database of nationally designated assets: HES Portal at http://portal.historicenvironment.scot/search . This database can be searched using the name or asset numbers as shown in the table below.
Cultural Heritage	Listed Buildings	There are 2661 Listed Buildings in East Lothian.		General information from HES: https://www.historicenvironment.scot/advice-and-support/listing-scheduling-and-designations/listed-buildings/
Cultural Heritage	Scheduled Monuments	There are 288 Scheduled Monuments in East Lothian.		HES website https://www.historicenvironment.scot/advice-and-support/listing-scheduling-and-designations/scheduled-monuments/

[122] Scottish Water Annual Report 2021-22. Annual Reports available from Scottish Waters website at https://www.scottishwater.co.uk/Help-and-Resources/Document-Hub/Key-Publications/Annual-Reports

Cultural Heritage	Battlefields	There are four Inventory Battlefields within East Lothian, Dunbar I and II, Pinkie and Prestonpans.		HES website https://www.historicenvironment.scot/advice-and-support/listing-scheduling-and-designations/battlefields/
Cultural Heritage	Inventory Gardens and Designed Landscapes	There are 25 Inventory Gardens and Designed Landscapes.	Archerfield has been removed from the Inventory.	HES website https://www.historicenvironment.scot/advice-and-support/listing-scheduling-and-designations/gardens-and-designed-landscapes/
Cultural Heritage	Conservation Areas	Conservation Areas are designated by East Lothian Council. There are 30 Conservation Areas in East Lothian.	The Council continues to receive requests for tree removal and tree work in Conservation Areas. The Council does not monitor trees in Conservation Areas nor trends for number of enquiries or outcomes of requests for tree work.	Further information on Conservation Areas can be found in the East Lothian Local Development Plan 2018 at https://www.eastlothian.gov.uk/downloads/file/27791/local_development_plan_2018_adopted_270918 . Character Statements for each Conservation Area, as well as further information about the operation of plan policies within them, are to be found in the Cultural Heritage Supplementary Planning Guidance at https://www.eastlothian.gov.uk/downloads/file/27907/cultural_heritage_and_the_built_environment_spg
	Historic Environment Record	The HER contains over 25,000 records, including sites of all periods.		The HER can be searched here: https://www.johngraycentre.org/map

Landscape	Special Landscape Areas and East Lothian Landscape Character Areas	Information and Supplementary Planning Guidance can be found here: https://www.eastlothian.gov.uk/info/210547/planning_and_building_standards/12284/natural_environment_and_planning/2	Special Landscape Areas were designated through the East Lothian Local Development Plan 2018, replacing Areas of Great Landscape Value as the local landscape designation. There are currently no plans to revise these areas.	
Landscape	National Landscape Character Types	Maps and descriptions can be found at NatureScots website https://www.nature.scot/professional-advice/landscape/landscape-character-assessment/scottish-landscape-character-types-map-and-descriptions	The national landscape type map and descriptions were published in 2020 and standardise the descriptions and types over the country, updating previous landscape work which was carried out on a regional basis.	

APPENDIX THREE – Flooding in Potentially vulnerable areas

PVA Summary of flooding impacts	Summary	No. of Properties at risk / approximate cost of annual damage (£)	Flooding source River 24% Coastal 35% Surface water 41%
Dunbar and West Barns (10/25)	The greatest risk of river flooding is from the Biel Water and the Hedderwick Burn to Dunbar and West Barns. The greatest risk of coastal flooding is from the North Sea to Dunbar and West Barns.	40 –residential 20 – non – residential £220,000	
Haddington (10/24)	The highest risk of river flooding is from the River Tyne to Haddington and the highest risk of surface water flooding is also in Haddington.	230 – residential 140 – non residential £700,000	
Cockenzie, Port Seton, Longniddry and Prestonpans (10/23)	The highest risk of surface water flooding is in Tranent.	120 – residential 60 – non-residential £740,000	
Musselburgh (10/21)	The highest risk of river flooding is from the River Esk to Musselburgh. The highest risk of surface water flooding is in Wallyford and Pinkie Brae in Musselburgh and the highest risk of coastal flooding is from the Firth of Forth to Musselburgh and Inveresk.	1300 – residential 280 – non-residential £3.3 million	
Lasswade, Penicuik, Dalkeith and Musselburgh	Parts of Musselburgh are within this area and area at risk from river flooding from the River Esk, the River South Esk, the River North Esk and the Loan Burn as well as from coastal flooding from the Firth of Forth.	– residential – non- residential £1.8 million	

- Website: www.eastlothian.gov.uk/ldp
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- To make a comment, suggestion or complaint about a council service, download a feedback form online at www.eastlothian.gov.uk or pick one up at your local office