NORTH LANARKSHIRE COUNCIL
COMHAIRLE SIORRACHD LANNRAIG A TUATH

State of the Environment Report (Phase 1)
Environmental Baseline Report for North Lanarkshire Council

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TABLE OF CONTENTS

1 INTRODUCTION

1.1 Background

1.1.1 The council are preparing an updated Local Development Plan (LDP) for North Lanarkshire, North Lanarkshire Local Development Plan 2 (NLLDP2) to supersede the current North Lanarkshire Local Development Plan (NLLDP) that was adopted in 2022.

1.1.2 It is important to note that the current NLLDP is superseded in places by the National Planning Framework 4 (NPF4), which is a document bringing together spatial principles with Scotland's national planning policy to form part of the statutory development plan.

1.1.3 The council has begun preparing the next Local Development Plan (NLLDP2) which is due to be published in 2028. The current Development Plan is NPF4 and NLLDP. NLLDP2 is due to be published in 2028 and will replace NLLDP in that role. Clydeplan is no longer part of the Development Plan.

1.1.4 To inform the new NLLDP2, Ironside Farrar have been asked to provide a Stage 1 summary of the environmental baseline, trends, and pressures in North Lanarkshire. The purpose of this environmental baseline is to bring together background information, statistics, and trends for North Lanarkshire.

1.1.5 The following tables provide the baseline for the council's Strategic Environmental Assessment (SEA) scoping exercise. The SEA will help to better protect the environment by ensuring that development within North Lanarkshire is as sustainable as possible. The full SEA will go on to inform the NLLDP2 baseline as well as the NLLDP2.

1.1.6 The following tables therefore reflect the current state of North Lanarkshire and have been produced by Ironside Farrar with specialist inputs. It includes the most up-to-date information available up to May 2025, with minor updates to vacant and derelict land statistics in November 2025.

1.2 North Lanarkshire

1.2.1 North Lanarkshire was formed as a unitary authority area in 1996 following local government reorganisation.

1.2.2 It covers an area of approximately 47,000 hectares (470 square kilometres) and is situated within West Central Scotland between the urban conurbations of Glasgow and Edinburgh. North Lanarkshire is Scotland's fourth largest Local Authority based on population and is part of the Glasgow conurbation and City Region.

1.2.3 The current population is 341,890 (2023) and the main settlements by population size are Cumbernauld, Coatbridge, Airdrie, Motherwell, and Wishaw.

1.2.4 The region forms a geographically diverse area between the urban conurbation of Glasgow which it borders to the west and the moorlands of central Scotland to the east. The southern part of North Lanarkshire is heavily populated, particularly in the south western area around the larger settlements. The south eastern and northern parts of the region are more rural in character with lower population densities and more extensive areas of open countryside.

1.2.5 North Lanarkshire is traversed by several important road, railway and waterway transport corridors which run approximately in an east-west direction across the region. The topography of North Lanarkshire is also influenced by the valleys of a number of significant watercourses including the Rivers Kelvin, North Calder and South Calder, each of which drains westwards to the River Clyde. Patterns of settlement tend to reflect the communication routes and established towns such as Motherwell, Coatbridge and Airdrie which developed largely during the industrial revolution as a result of their proximity to sources of raw materials.

1.2.6 Industrial change has been a key component in shaping the social, natural and built environment of North Lanarkshire. This industrialisation has been followed by an era of transition and more recently by a newer mix of light manufacturing, storage and service industries which has affected the land use and landscape of the area.

1.2.7 The Plan for North Lanarkshire sets the direction for the council and its partners. This high-level strategic document outlines a long-term vision for North Lanarkshire - a vision where North Lanarkshire is the place to Live, Learn, Work, Invest, and Visit. Its purpose is to communicate shared priorities and provide a focus for activities and resources.

1.2.8 To deliver the shared ambition of inclusive growth and prosperity, The Plan has five complementary priorities:

- Improve economic opportunities and outcomes;
- Support all children and young people to realise their full potential;
- Improve the health and wellbeing of our communities;
- Enhance participation, capacity, and empowerment across our communities; and
- Improve North Lanarkshire's resource base.

1.2.9 The Plan is accompanied by a five-year Programme of Work, approved in 2023, that sets out seven themes for delivery and implementation of the Plan. These are:

- Transforming Places – To better plan and co-ordinate public and private sector investment to deliver transformational change across town centres and local communities at pace.
- Invest in North Lanarkshire – Accelerated outcome delivery and investment via a more streamlined advisory service and aligned operating model and infrastructure plan.
- Sustainable Futures – Focus commitments to Net Zero Carbon and climate resilience and the associated energy solutions and investments required to make it a reality.
- Resilient People – Deliver whole family support locally, when families need it, in a way that addresses the impacts of poverty and reduces inequality.
- Brighter Futures – Support and improve educational attainment, employment opportunities, entrepreneurship, and volunteering.
- Digital North Lanarkshire – Develop a skilled digital workforce, promote an innovative, sustainable culture, and be the Digital Leader for a transformed North Lanarkshire.
- One Service – Ensure services are delivered, regardless of owner, in a streamlined, efficient, and supportive model, with the overall vision of inclusive growth and prosperity for all.

1.2.10 NLLDP2 will be a further mechanism for implementing The Plan, and as well as informing NLLDP2 the environmental baseline presented here may also be used across the council in its duties and endeavours.

1.3 Structure of the Report

1.3.1 The following baseline report is split into themes:

1. Population and Human Health
2. Land Use
3. Geology and Soils
4. Water Quality, Flooding and Drainage
5. Biodiversity, Ecology, and Nature Conservation
6. Landscape
7. Air Quality
8. Climate Change
9. Noise and Vibration
10. Cultural Heritage
11. Material Assets

1.3.2 The report is structured into a tabulated baseline as an initial overview of North Lanarkshire (Phase 1).

1.3.3 Within each topic there is a review of the following elements:

- Environmental Baseline Summary – what the environment is currently like in North Lanarkshire
- Trends – how the environment is changing over time and whether this change is positive or negative
- Pressures – what factors are affecting the quality of the environment in North Lanarkshire

1.4 Data Sources

1.4.1 Data has been found and downloaded from a variety of sources for the updated State of the Environment Report. Key data sources include:

- North Lanarkshire Council;
- Nature Scot's website and Scotland's Environment Web – information on nature conservation designations etc.
- SEPA website and Scotland's Environment Web - information regarding flooding, water quality, groundwater, pollution prevention etc.;
- Historic Environment Scotland and Scotland's Environment Web – Listed Buildings, Scheduled Ancient Monument Records etc.;
- OS Maps, Plans, Data;
- British Geological Society Published Mapping and Coal Authority Mapping; and
- NRS, NOMIS web, statistics.gov.scot, ONS – information on health and population.

1.4.2 The State of the Environment Report has been produced by a team of specialists with extensive experience within their relevant topic area across Scotland. A summary of the team is provided below:

Element	Specialist
Support and Co-ordination Population and Health Land Use Material Assets	Kim McLaren Director, Ironside Farrar Effie Roberts Environmental Consultant, Ironside Farrar
Geology and Soils Water Quality, Flooding and Drainage	Anna Lira, Associate, Ironside Farrar Audra Fabrizio, Graduate Geo-environmental Specialist, Ironside Farrar
Biodiversity, Ecology and Nature Conservation	Beccy Osborn Director, Direct Ecology
Landscape	Guy Wimble Technical Director, Ironside Farrar
Air Quality Climate Change	Penny Wilson, Technical Director, Air Quality Consultants
Noise and Vibration	Becki Edwards, Principal Consultant, Noise Consultants
Cultural Heritage	Christine Rennie, Consultancy Project Manager, GUARD Archaeology Limited

1.5 List of abbreviations

APR	Annual Progress Report
AQMA	Air Quality Management Area
BESS	Battery Energy Storage Site
BGS	British Geological Survey
CCF	Clyde Climate Forest
DWQR	Drinking Water Quality Regulator
EHA	Environmental Health Agency
GCR	Geological Conservation Review
GHG	Greenhouse Gases
GSHP	Ground Source Heat Pump
HES	Historic Environment Scotland (formally SNH – Scottish Natural Heritage)
INNS	Invasive Non-Native Species
LBAP	Local Biodiversity Action Plan
LCT	Landscape Character Area
L_{den}	Day-evening-night Level
LDP	Local Development Plan
LHEES	Local Heat and Energy Efficiency Strategy
L_{night}	Nighttime noise level
LNR	Local Nature Reserve
NBN (atlas)	National Biodiversity Network
NLC	North Lanarkshire Council
NLLDP	North Lanarkshire Council Local Development Plan
NLLDP2	North Lanarkshire Council Local Development Plan 2
NO_2	Nitrogen Dioxide
NPF4	National Planning Framework 4
NRS	National Records of Scotland
ONS	Office of National Statistics
$PM_{2.5}$	Particle pollution from fine particulates (<2.5 micrometres in diameter)
PM_{10}	Particle pollution from fine particulates (<10 micrometres in diameter)
PVA	Potentially Vulnerable Area (to flooding)
SAC	Special Area of Conservation
SEA	Strategic Environmental Assessment
SEPA	Scottish Environmental Protection Agency
SIMD	Scottish Index of Multiple Deprivation
SINC	Sites of Importance for Nature Conservation
SPA	Special Protection Area
SPT	Strathclyde Partnership for Transport
SRDP	Scottish Rural Development Programme
SSSI	Sites of Special Scientific Importance

1.6 List of figures

2 STATE OF THE ENVIRONMENT
NORTH LANARKSHIRE COUNCIL

Environmental Topic: Population and Human Health			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
North Lanarkshire has previously had an increasing population, but this is expected to decrease over the next 10-20 years.	Demographic profile: • The 2022 population of North Lanarkshire was 340,930[1].In terms of overall population size, in 2021, there were more females (51.6%) than males (54.4%) in North Lanarkshire, and the 45-64 age group was the largest[2]. • North Lanarkshire has the fourth-highest population of Council areas in Scotland[2].	The council's 'Towards a Fairer North Lanarkshire: Tackling Poverty Strategy' (2023-2026)[3] aims to increase the income of unemployed and employed residents within North Lanarkshire.	The population has generally been increasing, though is expected to decrease by 1.7% over the next 10 years. North Lanarkshire's population is projected to decrease to 337,170 by 2043[4].
North Lanarkshire's population is characterised as having a lower economic activity rate than the rest of Scotland, and the rest of the United Kingdom (UK), although employment rate is increasing, perhaps helped by the council's strategies running in the wake of the COVID-19 pandemic.	Health[2]: • The standardised death rate in North Lanarkshire in 2022 was 13.0 per 1,000 population. In Scotland, the rate was 11.5 per 1,000 population. • Similar to the rest of Scotland, the leading cause of death for males in 2022 was Ischaemic heart diseases (14.8%), and the leading cause of death for females was Dementia and Alzheimer's Disease (11.6%). • Life expectancy in North Lanarkshire was higher for females (78.8 years) than for males (74.1 years) in 2019-2021. In North Lanarkshire, both male and female life expectancy at birth is lower than at Scotland level.	The Cost-of-Living crisis and associated issues may affect health and social outcomes for many groups across the council area.	Life expectancy for both males and females has been increasing across North Lanarkshire since c. 2001, following similar trends across Scotland.
Unemployment in North Lanarkshire is markedly higher than unemployment rates in Scotland, although levels are decreasing following a spike in 2020-2023.	Socio-economy: • Job Density data measures the ratio of total jobs to working-age residents in a given area. The most recently published data (2021) shows that North Lanarkshire has a job density ratio of 0.64, indicating that the authority has 64 jobs for every 100 working-age residents. This represents a substantially lower ratio compared with Scotland (0.81) and the UK (0.86)[5].	The council's Economic Recovery Plan (2021-2023) set out how, in the wake of the COVID-19 pandemic, the council planned to continue to deliver inclusive growth and prosperity.	Job density decreased from 0.69 in 2018 to 0.64 in 2021[5].
	Employment structure: • Employment rate in 2023 in North Lanarkshire was 72.3% (74.7% in Scotland) for ages 16-64, increasing from 2022, when the local rate was 67.5% (74.4% in Scotland)[6]. • North Lanarkshire is characterised by a higher proportion of employment classified as lower skilled within Standard Occupational Classifications (SOCs) 8-9 (24.9%) compared to Scotland (15.3%) between October 2022 and September 2023[5].	In line with the council's ageing population, there will likely be opportunities for growth in lower skilled sectors, such as retail and also care, which is essential for meeting the needs of an ageing population.	There is an expected loss of almost 17,000 working age (16-64) individuals in North Lanarkshire by 2034, and a rise of around 23,000 pensionable individuals[5].
	Business growth: • Business data for North Lanarkshire shows that the total number of businesses grew from 7,380 in 2016 to 7,575 in 2023[5].	North Lanarkshire has a strong concentration of business services and transport and distribution operators and is positioned well to attract businesses within these sectors. Construction is also a major employer, and with major housebuilding and infrastructure projects being delivered through the City Region Deal, will have an ongoing need for new employees.	Trends show business growth is increasing steadily across North Lanarkshire, following trends across Scotland and the rest of Great Britain.

[1] https://statistics.gov.scot/atlas/resource?uri=http%3A%2F%2Fstatistics.gov.scot%2Fid%2Fstatistical-geography%2FS12000050
[2] https://webarchive.nrscotland.gov.uk/20241128124518/https://www.nrscotland.gov.uk/files//statistics/Council-area-data-sheets/north-lanarkshire-Council-profile.html
[3] https://www.northlanarkshire.gov.uk/sites/default/files/2020-09/CC_2020_00040%20Tackling%20Poverty%20Strategy%20Accesible%20Single%20Pages.pdf
[4] https://www.northlanarkshire.gov.uk/your-Council/facts-and-figures/population/population-projections-2018-2043
[5] https://www.nomisweb.co.uk/reports/lmp/la/1946157426/report.aspx#
[6] https://www.ons.gov.uk/visualisations/labourmarketlocal/S12000050/#employment-rate

Environmental Topic: Population and Human Health			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
	Unemployment: • According to NOMIS, the employment inactivity for North Lanarkshire was 60,600 (27.6% of the population), compared to 22.5% for Scotland January-December 2023[5], and 7,510 individuals are marked as being on the claimant count in April 2024, which is 3.3% of the 16-64 working age population.	Global and UK-wide trends in falling employment rates and economic pressures are reflected in levels of unemployment across Scotland and North Lanarkshire.	Unemployment rates vary from quarter to quarter, and generally follow similar trends from the start of record keeping (January-December 2004).
	Skills: • As of December 2022, the skills base of the resident workforce of North Lanarkshire is characterised by a lower proportion of residents with graduate level (RQF level 4+) qualifications (38.2%) compared to equivalent figures for Scotland (54.2%). The proportion of residents across North Lanarkshire with no qualifications is higher (14.4%) than across Scotland (8.0%)[5].	Industrial employment has declined due to changing land use within the area, and a shift toward sectors such as construction and transport and storage	Since 2018, the percentage of people within the council area with graduate-level qualifications has increased, and the proportion of residents with no qualifications has decreased.
	Earnings: • The latest available data for gross weekly pay shows a figure of £592.70 in 2021 (£619.90 in Scotland).[5]	The Cost-of-Living crisis and associated issues may affect health and social outcomes for many groups across the council area.	Earnings have been increasing, with gross weekly pay standing at £464.40 in 2011.
	Deprivation: • The Scottish Index for Multiple Deprivation (SIMD[7], 2020) is a relative measure of deprivation. It looks at the extent to which an area is deprived across seven domains: income, employment, education, health, access to services, crime, and housing. Data is ranked from most deprived (rank 1) to least deprived (rank 6,976). • North Lanarkshire has 447 data zones over the council area. 15% of people are income deprived across North Lanarkshire, higher than the Scottish average of 12%. Of this deprived population, 28,234 people live in the 20% most deprived data zones.	7 of North Lanarkshire's local communities are among the top 5% most deprived in Scotland and 13% are in the 10% most deprived[8].	In SIMD 2016, 23.3% of North Lanarkshire's data zones were in the 15% most overall deprived at a national level.
	Housing[9]: • In 2023, there were 152,653 households in North Lanarkshire, an increase from 132,754 in 2001. • In 2022, the average household size in North Lanarkshire was 2.24 people. • Out of 160,560 dwellings, 156,069 were occupied in 2023 (97.2% occupancy). • The latest Census shows that 9.4% of the population of North Lanarkshire who are over the age of 55 are living alone.	The council's Local Housing Strategy[10] (2021-2026) sets out the vision to increase the stock of affordable homes across the council area. Ageing population: The increasingly elderly population of North Lanarkshire contributes towards the disproportionate amount of people living on their own, but another issue is many homes lacking the capacity to cater for the needs of the older population. This will need to be accounted for in the variety of housing tenure that will be provided in the coming decades.	Home ownership has increased in the last 20 years within the council area.

[7] https://simd.scot/#/simd2020/BTTTFTT/9/-4.0000/55.9000/
[8] https://storymaps.arcgis.com/stories/c72edbd116444ed7a04fb3b1fab4cbcc
[9] https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/households/household-estimates/2023
[10] https://www.northlanarkshire.gov.uk/sites/default/files/2021-11/Local%20Housing%20Strategy%202021-2026.pdf

Environmental Topic: Land Use			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
North Lanarkshire has a broad range of land uses. Primarily, urban centres are along the western side of the county, adjoining Glasgow's urban fringes. In the North, the land use is predominantly rural.	Transport: • A map of North Lanarkshire's pedestrian and cycle[11] network is shown on Figure 2.1[12]. • North Lanarkshire is within the Central Belt of Scotland and contains major transport links including the M8, M80, A8 and A80 trunk roads and an extensive railway network. • North Lanarkshire is well connected to the rail network and has 25 passenger rail stations. The strategic national rail routes between Edinburgh and Glasgow pass through North Lanarkshire and the Airdrie to Bathgate Rail Link was opened in 2011. Motherwell is on the West Coast Main Line, which connects London with Glasgow. • North Lanarkshire is currently serviced by several bus companies operating both strategic and local services. With commuter settlements throughout North Lanarkshire, there are similar levels of car ownership in comparison to Scotland. Community transport services are available in North Lanarkshire through SPT's MyBus Rural.	North Lanarkshire's Active Travel Strategy (2021-2031)[8] aims to continue to create and promote a more sustainable transport system.	LDP policy protects Green Belt and sensitive locations from inappropriate scale of development. There are anticipated to be pressures through energy sector projects and associated energy infrastructure.
There are many major infrastructure links throughout North Lanarkshire, and current council plans will focus on extending and upgrading these links. *The roll out of NPF4 and the impact of climate change will likely change the future land use of North Lanarkshire, increasing the number of wind turbine and other renewable energy developments, and decreasing the reliance on fossil fuels.*	Environment*: • There are six catchments in or partly within North Lanarkshire (River Clyde, River Kelvin, River Carron, River Almond, River Avon and Glasgow Coastal). • Green Belt and Countryside: Much of the rural areas to the north of North Lanarkshire and along the western side are designated Green Belt areas. • Forest Research mapped UK Urban Canopy cover in 2020 at electoral ward level[13]. The average percentage of urban canopy cover in North Lanarkshire was 18.84%, compared to 15.6% across Scotland[14].	Clyde Climate Forest (CCF) is an initiative to see 18 million trees planted in both urban and rural parts of Glasgow City Region over the next decade. Mapping of CCF within NLC shows planting across the council area, with larger areas of planting around Cumbernauld, and in the south around Motherwell, Wishaw, and Shotts.	Trends in environmental cover for land use may be conflicting. On one hand, growing urbanisation sees a change in land use towards more residential, commercial, or industrial means. On the other, growing awareness of the import of protecting the environment sees initiatives such as the Clyde Climate Forest increasing green cover across the council area.
	Contaminated and vacant land: • More than 68% of North Lanarkshire's population lived within 500m of a vacant and derelict site in 2023[15], recorded at 69% in 2022[16]. North Lanarkshire is Scotland's highest proportion of its population living within 500m of vacant and derelict land. • As of 2024, the council had 1,247 hectares of vacant and derelict land. • Between the years of 2018 and 2024, NLC saw a decrease of 8.5% of vacant and derelict land. • There are two identified sites of contaminated land in North Lanarkshire, both located near Carnbroe.	Council (and wider Scottish) strategies are focussed on reducing the amount of vacant and derelict land within NLC area, and bringing these sites back into productive use.	There is a long history of mineral extraction in North Lanarkshire. Deep coal mining and hard rock quarrying has been undertaken in the past due to the resource characteristics of the Midland Valley. Following technological improvements, coal mining methods shifted towards surface mining in the late 1980s. The amount of vacant and derelict land in North Lanarkshire is decreasing – 31 areas of vacant and derelict land has been brought back to use since the previous survey by the council in NLC[14].

[11] https://explore.osmaps.com/?lat=51.641136&lon=-2.923634&zoom=8.4445&style=Standard&type=2d&overlays=os-ncn-layer
[12] https://nlcmaps.maps.arcgis.com/apps/webappviewer/index.html?id=3d554ccdc93044d88cff04c9c8c3b3f3
[13] https://www.forestresearch.gov.uk/research/i-tree-eco/uk-urban-canopy-cover/
[14] https://www.tandfonline.com/doi/full/10.1080/03071375.2023.2233864
[15] https://www.gov.scot/publications/scottish-vacant-derelict-land-statistics-2024/documents/
[16] https://www.gov.scot/publications/scottish-vacant-derelict-land-survey-2022/pages/6/
* The urban/rural classification and split used across this document has been provided by the council

Environmental Topic: Land Use			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
	Industry: • North Lanarkshire's historical development of the coal, steel and heavy engineering industries has resulted in one of the largest areas of vacant and derelict land in Scotland, accounting for 1247 hectares in 2024. • There are numerous wind farms and individual wind turbines within North Lanarkshire. The largest houses 25 turbines within the south east corner of the council boundary. Most large turbine developments are on the east side of the council area. • Of all solar energy applications to the council between 2023 and 2025, 5 are solar + BESS sites. • Between 2020 and 2025, 25 applications for BESS developments were made at 14 sites across North Lanarkshire.	NPF4 may increase wind farm development in the Plateau Moorland and Plateau Farmland areas. Doing so will not deplete resources in wind farm areas, but will generate renewable energy within North Lanarkshire.	There is an upwards trend in the amount of renewable energy developments across Scotland, as well as within the council area.

Environmental Topic: Geology and Soils			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
North Lanarkshire contains a variety of soils and rock types. During the Quaternary Ice Age, the superficial deposits of Scotland were transformed. This is reflected in the fact that over 75% of North Lanarkshire is covered by Glacial Till, with a further 15% made up of peat deposited in this time.	<u>Made Ground:</u> Made ground can be present from former quarrying and mining activities leading to subsidence, industrial activities creating derelict ground, earthworks, and polluted soils. The BGS has established a scheme for artificial deposits which distinguishes between undivided disturbed ground, infilled ground, and undivided made ground. Published BGS mapping records the following split of artificial ground types in North Lanarkshire, shown in Figure 3.1: • The majority of artificial ground in North Lanarkshire is noted to be undivided made ground, followed by infilled ground. • Undivided disturbed ground makes up the smallest portion of artificial ground in North Lanarkshire. • The majority of artificial ground within the council area is recorded in the southwest, centre, and east.	Plans to develop and remediate vacant and derelict land across the council area will likely decrease the amount of made ground to be found across North Lanarkshire.	The Scottish Vacant and Derelict Land Survey of 2024 shows that NLC is no longer the Authority with the largest percentage (by area) of Derelict and Urban Vacant land in Scotland, the figures dropping from 1,429 Ha in 2010 to 1,292 Ha in 2024.
The bedrock geology comprises a mixture of sedimentary rock, interspersed with igneous intrusions and extrusions. Parts of this bedrock comprised the Scottish Coal Measures and consequently North Lanarkshire has seen large scale coal mining, in addition to other mineral mining including hard rock mining, in its history. The Midland Valley of Scotland, identified as a potential unconventional gas resource, also lies beneath the council area.	<u>Superficial Soils:</u> Published BGS mapping records the following split of superficial soils across North Lanarkshire: • The vast majority of the area is covered by Glacial Till, which is prevalent across Scotland as a whole. • Peat is also present, with around 15% coverage, predominantly in the eastern half of the council area where topography is elevated, as well as a large area located in the north around the Kilsyth Hills. Figure 3.2 shows the superficial soils which underlie North Lanarkshire. Large Alluvium and Glaciofluvial Deposits of Sand and Gravel are located along the River Clyde on the south west boundary of the council area and along the Forth and Clyde Canal, which bisects the north of the county, as well as other localised zones.	North Lanarkshire's Peatland Action Plan[17] gives a clear set of objectives, targets and actions to ensure existing active peatland are maintained, the condition of degraded peatlands are improved, and to increase the awareness of peatlands and their importance.	As urbanisation increases, there will be a loss in organic matter and soil, as well as disturbance, reducing the quality of soil across the council area. If windfarm developments continue to be sited within the council, and these are sited across peat-rich areas, this could affect peat reserves within NLC[18].
Historic Environment Scotland (HES)[19] identifies soils as "representing a dynamic interface between physical, biological and hydrological systems. Soils are an integral part of the landscape, reflecting not only natural processes from which they have been formed, but also the influences of human activities, present and past".	<u>Bedrock Geology</u> Published BGS mapping records the following split of bedrock geology across North Lanarkshire, as seen in Figure 3.3: • The main bedrock types recorded within North Lanarkshire include the Scottish Coal Measures group (the most common type), including the Upper, Middle and Lower Coal Measures, which are sedimentary rocks including mudstone, siltstone, sandstone, coal, ironstone and ferricrete. • Secondary to this is Clackmannan Group Sedimentary Rock Cycles, which include the Passage Formation, Upper Limestone Formation and Limestone Coal Formation and comprises sequences of sandstones with siltstones, mudstones, ironstones, coals and seatrocks and limestone within the upper limestone formation. • Smaller quantities of Strathclyde Group and Inverclyde Group rock are located in the north of the council area, these groups also comprise sedimentary rocks, however coal is not recorded in the majority of formations from these groups. • Large numbers of coal seams are also shown, with the highest concentration around Coatbridge, where the Scottish Coal Measures are found, with deep coal	When development takes place, the ground which it is built on is effectively sealed and natural processes can no longer take place. Even if the development is later demolished and the ground reinstated it can still take time to re-establish itself. This includes losing / reducing the soils ability to allow rainfall to infiltrate and soakaway, adding to the climate change burden. This also reinforces the need to build on Brownfield land where possible.	As with the rest of the Central Belt, North Lanarkshire has valuable mineral reserves other than coal, including rocks used for aggregate. NPF4 Policy 33 covers Minerals, with the intention to support the sustainable management of resources and minimise the impacts of the extraction of minerals on communities and the environment. It notes LDPs should support a landbank of construction aggregates of at least 10-years at all times, in the relevant market areas, whilst promoting sustainable resource management, safeguarding important workable mineral resources, which are of

[17] https://www.northlanarkshire.gov.uk/sites/default/files/2020-12/Biodiversity_action_plan_-_Peatland.pdf
[18] https://www.sepa.org.uk/media/138741/state-of-soil-report-final.pdf
[19] https://www.gov.scot/publications/scottish-natural-heritage-factsheet/

Environmental Topic: Geology and Soils			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
	between 50m-1200m predominantly in the North and West of the council area and shallow coal, with less than 50m overburden, found centrally. • Multiple faults exist within North Lanarkshire. According to the BGS Faults 1:625,000 scale mapping, there exist 9 faults at rockhead within the North Lanarkshire catchment area, the majority of which trend west-east. One fault in the south of the catchment south of Motherwell and west of Wishaw trends broadly northwest-southeast. The same mapping shows the presence of dykes within the catchment area. Located primarily within the north of the catchment, there exist multiple unnamed igneous intrusions of carboniferous to Permian-dolerite and tholeiitic basalt. There are also two dykes of unnamed igneous intrusions of Palaeogene-mafic rock, one in the central west of the catchment and one in the southeast.		economic or conservation value, and take steps to ensure these are not sterilised by other types of development.
NLC declared a Climate Emergency in 2019. Like other council areas, North Lanarkshire must also balance the requirement for increasing green energy supply / improved energy supply, which often finds itself in conflict with peatland or prime agricultural land.	<u>Soil Types</u> The Soil maps of Scotland (partial coverage) (Digital version 10 release. James Hutton Institute, Aberdeen. DOI 10.5281/zenodo. 6908156) records the majority of the area to be covered by Mineral Gleys, which are wet soils characterised by permanent or intermittent waterlogging which often alters the inherent soil colours. The waterlogging can be due to inhibited drainage of surface water or to the presence of groundwater. Elsewhere, Alluvial soils are generally found within the vicinity of watercourses, with Brown Soils found around the periphery of the Alluvium. Peat and Peaty Gleys tend to be present in the north and east, with the latter derived from gleys and is poorly draining. Former opencast / quarry areas are also recorded on this mapping. As seen in Figure 3.4, the National Soils Inventory for Scotland determines the main soil types in each region of NLC to be brown earths in the north, peat in the east, alluvium in the south, and gleys in the west.	The increasing reliance on green energy sources like solar and wind power, while beneficial for reducing carbon emissions and combating climate change, can also impact soil health and fertility. While renewable energy technologies can improve soil carbon sequestration and reduce air and water pollution, the establishment of large-scale renewable energy infrastructure, like solar farms, can also affect soil properties and quality and potentially impact agricultural land, with construction and operation of renewable energy infrastructure potentially leading to compaction, erosion, and other changes in soils.	The need for more green energy and reinforcement of the network has the possibility of conflicting with peatland / carbon rich soil / prime agricultural land due to the most suitable locations for such infrastructure. Between April 2019 and March 2024, NLC received 32 applications for wind farms, 5 applications for solar farms and 23 applications for BESS. These developments must go through the consenting process which should seek to limit impacts, however some losses are inevitable.
Farming has been taking place in the UK for thousands of years, changing the natural landscape and creating a predominately man-made environment. Farmland dominates the landscape, with over 300 farms located within North Lanarkshire. However, North Lanarkshire has very limited prime agricultural land with no Class 1, only a tiny section of Class 2, and only some small very limited areas of Class 3.1.	<u>Topsoil:</u> The Map of Topsoil Organic Carbon Concentration (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) records that the majority of topsoil, approaching half of the total land cover, has a high (>3%-5%) concentration of organic carbon, this covers much of the non-urban areas across the catchment. As seen in Figure 3.5, much of the east, south, and central region of North Lanarkshire is covered by topsoil with an organic concentration of between 3.8% to 4.2%. The next most populous group is organic soils with greater than 35% organic carbon. With approximately 11% land take, these are found in upland areas to the east and south east, as well as the area around the Kilsyth Hills in the north. The southeast and north of North Lanarkshire is covered by topsoil with an organic concentration of 7.31% to 53.4%. The urban areas, such as around Airdrie, Coatbridge, Motherwell and Wishaw have no recorded topsoil concentration data.	Many of the direct impacts of climate change on soils are based on the premise that a warming climate is likely to have an impact on organic matter levels in soil. This is significant because soil organic matter comprises up to 50% carbon and is the principal store of carbon in soil. Soil organic matter content is a fundamental property of soil because it determines the soil's capacity to deliver many of its other functions, including storing, retaining and transforming water, nutrients and contaminants as well as sustaining biodiversity and storing carbon. Thus, any loss of soil organic matter will have wider consequences for the environment. According to the 2011 The State of Scotland's Soil report[20], Scotland holds over half the UK's carbon store and is important on a European wide scale in terms of potential impact on climate change, with North Lanarkshire making up a large portion of this.	If development and urbanisation continues to take place across the council area, this will likely lead to a loss in topsoil.

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

Environmental Topic: Geology and Soils			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
North Lanarkshire has a good geodiversity and contains resources which are important on a Scottish, UK and European level. Protection and management plans are in place to protect important resources including the Peatland Action Plan and SSSI legislation.	<u>Peatland:</u> The Carbon and Peatland Map (NatureScot, 2016) records areas of peatland, this includes Class 1 & 2 peatland which are Nationally important, Class 3 which may contain peatland habitat and is mostly carbon rich soil but with some deep peat, Class 4 which is typically not peatland habitat and unlikely to contain carbon rich soils and Class 5, where there is no peatland habitat but there are carbon rich soils and deep peat. The approximate land coverage within NLC are as follows: • Class 1 - 5.31% • Class 2 - none • Class 3 – 0.87% • Class 4 – 4.89% • Class 5 –10.11% Areas of deep peat, classified as peats depths in excess of 1m, are predominantly in the eastern half of the council area where topography is elevated, as well as a large area located in the north around the Kilsyth Hills.	The key pressures on soils and geology include the following: • Loss of peatland / carbon rich soils • Loss of prime agricultural land • Sterilisation of soils • Climate change • Contaminated land • Historically, large areas of upland bogs and lowland raised bog were destroyed to make room for forestry and agriculture. Following the designation of Site of Special Scientific Interest (SSSI) status to these features, and the implementation of management plans, the future of remaining peat reserves within North Lanarkshire should be secured. The NLC Biodiversity Action Plan (2023) [21], and Peatland Action Plan[22] contained within, seeks to continue this protection, safeguarding and restoration work.	The introduction of NPF4[23] in February 2023, which supersedes NLLDP policy in places, represents a turning point in the protection of soils and should help arrest decline. Policy 5 of the NPF4 provides protection for peatland and carbon rich soils. Policy 5 dictates that development proposals will only be supported if they are designed and constructed in accordance with the mitigation hierarchy by first avoiding and then minimising the amount of disturbance to soils on undeveloped land and in a manner that protects soil from damage including from compaction and erosion, and that minimises soil sealing. Policy 5 further dictates that development proposals on peatland, carbon-rich soils and priority peatland habitat will only be supported for essential infrastructure and there is a specific locational need and no other suitable site; the generation of energy from renewable sources that optimises the contribution of the area to greenhouse gas emissions reductions target; small-scale development directly linked to a rural business, farm or croft; Supporting a fragile community in a rural or island area; restoration of peatland habitats. Finally, where development on peatland, carbon-rich soils or priority peatland habitat is proposed, a detailed site specific assessment will be required to

[21] https://www.northlanarkshire.gov.uk/sites/default/files/2023-04/Biodiversity%20action%20plan%202023-2027%20%28Accessible%29.pdf
[22] https://www.northlanarkshire.gov.uk/sites/default/files/2020-12/Biodiversity_action_plan_-_Peatland.pdf#:~:text=Peatlands%20in%20North%20Lanarkshire%20A%20notable%20coverage%20of,national%20trends%20and%20is%20much%20reduced%20and%20degraded
[23] https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2023/02/national-planning-framework-4/documents/national-planning-framework-4-revised-draft/national-planning-framework-4-revised-draft/govscot%3Adocument/national-planning-framework-4.pdf

Environmental Topic: Geology and Soils			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
			identify: the baseline depth, habitat condition, quality and stability of carbon rich soils; the likely effects of the development on peatland, including on soil disturbance; and the likely net effects of the development on climate emissions and loss of carbon.
Legislation has been produced to help meet the demand for minerals within North Lanarkshire, with historic damage to Lanarkshire's peatland and previous abandonment of surface mining sites in neighbouring council areas highlighting the need to focus on geology and soils in legislation to ensure it is considered and protected as part of planning policy.	<u>Land Capability for Agriculture Map:</u> The Land Capability for Agriculture Soil Survey of Scotland (1984-87) (Macaulay Institute for Soil Research) maps the distribution of the different land classes across virtually all of Scotland's cultivated agricultural lands and adjacent uplands at a scale of 1:50 000, shown in Figure 3.6. Within NLC the split is approx. as follows: • Class 1 - none recorded • Class 2 (capable of producing a wide range of crops) - comprise 0.2%, recorded in the far south of the area along the River Clyde. • Class 3 (land capable of producing high yields of a narrow range of crops) - localised areas across the west around the urban areas and north, around Cumbernauld. • Classes 4 (capable of producing a narrow range of crops) and Class 5 (capable for use as improved grassland) are predominantly in the east and south, these classes cover approx. 50% of North Lanarkshire. • Class 6 (land capable of use as rough grazing) is predominantly found in the far north as well as localised areas elsewhere. Large areas of the county, including in the southwest around Wishaw, Motherwell and Coatbridge and in the north around Cumbernauld and Kilsyth are recorded as Urban and therefore absent of agricultural soils. The Urban Classification comprises the largest area, at 28.5%.	Climate change and loss of organic matter are the most significant threats to the functioning of Scottish soils on a national scale. Both affect most soil functions with impacts which are difficult to reverse. According to the Scottish Soil Framework[24], "Soils and climate are intimately linked. Climate has a direct influence on processes of soil formation and partially determines the extent to which soils can perform individual functions." The Scottish Soil Framework further states that "There are increasing concerns regarding food security and an increasing demand for food to be grown locally, both issues partially driven by climate change themselves. Climate change could potentially increase the area of prime agricultural land in Scotland suitable for intensive agriculture and thus support increased food production. However, an extension of areas suitable for agriculture could impinge on areas of high conservation and / or biodiversity value. Increasing agricultural production could also result in increased GHG emissions resulting in a positive feedback to climate change." Increased rainfall, as a result of climate change, will also likely lead to increased erosion of soils, which could lead to more issues with land slips and similar ground stability issues, which in turn can cause damage to infrastructure or the water environment.	Policy 5 of NPF4, which supersedes NLLDP policy in places, dictates that development proposals on prime agricultural land, or land of lesser quality that is culturally or locally important for primary use, as identified by the NLLDP, will only be supported where it is for essential infrastructure and there is a specific locational need and no other suitable site, for the purposes of small-scale development directly linked to a rural business, farm, or croft or for essential workers for the rural business to be able to live on site, for the development of production and processing facilities associated with the land produce where no other local site is suitable, and for the generation of energy from renewable sources or the extraction of minerals and there is secure provision for restoration. In all of these exceptions, the layout and design of the proposal minimises the amount of protected land that is required.
	<u>Protected Sites:</u> Within North Lanarkshire there exist two Geological Conservation Review (GCR) Sites, which are sites that contain geological and geomorphological features of national and international importance. Geological Conservation Review Sites are often also classified as SSSI, as is the case with the two sites identified in NLC.	Geological Conservation Review Sites in North Lanarkshire face pressures from habitat encroachment by vegetation, natural erosion and deterioration, changing land use, and inappropriate development. According to	The GCR is periodically updated to reflect new scientific understanding and discoveries.

[24] https://www.gov.scot/publications/scottish-soil-framework/pages/6/

Environmental Topic: Geology and Soils			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
	One of these GCR Sites is located approximately 5km southwest of central Cumbernauld near the M8 motorway, called the Mollinsburn Cuttings (A80). This designation covers a total 2.3 ha, specifically recognised for its geological significance as a dyke swarm, which is a geological formation characterized by a large number of magmatic dykes. This type of feature is protected for its provision of insight into past magmatic activity and tectonic events. The specific dyke swarm located at the Mollinsburn Cuttings (A80) site is the Lenzie–Torphichen Dyke, a typical quartz-dolerite dyke that can be traced for over 40 km. The other GCR Site in NLC is located approximately 3km northeast of Kilsyth and consists of four small streams which converge before draining south of Campsie Falls, called the Corrie Burn. This designation covers a total 11.67 ha, specifically recognized for its geological importance related to sedimentary and volcanic rocks of Lower Carboniferous age, as well as evidence of the Campsie Fault. The site is noted to be a key fossil and stratigraphical locality for its Dinantian and Namurian rocks which formed around 330 million years ago. There are two Sites of Special Scientific Interest (SSSI) designated for Geology within North Lanarkshire.	NatureScot, these sites are also threatened by a lack of awareness and resources for conservation coupled with the absence of specific legal protection comparable to that of flora and fauna.[25] GCR sites can indirectly help mitigate climate impacts by contributing to the understanding of past climate changes and potential future scenarios through their geological record, and by raising awareness about the importance of geodiversity and its connection to broader environmental issues such as biodiversity and ecosystem health.	In partnership with Strathclyde GeoConservation[26], NLC is actively involved in identifying and protecting geological conservation sites at the local level, known as Local Geodiversity Sites. NLC's LBAP for 2015-2020 included a Geodiversity Action Plan, which was also included in the NLBAP for 2023-2027. Considered management of Scotland's geodiversity aligns with, and supports, the Scottish Biodiversity Strategy, Scottish Soil Framework, Land Use Strategy and Scotland's Landscape Charter.
	<u>Non-Coal Mining Information:</u> The BGS GeoIndex records a vast number of former quarries across North Lanarkshire, particularly in the west. The 2020 Directory of Mines and Quarries from the BSG records the following active quarries: • Cairneyhill Quarry (Caldercruix) (igneous & metamorphic) • Croy Quarry (igneous & metamorphic) • Duntilland Quarry (igneous & metamorphic) • Riskend Quarry (igneous & metamorphic / secondary) • Tam's Loup Quarry (igneous & metamorphic) • Tam's Loup West Quarry (igneous & metamorphic) The following Quarry Sites are listed in the current NLLDP. A recent review of these indicates their status: • Riskend Quarry - Active • Tomfyne Farm – Inactive (planning application for 350,000 tonnes per annum of hard rock over a 21-year period but status is still pending consideration). • Hillend Quarry - Active • Cairneyhill Quarry – Active • Duntilland Quarry - Active • Blairhill Quarry - Dormant • Tams Loup Quarry – Active NLC consultation notes that Croy Quarry is believed to be inactive at present and is now a housing site.	There is increasing demand for minerals across the council area and at wider scales to meet the needs of aggregates for infrastructure and other projects.	The current NLLDP, which will be superseded by NLLDP2, confirms the council will satisfy market demands by protecting construction mineral sites from alternative development and directing proposals for extraction to extension areas within or adjacent to existing operational sites. The winning of construction minerals is not considered appropriate within the urban area and within the rural area will be directed to currently operational sites in the first instance.

[25] https://www.nature.scot/doc/standing-advice-and-guidance-forestry-and-woodland-planning-geological-conservation-review-sites-and
[26] https://www.northlanarkshire.gov.uk/sites/default/files/2020-12/Biodiversity_action_plan_-_Geodiversity.pdf

Environmental Topic: Geology and Soils			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
The mining legacy, and associated industrial uses, means contamination and potential ground instability are threats to development.	<u>Coal Authority Information:</u> Almost the entirety of North Lanarkshire sits within a Coal Mining Reporting Area, with the majority also within a Development High Risk Area, with the Coal Authority showing surface mining (past and current (as it is referred to by the Coal Authority)) and past and probable shallow coal mine workings covering large areas of land. Presently, there is no active coal mining in North Lanarkshire. While shafts can be located broadly across the entire NLC area, there exist three particularly focused areas of shafts. The main concentrated area of shafts can be found in the centre of the NLC area, encompassing Coatbridge, Airdrie, and the central east of the council region south of Cumbernauld. Another concentrated area of shafts exists northeast of Motherwell and east of Bellshill, with a final concentrated area of shafts located east and southeast of Wishaw along the southern extent of the council region. These concentrated areas align with recorded past shallow coal mine workings.	Areas of past mine workings are thought to be good geothermal energy locations: "Abandoned, sometimes collapsed, and flooded mine workings have very large surface areas; these rock-water interfaces provide significant potential for heat exchange. This, and the associated potential high abstraction rates related to artificially enhanced permeability, makes them of interest for large, open-loop ground source heat pump systems. The potential for abstraction of groundwater from mined areas, and utilising the heat energy it contains, is therefore greatly enhanced by mining activities. Characterising and quantifying this enhanced porosity and permeability, as well as other features of the groundwater system, is therefore needed in the development of this potentially large source of low-carbon energy using GSHP systems."[27]	Coal extraction has historically been prevalent in North Lanarkshire. However, following improvements in techniques in the late 1980s there was a shift from deep underground mining to surface mining methods. Coal resource does exist within North Lanarkshire however there has been a steep decline in coal production in the UK, with currently no active coal mines in Scotland. In light of climate change goals, the Scottish Government set out a preferred policy of no support for coal extraction in 2022, with NPF4 Policy 33 stating that development proposals that seek to explore, develop, and produce fossil fuels (excluding unconventional oil and gas) will not be supported other than in exceptional circumstances. Therefore, it is unlikely coal mining will recommence in North Lanarkshire, or Scotland as a whole. The NLLDP notes certain coal and aggregate deposits are seen as an economic resource and are required to be protected from developments that sterilise those resources, however NPF4 supersedes this position on coal and it is anticipated the forthcoming NLLDP2 will reflect this.
North Lanarkshire has a wide and varied industrial legacy due to the abundance of raw materials. The area was heavily industrialised by processes such as mining and quarrying, gas works, steel works and associated chemical works along with rail infrastructure. This has left large areas of potential historical chemical contamination that require attention. Equally, the rural parts of the district remained largely tied to agriculture, intermixed with	<u>Contaminated Land:</u> Across North Lanarkshire there is widespread potential for contaminated land, due to its mining and industrial past. The mining legacy, and associated industrial uses, means contamination and potential ground instability are threats to development, with vacant and derelict land covering over 10% of the council area. NLC launched its original inspection strategy in 2001, when 5,146 ha of land (around 11% of the council area) was identified as having potential to be contaminated. The latest update from 2019 to 2024 has seen 258 ha remediated via planning, with 48 sites	NLC has large amounts of vacant and derelict land, with the council pushing for redevelopment of these lands as a priority over Greenfield land, where possible. Cost / difficulty in remediating Brownfield land can however put Developers off. Vacant and Derelict land covers 14% of the council area across 425 sites, and NLC is the council area with the highest proportion of its population living within 500m of derelict land (69%)[14]. However, the	The Scottish Vacant and Derelict Land Survey of 2024 shows that NLC is no longer the Authority with the largest percentage (by area) of Derelict and Urban Vacant land in Scotland, the figures dropping from 1,429 Ha in 2010 to 1,292 Ha in 2024.

[27] https://www.gov.scot/publications/study-potential-deep-geothermal-energy-scotland-volume-2/pages/9/

Environmental Topic: Geology and Soils			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
quarrying for raw material such as sand and stone to supply local industry. Of the total contaminated land, vacant and derelict land covers a large proportion of the council area, notably around Motherwell, Newmains, Stand and Gartcosh.	that have been archived and 11 sites which have had their boundary reduced and redrawn as not all of the site was remediated.	amount of vacant and derelict land within the council area is decreasing: 31 areas of vacant and derelict land has been brought back to use since the previous survey by the council in NLC[14].The amount of VDL presents a major challenge but also acts as a resource for future development.	In 2024 NLC produced a Strategy for the Inspection of Contaminated Land 2025 – 2030[28]. It is NLC's intention that the reviewed Inspection Strategy for the Identification of Contaminated Land will continue to form the basis for implementation of the Part IIA legislative requirements, and that the strategy will work alongside the NLLDP.
	Radon: Figure 3.7 shows the probability of Radon within NLC. The chances of a higher level of radon depend on the type of ground. The majority of NLC is within the lowest band of radon potential, which means that less than 1% of homes are at or above the Action Level. Small regions in the north of NLC, particularly around Kilsyth, are located within areas of more elevated radon potential, where generally between 1-10% of homes are at or above the Action Level.	Greater awareness of radon impacts and requirements for new build development will continue to reduce the number of homes at or above the Action Level. Awareness raising through the Local Development Plan will also ensure advice is given through planning applications by the Contaminated Land Team.	Scottish Government and the British Geological Survey mapping does not identify higher levels of radon across North Lanarkshire but does note potential for higher levels due to Geology[29].
Invasive species are a type of land contamination present in Scotland, identified by the Scottish Government as a significant threat to environments, native wildlife, the economy, and in some cases health. Globally, INNS have contributed to 40% of the animal extinctions that have occurred in the last 400 years. Since 2011, Scotland has led the way in Europe on non-native species law with the Wildlife and Natural Environment (WANE) Act. Scotland's approach to invasive non-native species (INNS) involves a combination of legislation, strategic plans, and local initiatives, all aimed at preventing the introduction and spread of harmful species. The main recognised INNS in Scotland are commonly found across North Lanarkshire, leading to the North Lanarkshire Biodiversity Action Plan 2023-2027 considering one of its primary actions to be the implementation of a Scottish Plan for Invasive Non-Native Species (INNS).	Invasive Species: Land contamination also exists in the form of invasive species, with NLC recognising Japanese Knotweed and Giant Hogweed as two of the most common invasive plant species in the UK. Beyond invading habitats, invasive species such as these can be destructive, causing riverbanks, built structures, and surfaces to destabilize, and are considered controlled waste due to the potential for them to contaminate soils and plant material with seeds rhizomes, corms or fragments of plants that could regrow. There is a legal duty to control and prevent the spread of invasive species including preventing natural spread by seed dispersal and spread caused by dumping of plant material or contaminated soil. Figure 3.8 shows the locations in NLC where invasive species have been identified, mapped as shown at NLC level showing the 64 sites where the presence of either Japanese Knotweed, Giant Hogweed, Himalayan Balsam, Rhododendron or a mix of these species was noted.	There is a legal duty to prevent the spread of invasive species, and there is increasing awareness of their harm. The aim of the North Lanarkshire Biodiversity Plan is to provide context, focus and direction for the management of INNS in North Lanarkshire.	Within NLC, the NBN Atlas[30] identifies 19 records of Giant Hogweed since 1987 and 209 records of Japanese Knotweed since 1964, though it is important to note that the document relies on people reporting INNS and therefore there is a high likelihood that invasive species are underreported, particularly on private land. It is therefore hard to identify trends. However the aim of the North Lanarkshire Biodiversity Plan is to provide context, focus and direction for the management of INNS in North Lanarkshire, which should provide a benefit. Designated sites such as SSSIs, LNRs and SINCs as well as UK Biodiversity Action Plan (UKBAP) habitats should be the priority for control.
The Scottish Government has identified deep geothermal energy as a promising renewable energy technology that could have the potential to play a significant role in Scotland's future energy provision. To date, the extent and location of the potential deep	Geothermal Potential: Geothermal energy is energy produced and stored as heat in the subsurface. It can provide an ultra-low-carbon source for heating, cooling and power generation. BGS, in collaboration with Arup, was commissioned by the North East Local Enterprise Partnership to develop a White Paper entitled 'The case for deep geothermal energy	When it comes to the viability of geothermal energy, the LHEES (Local Heat and Energy Efficiency Strategy[32]) report considers heat pumps as the most suitable heating system, though other low carbon heating technologies are not to be ruled	A LHEES was issued by NLC in December of 2023 detailing the potential service areas and viability of heat network options. The draft states *"North Lanarkshire Council*

[28] https://www.northlanarkshire.gov.uk/sites/default/files/2025-03/Contaminated%20Land%20Strategy%202025-2030.pdf
[29] https://www.ukradon.org/information/ukmaps
[30] https://nbnatlas.org/
[32] https://www.northlanarkshire.gov.uk/sites/default/files/2024-04/LHEES%20Strategy%20Report.pdf

Environmental Topic: Geology and Soils			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
geothermal resources has not been well defined. It is shown that the type of geology within a region impacts the potential amount of geothermal energy available, with the main three geological settings targeted by the Scottish government being abandoned mine workings, aquifers, and crystalline rocks (also known as hot dry/hot wet rocks). With the entirety of NLC sitting within a Coal Mining Reporting Area and the majority also within a Development High Risk Area, North Lanarkshire could potentially provide valuable advancements towards the utilization of geothermal energy in Scotland.	— unlocking investment at scale in the UK'. It provides an evidence-based assessment of the opportunities and makes recommendations for building the deep geothermal sector in the UK.[31] The current high costs of drilling restrict the use of geothermal energy to areas with certain geological settings. As technologies improve and new extraction methods are developed, more areas should become economically viable for geothermal exploitation. Many parts of North Lanarkshire have mine workings at a range of depths and there is potential for heat to be extracted from mine-water. Figure 30 from the NLC LHEES report records the mine water geothermal potential in heat network areas, showing the majority of resource areas in the southwest and west of NLC borders. There also are geothermal resources at depth (40-60m BGL) in the southeast and east of NLC borders.	out at this stage. Geothermal heat pumps extract heat from the air or ground using electricity. Where electricity generation is being delivered through renewables (the electricity grid is aiming to be carbon neutral by 2035), the main source of heat can be considered low carbon. NPF4 notes that mine water, solar and onshore support for offshore renewables, including development that makes use of existing infrastructure at strategic hubs, all provide opportunities for decarbonisation.	*Area has multiple potential sources for large scale heat pump systems which could be considered as part of detailed feasibility studies."* including mine water geothermal. At present geothermal energy is still in its early feasibility and research stages, however it represents real potential for green energy supply, although public sector support will be important in helping it develop until the private sector confidence grows.

[31] https://www.bgs.ac.uk/news/new-report-assesses-deep-geothermal-energy-in-the-uk/

Environmental Topic: Water Quality, Flooding and Drainage			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
Water is a valuable resource which has multiple uses, e.g. potable water supply, water for agriculture and industry, support/ habitat for ecology, recreation, sport, transport and wastewater disposal. There is robust legislation in Scotland which enacts the Water Framework Directive (2000/60/EC) and regulates activities to protect the water environment. Combined with regulations in respect of contaminated land, this has led to an improvement in water quality across Scotland and North Lanarkshire. The Public Water Supplies (Scotland) Regulations 2014 (and 2015 amendments) define drinking water wholesomeness and require water authorities to monitor the quality of their supplies. The Flood Risk Management (Scotland) Act (2009) introduced new duties to SEPA and Local Authorities to assess and manage flood risk.	NLC records 89 rivers and burns, 2 canals (and 2 canal feeders) and 35 lochs and reservoirs within the region, the council has no coastline.	There is robust legislation in Scotland which enacts the Water Framework Directive (2000/60/EC) and regulates activities to protect the water environment. Combined with regulations in respect of contaminated land, this has led to an improvement in water quality across Scotland and North Lanarkshire.	The SEPA overall classification has improved in the eleven years since 2014 for twelve surface water bodies and worsened for none.
Ninety per cent of the surface water bodies in North Lanarkshire were of bad, poor or moderate status in 2014 and the quality does not compare favourably with the surface waters across Scotland as a whole. Some changes have occurred since 2014 where, of the 41 surface waters, status has improved for twelve surface water bodies and worsened for none.	<u>Surface Water Bodies:</u> Under the Water Framework Directive and river basin management planning there are 34 river water bodies, 4 lochs (3 of which are reservoirs) and 3 stretches of canals in or partly within North Lanarkshire for a total of 41 surface water bodies. One canal was culverted, shown in Figure 4.1. As of 2022 (the latest data): • Six are classified as having a Good status (the Forth and Clyde Canal from Wydnford to Rough Castle, North Calder Water, Garnkirk Burn, River Clyde, the Forth and Clyde Canal from Kirkintilloch to Kelvinhead, and the Carron Valley reservoir). • Fifteen are classified as of 2022 as having a Moderate status • Nineteen are classified as having a Poor status. • Only one is classified as having a Bad status: the River Kelvin from Kelvinhead to Glazert, representing a decrease in status of the River Kelvin from Kelvinhead to Glazert from 2013-2015, when it was noted as having a Poor ecological status. However, there was a concurrent improvement in status of the two formerly Bad water bodies in 2014 (Shirrel Burn/Thankerton and the South Burn) both to Poor status by 2022. Some pressures faced by surface water bodies with Bad and Poor status in 2022 include modifications to bed, banks and shores from urban and rural land uses impacting the physical condition, point source discharges of wastewater (sewage) disposal impacting water quality, urban diffuse source pollution from urban land use and drainage, and barriers to fish migration caused by legacy structures and hydroelectricity generation.	Historic peak river flow and rainfall intensity allowances were 20%, but the allowances set by SEPA today are well in excess of the 20%. A 2020 study commissioned by the Environment Agency (and contributed to by SEPA to ensure outputs covered Scotland) was carried out by the UK Centre for Ecology and Hydrology to assess the impact of climate change on fluvial flood peaks. The river basin region of Clyde has a total 49% range of peak river flow allowances while the river basin region of Forth has a total 56% range of peak river flow allowances. For peak rainfall intensity, the total change to the year 2080 is predicted to be 41% for the Clyde river basin region and 39% for the Forth river basin region.	Changes in sea level rise are driven by the thermal expansion of the ocean as well as the addition of water through global ice melt. Within Scotland, these impacts are being partially offset by glacial isostatic rebound - the ongoing rise of land formally depressed by the huge weight of ice sheets during the last glacial period. The cumulative sea level rise from 2017 to 2100 is based on the outputs from UK Climate Projections 2018 (UKCP18). However, given that sea level rise will continue well beyond the end of the 21st century, we require that an additional allowance of 0.15m per decade after the year 2100 be applied where the design life of a development is known to extend beyond that date. The river basin region of Clyde has a total 0.85m sea level allowance while the river basin region of Forth has a total 0.86m sea level allowance.
In North Lanarkshire 37% of the groundwater bodies were of poor status and 63% were good status in 2014. This does not compare favourably with the whole of Scotland where 21% were poor status and 79% good. Groundwater status decreased for one groundwater body by 2022: Whitburn bedrock groundwater status decreased to Poor in 2015 and 2016 due to manganese surface water interactions which were not	<u>Groundwater:</u> There are 12 bedrock groundwater bodies and 4 superficial groundwater bodies in North Lanarkshire. The locations and status of each groundwater body in NLC is shown in Figure 4.2. As of 2022 (the latest data) SEPA classified the status of the groundwater as 5 Good and 7 Poor, with the 4 superficial groundwater bodies as Good, however there has been some fluctuation in some of the water bodies between the years of 2014 and 2022. For example, the Whitburn groundwater body had a status of Good in	The primary pressure on groundwaters in NLC comes from historical mining activities and land contamination. Over-abstraction of groundwater is also a significant concern, potentially leading to saline intrusion and affecting other water users. According to the 2021-2027 River	The overall SEPA Classifications have improved for three groundwater bodies since 2012, remaining the same as of 2022 at 5 Good and 7 Poor with the 4 superficial groundwater bodies as Good. Whitburn bedrock groundwater status decreased to Poor in 2015 and 2016 due to manganese

Environmental Topic: Water Quality, Flooding and Drainage			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
reported for previous years. The status is still poor as of 2022. The status of the other six poor status groundwaters is considered to require decades to improve as the impacts from legacy mining/ quarrying and historic land contamination will be naturally flushed out at slow rates.	2014 which decreased to Poor in 2015/2016. In 2017 it was noted as Good again, but from 2018 to 2022 it was once again labelled as having a Poor status. Some pressures faced by groundwater bodies with Poor status in 2022 include pollution from legacy mining or quarrying impacting water quality, water abstraction from business water use impacting water flows and levels, and point source discharges from past land contamination impacting water quality.	Basin Management Plan[33], some 10% of the total area of Scotland is over-abstracted. The total area is small but impacts occur in localised clusters, with the largest clusters occurring in the Central Belt, Strathmore in Fife, East Lothian, the Moray Firth and Dumfries.	surface water interactions which were not reported for previous years. The status of the other six Poor status groundwaters is considered to require decades to improve as the impacts from legacy mining/ quarrying and historic land contamination will be naturally flushed out at slow rates.
There is no information located on the Drinking Water Quality Regulator for Scotland website pertaining specifically to NLC, however, there does exist an annual report from 2022 that comments on the drinking water quality compliance of Scotland as a whole. In Scotland the public water supply is provided by Scottish Water. All other supplies are known as private water supplies, managed by owners and/or users. The Drinking Water Quality Regulator for Scotland (DWQR) regulates the quality of water supplied by Scottish Water, ensuring that drinking water supplies meet the requirements of The Public Water Supplies (Scotland) Regulations 2014 ("the Regulations"). In 2022, Scottish Water carried out a total of 297,284 regulatory tests on Scotland's drinking water with numerical standards and many more for operational reasons such as following a burst main. Of the 139,971 tests taken to represent water at consumers taps, 99.92% complied with the standards.	<u>Private Water Supplies[34]:</u> NLC provided their list of private water supplies as of April 2024, this included 25 entries however one was noted as not in operation. The entry noted as not in operation is the only water supply recorded to serve more than 4 people. The DWQR 2021 Annual Report notes there were 15 private Type B water supplies recorded as well as 6 regulated supplies. These 6 regulated supplies require mandatory testing for water quality, which occurred for 100% of supplies sampled in 2020 and 2021. Based on the SEPA Compliance Assessment Scheme 2018 mapping data (the latest available, with the service due to be overhauled) there are 40 Pollution Prevention and Control (PPC) licences, 30 Controlled Activity Regulations 2011 (CAR) licences and 41 Waste Management (WML) licences. Of the total 111 records of all types, 66 are within the Excellent compliance band, 26 are within the Good compliance band, 6 are noted as Broadly Compliant, 3 are At Risk, 7 are within the Poor compliance band, and 3 are within the Very Poor compliance band.	Private water supplies in NLC face increasing pressures due to climate change and existing infrastructure limitations, particularly impacting rural areas. These supplies are vulnerable to water scarcity, quality issues, and reliability risks, with potential consequences for both human health and the environment. Private supplies are more susceptible to water quality problems, including microbiological and chemical contamination from agricultural runoff, silting during dry periods, and potential breaches of regulatory standards.	The number of private water supplies across North Lanarkshire has not increased in recent years.
Changes in the supply and demand for the public water are anticipated from climate change, increasing population, movement to large towns and cities as encouraged by NPF4, reduction in household size, increase in number of properties to be served in certain locations and aging infrastructure. SEPA have warned within their Water Situation Report (Spring 2024) that water users should remain vigilant and manage water supplies sustainably.	<u>Public Water Supplies[35]:</u> North Lanarkshire's public water supply is from ten surface water sources (reservoirs and lochs), treated in six water treatment works (outwith North Lanarkshire) and provided via 16 public water supply zones (which cross local authority boundaries). In 2016, 11 of the 16 water supply zones had failures of the prescribed concentrations and values across all water quality parameters, mostly related to microbiological factors, and the zones were 88.1% compliant.	At present, public focus is firmly on the release of pollution from the sewage system into waterbodies, with climate change and increased populations meaning Victorian combined sewer systems cannot cope with increased rainfall. The requirement for all new infrastructure to provide separate foul & surface water sewers and provide SuDS for treatment and attenuation helps combat this, but legacy infrastructure is an issue.	Changes in the supply and demand for public water can result from climate change, increasing population, movement to large towns and cities as encouraged by NPF4, reduction in household size, increase in number of properties to be served in certain locations and aging infrastructure. Scotland's supply of natural water resource is becoming increasingly variable. There is evidence that meteorological and hydrological droughts have become more frequent in Scotland. The latest climate change projections indicate that drought conditions in much of Scotland are likely to increase in frequency, severity, and duration over the next few decades.

[33] https://www.sepa.org.uk/media/594088/211222-final-rbmp3-scotland.pdf
[34] https://dwqr.scot/media/tvafu2kt/pws-annual-report-2021.pdf
[35] https://dwqr.scot/media/21meplzu/annual-report-public-supplies-2022.pdf

Environmental Topic: Water Quality, Flooding and Drainage			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
SEPA's climate change predictions estimate that the Clyde catchment is likely to see a 49% increase in peak river flows by 2100, whilst for the Forth it is 56%. For peak rainfall intensity, the total change to the year 2080 is predicted to be 41% for the Clyde river basin region and 39% for the Forth river basin region. As of 2018, which is the most recent dataset, there are eleven Potentially Vulnerable Areas (PVAs) identified in or partly in North Lanarkshire. Ensuring that development avoids flood risk areas, and mitigates against the risk where avoidance is impossible, is essential to avoid human, economic and environmental cost.	<u>Flooding[36]:</u> SEPA Flood Maps provide guidance on flood risk areas across Scotland, with information on River, Surface Water and Coastal Flooding, as well as the Future Flood Maps for River and Coastal risk. There is river and surface water flood risk in North Lanarkshire, with discrete surface water risk widespread and fluvial risk particular associated with the Clyde and Forth & Clyde Canal, as well as the Luggie Water around Mollinsburn and the series of lochs around Gartcosh. There are eleven Potentially Vulnerable Areas (PVAs) identified in or partly in North Lanarkshire, eight of which are identified within the Clyde and Loch Lomond Local Plan District 2022 plan and three of which are identified within the Forth Estuary Loal Plan District 2022 plan. The areas covered by a PVA were an output from the 2nd National Flood Risk Assessment (NFRA) completed in 2018, taking into account the current and / or future risk from all sources of flooding. Currently it is estimated there are around 170,000 people and 98,000 homes and businesses at risk from flooding. This may increase to 220,000 people and 130,000 homes and businesses by the 2080s due to climate change. The expected annual cost of flooding is around £70 million. Up until 2018, PVAs were large geographical areas which included the surrounding river catchment or coastal area, around the communities most impacted by flooding. For the 2021 flood risk management plans, specific communities within each PVA were identified as the places where actions to reduce flooding were targeted to benefit. A final version of the PVAs was updated and published in December of 2024 as part of the review of the NFRA (mandated every 6 years) for use in the next flood risk management cycle (2028-2034) after public consultation. While it was determined by SEPA that the NFRA 2018 outputs remain the appropriate source of SEPA's flood risk assessment information for the designation of PVAs, public consultation in 2024 saw the addition of two PVAs and an expansion of the boundaries for two other PVAs. Updated flood risk management plans based on this are due to be published in 2027. The SEPA Reservoirs Maps shows indicative area that may flood from an uncontrolled release of water from all possible dam failure scenarios. This includes the Carron Valley Reservoir, which would flow towards Denny, outwith the council area. Hillend Reservoir and Roughrigg Reservoir would both overtop and run south of Airdrie along North Calder Water before reaching the River Clyde.	According to the Scottish National Adaptation Plan 2024-2029[37], flooding across Scotland is becoming more frequent and poses risks to agriculture through loss of crops and stock, infrastructure damage and negative impacts on soils. The risk of water scarcity for farmers and crofters is also increasing due to the changing climate, especially in eastern areas where drier summers are expected and demand for irrigation of arable land is highest. Beyond crops, water scarcity can impact on livestock farming through extra costs for livestock feed when grass growth is reduced.	Climate change with predicted increases in rainfall and river flows will increase flooding potential. Implementation of Flood Risk Management Strategies will assist with this, as will strict adherence to keeping new development outwith future flood risk areas, however increased damage to people and properties must be expected. NPF4 Policy 22 states that development proposals at risk of flooding or in a flood risk area will only be supported if they are for essential infrastructure where the location is required for operational reasons, water compatible uses, redevelopment of an existing building or site for an equal or less vulnerable use, or for redevelopment of previously used sites in built up areas where the LDP has identified a need to bring these into positive use and where proposals demonstrate that long-term safety and resilience can be secured in accordance with relevant SEPA advice.

[36] Flood risk management plans 2021 (sepa.org.uk)
[37] https://www.gov.scot/publications/scottish-national-adaptation-plan-2024-2029-2/pages/9/

Environmental Topic: Water Quality, Flooding and Drainage			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
Precipitation in Scotland varies remarkably. Some two-thirds of Scotland receives more than 40 inches (1,000 mm) annually, while the East of Scotland can see levels as low as 31 inches (800mm). In recent decades, Scotland has experienced an overall increase in rainfall, particularly during the winter months, with a significant rise in the intensity of rainfall events. While the annual rainfall has increased, there is also evidence of longer dry spells punctuated by periods of intense rainfall. Future climate models suggest a possible slight decrease in annual rainfall by the 2050s, but with continued variability and more intense rainfall events. These changes are attributed to climate change, with rising average temperatures driving these shifts in rainfall patterns.	<u>Rainfall:</u> The Meteorological Office provides 30-year average rainfall data for 1981 to 2010 and 1991 to 2020. For North Lanarkshire the station nearest to Wishaw (Salsburgh which is 1.9 miles from Caldercruix) had annual averages between 1981 and 2010 of 1092.7mm. Between the years of 1991 and 2020, the same station had annual average of 1104.67mm. Rainfall is higher in the northern and western areas. Locations of weather stations in and around NLC are shown on Figure 4.3. Salsburgh weather station is an automatic weather station located 277m above sea level and Motherwell Strathclyde Park is a manual weather station located 22m above sea level. These are the only two stations located within NLC. In the surrounds sit three other weather stations; Grangemouth Refinery is to the northeast, Drumabin is to the southeast, and Pollok Country Park is to the west.	Rainfall allowances[38] can be used to provide a more accurate estimation for surface water (pluvial flooding) and fluvial uplifts in small 'flashy' catchments. Small watercourses are impacted because of the high volume of runoff relative to their channel capacity. Increases in rainfall intensity due to climate change are likely to result in an increase in the severity and frequency of flooding incidents on small watercourses. The river basin region of Clyde has a total 41% range of peak rainfall intensity allowances while the river basin region of Forth has a total 39% range of peak rainfall intensity allowances.	Within their Water Situation Report (March 2024) SEPA note areas along the east coast of Scotland have seen higher than average rainfall throughout autumn and winter. Elsewhere rainfall totals have been within the normal range. This has allowed a good recovery of water resources and natural water storage, in lochs and groundwater, is normal to high for this time of year. As a result, there is a reduced risk of water scarcity this summer. Conditions through spring and summer can still lead to water scarcity as was experienced following a very dry spring in 2023, therefore urging users to continue to manage supplies sustainably.
Scotland is becoming exposed to climate related risks, such as water scarcity, that were not considered significant in the past and have not been planned for. An important step in addressing this shift in risk has been to develop early warning and emergency measures to mitigate the impacts of exceptional events. It is expected to see further changes in seasonal precipitation patterns that may increase the frequency and severity of water scarcity conditions, including droughts, particularly in the eastern parts of Scotland. NPF4 mentions the increase in water scarcity due to extreme weather events and higher	<u>Water Scarcity:</u> SEPA provided water scarcity reports dating back eight years (2017-2025), with the reporting style changing for 2024 and 2025. 2020 reporting occurred between May – December, with most of Scotland in early warning while the Northeast and Southwest were in Alert in May. In December, forecasts indicated a high chance of a wet and mild winter ahead, with an increased likelihood of impacts from heavy rainfall. 2021 reporting occurred between April – October, with all of Scotland experiencing normal conditions through May due to experiencing normal water resource conditions for that time of year, before escalating to early alert and alert by July. Significant	Scotland is becoming exposed to climate related risks, such as water scarcity[39], that were not considered significant in the past and have not been planned for. The first phase in addressing this shift in risk has been to develop early warning and emergency measures to mitigate the impacts of exceptional events such as the 2018 European drought and its impact in Scotland.	Scotland's 2020 National Water Scarcity Plan[40] sets out a staged approach for how SEPA will manage water resources prior to and during periods of prolonged dry weather, proportionate to the severity of the event. An updated Water Scarcity Report was published as of May 2025[41], noting that 13 hydrometric areas across Scotland have been raised to Alert

[38] https://www.sepa.org.uk/media/fxjgfjmf/climate-change-allowances-guidance.docx
[39] https://www.crew.ac.uk/publication/mitigation-adaptation-response-to-water-scarcity
[40] https://www.sepa.org.uk/media/219302/scotlands-national-water-scarcity-plan.pdf
[41] https://beta.sepa.scot/water-scarcity/previous-reports/1-may-2025/

Environmental Topic: Water Quality, Flooding and Drainage			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
temperatures, stating that LDPs should strengthen community resilience, with NPF4 Policy 22 dictating that water for drinking water purposes must be sourced from a sustainable water source that is resilient to periods of water scarcity.	recovery occurred across Scotland by October due to rainfall, and it was noted that a prolonged period of above average rainfall was required to improve loch levels and reservoir storage country-wide. 2022 reporting occurred between April – October, with the entire southern half of Scotland in early warning while the rest saw normal conditions in April. There was an east/west split in scarcity by May, with area in the east of Scotland increasing to alert and moderate scarcity through June and July. The Scottish Borders experienced significant scarcity in August, after which the majority of the country recovered to early warning and normal conditions. 2024 – 2025 reporting was split up by season. The autumn water situation report occurred between September – November 2024. Scotland saw drier than normal conditions over the autumn which has resulted in low river levels. Rainfall was below the long-term autumn average across most of Scotland. Based on Met Office rainfall data it was the 5th driest autumn in 100 years. The lower rainfall resulted in below average river flows across the country. Which is rare at that time of year. It was noted that winter would now be crucial to replenish water resources. The winter water situation report occurred between December – February of 2025. Despite intermittent wet spells, many parts of Scotland had drier than normal conditions over the winter. This follows on from a dry autumn. Without significant above average rainfall in spring and summer, there is an increased risk of water scarcity. Some areas, particularly in central and south Scotland, have experienced below average rainfall for several months by this point. The rainfall outlook for the March-May period suggested the chances of either a dry or wet spring overall were both near normal for the UK. The chance of a mild season was higher than normal, with a reduced chance of a cool season. A separate water situation update was reported in April 2025. It states that there is an Early Warning of water scarcity across most of the country. March was a dry month for most of Scotland, with some areas having received less than half of the average rainfall for this time of year. This follows on from a dry autumn and winter. Without significant above average rainfall in spring and summer, there is an increased risk of water scarcity occurring early in the season. River flows are low to extremely low, relative to the long-term average, for this time of year. Groundwater levels, from our monitoring points, are generally low to very low for the time of year. This is due to the limited recharge over the winter period. Groundwater levels are lower than levels recorded in early April 2022.		level, with two catchments remaining at Alert level from last reporting. The rest of the country remains at Early Warning level. The hydrometric area of Clyde, covering the land from Lanark to Glasgow, is considered to have no significant scarcity as of 2024, though the area is identified as being at an Ealy Warning stage as of 2025. Projections to 2049 indicate reductions in the water available through rainfall during summer and early autumn in eastern Scotland, a key crop growing area, compared to current conditions. Mean number and duration of events where river flows are significantly low are projected to approximately double by 2050.
	<u>Pollution Events:</u> SEPA will be consulted to ascertain data on notable pollution events relating to the water environment.		

Environmental Topic: Biodiversity, Ecology and Nature Conservation			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
North Lanarkshire has a variety of habitats (primarily urban, grassland, woodland and blanket bogs), with a number of designations designed to protect key species and habitats, covering a total of 16.8% of the surface area. The latest North Lanarkshire Local Biodiversity Action Plan (LBAP) has identified key species and habitats, which have been outlined here.	<u>Designated and notable sites:</u> NatureScot records the following sites within North Lanarkshire: • 3 country parks: 2.0% land coverage. *Country parks are managed to benefit wildlife and support nature conservation.* • 1 Special Protection Area (SPA): 3.8% land coverage. *SPAs protect birds and their surrounding habitats; which are classified under the 1992 EC Wild Birds Directive* • 11 Sites of Special Scientific Interest (SSSI): 2.1% land coverage, of which 9 are designated for their biological attributes. *SSSIs is a formal conservation designation aimed to conserve key biological or geographical features.* • 3 Special Areas of Conservation (SAC): 0.4% land coverage. *Special Areas of Conservation are designated as high-quality areas that contribute towards the habitats and species identified in Annexes I and II of the European Habitats Directive.* • 6 Scottish Wildlife Trust reserves: 0.7% land coverage/2 Royal Society for the Protection of Birds (RSPB) reserves: 0.4% coverage. *A variety of reserves managed by these NGOs for the benefit of both humans and wildlife.* • 9 Local Nature Reserves (LNR): 1.0% land coverage. *Local nature reserves are areas of at least locally important natural heritage, designated and managed by local authorities to give people better opportunities to learn about and enjoy nature close to where they live.* • 410 Sites of Importance to Nature Conservation (SINC): 15.6% land coverage. *Local designation covering sites that have a local biodiversity value or notable biodiversity features.* Overall, 16.8% of North Lanarkshire (7,900 ha) falls under at least one of the above designations. Designated Sites are shown in Figure 5.1.	<u>Pressures on designated and notable sites:</u> Continued demand for new housing, jobs and infrastructure puts pressure on key habitats and species within designated sites. Although development may not occur directly on sites, pressures occur from diffuse pollution and habitat fragmentation.	
Major pressures include development of urban areas, intensification of agriculture, pollution/waste and invasive species. These pressures have an impact on key species and habitats, with a number of initiatives outlined in order to combat species decline and provide enhancement for biodiversity across the council area.	<u>Landcover:</u> Landcover has been periodically mapped in Scotland by Space Intelligence and divided according to their EUNIS habitat classification. Landcover in North Lanarkshire as of 2022 (in order of area) is as follows: • J: Built-up (21.8%) - 10295 ha • E2: Mesic grassland (20.7%) - 9755 ha • G1: Broadleaved deciduous woodland (18.1%) - 8541 ha • E3: Seasonally wet and wet grasslands (13.1%) - 6164 ha • D1: Raised and blanket bogs (7.5%) - 3565 ha • G3.F: Highly artificial coniferous plantations (5.4%) - 2548 ha • F4: Temperate shrub heathland (2.7%) - 1270 ha • G5: Lines of trees, small anthropogenic woodlands, early-stage woodland and coppice (1.9%) - 880 ha • I1: Arable land and market gardens (1.7%) - 789 ha • C: Surface standing and running waters (1.6%) - 766 ha • O: Bare field (1.4%) - 681 ha • E1: Dry grasslands (1.4%) - 668 ha • G4: Mixed deciduous and coniferous woodland (0.9%) - 431 ha • F3: Temperate and mediterranean-montane scrub (0.6%) - 266 ha • D2: Valley mires, poor fens and transition mires (0.5%) - 259 ha	<u>Pressures in landcover change:</u> *See the priority habitats section for an outline of pressures.*	<u>Trends in landcover change:</u> Landcover changes were mapped between 2020 and 2022 (Figure 5.4). Major drivers in North Lanarkshire include: Urban development (8.1%) - 3826 ha Forest growth (5.3%) - 2492 ha Agriculture related (4.7%) - 2222 ha Tree removal (3.7%) - 1748 ha Afforestation (1.1%) - 502 ha Water gain (0.2%) - 109 ha Water loss (0.1%) - 33 ha Other changes (12%) - 5674 ha*[42]

*[42] Figures provided by NatureScot, who add the following note to this data set regarding 'other': *"Please note, we believe these predicted changes, and others, are inaccurate, mainly due to inaccuracies we have identified in the 2020 map, along with improved methodologies and processes developed at Space Intelligence since the creation of the 2020 map."*

Environmental Topic: Biodiversity, Ecology and Nature Conservation			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
	• OW: Windthrow (0.3%) - 159 ha • E5: Woodland fringes and clearings and tall forb stands (0.2%) - 105 ha • F9: Riverine and fen scrubs (0.1%) - 61 ha • H3: Inland cliffs, rock pavements and outcrops (0%) - 19 ha • Additionally, data from the North Lanarkshire Local Development plan was provided which is considered the most accurate representation of the urban boundary. The total coverage of urban spaces was calculated to be just over 13,000 ha (27.5%), with the largest areas being Wishaw (3,700 ha), Airdrie (2,200 ha) and Cumbernauld (2,100 ha). This coverage includes other landcover types such as open areas and woodland that fall within urban areas. These landcover types are mapped in Figure 5.2. Landcover change (2020-2022, discussed opposite) is mapped in Figure 5.3.		
	<u>Water quality:</u> The last assessment of water quality for waterbodies/rivers by SEPA was in 2014, where: 2 waterbodies were rated 'bad' 1 waterbody was rated 'poor' 25 waterbodies were rated 'moderate' 6 waterbodies were rated 'good' 7 waterbodies were rated 'high' The classification process is complex and takes account of physical condition, access for fish migration, invasive species, water quality and water flows/levels. SEPA list actions to address the known causes of poor water quality and set targets for improvement where these are considered feasible. Figure 5.4 shows the count of surface waters expected at each condition for water quality in North Lanarkshire.	<u>Pressures on water quality:</u> *See pressures in the Rivers and Burns key habitat section.*	<u>Trends in water quality:</u> According to the SEPA Water Environment Hub, there is a predicted future trend of improvement in water quality, with 46.3% water bodies/rivers predicted to reach 'good' in long term analysis, as opposed to only 14.6% in 2014.
	<u>Woodland cover:</u> In total, 23% (10,720 ha) of North Lanarkshire is denoted on the Native Woodland Survey of Scotland (NWSS) register. This is largely evenly distributed, with concentration in the southwest. The top three dominant habitats on this register are lowland mixed deciduous woodland (6,000 ha), wet woodland (2,800 ha) and upland birchwood (900 ha). In addition, 3% (1,500 ha) of the woodland of North Lanarkshire is recorded on the Ancient Woodland Inventory (AWI), of which 960 ha is Long Established of Plantation Origin (LEPO), 550 ha is Ancient of Semi-Natural Origin (ASNO) and the remainder is other. Ancient Woodland cover is mapped in Figure 5.5. Forest Research mapped UK Urban Canopy cover in 2020 at electoral ward level[11]. The average percentage of urban canopy cover in North Lanarkshire was 18.84%, compared to 15.6% across Scotland[43]. Clyde Climate Forest (CCF) is an initiative to see 18 million trees planted in both urban and rural parts of Glasgow City Region over the next decade. Mapping of CCF within North Lanarkshire shows planting across the council area, with larger areas of planting around Cumbernauld, and in the south around Motherwell, Wishaw, and Shotts.	<u>Pressures on woodland cover:</u> Pests and diseases that affect trees are major pressures. These include ash die-back, sudden oak death, phytophthora and Asian long horn beetle. The Clyde Climate Forest is a project with the council committed to helping to plant 18 million trees by 2031. The first tree plantings took place in early 2023 in the Hattonrigg area of Bellshill. North Lanarkshire projects are focused on Bellshill, Central Wishaw, and North Motherwell, with a target for 20% canopy cover across each city region.	<u>Trends in woodland cover:</u> North Lanarkshire has undertaken management and enhancement works at 20 woodland sites due to grants. Ash dieback is predicted to continue to cause large losses of ash trees. There are long term woodland creation projects in response to the Climate Emergency, where 40,000 trees will be planted.

[43] https://www.tandfonline.com/doi/full/10.1080/03071375.2023.2233864

Environmental Topic: Biodiversity, Ecology and Nature Conservation			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
	Priority habitats: The following are identified in the Local Biodiversity Action Plan (LBAP) as priority habitats, with each having their own Habitat Action Plan examining the conditions, previous and current action to restore and improve these habitats. • **Bogs**: Bogs in North Lanarkshire are primarily raised/lowland bog, which covers 187ha, or 7% of total cover in Scotland. The Peatland Habitat Action Plan aims to restore and improve peatland habitats for the purpose of carbon sequestration and improve habitats for bog-dependent species. • **Farmland**: There are over 300 farms in North Lanarkshire which support a diverse range of habitats and wildlife. The protection and safeguarding diverse farmland and associated habitats have been identified. • **Floodplain and grazing marshland:** Periodically flooded pasture and meadows. In North Lanarkshire this habitat is found predominantly in the Kelvin Valley. This habitat can be important for breeding birds such as waders and waterfowl. • **Hedgerows:** A vital countryside habitat providing shelter as well as habitat connectivity for animals such as bats and hedgehogs. More work is required to assess their extent and condition within North Lanarkshire. • **Ponds:** Seasonal/permanent water bodies <2 ha in surface area. These are valuable habitats at the local level and provide habitat for Priority species such as otter, great-crested newt and water vole. Gartcosh LNR contains one of the largest populations of great-crested newts in Scotland. • **Rivers and burns:** The most unmodified habitat in North Lanarkshire, of which there are approximately 89 rivers, in addition to two main canals and 35 lochs/reservoirs. • **Urban landscapes:** Greenspace within urban areas is beneficial to connect people with nature, and a variety of micro-habitats within urban areas create opportunities for vulnerable priority species including bat and swift. • **Woodlands:** In North Lanarkshire woodlands are generally small, linear sites, typically in river gorges and steep slopes with less human intervention. The council owns most of the non-coniferous woodland within the local authority area. Only a small percentage of woodlands are formally protected.	Pressures on priority habitats: **Bogs**: Pressures include peat extraction, forestry, built development, agricultural intensification, dereliction, pollution and windfarm development. Despite becoming designated such as SINC and SSSI, most peat bog areas in North Lanarkshire have been historically damaged and degraded as a result of above pressures and do not sequester carbon effectively. **Farmland**: Biodiversity on farmland is threatened from the intensification of agricultural practices, and loss of farmland to urban and utility development. **Floodplain and grazing marshland:** The remnants that have not been historically drained or constructed on is in poor conditions due to a lack of or inappropriate management. Inappropriate management includes physical destruction, poor water quality of tributary streams, afforestation and neglect. **Hedgerows**: Poor management (such as inappropriate use of fertiliser/pesticides and neglect) is the primary pressure. More information is required to determine if North Lanarkshire reflects current trends, where overall hedgerow length in Scotland decreased by 7% between 1998 and 2007. **Ponds:** Primary pressures include drainage and eutrophication from intensifying agriculture, invasive species and development/infilling of ponds. **Rivers and burns:** Major pressures include groundwater pollution through agriculture and industry, creation of manmade barriers and colonisation by invasive species. In addition, riverbanks can be perceived as waste ground, with fly tipping a local problem. **Urban landscapes:** Constant development and redevelopment, changing the ecological structures of urban spaces can be a threat to priority species such as bats, especially when development does not take biodiversity into account in their design.	Trends in priority habitats: A drive to improve priority habitats has seen land reclamation projects at Strathclyde Country Park, Drumpellier Country Park, Greenhead Moss and Dumbreck Moss, as river restoration at the Garrell Burn. **Bogs**: Recent incentives have been aimed at restoring lowland bog (such as the WREN project and PEATLAND Action), as well as action from volunteer schemes such as the Butterfly Conservation Bog Squad to install dams and remove scrub. **Farmland**: Biodiversity continues to decline due to changing management practices. There have been long term declines in farmland birds such as tree sparrow, corn bunting and greenfinch. **Floodplain and grazing marshland:** Much of this habitat was adversely affected by draining and water control schemes in the Industrial Revolution. Currently, physical habitat destruction is regulated by SEPA. Habitat improvements have taken place at various designated sites, and the Baron's Haugh RSPB reserve. **Hedgerows:** Small schemes such as hedgerow enhancement at Gartcosh LNR are underway. Protection and enhancement of hedgerows is now considered for new developments in the planning process. **Ponds:** After a decline in ponds in the 20th century, there has been an increase across Scotland between 1998 and 2007. Recently, the encouragement of the construction of SUDS ponds has been encouraged for development, and new ponds have been created by the Greenspace Development Team. **Rivers and burns:** Water quality has improved by 3% between 2015 and 2020, with 64% of rivers and lochs in at least good condition. Re-naturalisation projects have also been undertaken aiming to create and

Environmental Topic: Biodiversity, Ecology and Nature Conservation			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
		Woodlands: *See Woodland Cover.*	enhance wetland habitats, as well as facilitate migratory fish movements. **Urban landscapes:** Where developments such as the relatively new town of Cumbernauld have resulted in the loss of habitats, recent projects such as the Cumbernauld Living Landscape have sought to create and improve multifunctional ecosystems. **Woodlands:** *See Woodland Cover.*
	Priority species: • In the previous year, the council introduced the latest version of their Local Biodiversity Action Plan (LBAP) – spanning 2023 to 2027, highlighting priority species and habitats. • The priority species listed in the report are follows: **Invertebrates:** • Small pearl-bordered fritillary *Boloria selene* • Pollinator species including bees and wasps **Birds:** • Barn owl *Tyto alba* • Kestrel *Falco tinnunculus* • Redshank *Tringa totanus* • Lapwing *Vanellus vanellus* • Snipe *Gallinago gallinago* • Curlew *Numenius arquata* • Tagia bean goose *Answer fabalis* • Swift *Apus apus* **Mammals:** • Otter *Lutra lutra* • Water vole *Arvicola terrestris* • Pine marten *Martes martes* • All bat species – of which eight reside in North Lanarkshire including common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygaemus* and brown long-eared *Plecotus auritus*. **Amphibians:** • Great crested newt *Triturus crisatus* **Plants:** • Bluebell *Hyacinthoides non-scripta*	Pressures on priority species: **Invertebrates:** Development and habitat loss has reduced or eliminated suitable breeding sites. There is also difficulty in facilitating adequate habitat management and minimising development impacts due to varying land use/land ownership. **Birds:** Pressures include a decline of nesting sites for kestrel and barn owl and swift, reduction of prey and habitat loss due to changes in farming practices. Climate change also creates a pressure on bird populations. For taiga bean geese, pressures include reduction in areas of suitable habitat, visitor pressure and wind farm developments. **Mammals:** Otters are under pressure from development, with populations impacted by road fatalities and disturbance from people exercising dogs and using waterways for recreation. Water voles have similar pressures but are also at risk of being poisoned when misidentified as brown rat, in addition to predation by cats, dogs and non-native American mink. Pine marten populations are pressured by habitat fragmentation and loss, as well as threats of illegal persecution and accidental trapping. Bats are adversely impacted by development such as building alteration, leading to a loss of roost and hibernation sites. **Amphibians:** Great crested newts are impacted by loss of habitats for foraging, dispersal and hibernation, as well as being vulnerable to indirect disturbance such as felling and planting, as well as pollution.	Trends in priority species: **Invertebrates:** Sites that previously returned good populations of small pearl-bordered fritillary have experienced overall decline. Attempts have been made recently to increase numbers with the Woodland Grant Scheme and the development planning process. **Birds:** Overall current barn owl population is low, with many nest boxes installed in recent years to counter the limited nesting space available. Kestrel territories appear to have been increasing in recent years, with more monitoring required. Wader species have seen decline in North Lanarkshire due to changes in farming practices and drainage of wetland areas. The number of taiga bean geese have been steadily declining since the late 20th century. **Mammals:** Otters have seen population crashes in the late 20th century due to pollution and habitat loss, however populations have been recovering due to banning of certain hydrocarbon pesticides. Water vole populations have experienced a decline, but further studies are required in North Lanarkshire to assess the nature and extent of decline. Pine marten have risen in number since records began in 2014, although further monitoring is suggested. Bat species have seen declines in recent years, due to development pressures.

Environmental Topic: Biodiversity, Ecology and Nature Conservation			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
		Plants: Habitat loss and fragmentation affects bluebell numbers. Competition and hybridisation from Spanish bluebell *Hyacynthoides hispanica* also threatens populations.	**Amphibians:** Great crested newt populations at Gartosh have seen a slight increase since monitoring began in 2008, however the population at the former Ravenscraig steel works has assumed to have died out. **Plants:** Recent initiatives have been planned to link up isolated populations of bluebells and establish new colonies in appropriate woodland areas.
		<u>Pressures relating to invasive species:</u> Invasive species cause damage to human health, property, crops and forests. In addition to this the cost is high in controlling these species.	<u>Trends in invasive species:</u> There are currently no plans to deal with non-native mammal populations within North Lanarkshire, but there are initiatives in place for surveying and treating INNS plants in waterways such as the Luggie Water and Garrell Burn.

Environmental Topic: Landscape			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**

North Lanarkshire has a diverse landscape ranging from scenic hills, through farmland and river valleys to an extensive area of urban development. This is reflected in its landscape character assessment and by landscape designations in two areas of highest scenic quality. Landscape and visual amenity is enhanced by other related designations including cultural and natural heritage sites.	Landscape Character:
	• Broadly speaking the landscape is divided between sparsely populated upland areas in the north and east and densely settled lowland areas and river valleys in the west. National and local landscape assessments describe landscape character in broad and detailed terms.
	• In a national context, the area is overlapped mainly by 3 of the 79 Landscapes of Scotland areas; representing the two main upland areas to the north and east and the populated area fringing the Glasgow conurbation to the west[44].
	  ○ *58 Lennox Hills* - Rugged upland area north of the Kelvin Valley.
	  ○ *64 Glasgow and Clydeside* - Lowlands and urban conurbation in the west of North Lanarkshire.
	  ○ *65 Slamannan Plateau* - Upland plateau area in the east of North Lanarkshire.
	• More detail is provided in the NatureScot national assessment where 10 Landscape Character Types (LCTs)[45] overlap the North Lanarkshire area.
	• However, the 2022 NLLDP includes a local landscape character assessment[46], broadly similar to the NatureScot national assessment. There are 10 North Lanarkshire LCTs ranging from uplands to farmlands and incised river valleys as well as the urban area (% of NLC area shown):
	1. Rugged Moorland Hills 7.6%
	2. Broad Valley Lowlands 5.3%
	3. Incised Valleys 1.2%
	4. Rolling Farmlands 3.9%
	5. Fragmented Farmlands 5.4%
	6. Plateau Farmlands 21.6%
	7. Plateau Moorlands 30.4%
	8. Urban Greenspace 3.7%
	9. Ravenscraig 0.7%
	10. Urban 20.2%
	Some of the LCTs subdivide into distinct geographical areas, leading to 18 Local Landscape Units or LLUs[14]
		The response to climate change has seen increased development of wind energy schemes in some of the upland and upland fringe areas of the local authority, particularly Plateau Moorland and Plateau Farmland LCTs (see Fig. 6.1). Wind turbines have an obvious and significant visual effect on landscape character and views in and around the affected areas.	Between 2020 and 2022, there has been an additional 3828 hectares of urban expansion, an increase of 8.1%.

Recent developments in renewables, urban expansion and mineral extraction have influenced landscape character and visual amenity. Wind energy has been the most pervasive, with more sites developed and a trend to larger turbines particularly in upland and upland fringe areas (see Fig. 6.1).	Landscape Designations:
	• There are no national landscape designations. However, there are two local landscape designations, identified as Special Landscape Areas (see last NLLDP)[47]:
	  ○ Kilsyth Hills SLA (equivalent to the Kilsyth Hills LLU, in the Rugged Moorland Hills LCT)
	  ○ Clyde Valley SLA (equivalent to the Clyde River Valley LLU, in the Broad Valley Lowland LCT)
	• These areas are designated in the NLLDP, having previously been classified as a Regional Scenic Area and Area of Great Landscape Value, respectively. Boundaries are slightly amended from these.
	• Policy PROT A POLICY Natural Environment and Green Network Assets in the NLLDP focuses on protecting environmental assets and environmental designations.
		More recently, smaller scale renewable-related development proposals now include solar farms and battery energy storage sites which would have a more localised effect. In addition, deep coal mining no longer takes place in North Lanarkshire. The 2019 Aggregate Minerals Survey for Scotland Report[48], groups North Lanarkshire into the 'West Central Scotland' group for study. In West Central Scotland, there are 6 sand and gravel quarries and 12 crushed rock quarries.	NPF4 promotes the development of renewables, particularly onshore wind. Together with the current rate of applications, this indicates continuing pressure to accommodate renewable energy developments in NLC areas.

[44] https://www.nature.scot/landscapes-and-habitats/about-scotlands-landscapes/landscape-variety-scotland
[45] https://www.nature.scot/professional-advice/landscape/landscape-character-assessment/scottish-landscape-character-types-map-and-descriptions
[46] https://www.northlanarkshire.gov.uk/sites/default/files/2020-10/Local%20Landscape%20Character%20Assessment.pdf
[47] https://www.northlanarkshire.gov.uk/sites/default/files/2020-10/Special%20Landscape%20Importance%20Kilsyth%20Hills.pdf
[48] https://www.gov.scot/publications/2019-aggregate-minerals-survey-scotland/pages/1/

Environmental Topic: Landscape			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
Pressure will continue in all these areas of development, leading to widespread landscape change.	<u>Related Designations:</u> • Other designations which relate or contribute to landscape character and quality or provide access and amenity include: Historic Environment Assets ○ The Frontiers of the Roman Empire (Antonine Wall) World Heritage Site and buffer zone is an international level designation with policy protection for the designated area and its setting which stretches east-west across the local authority area to the south of the Kelvin Valley and parallel to the Forth and Clyde Canal. ○ Gardens and Designed Landscapes (GDLs): There are two GDLs designated within North Lanarkshire: *Dalzell House* south of Motherwell and recently added (2021) *Colzium Lennox Estate*. ○ Conservation Areas: there are 7 including *Blairhill and Dunbeth; Cumbernauld Village; Drumgelloch; Dullatur; Hamilton Road; Kilsyth;* and *Victoria and Town Centre*. ○ Scheduled Monuments: there are 33 designated within North Lanarkshire. The Forth and Clyde Canal following the Kelvin Valley is a key feature of the landscape. ○ Listed buildings: 404 (Category A-C) Listed Buildings. Natural Environment Assets ○ SPAs – 1 SPA ○ SSSIs – 11 SSSIs ○ Nature Reserves – 9 Nature Reserves Development Management ○ The Green Belt and Countryside are development management designations together covering three quarters of the authority area. These help to regulate development outwith the urban areas. Green Networks ○ Green network assets encompass international, national and local landscape designations as well as urban green spaces and are covered by PROT A POLICY Natural Environment and Green Network Assets. Urban green network, including natural areas (including urban wildlife corridors, trees & woodlands, watercourses & wetlands and flood plains), outdoor sports facilities and other green open spaces contributing to quality of life in local communities, is shown in Fig. 6.2. Green Network improvement opportunities are promoted under PROM LOC4 POLICY Special Landscape Areas and Green Network Improvements. Outdoor Access ○ Core Paths are a system of strategic paths designated under the Land Reform (Scotland) Act 2003 identified by the council to give people reasonable access throughout their area for walking, cycling or horse riding. They include rights of way, other existing routes such as paths, footways, cycle routes, paths established through public path agreements and orders, and waterways over which access rights are applicable. These are shown in Figure 2.1.	Pressure for development in the form of urban expansion and improving transport infrastructure also has a pervasive effect on the lowlands and upland fringe areas of the landscape.	

Environmental Topic: Landscape			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
	Parks and Greenspaces: ○ According to the council's Parks and Greenspaces directory, there are 8 main town parks and 6 country parks or gardens.		
NLLDP policies seek to protect the key areas of highest landscape and visual amenity including the Kilsyth Hills, Clyde valley and Forth & Clyde Canal.		The council has in place a strong policy framework of landscape protection and development management. The most valued scenic landscapes and culturally and naturally significant areas contributing to landscape character are protected by designations. Urban and rural character is protected through the extensive Green Belt Area which controls the form and extent of development.	

Environmental Topic: Air Quality			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
During 2023, concentrations at all automatic and diffusion tube monitoring sites complied comfortably with the annual mean nitrogen dioxide (NO_2) (40 µg/m^3) and PM_{10} (18 µg/m^3) air quality objectives, as well as the annual mean $PM_{2.5}$ (10 µg/m^3) objective. Further, no exceedances of the short-term NO_2 and PM_{10} objectives were noted (Figures 7.1-7.3).	The annual mean NO_2 objective has been achieved at all of the continuous, automatic, monitoring stations in operation over the last six years (2018 to 2023), as well as all diffusion tube monitoring sites since 2019. No exceedances of the 1-hour objective have been recorded[49] (Figure 7.4) The respective PM_{10} and $PM_{2.5}$ annual mean objectives, between 2018 and 2023, have also been achieved at all of the continuous, automatic, monitoring stations[39] (Figures 7.5 and 7.6).	Changes to the emission sources.	Downward trend in measured concentrations at the automatic and diffusion tube monitoring sites[39,] leading to the revoking of two of the AQMAs in 2024: Chapelhall and Coatbridge.
As a result of several years of compliance with the statutory air quality objectives within the Air Quality Management Areas (AQMAs), the council has revoked the Chapelhall and Coatbridge AQMAs in 2024. The remaining AQMA in Motherwell has been declared due to exceedances of the PM_{10} objective, and although no recent exceedance has been measured, the AQMA is retained at the current time.	The monitoring network has also been enhanced with the commissioning of new monitoring sites at Whifflet Cross, within Coatbridge, and at Ravenscraig, and Gartcosh[39], with the new diffusion tube sites added in Whifflet and in the area earmarked for the East Airdrie Link Road (Figure 7.7). There is currently only one AQMAs, located in Motherwell. The Chapelhall and Coatbridge AQMAs which existed previously have been revoked.	Increasing population and development.	Concentrations are expected to further reduce in the future, given the implementation of more strict legislation and the incorporation of newer, cleaner technologies.
A major focus of the council's work on air pollution has involved a comprehensive review of the council's air monitoring network to ensure appropriate monitoring is carried out close to are pollution sources and in areas where receptors may be exposed to air pollution. In addition to this, the council's Air Quality Action Plan (AQAP) was also updated in 2023. This latter involved the creation of a Steering Group, comprising internal and external stakeholders to devise new action plan measures for the continued improvement of air quality in North Lanarkshire. The Air Quality Action Plan runs from 2023-2028 and is available on the NLC website.	The main source of air pollution within North Lanarkshire is road traffic emissions, with a small element attributable to small-scale quarrying activities. Following a source apportionment exercise, undertaken in 2018, to evaluate the emissions contributions from multiple source types within their AQMAs, the council concluded that for concentrations of NO_2 the dominant source type was road transport sources (75% of the total emissions) in particular cars and Light Duty Vehicles (LDVs). In contrast, for concentrations of particulate matter, the dominant source of pollution was found to be rural background in nature, including rural / long range transportation[50].	Implementation of new policies and legislative requirements.	
		Climate change altering current patterns and concentrations of air pollution.	

[49] North Lanarkshire Council 2024 Air Quality Annual Progress Report. June 2024
[50] North Lanarkshire Council 2023 Air Quality Action Plan. July 2023.

Environmental Topic: Climate Change			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
Greenhouse gas emissions in North Lanarkshire have reduced by 40% between 2005 and 2022[51].	Greenhouse gas emissions in North Lanarkshire have reduced from 3,058 kt to 1,858 kt CO_2e between 2005 and 2022[42].	Natural environmental and natural assets.	Climate change projections suggest observed climate trends will continue to intensify in the future.
The council declared a climate emergency in June 2019[52].	For 2022/2023, the council showed a reduction in their greenhouse gas emissions (by 55,166 tonnes CO_2e since the new baseline of 2015/2016), with their carbon footprint being 61,909 tonnes CO_2e. This equates to 5.3 tonnes of CO_2e emitted into the atmosphere for every person living in the area[43].	Infrastructure – flooding poses the greatest long-term risk to infrastructure performance from climate change.	Projected increases in mean annual temperature by the 2080s for Scottish regions range from 1.6°C to 4.5°C.
The council, in light of the Climate Emergency, is currently working on updating the climate plan for North Lanarkshire. The Plan for North Lanarkshire is the council's central strategy for the area to improve services and outcomes for the communities who live here. It provides a shared ambition for inclusive growth and prosperity for all, setting a path for the council and partners to follow. The Plan covers a wide range of activities that can impact on carbon emissions and help to make North Lanarkshire a more sustainable place to live-learn-work-invest-visit. It is supported by a Programme of Work that has key themes including Transforming Places and Sustainable Futures that particularly impact climate change, although all themes are interrelated. Priority actions set out for the council in the Programme, a number of which will address climate change.	In 2022, the three sectors with the highest contributions to total North Lanarkshire emissions were transport (778 $ktCO_2e$; 42% of the total emissions), domestic consumption (432 $ktCO_2e$; 23% of total emissions) and industrial activities (209 $ktCO_2e$; 11% of total emissions), with the rest being attributed to commercial, public sector and agricultural activities[42].	People and the built environment.	Drier summers and wetter winters, as well as more seasonal rainfall.
	There are numerous wind farms and individual wind turbines within North Lanarkshire. The largest, houses 25 turbines within the south east corner of the council boundary. Most large turbine developments are on the east side of the council area.	Business and Industry.	CO_2e emissions have reduced steadily, both within North Lanarkshire and Scotland at a similar rate (see Figure 8.1).
	There have been 5 solar energy applications to the council in 2023, of which 3 are solar + BESS sites.	International dimensions – climate change will impact upon water security, agricultural production and economic resources, which in turn can exacerbate risks from conflict, migration and human crises in other countries.	
	Between 2020 and 2024, 23 applications for BESS developments were made at 14 sites across North Lanarkshire.		

[51] DESNZ UK local authority and regional greenhouse gas emissions national statistics 2005-2022
[52] North Lanarkshire Council Climate Plan Action on Climate Together 2030

Environmental Topic: Noise and Vibration			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
The Environmental Noise (Scotland) Regulations 2006 (the Regulations) Noise Mapping (Scotland Noise Mapping) results for Round 3 (2017) road traffic noise present predicted road traffic noise levels from major roads with more than 3,000,000 vehicle passages per year. The road traffic noise statistics show that, for Scotland, there has been a decrease in population exposed to the highest levels of road traffic noise since Round 2 (2012). However, overall, there is an increase in population exposed to noise from road traffic noise.	Scotland's Noise Maps (Round 4) for road traffic noise: Figure 9.1 and 9.2 Scotland's Noise Maps (Round 4) for railway noise: Figure 9.3 and 9.4	Construction noise and vibration.	Road Traffic Noise Mapping Population exposed to noise levels >=55 dB and >=65 dB L_{den} and L_{night} increased between round 2 and round 3.
The Scottish Noise Mapping results for Round 3 railway noise presents predicted noise levels from railway lines with more than 30,000 train passages per year. The railway noise statistics show that, for Scotland, in general, the population exposed to railway noise has decreased since Round 2.	Scotland's Noise Maps (Round 4) for industry noise: Figure 9.5 and 9.6 Scotland's Consolidated Noise Maps (Round 4, including road, rail, air and industry noise): Figure 9.7 and 9.8	Construction traffic noise.	Population exposed to noise levels >=75 dB L_{den} and L_{night} decreased between round 2 and round 3.
The Transportation Noise Action Plan prepared following the Round 3 noise mapping exercise identifies 15 candidate noise management area in North Lanarkshire for road traffic and 2 for railway noise. It is unknown whether these areas became noise management areas or have benefited from any mitigation measures. It is noted that there are no airports in NLC which fall under the requirements of the Regulations.	Scottish Household Survey (Figure 9.9) includes questions on problems in neighbourhoods. Statistics reported for • Percentage of adults saying 'noisy neighbours/regular loud parties' are a problem in their neighbourhood. • Percentage of adults saying 'animal nuisance' including noise is a problem in their neighbourhood.	Mineral extraction noise and vibration (from blasting).	Railway Noise Mapping Population exposed to noise levels >=55 dB L_{den} increased between round 2 and round 3.
The Round 4 noise mapping has been publicly available since late 2024 and represents noise levels across Scotland for the year 2021. Due to a change in calculation methodology, direct comparison with the previous rounds of noise mapping is not possible. However, the Round 4 noise mapping provides a much more comprehensive picture of noise exposure across Scotland than previous rounds. The Round 4 noise mapping including all roads, all railway lines, industry noise as well as consolidated road, rail, air and industry noise maps for a variety of noise exposure metrics. The corresponding Noise Action Plans are currently in development.	Noise complaints directed to the Environmental Health Service (EHS) at NLC regarding commercial and domestic sources of noise. NLC investigate complaints using the Statutory Nuisance provisions of the Environmental Protection Act 1990 and unacceptable construction noise under Section 60 of the Control of Pollution Act 1974.	Transportation noise and vibration (road traffic and railways).	Population exposed to noise levels >=65 dB and >=75 dB L_{den} decreased between round 2 and round 3 Population exposed to noise levels >=55 dB, >=65 dB and >=75 dB L_{night} decreased between round 2 and round 3.
The annual Scottish Household Survey (SHS) includes questions on problems in neighbourhoods. The survey reports the percentage of adults saying that 'noisy neighbours/regular loud parties' and 'animal nuisance', which includes noise, are a problem in their neighbourhood. In general, 'noisy neighbours' remains consistent with the national response, however, 'animal nuisance' responses are variable from year to year and generally do not align with the national response. The latest statistics for 2023 show that NLC has been falling below the national average response for ' noisy	There are no definitive sources of national or regional records of vibration. Vibration may be perceived by people close to railway lines, poorly maintained roads, roads carrying high volumes of HGVs, some industrial premises, or temporary construction works. Larger projects capture potential vibration effects where the project falls within the Environmental Impact Assessment (Scotland) Regulations 2017. The EHS at NLC also covers public concerns over vibration.	Renewable energy noise (wind turbines, construction phases) Industrial and commercial noise.	Scottish Household Survey: • Percentage of adults saying noisy neighbours/regular loud parties is very/fairly common in their neighbourhood continues to broadly align with national levels. In 2019 it was higher than national average at 15% and in 2021 it was lower than national average at

Environmental Topic: Noise and Vibration			
neighbours' in recent years but has been above the national average for 'animal nuisance' in both 2022 and 2023.			10%. As of 2023, it falls below the average at 7%. • Percentage of adults saying animal nuisance remains variable from year to year. No NLC data is available for 2020, however, the national average increased almost 10% compared to 2019 and 2021. In 2022 and 2023, NLC data exceeds national average at 42% and 36% respectively.
Noise complaints regarding commercial and domestic sources of noise are directed to the Environmental Health Service (EHS) at NLC. EHS can investigate complaints using the Statutory Nuisance provisions of the Environmental Protection Act 1990 and unacceptable construction noise under Section 60 of the Control of Pollution Act 1974.			
There are no definitive sources of national or regional records of vibration. Vibration may be perceived by people living close to railway lines, poorly maintained roads, roads carrying high volumes of HGVs, some industrial facilities, or temporary construction works.			

Environmental Topic: Cultural Heritage			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
The cultural heritage resource has been relatively static since 2018 with slight increases in the number of category B Listed Buildings and Inventory Garden and Designed Landscapes, and a more substantial increase in the number of undesignated cultural heritage sites. The number of Buildings at Risk has decreased.* **Undesignated cultural heritage sites comprise sites listed on the National Record of the Historic Environment and/or the local Historic Environment Record which do not have statutory designation as defined in Historic Environment Scotland's Designation Policy and Selection Guidance (2019). Undesignated sites can be of national, regional, local or lesser importance.*	• 1 World Heritage Site • 1 World Heritage Site Buffer Zone • 33 Scheduled Monuments • 14 category A Listed Buildings • 191 category B Listed Buildings • 201 category C Listed Buildings • 7 conservation Areas • 2 Inventory Garden and Designed Landscapes • 1 Inventory Battlefield • 4 Properties in Care • 2644 undesignated cultural heritage sites • 31 Buildings at Risk Figures 10.1-10.3 show cultural heritage designations within North Lanarkshire.	Development, especially housing.	Almost all cultural heritage assets have remained static, with no designation changes. However, there has been an increase in the amount of designated Category B Listed Buildings, in Garden and Inventory Designed Landscapes, and a large increase in the number of undesignated cultural heritage sites. The number of Buildings at Risk has declined.
The primary pressure on cultural heritage continues to be land development, particularly that related to housing. The current national economic conditions means that monies for the maintenance of cultural heritage sites by owners, local authorities and national bodies may be required more pressingly elsewhere. Lack of maintenance is, therefore, closely linked to economic conditions.		Lack of maintenance.	
The council have a contracted archaeology service used to protect cultural heritage assets within the council boundary.		Economic conditions.	

Environmental Topic: Material Assets			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
North Lanarkshire is well situated within the Central Belt of Scotland to make good use of strong road and rail networks.	Economy: • The main settlements by population size are Cumbernauld, Coatbridge, Airdrie, Motherwell, and Wishaw. • The main industry sectors within North Lanarkshire are construction (18.5% of all North Lanarkshire-based business), followed by wholesale, retails, and repairs[53]. There are many strategic business centres within North Lanarkshire, such as Cumbernauld and Motherwell, with multiple business parks, such as Ravenscraig, mainly along the western edge of the council area. • Economic and major population centres are well connected to each other by the strong transport infrastructure links within North Lanarkshire.	In 2024, the Council have focused on continuing to strengthen support available to new and growing businesses.	There is an upward trend in economic figures for North Lanarkshire. The number of registered businesses increased by 60 in 2023/2024 to 8,385, and the number of people employed by business in the area also rose to 97,960.
The council is currently trying to promote active travel networks over private travel, which will improve active travel and accessibility of routes.	Transport: • North Lanarkshire is within the Central Belt of Scotland and contains major transport links including the M8, M80, A8 and A80 trunk roads and an extensive railway network. • North Lanarkshire is well connected to the rail network and has 25 passenger rail stations. The strategic national rail routes between Edinburgh and Glasgow pass through North Lanarkshire and the Airdrie to Bathgate Rail Link was opened in 2011. Motherwell is on the West Coast Main Line, which connect s London with Glasgow. • North Lanarkshire is currently serviced by several bus companies operating both strategic and local services. With commuter settlements throughout North Lanarkshire, there are similar levels of car ownership in comparison to Scotland. Community transport services are available in North Lanarkshire through SPT's MyBus Rural. • The council's Active Travel Strategy seeks to improve the long-term uptake of walking and cycling in NLC. The strategy supports the Scottish Government's National Transport Strategy and Active Travel Framework which incorporate the aims of the National Walking Strategy and Cycling Action Plan.	The council's Active Travel Strategy identifies a range of problems to be solved within the future of the strategy: • Lack of cohesive network for active travel, and only 25% of households in North Lanarkshire have access to a bike, compared to an average of 34.4% in Scotland. • 7% of our local communities are among the top 5% most deprived in Scotland and 13% are in the 10% most deprived. • Lack of safe crossing facilities. • Connectivity issues for non-motorised users. • Limited or inconsistent wayfinding/signage. • Safety issues concerning underpasses due to a lack of suitable maintenance.	The Ravenscraig access infrastructure project[54] will improve road and active travel networks from Motherwell to the north. A key part of the Pan Lanarkshire Orbital Transport Corridor will be the East Airdrie Link Road which will create a direct north south route from the M8 at the A73 Newhouse Interchange to the A73, north of Stand.
Mineral production, particularly coal production, is potentially becoming less important in North Lanarkshire and instead there are an increasing number of renewable energy developments within the council area, including wind turbines, solar projects, and Battery Energy Storage Sites.	Green assets: • The Scottish Agricultural Census (2024)[55] presents data on farming for broader areas across Scotland. Within this, North Lanarkshire falls within the 'Clyde Valley' category. The Census results show that the total agricultural area stands at 197,608 hectares.	The council are committed to enhancing their green assets, including farming and agriculture. Ambition 2030[56] is a growth strategy for farming, fishing, food and drink.	There is a long history of mineral extraction in North Lanarkshire as deep coal mining and hard rock quarrying due to the resource characteristics of the Midland Valley. Following technological improvements, coal mining methods shifted towards surface mining in the late 1980s.
North Lanarkshire is the fifth largest waste producer in Scotland, and recycling levels in 2022 decreased from 2021.	Population and workforce: • From information in the Population and Human Health section, despite higher deprivation levels and lower skills levels in North Lanarkshire compared with		The population has generally been increasing, though is expected to decrease by 1.7% over the next 10

[53] https://www.northlanarkshire.gov.uk/news/strong-economic-figures-north-lanarkshire
[54] https://www.northlanarkshire.gov.uk/regeneration-and-investment/glasgow-city-region-city-deal/pan-lanarkshire-orbital-transport-corridor/improving-access-through-ravenscraig
[55] https://www.gov.scot/publications/results-from-the-scottish-agricultural-census-june-2024/
[56] https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2021/03/scotlands-third-land-use-strategy-2021-2026-getting-best-land/documents/scotlands-third-land-use-strategy-2021-2026-getting-best-land/scotlands-third-land-use-strategy-2021-2026-getting-best-land/govscot%3Adocument/scotlands-third-land-use-strategy-2021-2026-getting-best-land.pdf

Environmental Topic: Material Assets			
Overview	**Environmental Baseline Summary**	**Pressures**	**Trends**
	Scotland, North Lanarkshire is seeing an increase in housing stock and businesses. As such, North Lanarkshire's population, the fourth-highest of any Council area in Scotland, can be considered a material asset.		years. North Lanarkshire's population is projected to decrease to 337,170 by 2043[57].

[57] https://www.northlanarkshire.gov.uk/your-Council/facts-and-figures/population/population-projections-2018-2043