Department
for Environment
Food & Rural Affairs

Environmental Improvement Plan annual progress report

April 2023 to March 2024

July 2024

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for Environment
Food & Rural Affairs

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Presented to Parliament pursuant to Section 9 of the Environment Act 2021

We are the Department for Environment, Food and Rural Affairs. We are responsible for improving and protecting the environment, growing the green economy, sustaining thriving rural communities and supporting our world-class food, farming and fishing industries.

We work closely with our 34 agencies and arm's length bodies on our ambition to make our air purer, our water cleaner, our land greener and our food more sustainable. Our mission is to restore and enhance the environment for the next generation, and to leave the environment in a better state than we found it.

This publication is available at www.gov.uk/official-documents.

Any enquiries regarding this publication should be sent to us at 25yearenvironmentplan@defra.gov.uk

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Contents

Introduction

In 2023 the Environmental Improvement Plan (EIP23) was published, in accordance with the Environment Act 2021, as a revision of the 25 Year Environment Plan (25YEP) published in 2018. This annual progress report covers April 2023 to March 2024.

EIP23 is set out in 10 goals. Each goal has specific targets and commitments described in the EIP23 that contribute to the goal outcome, including the legally binding targets set under the Environment Act 2021. The annual progress report is set out under these goals. Further information on progress towards the targets can be found in the accompanying monitoring annex, which forms part of the annual progress report.

How data is used in this annual progress report

Commenting on environmental improvement

Section 9 of the Environment Act 2021 requires that annual progress reports:

- describe what has been done, in the period to which the report relates, to implement the Environmental Improvement Plan
- consider, having regard to any data obtained, whether the natural environment has, or particular aspects of it have, improved during that period
- consider the progress that has been made towards achieving any legally binding targets or interim targets set under the Environment Act

Scope of the data

Different data sets are provided in this annual progress report to understand if the environment is improving and to report on individual goals or targets. The main data sources are the Outcome Indicator Framework (OIF) and data from additional monitoring activities against the individual Environment Act 2021 targets. The OIF is a set of indicators describing environmental change relating to EIP23.

Updates and information on monitoring progress for the legally binding Environment Act targets are provided in the accompanying annex.

Commentary on environmental improvement relating to individual EIP goals is supported by the OIF and evidence around supporting policies.

Reporting on progress towards Environment Act targets: availability of data

Outcome based metrics towards targets are being developed, however, data availability can mean it is difficult to comment on progress for various reasons listed below.

Data provided in annual progress reports will not always reflect the previous calendar year due to different data reporting cycles. For example, data released in 2023 could have been recorded in 2021. This therefore impacts the ability to comment on whether the natural environment has improved over the previous year. This is generally due to timing impacts of quality assurance processes necessary to produce datasets which support reliable analysis of high statistical quality. There may be diverse environmental factors which impact the duration of time needed for data collection (such as weather constraints or seasonality of survey periods). In some instances, it may also be the case that a target is so recently established there is not yet sufficient data to reliably identify a trend at this point.

Quality assurance processes can take time due to the wide range of partners Defra receives its data from. These range from volunteer organisations to its arm's length bodies. Each organisation has stringent quality assurance processes and once received, data are often assured collectively again by Defra.

Environmental factors can result in much longer delays to reporting, meaning data points will not be updated for up to 5 years for some areas. Examples of environmental factors include:

- needing to gather a full year of data to average across seasons
- waiting for multiple years of data to account for breeding cycles, where only after multiple generations of species arise can population-level effects be understood with certainty

More frequent monitoring is therefore unlikely to be appropriate in such instances as the environment is complex and therefore it takes time for clear trends to emerge.

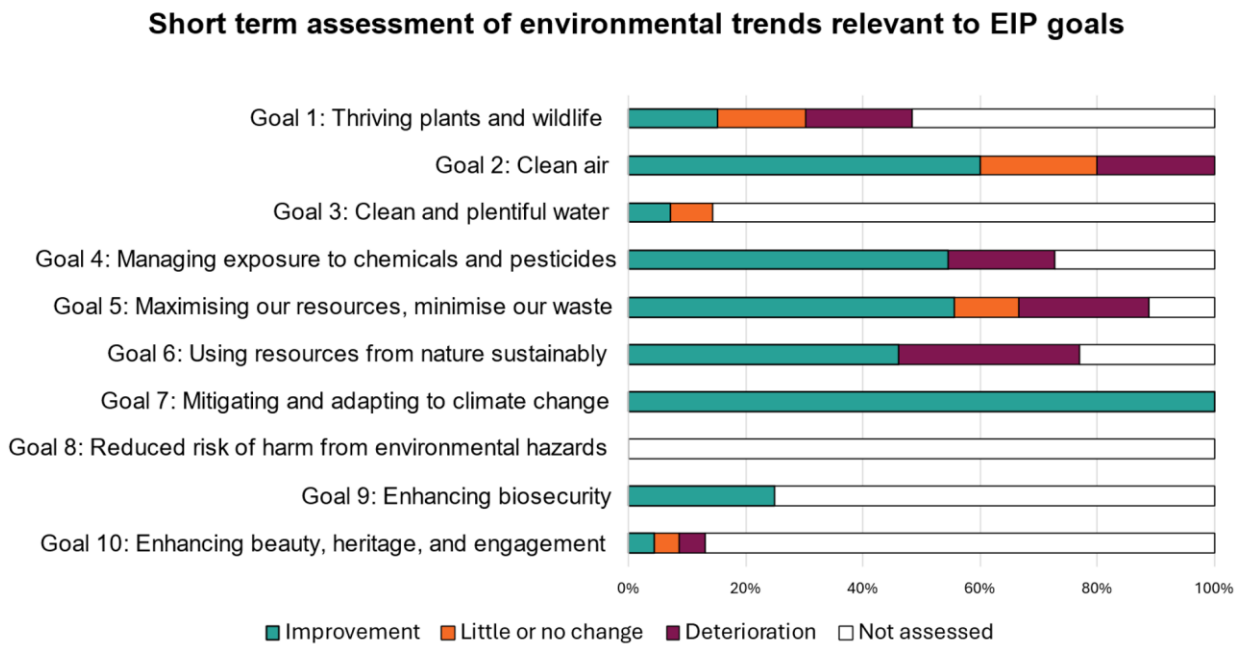
Examples of assurance processes and environmental factors are provided in the targets monitoring annex.

Reporting on the natural environment: data on EIP23 goals

Figure 1 summarises the short-term assessment of progress against the 66 indicators in the OIF. These have been grouped together by EIP23 goal. Short-term assessments consider 5 years of environmental change. This allows for lags in data and enables greater certainty in understanding environmental trends beyond normal fluctuations between years.

Figure 1: High level view of short-term progress towards the 10 goals, based on OIF indicators

Proportion of indicator components relevant to each goal which are improving, show little or no change, deteriorating or have not yet been assessed. The legend follows the same order as the stacks in the bars.



This stacked bar chart shows the percentage of indicator components within each goal area that have been assessed as improving, showing little or no change, deteriorating or have not yet been assessed against the stated goal. For example, all of the indicators for goal 7 have shown an improvement in short-term assessments. There has been a reduction in the emissions of greenhouse gases from natural resources in England (indicator A2) and a reduction in consumption-based greenhouse gas emissions in England (indicator J1).

Overall, there have been improvements in aspects of the natural environment in 9 of the goals, as demonstrated by available data. There has been deterioration in other aspects of the environment in 6 of the goals. For the apex goal of ‘thriving plants and wildlife’ there is a legally binding target to halt the decline in species abundance by 2030 and the latest data show potential progress towards this.

There are a number of indicators for which there is not yet a long enough time series to make an assessment. These are categorised as ‘not assessed’. For example, there are 3 indicators published against goal 8, all of which cannot yet allow for a robust assessment of overall trends.

The methodology for these assessments is detailed in the OIF dashboard. Not all 5-year periods cover the same years as data become available at different times for different indicators. For example, the D4i indicator on relative abundance of species in England spans from 1970 to 2022, whereas D2a on the extent of protected sites in England covers 2005 to 2023. The most recent data have been used for each individual indicator. All assessments are refreshed annually to ensure the latest available data are captured.

Apex goal: Thriving plants and wildlife

England's wildlife is facing significant pressures – habitat loss and fragmentation, climate change, pollution, and invasive species have created steep declines.

There are 6 legally binding Environment Act targets and 5 interim targets associated with the apex goal of 'thriving plants and wildlife'. More information on these can be found in the accompanying monitoring annex.

Key activities over the past year

Habitats and species

The Environmental Land Management (ELM) schemes pay farmers and land managers to deliver outcomes for the climate and environment, alongside food production. In January 2024, an update to the Agricultural Transition Plan was published, which outlined the actions that will be part of the ELM schemes.

Thirty-four projects in the second round of Landscape Recovery were announced in May 2023. This round will involve over 700 farmers and land managers working with their communities to support over 200,000 hectares across England.

In 2023 Natural England declared the Lincolnshire Coronation Coast National Nature Reserve (NNR). This is part of the new King's Series of 25 NNRs which drive nature recovery while connecting people with nature.

In January 2024, over 800 new Countryside Stewardship Higher Tier and 6,600 Mid-Tier agreements started.

In February 2024, the Pebblebed Heaths NNR extension brought together the existing 1,159 hectares NNR, a nationally important lowland heathland, with 90 hectares of wetland at the Otter Estuary. The inter-tidal habitat created as part of the Lower Otter Restoration Project supports climate change adaptation by reconnecting the river with its floodplain. Following a breach of an embankment in September 2023, the land is tidal for the first time in 200 years.

In June 2023, West Penwith Moors and Downs (Halow ha Gonyow Pennwydh West) in Cornwall was confirmed as the latest SSSI by the Natural England Board. The confirmation means that 3,044 hectares of nature rich habitat is protected.

In June 2023, 48 local authorities were appointed as the 'responsible authority' to lead the preparation of the Local Nature Recovery Strategy for their area.

A 12-week consultation on protecting agricultural hedgerows in England was held between 28 June and 20 September 2023. This received 8,841 responses and shaped legislation, which was subsequently made in the 2024 to 2025 reporting year.

Six new landscape-scale nature recovery projects were launched in July 2023 by Natural England and Defra.

Natural England announced in September 2023 that 63 projects across the country have been awarded a share of £14.5 million. This will be used to help recover 150 species nationwide through its Species Recovery Programme.

In March 2024, 20 projects were awarded a share of £25 million from the Species Survival Fund.

In November 2023, a new plan to recover England's temperate rainforests was published.

In December 2023, the draft 30by30 criteria were published. This publication sets out how land in England can contribute towards an international commitment to protect 30% of land and sea by 2030. An indicative map was also published.

The Environment Act 2021 introduced a strengthened 'biodiversity duty'. Public authorities who operate in England must consider what they can do to conserve and enhance biodiversity in England. Public authorities were required to complete their first consideration of what action to take for biodiversity by 1 January 2024 and then agree policies and objectives to deliver this action as soon as practicable.

The Levelling Up and Regeneration Act 2023 introduced a strengthened duty on relevant authorities who must now 'seek to further' the purposes of Protected Landscapes.

Since February 2024, developers in England are required to deliver 10% Biodiversity Net Gain (BNG) for most new developments unless exempt.

Trees and woodlands

In November 2023, £16 million of funding was announced to support new forest research projects to help secure healthy and resilient woodlands, protect woodlands and plant more trees in the long term.

In January 2024, as part of an update to the Agricultural Transition Plan, actions to support in-field agroforestry across various tree densities were announced for introduction throughout 2024.

Countryside Stewardship is supporting the restoration and maintenance of planted ancient woodland sites and greater access to woodland sites for the public.

In February 2024, a grant funding competition was launched to create a new Forest for the Nation. Organisations from across England were invited to put forward their local areas to become the new Forest for the Nation. The competition offered to support the final winning bid with up to £10 million to fund their project with mentorship from the National Forest Company throughout the initial Forest for the Nation implementation period.

In March 2024, further uplifts in England Woodland Creation Offer (EWCO) payments were announced to offer farmers and land managers more targeted tree-planting incentives. Alongside this, a new Woodland Creation Fast Track initiative was launched to speed up tree planting rates.

Marine and coastal environments

In March 2024, a new byelaw protecting features in an area of almost 4,000 square kilometres of the sea from damaging fishing activity was introduced. The byelaw prohibits the use of bottom towed gear in specific areas within 13 English offshore Marine Protected Areas (MPAs) that contain valuable reef and rocky habitats.

In July 2023, the first 3 Highly Protected Marine Areas were designated. Allonby Bay, North-East of Farnes Deep and Dolphin Head were announced as having received the highest level of protection for marine habitats and species.

Global environment

In December 2022, the UK helped secure a new global deal for nature at the Convention on Biological Diversity (CBD) Conference of the Parties (COP)15. The Kunming-Montreal Global Biodiversity Framework (GBF) has a mission to halt and reverse global biodiversity loss by 2030. The UK has continued to progress implementation of the GBF over the last year.

The UK worked with partners to secure a commitment from G7 and G20 Leaders in 2023 for countries to:

- fully implement the GBF
- publish their National Biodiversity Strategies and Action Plans (NBSAPs)
- mobilise nature finance

In June 2023, the UK and France launched the independent International Advisory Panel on Biodiversity Credits to help shape and scale-up the development of high-integrity biodiversity credits markets.

The UK pledged a financial contribution to the new GBF Fund, contributing £10 million to help launch the fund.

The UK is the chair of the Global Ocean Alliance which is supporting its members to implement the GBF for the ocean and continuing to advocate for ocean action.

The UK played a role in the negotiations on the new UN agreement on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction - the ‘BBNJ agreement’ - which was adopted in June 2023. The agreement will mean greater protection for the two-thirds of the global ocean that lies beyond national jurisdiction. The agreement was laid before Parliament for scrutiny in October 2023.

The UK government continued to provide support to developing countries to deliver on global nature commitments through the Official Development Assistance programmes. This included:

- launching the second call for proposals for the new Global Centre on Biodiversity for Climate to support research and development that can generate evidence and unlock new approaches to addressing biodiversity and climate challenges simultaneously
- committing a further £12.5 million at the UN Framework Convention on Climate Change Conference of the Parties (COP28) to the World Bank's PROBLUE programme, supporting the mobilisation of blue finance towards sustainable ocean sectors and activities in developing countries
- implementing a range of programmes to protect and restore ecosystems including the Biodiverse Landscapes Fund and Blue Planet Fund
- increasing its contributions to the Climate Promise by a further £3 million, enabling the United Nations Development Programme (UNDP) to support developing countries to increase their climate ambition, and implement their commitments to meet the Paris Agreement goal through the use of forests, land and nature
- the £6 million Environment Pollution Programme (running to 2025), which is working with delivery partners on projects that consist of applied research and development with outcomes for nature, climate and people
- completing nature-related risk stress-testing with 5 Central Banks in Ghana, Mauritius, Morocco, Rwanda and Zambia through the Nature Positive Economy Programme
- supporting work to repurpose environmentally harmful subsidies in 8 developing countries

Improving environmental quality

A healthy environment is essential to restore nature. The following EIP23 goals are critical to improve the quality of our environment:

- **Goal 2: Clean air**
- **Goal 3: Clean and plentiful water**
- **Goal 4: Managing exposure to chemicals**

There are 6 legally binding Environment Act targets and 9 interim targets in the 'improving environmental quality' theme. More information can be found in the accompanying monitoring annex.

As well as the Environment Act 2021 legally binding and interim targets, the 'clean air' goal comprises 5 emission reduction targets, set in the National Emissions Ceilings Regulations 2018. The legal emission reduction targets for damaging pollutants by 2030 relative to 2005 levels are to reduce emissions of:

- nitrogen oxides by 73%
- sulphur dioxide by 88%
- PM2.5 by 46%
- ammonia by 16%
- non-methane volatile organic compounds by 39%

Key activities over the past year

Clean air

The Air Quality Strategy was published in April 2023. The Air Quality Strategy makes clear that local authorities are key delivery partners in reaching legal limits and targets for air pollutants.

In July 2023, the first progress update with respect to the Environment Act 2021 PM2.5 targets was published, alongside detail about how the targets were calculated. This met a key requirement of the Environment Act Targets (Fine Particulate Matter) (England) 2023 Targets legislation.

The outdoor burning best practice guidance was published in November 2023 to support people to make the most positive choices for themselves regarding air quality and steps to mitigate their own exposure.

Awareness was raised about the impact of domestic burning on air quality and health through the 'Burn Better, Breathe Better', communications campaign in March 2023.

£2 million of grant funding was provided for the Small Business Research Initiative in April 2023 for innovative approaches to reducing pollution resulting from domestic burning, or

agricultural practices including anaerobic digestion. Grant funding and advice have been provided to help farmers manage slurry better and reduce water pollution also help farmers to reduce ammonia emissions.

Roll-out of UK BAT (Best Available Techniques) continued. Industrial installations with specific types of activity must use BAT to prevent and reduce emissions to air, water, and land.

To meet the requirements of the new target Environment Act (Fine Particulate Matter) regulations and ensure the targets are monitored effectively, an expansion of the PM2.5 monitoring network is being undertaken.

Clean and plentiful water

In April 2023 the Plan for Water was published.

In September 2023, a National Policy Statement on water resources was launched.

In June 2023, companies announced accelerated investment of £350 million for water resilience schemes, including smart water meters.

The Regulators' Alliance for Progressing Infrastructure Development (RAPID) is supporting water companies to deliver new supplies in their Water Resources Management Plans. Seventeen schemes are progressing.

Funding was announced to support water efficiency measures, including the set-up of a water credit market and retrofits, nature-based solutions and piloting agricultural water resources management plans to enable development in Cambridge.

It was announced that over 140 wastewater treatment works must be upgraded by water companies to meet nutrient removal standards in designated areas particularly affected by nutrient pollution – particularly nitrogen and phosphorous.

In September 2023, an expanded Storm Overflows Discharge Reduction Plan was published.

100% of storm overflows across the water network in England have been now fitted with Event Duration Monitors (EDM).

There were 6 water company prosecutions between April 2023 and March 2024 by the Environment Agency.

The £250,000 cap on variable monetary penalties (a type of civil sanction for water companies who breach environmental permits) was removed and the range of offences to which penalties was expanded.

Funding for the Catchment Sensitive Farming advice service was increased to £15 million per year and expanded its coverage across England.

In 2023, a second round of the Slurry Infrastructure Grant (SIG) made £74 million available to farmers.

The Farm Equipment and Technology Fund (FETF) supported the acquisition of slurry handling equipment in 2023.

During April 2023 to March 2024, the Environment Agency conducted 4,862 farm inspections in England, and issued 469 warnings and notices to farms for failing to address non-compliance with regulations. In the same period, there were 6 prosecutions relating to polluting agricultural activities.

Since January 2023, a new mine water treatment scheme in Cornwall and 11 interventions to control diffuse metal pollution (in Cumbria and County Durham) have been completed.

Across 2023 to 2024, the Water Environment Improvement Fund (WEIF) programme, managed by the Environment Agency, spent a total of £8.4 million on 216 projects, and attracted £20.7 million in match funding from partners and external contributions.

The Woodlands for Water project continued with additional contribution payments through the England Woodland Creation Offer for riparian tree planting.

In the 2023 to 2024 financial year, £1 million investment has been leveraged in partnership projects to improve chalk catchments.

Work also continued on the Thames Tideway Improvement Scheme.

Managing exposure to chemicals

The Environment Agency continued to support partners to manage waste streams that contain Persistent Organic Pollutants (POPs) to reduce the levels of POPs entering the environment. Targeted risk-based compliance activity was undertaken that resulted in a significant increase in the destruction of POPs contained within waste, such as waste upholstered domestic seating. Regulatory guidance has been updated and research is ongoing to identify priorities for future interventions.

In 2023 the assimilated POPs Regulation was amended to add new POP perfluorohexane sulfonic acid (PFHxS) including its salts and related compound to the list of substances the use, manufacture, and placing on the market of which is prohibited in Great Britain, following the adoption of this substance as a new POP under the Stockholm Convention.

A 2023 public consultation led by Defra and Welsh Government sought stakeholders' views on a draft statutory instrument proposed to amend the Polychlorinated Biphenyls (PCB) Regulations (England and Wales) to provide additional clarity regarding requirements relating to PCB-containing equipment.

In March 2024, following public consultation, the PCBs Regulations (England and Wales) were amended to provide extra clarity and remove any potential ambiguity in the way that these regulations are interpreted.

The risk of chemicals manufactured and imported to Great Britain through UK REACH has continued be managed as set out in the annual Work Programme, published by the Health and Safety Executive. The April 2023 to March 2024 Work Programme was published earlier this year. This included continuing work on restrictions on substances in tattoo inks and permanent make-up, lead in ammunition, and initiating a new restriction on polyfluoroalkyl substances (PFAS) in fire-fighting foams following the publication of a Risk Management Options Analysis on PFAS.

The UK played a role in the development and adoption of a new UN Global Framework on Chemicals.

Progress had been made in establishing an intergovernmental Science-Policy Panel for Chemicals, Waste and Pollution Prevention (SPP). This will enable the UK to share its scientific expertise internationally on the sound management of chemicals and waste, gain knowledge on emerging issues and identify opportunities for innovation across sectors.

In June 2023, 4 actions for Integrated Pest Management were launched as part of the Sustainable Farming Incentive. Farmers and growers can now be paid to undertake activity which will contribute to reducing their reliance on the use of conventional chemical pesticides.

The Catchment Sensitive Farming elements of the Countryside Stewardship Scheme have been extended to the whole of England. This includes funding to cover priority areas such as pesticide sprayer filling and washdown areas that have been shown to be responsible for the majority of pesticide contamination events on farm. The scheme includes mitigation measures to reduce pesticide runoff to water and to promote the use of buffer zones.

Improving our use of resources

To implement the Environmental Improvement Plan, the following goals will improve use of resources:

- **Goal 5: Maximising resources, minimising waste**
- **Goal 6: Using resources from nature sustainably**

There is one legally binding Environment Act target and 8 interim targets that contribute to the Improving the use of our resources theme. More information can be found in the accompanying monitoring annex.

Key activities over the past year

Minimising waste

The statutory waste prevention programme aimed to bring together a range of measures backed by funding which will help to keep products and materials in circulation for as long as possible and at their highest value.

In November 2023, the Waste and Resources Action Programme (WRAP) published new data on food waste. This showed that between 2007 and 2021, UK per capita food waste fell by 26kg per person per year, an 18.3% reduction. For the retail sector, food waste in 2021 was 26% lower than 2007, manufacturing waste was 34% lower and household food waste was 17% lower.

Councils in England were supported with up to £295 million of capital funding over the 2023 to 2024 period to introduce weekly food waste collections by 31 March 2026.

Figures were announced which show that by 2023, the number of single-use plastic bags sold by the main retailers had fallen by more than 98% since the introduction of the single-use carrier bag charge in 2015.

Bans and restrictions were introduced in October 2023 on a range of polluting single-use plastic items including expanded polystyrene food and drinks containers, plastic cutlery, plastic balloon sticks and cotton buds, plastic straws and drink stirrers, and plastic food containers.

A UK-wide ban was announced on the supply and sale of wet wipes containing plastic. This will be enforced after an 18-month transition period after legislation has been passed to allow businesses time to adapt.

The maximum fine councils can issue for littering and fly-tipping has been increased. Fly tipping league tables have been published to increase transparency on the use of fly-tipping fines and regulations laid to ensure councils spend the income on enforcement and clean up.

Using resources from nature sustainably

In September 2023, the Forestry Training Fund (now Forestry and Arboriculture Training Fund) was expanded to cover the costs of short technical arboriculture skills courses in recognition of the value that amenity and urban trees contribute to overall canopy cover.

In December 2023, applications for a third round of the Professional Forester Apprenticeship Programme were opened, offering a career pathway into the forestry sector for people from all backgrounds.

In December 2023, a roadmap was published to increase use of timber in the construction of homes and buildings to reduce greenhouse gas emissions from the built environment. Also, new rounds of the domestic Seed Sourcing Grant and Tree Production Capital Grant were opened.

Over £2.75 million was provided through 4 Woodlands into Management Forestry Innovation Funds to support increased demand for wood and increased levels of woodland management. Forty-three projects received funding to stimulate the development and testing of new ideas to help improve the ecological condition of trees and woodlands and their resilience to climate change.

The Tree Production Innovation Fund (TPIF) also made over £2.5 million of funding available for 25 projects to support the development and adoption of new technologies and ways of working which will enhance the quantity and quality of available tree planting stock in England.

The first 5 Fisheries Management Plans (FMPs) were published in December 2023.

Following the conclusion of annual negotiations for fishing opportunities Defra published a report detailing the sustainability outcomes of these negotiations. For 2024, for the total allowable catches (TACs) which have maximum sustainable yield advice from the International Council for the Exploration of the Sea, 52% of TACs were set in line with this advice, compared to 47% in 2021.

In January 2024, an update to the Agricultural Transition Plan was published. It set out support to the agricultural sector to produce food hand in hand with preserving the diversity and abundance of nature.

In February 2024, the availability of low emissions farming equipment was expanded through Countryside Stewardship and continued funding through the Farm Equipment and Technology Fund.

The biggest driver of illegal deforestation worldwide is agricultural expansion, and in particular, the production of a small number of commodities. The Environment Act introduced new provisions to make it illegal for larger businesses to use key forest risk commodities that have been grown on land that is illegally occupied or used in their UK commercial activity. The proposed approach to operationalise this through secondary

legislation was announced at the UN Framework Convention on Climate Change Conference of the Parties (COP28) in December 2023.

In March 2024, the UK and Indonesia convened the governments that participate in the Forest, Agriculture and Commodity Trade (FACT) Dialogue. They discussed collective approaches to improve the sustainability of supply chains for agricultural commodities associated with deforestation.

In November 2023, the 34 successful projects in the second round of Landscape Recovery were shared.

In March 2023, the first round of the Farming Futures research and development 2023 was announced, providing funding for businesses and researchers to work on longer-term innovation in nutrient management.

In August 2023, 12 new projects receiving £16 million to restore peatlands across England were announced.

In June 2023, the Lowland Agricultural Peat Task Force Chair's report was published. This independent report makes recommendations for a more sustainable future for the environment and agriculture on lowland peat soils in England. The government response to the Lowland Agricultural Peat Task Force Chair's report agreed to take forward action on all recommendations. It also announced over £7.5 million of new funding on pilot projects for local collaboration and water infrastructure. Additionally, the response announced the grant winners of the £5.6 million Paludiculture Exploration Fund.

As of 1 April 2024, 13,900 live Sustainable Farming Incentive (SFI) 2023 agreements were live and held by 13,400 farmers and land managers. This represents over 2 million hectares of land in England. Actions include use of insecticide, nematicide or acaricide on arable crops and permanent crops; establishing and maintaining herbal leys; multi species winter cover crops; very low input grassland and hedgerow management.

As of 1 April 2024, 35,100 Countryside Stewardship (CS) and 6,300 Environmental Stewardship (ES) agreements were live and held by 34,100 farmers and land managers. This includes actions to protect, improve and recover soil.

In February 2024, funding awards to improve lowland peat soils were announced, including over £1.3 million to projects across the North. The pilots will produce costed water-management plans.

A £6.6 million Lowland Peat Research and Development programme was launched in June 2023 to identify the best way to reduce emissions from lowland peatlands.

Improving our mitigation of and adaptation to climate change

The 'improving our mitigation of and adaptation to climate change' theme includes:

- **Goal 7: Mitigating and adapting to climate change**
- **Goal 8: Reduced risk of harm from environmental hazards**

The goal to mitigate and adapt to climate change includes the following commitments:

- a UK-wide legally binding target of net zero emissions by 2050, including carbon budgets 4, 5, and 6 from 2023 to 2037; and the 2030 Nationally Determined Contribution
- to produce a UK Climate Change Risk Assessment to identify risks, followed by a National Adaptation Programme to address those risks every 5 years
- in accordance with the Montreal Protocol, the UK has phased out the production and consumption of ozone-depleting substances, except for very minor exempted uses
- under the Kigali amendment to the Montreal protocol, the UK has an obligation to phasing down hydrofluorocarbon (HFC) production and consumption by 85% by 2036
- under the Paris Agreement, the UK is committed to pursuing efforts to limit the global average temperature increase to 1.5°C above pre-industrial levels.

The goal to reduce risk of harm from environmental hazards includes the following commitments:

- to invest in flood and coastal defence projects to better protect more properties
- to double the number of government-funded projects which include nature-based solutions to reduce flooding and coastal erosion
- to maintain at least 94% of major flood and coastal erosion risk management assets fit for their designed purpose, through to March 2025. The long-term aim is for this to reach 98%

Key activities over the past year

Mitigating and adapting to climate change

The UK has halved greenhouse gas emissions released into the atmosphere since 1990. In 2023, UK territorial emissions:

- reduced 5.4% in terms of total greenhouse gas emissions relative to 2022, amounting to a 52.7% reduction relative to 1990
- reduced 6.6% in terms of CO2 only emissions relative to 2022, amounting to a 49.8% reduction relative to 1990

In 2022 there was a call for evidence on proposals to make changes to the UK Emissions Trading Scheme (UK ETS). The UK ETS Authority – made up of the UK Government, Scottish Government, Welsh Government and the Department of Agriculture, Environment and Rural Affairs in Northern Ireland – published a joint response in July 2023 to this call for evidence.

The United Nations Framework on Convention on Climate Change COP28 took place in December 2023. Parties at COP28 agreed strong representation of nature, including the ocean, forests, and the importance of sustainable agriculture and resilient food systems in negotiated text. The negotiated text also contains reference to the Global Biodiversity Framework (GBF), recognising the interlinked nature of the climate and biodiversity crises.

At COP28 the UK announced new funding for forests and the ocean and action to help increase transparency around finance needs to support countries to protect nature. The UK endorsed several important nature related initiatives, including:

- a Joint Statement by Multilateral Development Banks (MDBs) on Climate, Nature and People which commits to coordinate and simultaneously implement nature and climate strategies
- the UAE Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate Action
- the Mangrove Breakthrough and Coral Reef Breakthrough frameworks for international action on marine ecosystems

Reduced risks from environmental hazards

In the third year of the 6-year £5.6 billion Flood and Coastal Defence Investment Programme, 135 flood protection schemes were delivered. In July 2023, the third National Adaptation Programme was unveiled which sets out a 5-year plan to boost resilience and protect people, homes, businesses, and cultural heritage against climate change risks such as flooding, drought, and heatwaves.

In September 2023, 3 additional areas joined the Coastal Transition Accelerator Programme, which is trialling and testing opportunities to help communities to plan for the long term. These are Charmouth, Bude and Swanage.

In February 2024, a £75 million, one-off grant scheme was announced for internal drainage boards to protect agricultural land and rural communities from flooding.

The Property Flood Resilience Repair Grant Scheme was made available twice between April 2023 and March 2024 - for Storm Babet and Storm Henk. This enabled eligible flood-hit property owners to apply for up to £5,000 to help make their homes and businesses more resilient to future flooding.

In February 2024, it was announced that 40 projects will benefit from £25 million to support natural flood management schemes across England.

Improving our biosecurity

Delivering the targets and commitments for the biosecurity goal will require a range of actions that improve safeguarding and response measures. This includes to:

- reduce the number of establishments of invasive non-native species by at least 50% in 2030, compared to levels seen in 2000, supporting delivery of the convention on biological diversity global target on invasive species
- ensure at least 97% of export health certificates (EHCs) and licences are issued correctly within agreed timeframes to support safe and secure trade
- invest in the Science Capability in Animal Health Programme at Weybridge
- achieve official bovine tuberculosis free status for England by 2038

Key activities over the past year

Tackling invasive non-native species

Twelve Local Action Groups in England were awarded a total of £300,000 over 2 years under the Local Invasive Species Management Fund to tackle invasive, non-native species.

The biological control research programme continued to test the use of natural enemies to target a range of invasive, non-native species. Testing of the weevil Listronotus elongatus has been successful, with clear ongoing control of floating pennywort at many of the 19 test sites.

Through the Invasive Non-Native Inspectorate, a total of 1,378 inspections took place in 2023 to 2024. The Inspectorate has determined that non-compliance with respect to key invasive species legislation across all key sectors is at 11% in 2023 to 2024.

Protecting and enhancing animal and plant health

In January 2024, the introduction of new border controls to guard against incoming diseases and pests while minimising burdens and costs for traders and consumers was announced. The controls coming into effect are part of the Border Target Operating Model which continues to be rolled out, including bringing the EU further within the scope of import controls.

The latest statistics for bovine tuberculosis (bovine TB) for the 12-month period to March 2024 were published in June 2024. The latest figure for percentage of herds officially bovine TB free is 95.6% at end March 2024. This figure is updated on a quarterly basis and usually shows small fluctuations. Large fluctuations are not expected.

Campaigns to raise awareness about the threats to plant and bee health are ongoing. This included working with 32 organisations on the third annual National Plant Health Week in

May 2023. This raised awareness of the threats to plant health, alongside promotion of the "Don't risk it campaign" in May at 2023 RHS Chelsea on the importance of biosecurity.

An outbreak of Colorado beetle in Kent was successfully managed, preventing establishment of this invasive species. The Colorado beetle poses a major threat to potato crops and would have a significant impact on the potato industry.

The import regime was further updated through new legislation to mitigate threats identified and assessed through the UK Plant Health Risk Group, including new measures to regulate certain pests of tomato and pepper, including Pepper chat fruit viroid and Tomato planta macho viroid.

Trees were removed or treated to contain or eradicate ongoing priority quarantine tree pests and diseases including Phytophthora pluvialis, oak processionary moth and sweet chestnut blight and over 20 outbreaks of Ips typographus, which could have a significant impact to the forestry industry, if it became established.

Evaluation and testing of new forms of grant support continued through the Tree Health Pilot, which helps land managers deal with tree pests and diseases and increases the resilience of the treescape.

Investigation and development of schemes for increasing the numbers of trees outside of woodlands, and boosting the resilience of treescapes, continued through research and pilots. Through these pilots, 56,000 trees were planted in April 2023 to March 2024 in 5 participating local authority areas. This work informed updates to April 2023 to March 2024 schemes for replacing lost trees outside woodland, such as the Local Authority Treescapes Fund and Coronation Living Heritage Fund.

In June 2023, the Plant Health Research and Development Plan was published, which set out the approach to research to meet plant health policy needs. The plant health research programme provided over £6 million to support 104 research projects in 2023 to 2024. This includes co-funding with UK Research and Innovation (UKRI) the Future of UK Treescapes Programme and the Bacterial Plant Diseases Programme.

In July 2023, the pilot on biosecure sourcing policy, which applied to public sector funded planting, was extended to several additional grant schemes. The trial was extended to the Local Authority Treescapes Fund, Urban Tree Challenge Fund, Coronation Living Heritage Fund and the HS2 Woodland fund.

Enhancing beauty, heritage, and our engagement with the natural environment

Delivering the goal outcomes will require meeting a range of targets and commitments including the following key commitments:

- everyone should live within 15 minutes' walk of a green or blue space
- make the England Coast path fully walkable by the end of 2024
- deliver a new National Trail along the route of the Coast-to-Coast path by 2025

Key activities over the past year

Protect our landscapes and their heritage

In November 2023, a package of measures was announced to aid recovery of nature and access to the outdoors in England's National Parks and National Landscapes - the new name for Areas of Outstanding Natural Beauty (AONBs). This builds on legislation introduced through the Levelling Up and Regeneration Act.

In January 2024, targets were set for all 44 Protected Landscapes (National Parks and National Landscapes).

Improve access to nature

In September 2023 Active Travel England announced £60 million for cycle training for children ('Bikeability') and to support active travel to and from schools. This was followed by a further £101m announced in March 2024 to support local authorities in delivering cycling and walking schemes.

In June 2023, new incentives within Environmental Land Management (ELM) schemes were announced including:

- paying for new permissive access routes, and increasing the length of paths available for cycling and horse riding
- increasing the number of accessible gates and bridges
- improving the condition of existing paths so that they can be used by prams, mobility scooters and others

In August 2023, a £2.5 million tree planting fund was opened to support local authorities to plant thousands of trees across England close to where people live to commemorate King Charles III's coronation. The fund will see more trees being planted outside of woodlands through the creation of micro woodlands in urban areas and new community orchards.

In October 2023, Natural England, working with Defra and local authorities, completed over 1,000 miles of the King Charles III England Coast Path as the Ramsgate to Whitstable stretch opened.

During National Tree Week (25 November to 3 December 2023), the Woodland Access Implementation Plan was published.

It was also announced that 2 additional community forests will be created in Derbyshire and the Tees Valley.

In December 2023, the results on the impact of the Green Recovery Challenge Fund were published.

Further rounds of the Local Authority Treescapes Fund and Urban Tree Challenge Fund were run.

Natural England's 'Green Infrastructure Framework: Principles and Standards for England' was launched at the same time as the publication of EIP23. Since then, Natural England has started to embed the framework through training and support.

The Green Infrastructure Framework includes visual mapping and analyses to help understand local opportunities and issues relating to green space, blue space, and walking and cycling routes.

Connecting children and nature

In November 2023, £2.5 million was committed to helping children experience the benefits of the great outdoors. This will build on the Generation Green project.

Department for Environment Food & Rural Affairs

Environmental Improvement Plan annual progress report

Annex: Monitoring statutory Environment Act targets 2023 to 2024

April 2023 to March 2024

July 2024

Contents

Introduction

This annex forms part of the annual progress report 2024 and is provided for transparency alongside the annual progress report. It provides more information on the challenges and processes involved in monitoring legally binding Environment Act targets.

This document mirrors the main report for ease. Each chapter reflects a grouping of goals as set out by the Environment Improvement Plan 2023 (EIP23).

Data on environmental targets

This annex provides a summary of the data available for each target. As part of this, the data are classified into the following types:

- **direct** – data that represents progress against the target directly
- **related** – where direct data are not available, due to lengthy reporting cycles from reporting or environmental factors, proxy data has been provided as a substitute to report against the target
- **unavailable** – monitoring methods are currently being established and data are not yet available against the target

Each chapter will also discuss the targets associated with those goals, including:

- **2023 to 2024 monitoring progress update:** more detailed information on monitoring evidence linked to that target
- **what the data show:** the latest available data and a brief description of what this tells us about progress towards achieving the target
- **understanding this metric:** more context around how that target is monitored, describing any reporting challenges and explaining why data may not be available annually or there is apparent reporting delay

Apex goal: Thriving plants and wildlife

Goal 1: Thriving plants and wildlife

Legally binding Environment Act targets:

1. Halt the decline in species abundance by 2030.
2. Increase species abundance so that by 2042 it is greater than in 2022 and at least 10% greater than in 2030.
3. Improve the Red List Index for England for species extinction by 2042 compared to 2022 levels.
4. Restore or create in excess of 500,000 hectares of a range of wildlife-rich habitats outside protected sites by 2042.
5. Increase tree canopy and woodland cover to at least 16.5% of total land area by 2050.
6. Ensure that at least 70% of designated features in Marine Protected Areas (MPAs) are in favourable condition by 2042, with the remainder in recovering condition.

Interim targets:

1. Restore or create 140,000 hectares of a range of wildlife-rich habitats outside protected sites by 31 January 2028.
2. All sites of special scientific interest (SSSI) features to have an up-to-date condition assessment by 2028.
3. 50% of SSSI features to have actions on-track to achieve favourable condition by 2028.
4. Increase tree canopy and woodland cover by 0.26% of land area (equivalent to 34,000 hectares) by 31 January 2028.
5. 48% of designated features in MPAs to be in favourable condition by 31 January 2028, with the remainder in recovering condition.

How legally binding Environment Act targets are monitored

Target	**Type of data** (direct, related or unavailable)	**Monitoring update**	**What data are available**
Halt the decline in species abundance by 2030, and then increase species abundance so that by 2042 it is greater than in 2022 and at least 10% greater than in 2030.	Direct	Data now provided in composite metric covering 1,177 species and published as an official statistic in development.	Data are provided annually, with a 2-year lag. Historic data are available for context.
By the end of 2042, we will improve the Red List Index for England for species extinction compared to 2022 levels.	Direct	Monitoring activities concentrated on exploring additional reporting routes for more frequent, related proxy data.	Ecological lag means there is a 5-year reporting cycle for this target. Baseline 2022 data provided.
To restore or create more than 500,000 hectares of wildlife-rich habitat by 2042. Includes interim target: restore or create 140,000 hectares of wildlife-rich habitats outside protected sites by 2028.	Unavailable	Monitoring activity this year has concentrated on developing options for a monitoring and reporting system.	There are currently no comprehensive and robust data to report on this target. Going forward, data provided will on average have a 2-year lag. Data on 2023 delivery are planned to be reported on in the 2025 annual progress report where available.

Target	**Type of data** (direct, related or unavailable)	**Monitoring update**	**What data are available**
Increase tree canopy and woodland cover to 16.5% of total land area in England by 2050. Includes interim target to increase this by 0.26% (equivalent to 34,000 hectares) by 31 January 2028.	Related	A revised baseline has been established for this new target (which was based on a provisional baseline when created). In addition, ongoing reporting has taken place.	Data directly related to target but are reported separately by gain and loss annually and reported as a combined total figure once every 5 years.
Interim targets for all sites of special scientific interest (SSSIs) to have an up-to date condition assessment; and for 50% of SSSIs to have actions on track to achieve favourable condition by 31 January 2028.	Unavailable	Data types are established and being collected, but activity is underway to establish how to report this collectively for all SSSI sites.	There are currently no collated published data available to report on this target. Going forward, ambitions are for data to be presented annually.
For at least 70% of designated features in Marine Protected Areas (MPAs) to be in favourable condition by 2042 with the remainder in recovering condition. Includes interim target of 48% of designated features to be in favourable condition by 31 January 2028.	Direct	A MPA monitoring strategy is being developed to assess progress and whether necessary management measures are in place.	Direct data are reported, but noting ecological lag means there is a 5-year reporting cycle for this target. Baseline 2022 data provided.

Targets: Halt the decline in species abundance by 2030 and increase species abundance so that by 2042 it is greater than in 2022 and at least 10% greater than in 2030

Overall, methods for monitoring these targets continue to be finalised and have been reported together as they use the same monitoring mechanisms. To note, as the first target to halt decline in species abundance by 2030 is relative to 2029, the reporting of this target will not be possible until 2032 due to data lags. For the second target, data for 2022 are not completely available but much is now represented within the combined indicator, and the 2030 data will be available in 2032.

2023 to 2024 monitoring progress update

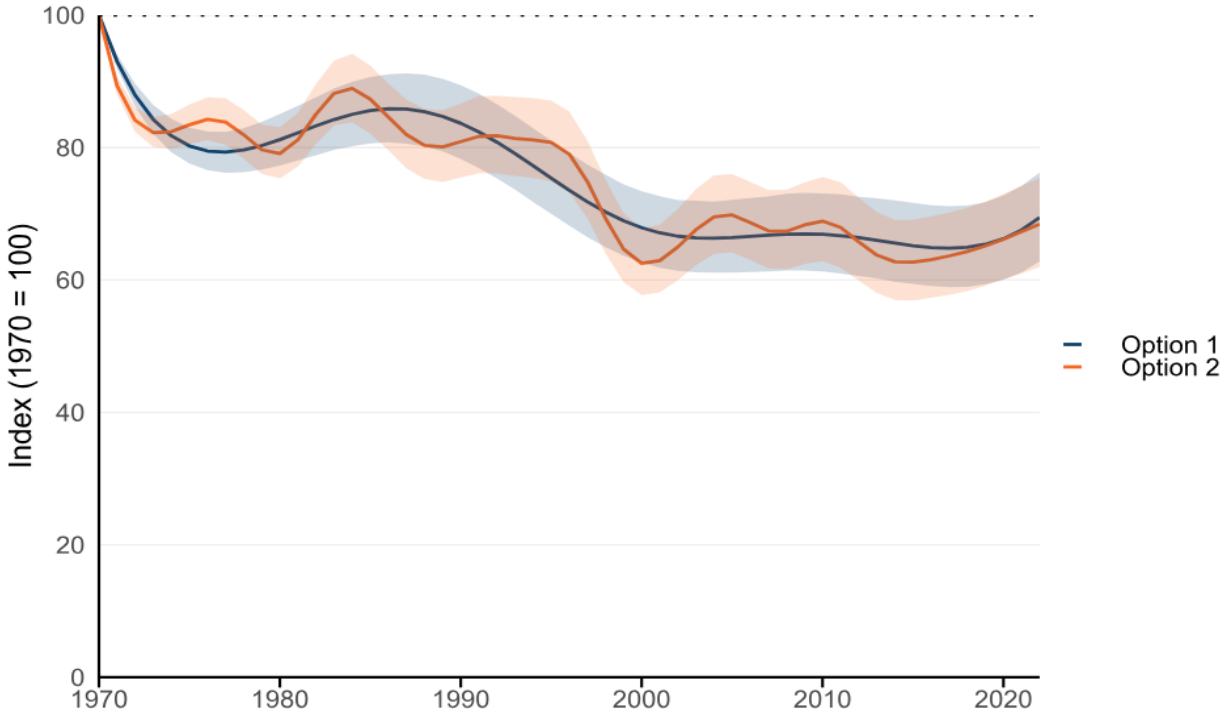
Work undertaken this year means the targets will be reported on using a composite indicator of the species listed in Schedule 2 of the Environmental Targets (Biodiversity) (England) Regulations 2023 (for all those with suitable data). This combined indicator has been produced for overall species abundance from 1970 up to 2022. Existing Defra indicators of species abundance are presented separately (covering birds, butterflies, bats and plants). It is important to note that this is not the final version of the indicator as methods are still in development.

Providing data from as far back as 1970, where possible, allows for long term trends to be identified. This metric will be reported annually, noting that data are expected to be reported with a 2-year lag which is discussed below.

There are currently 2 versions of the indicator, one with a greater degree of smoothing applied and one with a lesser degree. More smoothing may provide a clearer view of the underlying long-term trend, while a lesser degree preserves the shorter-term patterns in the data. When the indicator is fully developed, one version with the most appropriate smoothing option will be published.

What the data show

Figure 1: Change in relative abundance of species in England



This line graph shows the smoothed trends for the relative abundance of 1,177 species under 2 different smoothing scenarios. Option 1 (blue) is smoothed on a 10-year timescale (more smoothed) and option 2 (orange) is smoothed on a 3-year timescale (less smoothed). The shaded areas represent the 95% credible intervals (measures of uncertainty) for the 2 smoothed trends. The index values represent change from the baseline value in 1970, therefore the credible intervals widen over time as confidence in the estimates of change relative to the baseline fall.

As shown in Figure 1, since 1970, the all-species indicator has shown an overall decline to around 69% of its starting value. However, in recent years the indicator has shown progress towards levelling off.

Understanding this metric

This metric is now calculated by bringing together several individual reporting streams which were previously reported separately and combined with new data not reported before. The provision of each data stream involves several steps and different external partners, which results in an inevitable reporting lag. This metric highlights the reporting complexity behind generating data for some of our targets, but also the generosity of UK volunteers in giving their time to citizen science, which ensures the condition of the natural environment can be reported.

All the 1,177 data streams that are included in this metric are presented in the indicators of species abundance in England (1970 to 2022).

Target: Improve the Red List Index for England for species extinction by 2042 compared to 2022 levels

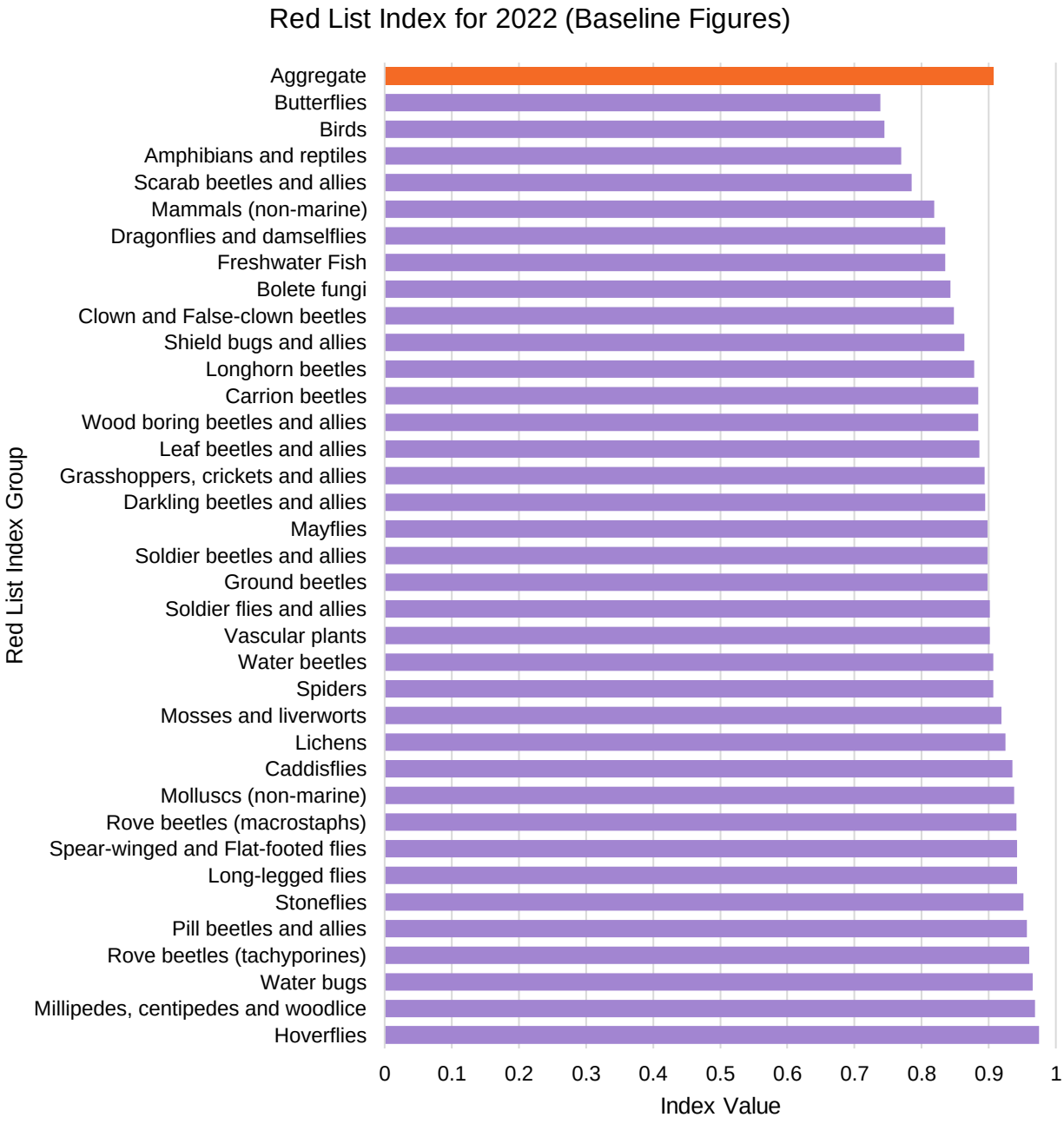
2023 to 2024 monitoring progress update

Data from long term population trends, rather than annual assessments, provide more reliable data to understand the impact of conservation interventions on the recovery and conservation of species. There is a high level of unreliability in annual datasets due to population fluctuations caused by weather conditions for example. Additionally, the impact of recovery actions is not immediate, and species require multiple breeding cycles for populations to increase.

Consequently, there is no update for 2023 to 2024. It is anticipated that the indicator will operate over at least a 20-year period (2022 to 2042) with a full update of the Red List in 2032 and 2042. A partial set of reassessments will be available in 2027 and 2037, but the aggregate index will be less precise. The index will be most effective as a long-term indicator due to time lags due to the time taken for species populations to react to delivery actions, availability of data and the frequency of Red List assessment.

What the data show

Figure 2: Red List Index for 2022 (baseline figures)



This bar chart shows the Red List Index (RLI) baseline data in 2022 for 36 individual taxonomic groups, comprising: invertebrates, vascular plants, mosses and liverworts; fungi and lichens; and vertebrates. The index value of 1 equates to species of Least Concern, and 0 indicates that all species have gone extinct within the geographical area considered. The overall aggregate value (0.9070) is represented by the orange bar.

Understanding this metric

Progress in delivery of the species extinction target is measured using the RLI for England (the D5 Outcome Indicator Framework (OIF) metric). The RLI is based on the numbers of species in each International Union for Conservation of Nature (IUCN) category (Extinct, Extinct in the Wild, Regionally Extinct, Critically Endangered, Endangered, Vulnerable, Near Threatened, Least Concern) and how these change as species improve or deteriorate in status.

It should also be noted that, in the 2022 baseline year, 1.8% of species native to England were either Extinct (in Great Britain), Regionally Extinct, Extinct in the Wild or Critically Endangered (Possibly Extinct), 12% were considered to be in one of the 3 threatened categories (1.9% Critically Endangered, 3.7% Endangered and 6.4% Vulnerable) and a further 6% were considered to be Near Threatened.

Target: Restore or create in excess of 500,000 hectares of a range of wildlife-rich habitats outside protected sites by 2042

The process for collating data from multiple contributing delivery mechanisms is being developed. Therefore, comprehensive and robust data to report against this target are not yet available, but a progress update on activity to develop a monitoring and reporting system from the previous year is provided below.

2023 to 2024 monitoring progress update

Defra have commissioned Natural England to lead development of options for a system to monitor and map habitat restoration and creation actions to measure progress towards the habitat target. This involves establishing a data model and data standard to allow data from multiple contributing delivery mechanisms to be brought together and analysed to avoid double counting of areas where multiple delivery mechanisms may have been used.

Initial focus has been on the data available by contributing Defra Group mechanisms, which are expected to deliver most of the target. Data on action taken by external partners will also be sought, who are undertaking vital work that will support delivery of the targets.

What the data show

The process for collating data from multiple contributing delivery mechanisms is being developed. Therefore, comprehensive and robust data to report against this target are not yet available.

Understanding this metric

Reporting against this target will be provided through the number of hectares where action has been taken which is expected to create or restore wildlife-rich habitat, outside of protected sites.

Natural England provides further information about what counts towards the habitat target and the list of wildlife-rich habitats.

As the provision of data from each delivery mechanism involves several steps and different partners, there will be an expected average reporting lag of 2 years.

Target: Increase tree canopy and woodland cover to at least 16.5% of total land area by 2050

This new target was based on a provisional baseline. The baseline has been updated in the past year from 14.5% to 14.9% of total land area (1.94 million hectares) and the next full update will be published after the endpoint of the interim target in 2028. However, as the target is a composite net target, updates on individual components provide a picture of progress.

2023 to 2024 monitoring progress update

Alongside the revision to the baseline for the target, from the provisional reference date of 2016 to new reference of 31 March 2022, administrative records for grant-aided tree planting and woodland creation together with information provided by eNGOs and the private sector for planting for which no grant-aid is sought, give a good indication of progress on expanding canopy cover. In 2023 to 2024, 4,547 hectares of new woodland was planted in England, of which 4,164 hectares received government funding, mostly through the Nature for Climate Fund. In addition, 546,000 trees were planted outside woodland equivalent to 983 hectares, bringing the total area of tree canopy established and numbers of trees planted to 5,529 hectares and 7.1 million trees, respectively.

Progress is slightly behind the pathway required to meet the interim target, although woodland planting rates in 2023 to 2024 were 45% higher than in 2022 to 2023 and more than double those achieved in 2021 to 2022. 90% of the woodland created in 2023 to 2024 was broadleaf woodland, with the remaining 10% conifer. The proportion of woodland contributing to the wildlife-rich habitat target is therefore above the indicative target, but this may reduce the contribution of trees and woodland to net zero.

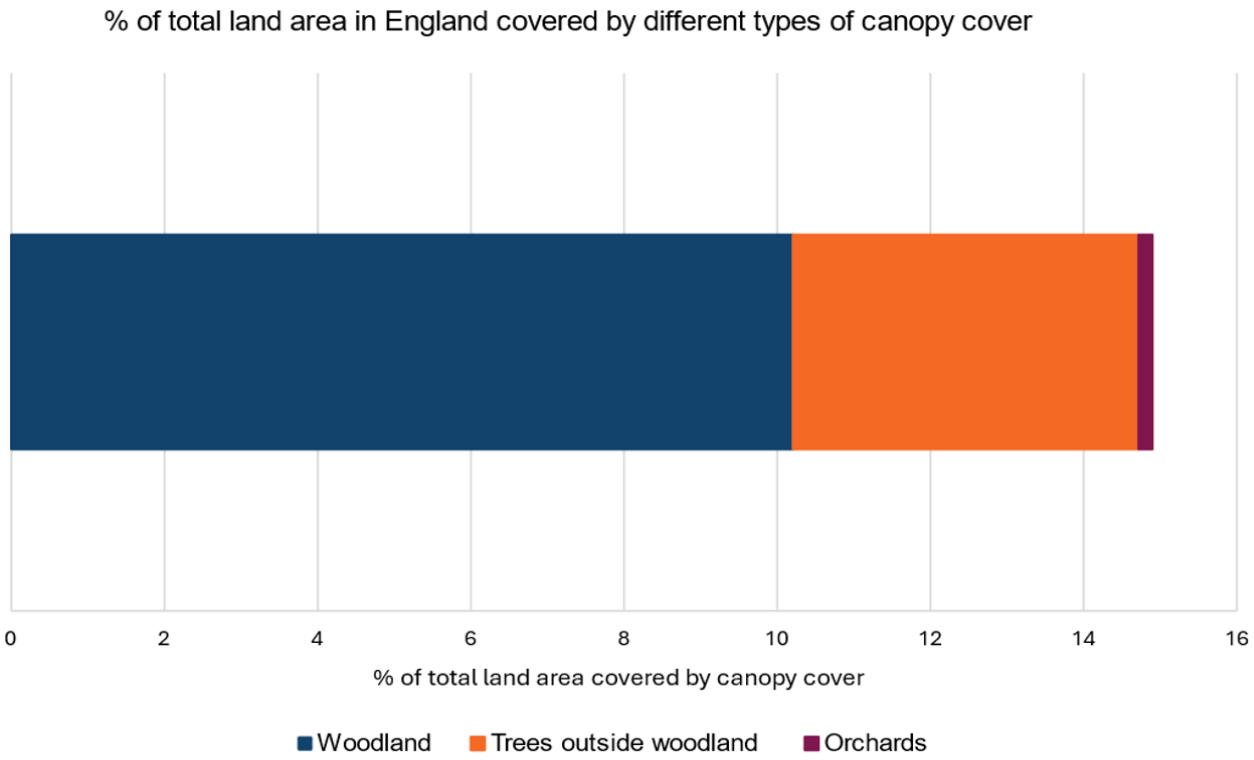
Further information on woodland that establishes naturally over the period of the interim target will be identified through remote sensing in 2028. A partial picture of woodland loss in 2023 to 2024 is available for open habitat restoration in private woodlands and in the nation’s forests, separately. This partial picture reveals 177 hectares of woodland was restored to priority habitat in 2023 to 2024.

No update is available for woodland loss to development for 2023 to 2024 (the most recent data being a loss of 282 hectares in 2021 to 2022) and monitoring of tree canopy loss outside woodland will not be available until 2028.

What the data show

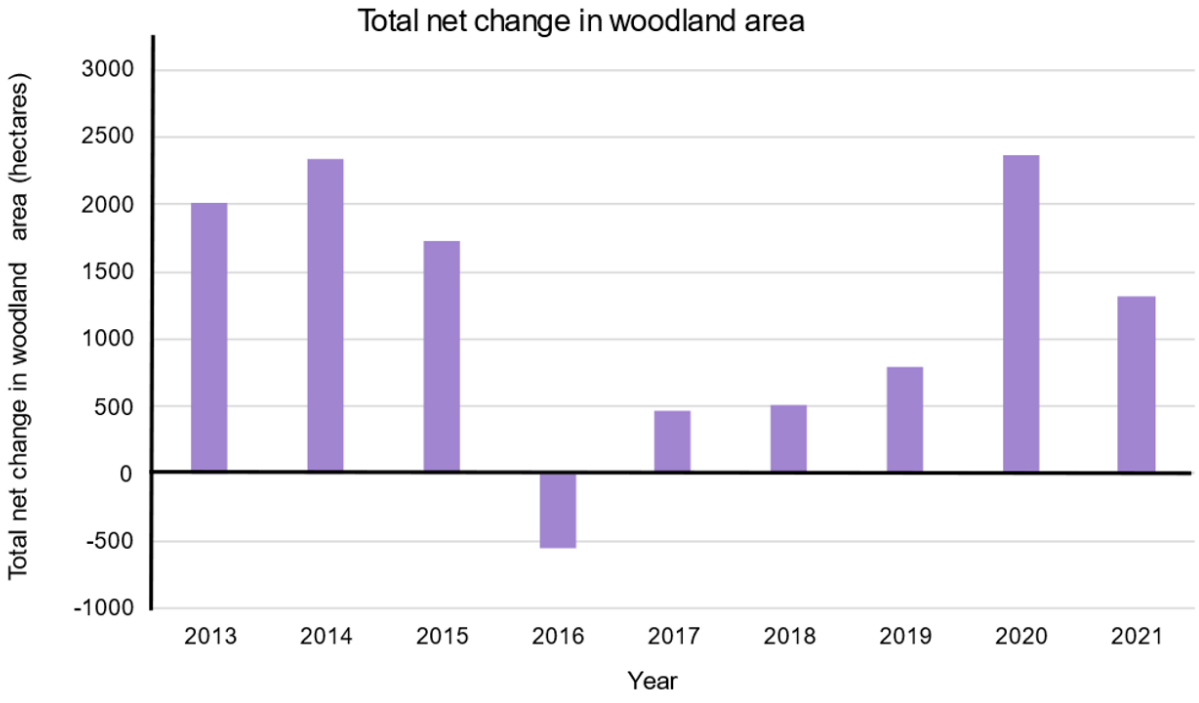
Overall, there are signs of progress, but further acceleration in woodland establishment and tree planting will be necessary if the interim target is to be met.

Figure 3: Percentage of total land area in England covered by different types of canopy cover



This bar chart shows the revised baseline of land area covered by canopy cover (14.9% of total land area in England) in 2022 and its components (woodland, trees outside woodland and orchards). It is important to note that these are revised baseline figures and will be updated every 5 years to report directly against the canopy cover target.

Figure 4: Total net change in woodland area



This bar chart shows the total net change in woodland area in hectares (woodland creation minus woodland removal) based on most recent data collection years where woodland creation and woodland removal are both available. This is found in page 29 of the 2022 to 2023 Forestry Commission Indicator reporting.

Understanding this metric

As a composite indicator based on administrative data and remote sensing, each with their own time-lags, real–time reporting of progress is not possible. The progress indicators reported here give an indication of each of the activities that contribute to net change in tree canopy and woodland cover, both loss and gain. However, the full picture will only become clear when analysis of remote sensing data confirms losses and gains that have not been accounted for; for example, small-scale woodland creation that has not been grant-funded and is below the threshold requiring regulatory screening and the loss of trees outside woodland through natural mortality or land management operations.

Interim targets: By January 2028 50% of SSSI features to have actions on-track to achieve favourable condition, and all SSSI features to have an up-to-date condition assessment

These 2 interim targets are being presented together as they use the same monitoring mechanism.

2023 to 2024 monitoring progress update

Natural England are undertaking actions towards achieving the EIP23 interim targets by 31 of January 2028. They are also developing two metrics that will measure progress towards achieving these interim targets.

What the data show

These metrics are currently under development. There are no collated published data available to report on these interim targets yet. Natural England is working towards having these metrics made available in the public domain by the next annual progress report.

Understanding this metric

To estimate the level of the up-to-date condition assessments, Natural England has developed a methodology set out in the Environment Act Interim Target for protected sites - technical background. The report explains how the baseline feature condition information has been used to create confidence categories. It describes which categories Natural England considers to be up to date in the context of this metric.

Target: Ensure that at least 70% of designated features in Marine Protected Areas (MPAs) are in favourable condition by 2042, with the remainder in recovering condition

The interim target is for 48% of designated features in Marine Protected Areas (MPAs) to be in a healthy condition, with the remainder in recovering condition, by January 2028. Progress towards the target is reviewed every 5 years to align with the interim target, which both use the same reporting mechanism and are therefore discussed together here.

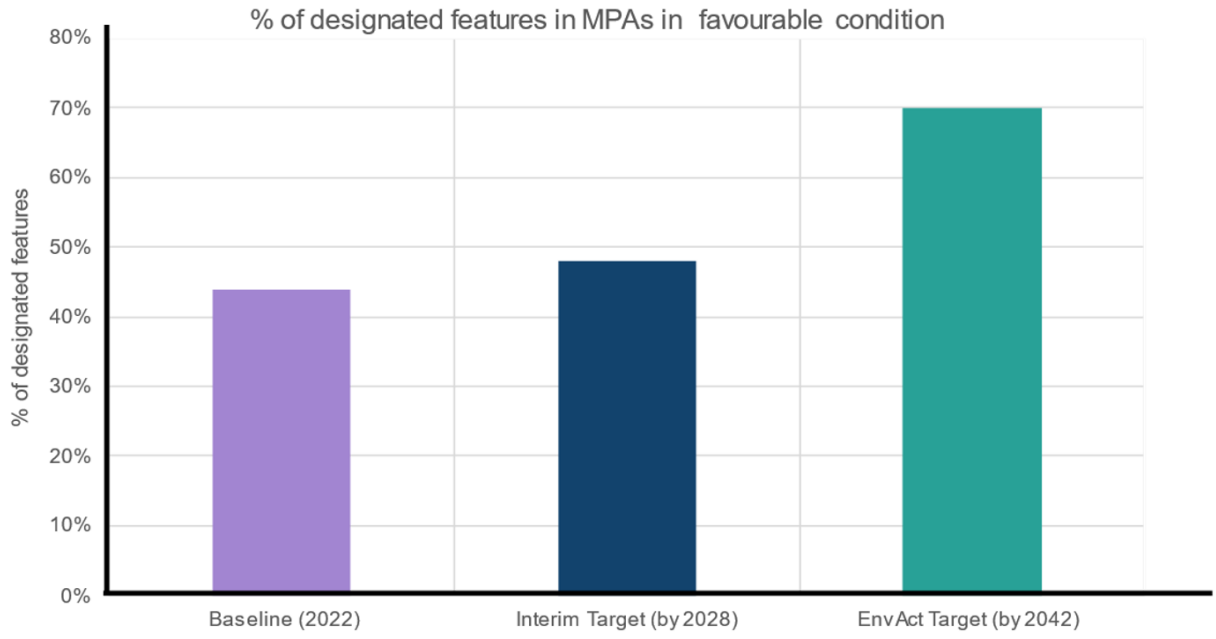
2023 to 2024 monitoring progress update

Scientific advisors (Natural England and the Joint Nature Conservation Committee (JNCC) are developing an MPA monitoring strategy to assess progress towards meeting the legally binding MPA target, including whether the necessary management measures are in place. The MPA monitoring and assessment strategy will be completed by 2028.

In addition to the target assessments of percentage of features in favourable condition and percentage in recovering condition, Defra can provide the progress made towards implementing effective management measures within MPAs, particularly progress implementing byelaws to manage damaging fishing in MPAs. Currently, 60% of the 181 English MPAs are already protected from damaging fishing activity through byelaws.

What the data show

Figure 5: Percentage of designated features in marine protected areas in favourable condition



This bar chart shows the current baseline in purple of the % of designated features in MPAs in favourable condition (44%), with dark blue and turquoise bars representing the interim target (48% by 2028) and long-term Environment Act target (70% by 2042) respectively.

The 44% figure provides a baseline of the condition of features within English MPAs. There will be no update on whether the percentage of features within favourable condition are increasing or decreasing until the next assessment takes place in 2028. However, Defra are focused on making sure MPAs are properly protected by removing damaging human activities within or near MPAs, which should bolster feature condition to favourable condition.

Understanding this metric

Assessing the condition of features designated within MPAs is undertaken by Statutory Nature Conservation Bodies (NE and the JNCC) using survey data. In the absence of survey data, a vulnerability assessment is performed, which estimates the sensitivity of protected features to human activity occurring within their vicinity. The results will give the likely condition of the feature at the site. The assessments will be used to determine if the English target, of at least 70% of MPA features are in a favourable condition and the remaining features are in a recovering condition by 2042.

Defra can provide an assessment ready for the interim target in 2028 and every 5 years after for subsequent targets. A comprehensive assessment of English MPAs consists of 181 sites and over 1,000 designated features. The process places significant demands on resources, particularly in terms of vessels and expert availability for data collection, analysis, and funding. Marine species and habitats can have extremely slow recovery rates and reporting more frequently may result in updated figures which have not changed, so doing assessments at a high frequency may not be the best use of limited resources.

Improving environmental quality

Goal 2: Clean air

Legally binding Environment Act targets:

1. Reduce population exposure to $PM_{2.5}$ by 35% in 2040 compared to 2018 levels.
2. The maximum annual mean concentration of $PM_{2.5}$ in 2040 must be equal to or less than 10 µg per m^3.

Interim targets:

1. By 31 January 2028, the reduction in population exposure to $PM_{2.5}$ in the most recent full calendar year (compared to 2018) must be 22% or greater.
2. By 31 January 2028, the highest annual mean concentration of $PM_{2.5}$ in the most recent full calendar year must not exceed 12 µg per m^3.

How legally binding Environment Act targets are monitored

Target	**Type of data** (direct, related or unavailable)	**What data are available**
Reduce population exposure to $PM_{2.5}$ by 35% in 2040 compared to 2018 levels. Includes interim target to reduce by 22% by the end of January 2028.	Direct	Data measuring percentage change in population exposure to $PM_{2.5}$ will be provided for 2018 to 2023. Updates are expected annually.
The maximum annual mean concentration of $PM_{2.5}$ in 2040 must be equal to 10 micrograms per cubic metre (µg per m^3). Includes interim target of 12 µg per m^3 by the end of January 2028.	Direct	Data measuring the annual mean concentration of $PM_{2.5}$ at individual monitoring sites will be provided for 2018 to 2023. Updates are expected annually

Target: Reduce population exposure to $PM_{2.5}$ by 35% in 2040 compared to 2018 levels

This target and interim target are discussed together as they use the same monitoring mechanism.

Overall, reduction in population exposure to $PM_{2.5}$ of 22% compared to 2018 has been observed for 2023.

2023 to 2024 monitoring progress update

To support the measurement of the Population Exposure Reduction Target (PERT), an expansion of the monitoring network is underway. Over the past year (April 2023 to March 2024), 6 new monitors have been added to the network, 3 of which are PERT sites. The PERT is assessed by using monitoring sites that are located in urban background and suburban background locations across England.

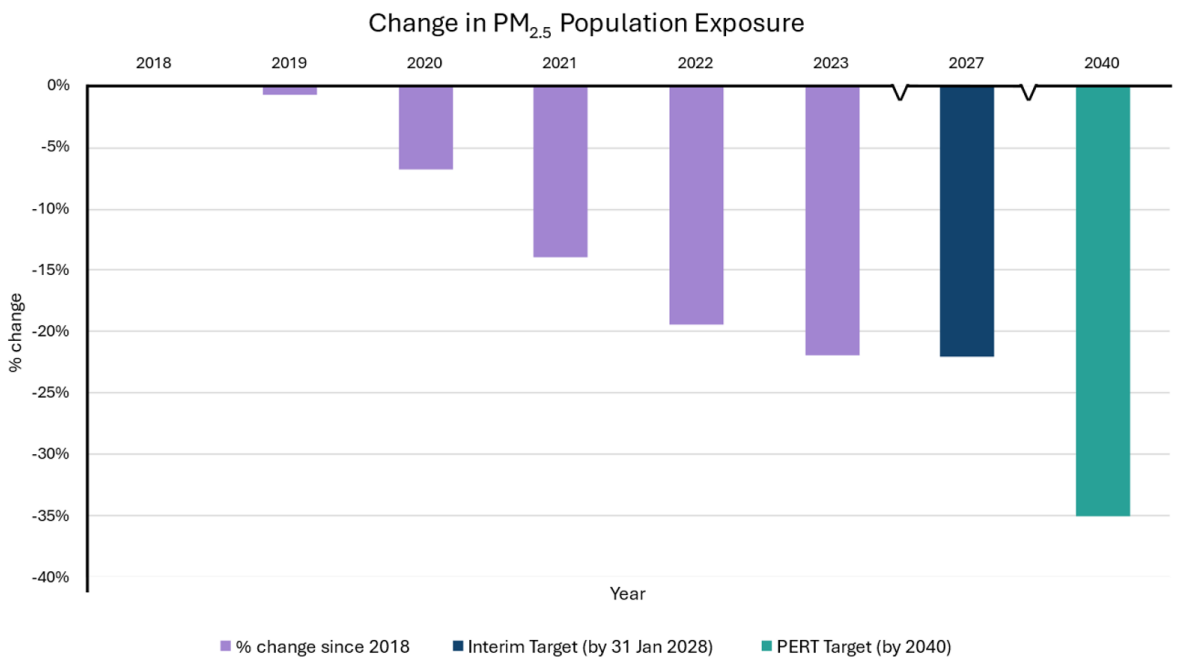
The expansion is set to continue over the next 2 to 3 years with the aim of at least doubling the size of the network compared to December 2021 and ensuring the minimum sampling requirements specified in the legislation are met.

Over the coming year, opportunities to bring greater alignment between the PERT metric (based on measurements) and the OIF metric for $PM_{2.5}$ exposure (which has historically been based on modelled data) will be explored.

What the data show

The figure below shows that population exposure has reduced over time, with large improvements since 2020. The substantial progress made towards the PERT means the interim target was met in 2023. However, whilst good progress has been made, a range of factors such as covid restrictions and potentially favourable weather conditions may have played a role in the observed reductions so it does not necessarily mean the target will be met in subsequent years. In addition, localised factors can have significant effects on individual site concentrations, meaning that until the final monitoring network is in place in 2027 it is not possible to fully assert that the interim target has been met. However, the current trend suggests efforts are on track to meet the interim target in 2028.

Figure 6: Change in $PM_{2.5}$ population exposure



This bar chart shows the trends of PERT data from 2018 to 2023 in light purple, the interim target of a 22% reduction by in dark blue and the long-term Environment Act target of a 35% reduction in turquoise.

Understanding this metric

Assessment of the fine particulate matter ($PM_{2.5}$) PERT is based on measurements of $PM_{2.5}$ concentration from the Automatic Urban and Rual Network (AURN). This is an established network of fixed monitors located across the UK which is used for assessing compliance with air quality standards. The measurements within England are used to calculate the PERT using the method set out in the Environmental Targets (Fine Particulate Matter) (England) Regulations 2023.

Annual average concentrations are calculated from hourly (or for a small number of instruments daily) measurements for each urban and suburban monitoring site, and a country average is produced from these sites to calculate the average population exposure for England. A rolling three-yearly average is used to reduce the impact of variations in weather conditions and other short-term influences to provide an indicator of the long-term trend. A statistical method is employed to take account of the expansion of the monitoring network in calculating the PERT metric and this is described in the target regulations.

Real-time fixed monitoring undergoes a high level of quality assurance and calibration. It also follows international standards and guidelines as set out in the legislation. This includes calibration visits to sites and audits every 6 months.

Following data collection, the annual mean concentrations are subject to an external ratification process and are published in June to July of the following year. A minimum data capture threshold is also required to be met for a measurement to be included in the calculation. Further information on how the PERT is measured is available on Defra's UKAIR website.

Target: The maximum annual mean concentration of $PM_{2.5}$ in 2040 must be equal to or less than 10 µg per m^3

This target and interim target are discussed together as they use the same monitoring mechanism.

Overall, a reduction in the PM2.5 annual mean concentration to 12 µg per m3 compared to 16 µg per m3 in 2018 has been observed in 2023.

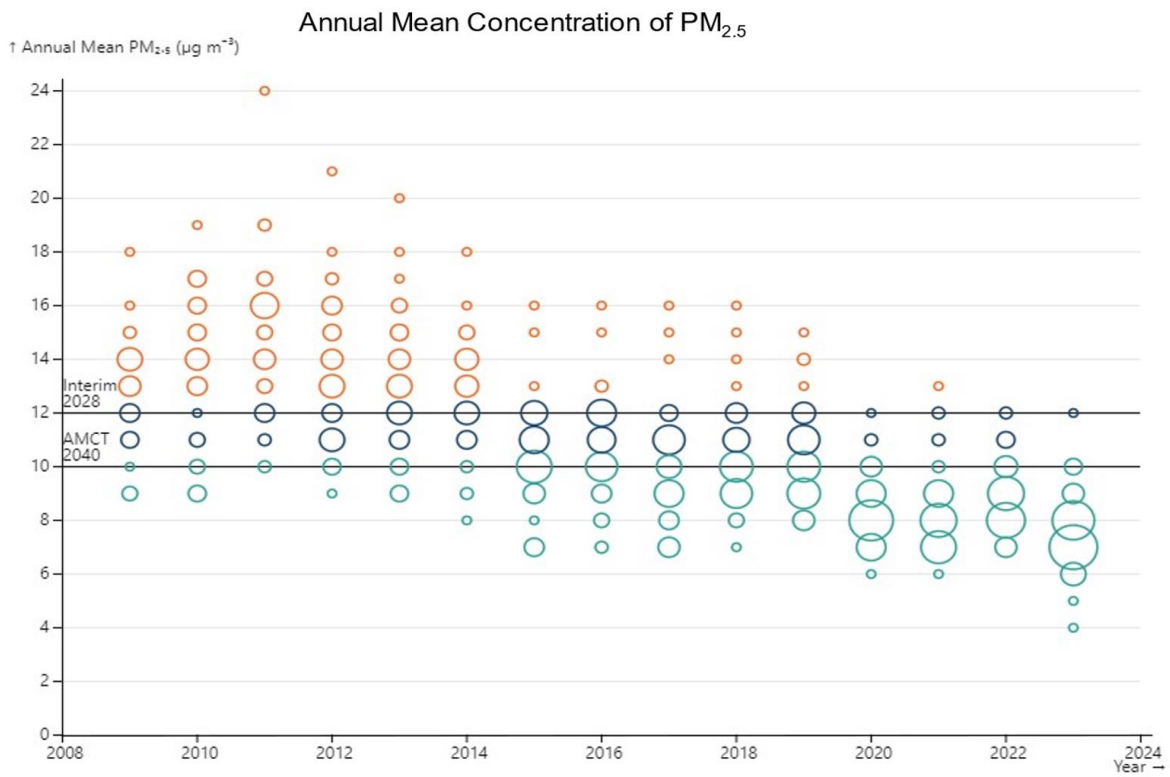
2023 to 2024 monitoring progress update

As with the PERT, to support the measurement of the Annual Mean Concentration Target (AMCT), the monitoring network is being expanded. Over the past year (April 2023 to March 2024) 6 new monitors have been added to the network, all of which will report against the AMCT. The AMCT is assessed by using monitoring sites that have been located in all site locations across England. This will include sites in both rural and urban areas and those likely to have the highest concentrations.

What the data show

The figure below shows a decrease in the PM2.5 concentrations measured at individual monitoring sites over time. The majority of monitoring sites now measure below 10 µg per m3 and the maximum measured concentration in 2023 was 12 µg per m3, meeting the interim target. However, as with the PERT, factors such as covid restrictions and favourable weather conditions may have played a role in the reductions since 2020 so this does not necessarily mean the target will be met in subsequent years. In addition, until the final monitoring network is in place in 2027 it is not possible to fully assert the interim target has been met. However, the current trend suggests efforts are on track to meet the interim target in 2028.

Figure 7: Annual mean concentration of $PM_{2.5}$



This bubble graph shows the AMCT data with proportional size of circles showing the number of sites with corresponding AMCT values. The larger the circle, the greater the number of monitoring sites at that value for that year. Orange circles represent data where the sites have not yet achieved targets. The dark blue and turquoise horizontal circles represent sites that have data collected which have achieved the interim and long-term Environment Act targets respectively. The two target levels (interim by 2028 and Environment Act by 2040) are represented by solid horizontal lines.

Understanding this metric

As with PERT described above, assessment of the fine particulate matter (PM2.5) AMCT is based on measurements of PM2.5 concentration from the AURN. The measurements within England are used to calculate the AMCT using the method set out in the Environmental Targets (Fine Particulate Matter) (England) Regulations 2023.

Annual average concentrations are calculated from hourly (or for a small number of instruments daily) measurements for each monitoring site, including near-source roadside and industrial sites. The highest measured concentration needs to be a maximum of 12 µg per m3 for the interim target to be met. As the target metric is based on one-year mean concentrations rather than three-year averages like the PERT, there is potential for a greater fluctuation in the target metric from year to year.

As with the PERT, real-time fixed monitoring undergoes a high level of quality assurance and calibration. It also follows international standards and guidelines as set out in the legislation. This includes calibration visits to sites and audits every 6 months.

Following data collection, the annual mean concentration measurements are subject to an external ratification process and are published in June or July of the following year. In addition, a minimum data capture threshold needs to be met for a measurement to be included in the calculation. Further information on how the AMCT is measured is available on Defra's UKAIR website.

Goal 3: Clean and plentiful water

Legally binding Environment Act targets:

1. Reduce nitrogen, phosphorus, and sediment pollution from agriculture into the water environment by 40% by 31 December 2038, compared to a 2018 baseline.
2. Reduce phosphorus loadings from treated wastewater by 80% by 31 December 2038, against a 2020 baseline.
3. Halve the length of rivers polluted by harmful metals from abandoned metal mines by 31 December 2038, against a baseline of around 930 miles (or 1,500km).
4. Reduce the use of public water supply in England per head of population by 20% from the 2019 to 2020 baseline reporting year figures, by 31 March 2038.

Interim targets:

1. Reduce nitrogen, phosphorus and sediment pollution from agriculture to the water environment by 10% by 31 January 2028.
2. Reduce nitrogen, phosphorus and sediment pollution from agriculture to the water environment by 15% in catchments containing protected sites in unfavourable condition due to nutrient pollution by 31 January 2028.
3. Reduce phosphorus loadings from treated wastewater by 50% by 31 January 2028, against a 2020 baseline.
4. Construct 8 mine water treatment schemes and 20 diffuse interventions to control inputs of target substances to rivers by 31 January 2028.
5. Reduce the use of public water supply in England per head of population by 9% by 31 March 2027 and 14% by 31 March 2032, from a 2019 to 2020 baseline.
6. Reduce leakage by 20% by 31 March 2027 and by 30% by 31 March 2032, from a 2017 to 2018 baseline.

How legally binding Environment Act targets are monitored

Target	Type of data (direct, related or unavailable)	Monitoring update	What data are available
Reduce nitrogen, phosphorus and sediment pollution from agriculture into the water environment by at least 40% by 2038, compared to a 2018 baseline. Includes interim target of 10% by 31 January 2028, and 15% in catchments containing protected sites in unfavourable condition due to nutrient pollution by 31 January 2028.	Related	Soil Nutrient Balances (SNB) have been identified as proxy data enabling annual reporting.	Annual SNB data provided with historic data for comparison. Long-term aims are to provide available modelling data.
Reduce phosphorus loadings from treated wastewater by 80% by 2038, against a 2020 baseline. Includes interim target of 50% by 31 January 2028.	Related	The number of completed phosphorus improvement schemes has been identified as a proxy for this metric.	Number of phosphorus improvement schemes completed during the period 2020 to 2024.
Halve the length of rivers and estuaries polluted by harmful metals from abandoned metal mines by 2038, against a baseline of around 930 miles (or 1,500 km).	Unavailable	An Environment Agency (EA) report on the baseline length of polluted rivers and estuaries is expected in September 2024. This will confirm the total length of polluted rivers and estuaries that needs to be decreased by 50% by 2038.	Data unavailable for annual progress report 2024, but are expected to be concentrations of metals monitored in all rivers impacted by abandoned metal mines (data publicly available at EA online water quality archive)

Target	**Type of data** (direct, related or unavailable)	**Monitoring update**	**What data are available**
Interim target to construct eight mine water treatment schemes and 20 diffuse interventions to control inputs of target substances by 31 January 2028.	Direct	Reporting mechanisms agreed and have begun.	Number of mine water treatment schemes and diffuse interventions constructed between 31 January 2023 and 31 January 2024. Expected annually.
Reduce the use of public water supply in England per head of population by 20% from the 2019 to 2020 baseline reporting figures, by 31 March 2038. Includes interim targets of 9% by 31 March 2027 and 14% by 31 March 2032.	Direct	Change in water supply data provided between 2019 and 2023, with reporting mechanisms established. Expected annual reporting.	Change in water supply data provided between 2019 and 2023. Expected annual reporting.
Interim target to reduce leakage by 20% by 31 March 2027 and 30% by 31 March 2032, from a 2017 to 2018 baseline.	Direct	Reporting mechanism established.	Change in water leakage data provided between 2019 and 2023. Expected annual reporting.

Target: Reduce nitrogen, phosphorus, and sediment pollution from agriculture into the water environment by 40% by 31 December 2038, compared to a 2018 baseline

Progress towards this target is tracked through collection of data on agricultural practices, on farm mitigation measures and compliance with regulations, and subsequent modelling of the impacts. Defra is currently in the process of updating and improving data collection and modelling tools for this target.

As this target uses the same monitoring mechanisms as the interim targets, they are discussed together here.

2023 to 2024 monitoring progress update

One model is relied upon to estimate national pollutant loadings from agriculture, but following advice from the Water Expert Advisory Group, modelling capability is being updated and expanded. By comparing results from several models, there should be a more robust assessment of the impact of agriculture on the water environment.

Defra is currently in the process of incorporating feedback from external experts to improve our approach. Refinements include updates to the list of mitigation measures and incorporation of the latest developments in the science of modelling total nitrogen, phosphorus, and sediment loads (particularly in terms of accounting for ecological contextual factors).

Data are currently being collected. The main sources of data are:

- the Environment Agency's (EA) records on regulatory compliance, and the activities being implemented by farmers in response to EA inspections and advice
- the Farming and Countryside Programme (FCP) data on farmers' voluntary uptake of environmental land management schemes
- the Rural Payments Agency (RPA) data on grants provided to farmers

The modelling suite is highly complex, and while still in development, is likely to have input data which is collected at different frequencies (such as farm survey data on on-farm practices). Expert advice will be sought during model development on the most appropriate reporting frequency. Until new models are available, soil nutrient balances (SNBs) have been identified as the best available proxy for tracking changes in nutrient loadings from agricultural soils into the water environment in England. SNBs track changes in nutrient surpluses in agricultural soil, including showing the surplus of nitrogen and phosphorus entering soils caused by inputs of nutrients (such as manure, fertilisers) exceeding the offtake (e.g., from crop production and grazing). SNBs are estimated yearly, and official records extend for over a decade.

What the data show

SNBs provide a method for estimating the annual nutrient loadings of nitrogen and phosphorus to agricultural soils. They give an indication of the potential losses of nutrients

to the environment. These losses can impact on air and water quality and on climate change. The nutrient balances are used as a high-level indicator of farming's pressure on the environment and of how that pressure is changing over time. The balances do not estimate the actual losses of nutrients to the environment, but significant nutrient surpluses that are directly linked with losses to the environment.

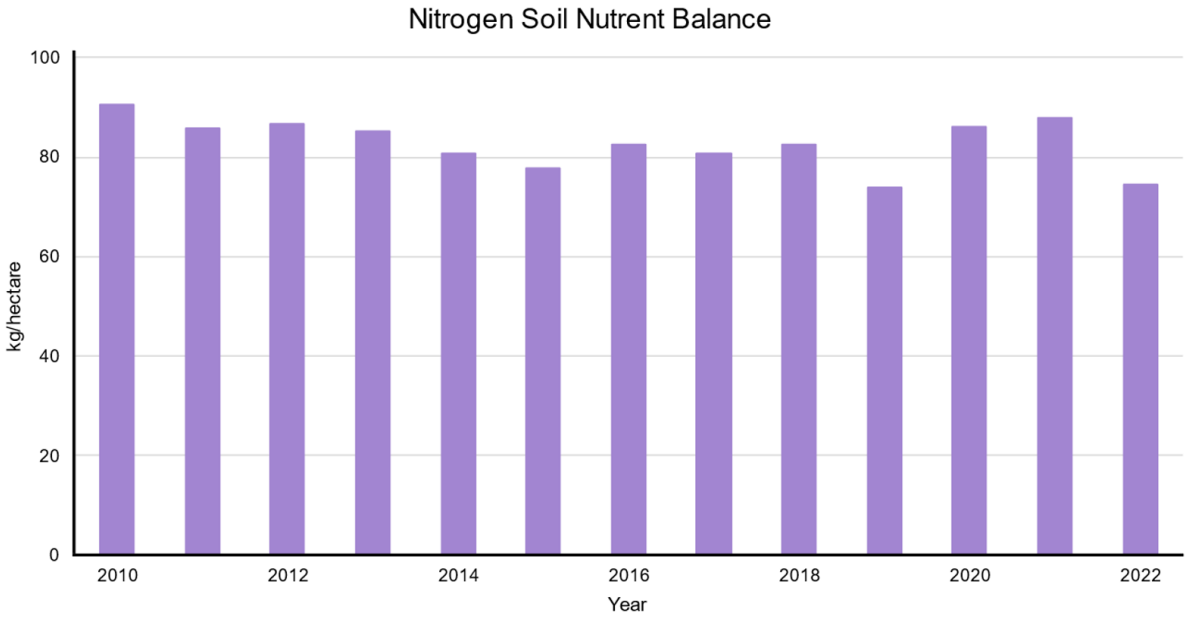
The nitrogen surplus in England has fallen by around 30% since 2000. The main drivers have been reductions in the application of inorganic fertilisers (particularly to grass) and manure production (due to lower livestock numbers), partially offset by a reduction in the nitrogen offtake (particularly forage). Factors such as the balance of land used for growing crops and cropping patterns over a growing season can also affect nitrogen and phosphorus balances. .

Furthermore, since the 1990s there has been a general trend for an increase in crop yield (in weight) for staple cereal crops for the weight of inorganic nitrogen fertiliser applied, eliciting an improvement in inorganic fertiliser use efficiency and associated crop productivity. Specifically, from 2018 (the target's baseline year) to 2022, the nitrogen surplus decreased by 12% to 79.1 kg per ha, while the phosphorus surplus decreased by 52% to 2.8 kg per ha. The phosphorus surplus has fallen by around 70% since 2000, with reductions in nitrogen and phosphorus balances in 2022 influenced by lower applications of inorganic fertilisers relative to previous years.

The British Survey of Fertiliser Practice report illustrates how total use of nitrogen fertilisers fell by 13.3% year-on-year between 2021 to 2022 financial year, and 5% reductions in phosphate fertilisers over same period. This drop in usage is attributed to notable declines of ammonium nitrate (AN) (-17.3%), urea (-11.3%), and Urea Ammonium Nitrate (-4.9%).

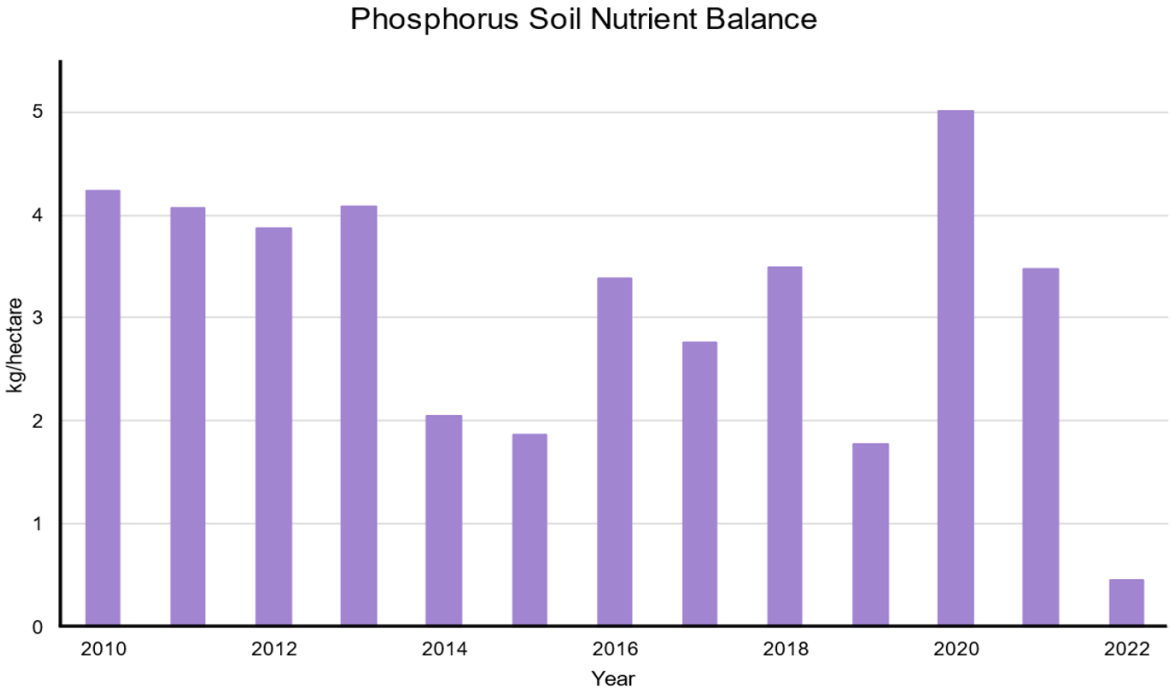
This was likely a response to the high global prices for inorganic fertilisers in late 2021 and 2022 caused by higher gas prices (gas is required in the manufacture of fertilisers).

Figure 8: Nitrogen soil nutrient balances



This bar graph shows the overall balance of nitrogen in soils in England between 2010 and 2022. This is calculated by total inputs (such as manures and fertilisers) minus total offtakes (crop production and fodder for livestock, such as grazing).

Figure 9: Phosphorus soil nutrient balances



This bar graph shows the overall balance of phosphorus in soils in England between 2010 and 2022. This is calculated by total inputs (such as manures, fertilisers) minus total offtakes (crop production and fodder for livestock, such as grazing).

Efficient nutrient application requires farm specific planning and data, to determine the requirements for each crop grown, whether arable, fodder, grass or horticultural goods. Defra survey data indicate that in recent years around 55% of farm businesses have a nutrient management plan, and that up to 70% routinely test soil nutrient content. Around 70% hold manure management plans.

Whilst national trends in SNB and nutrient management are valuable indications of agricultural sector performance and contribution to water pollution, these data are not a proxy for individual farm performance. The nutrient requirements of each farm business are spatially specific to each crop, field and soil type, potentially with variation in demand and application within each field, over each cropping season.

Understanding this metric

Nitrogen and phosphorus surpluses in agricultural soils have shown an overall downward trajectory since 2000. The most considerable drops took place in the 2000 to 2008 period. Currently, it is not possible to reliably infer a future trend in nitrogen and phosphorus soil balance towards 2038. This is partly due to the relatively few data points at the time of publishing, but also because of the important impact of unexpectedly high inorganic fertiliser prices on nutrient application to soils in 2022. The balance also depends on overall crop yields. When weather and other conditions result in poor harvests, offtake is reduced and the soil nutrient surplus increases, as happened in 2020. Continued monitoring of SNBs in the coming years will provide a picture of nutrient surplus in agricultural soils, which in turn is a proxy for potential nutrient loadings into the water environment.

Target: Reduce phosphorus loadings from treated wastewater by 80% by 31 December 2038, against a 2020 baseline

The planned delivery mechanism for this target is well established and a proxy metric for monitoring progress - the amount of completed phosphorus improvement schemes by water companies - has been included in this year's report. Work is currently being done to establish an improved approach for monitoring progress in reductions of phosphorus loads, to enhance our ability to monitor progress towards achieving the target using more detailed data.

As this target uses the same monitoring mechanisms as the interim target, they are discussed together here.

2023 to 2024 monitoring progress update

Progress towards the target is being reported by publishing the number of schemes delivered or scheduled for delivery during one of a series of investment cycles, referred to as five-yearly Asset Management Plans (AMPs). More information on this delivery mechanism is provided below in 'understanding this metric'.

This is a proxy metric and provides a measure of the increasing requirement for the water industry to reduce the load of total phosphorus from treated wastewater in England. A minority of planned AMP7 (2020-2025) phosphorus improvement schemes (42 of 936) have had their completion dates extended until December 2027, so the published data cover financial year 2020 to 2021 through 2027 to 2028.

For future annual progress reports an enhanced methodology to model and assess total phosphorus loadings in treated wastewater is currently being established with the Environment Agency. This will provide more nuanced information on progress to meet the target. It will also ensure a more consistent approach to the modelling of expected phosphorus concentrations at all wastewater treatment works, enabling a like-for-like comparison across all years.

What the data show

The data show the number of phosphorus reduction schemes included in AMP7. These schemes involve upgrades or additions to wastewater treatment processes to reduce phosphorus levels in the treated effluent before it is discharged into freshwater waterbodies.

The latest phosphorus reduction scheme delivery data show that, in the 2023 to 2024 financial year, 22 phosphorus schemes were completed. This included the early delivery of 7 schemes. As such, 13% of all phosphorus schemes planned for AMP7 (2020 to 2025, with some schemes extended to 2027) were completed by April 2024 (118 of 936), against a planned delivery percentage of 12% by this stage of the AMP cycle. Phosphorus scheme delivery is therefore currently slightly ahead of schedule, in line with planning which schedules delivery of most schemes to the final year of the cycle.

Figure 10: Number of phosphorus improvement schemes planned and completed during AMP7

Year	Schemes planned	Schemes completed
2020 to 2021	6	6
2021 to 2022	82	82
2022 to 2023	8	8
2023 to 2024	15	22
2024 to 2025	783	Not applicable
2025 to 2026	1	Not applicable
2026 to 2027	33	Not applicable
2027 to 2028	8	Not applicable

This table shows the number of phosphorus improvement schemes implemented during the AMP7 phosphorus reduction period in comparison to planned schemes, to show the progress being made in delivery of schemes.

The vast majority of planned AMP7 phosphorus reduction schemes (783 out of 936) are due to be completed in the 2024 to 2025 financial year.

Understanding this metric

The mechanism for delivering the target will be water companies completing planned phosphorus improvement schemes and the tightening of the relevant wastewater discharge permits to meet statutory environmental obligations by the Environment Agency.

Tracking the number of phosphorus reduction schemes delivered or scheduled for delivery during AMP7 provides a quantitative measure of progress. However, this metric does not quantify the phosphorus load reduction, as each scheme varies in size and effect on total phosphorus removal. It will, however, provide good insight into progress made since 2020, as the successful delivery of planned phosphorus improvement schemes is the mechanism for achieving the target.

Legally binding long-term target: Halve the length of rivers polluted by harmful metals from abandoned metal mines by 31 December 2038, against a baseline of around 930 miles (or 1,500km)

The long-term and interim targets are monitored using different mechanisms and discussion in this annex is split accordingly. Data are not currently available against the long-term target but are provided for the interim.

Interim target: Construct 8 mine water treatment schemes and 20 diffuse interventions to control inputs of target substances to rivers by 31 January 2028

This target builds on previous activities being carried out through the Water and Abandoned Metal Mines (WAMM) Programme established in 2011. This is a partnership between Defra, the Environment Agency and the Coal Authority (CA) with the objective to clean up rivers and estuaries that are polluted by metals being released from abandoned metal mines.

2023 to 2024 monitoring progress update

Long-term target:

As noted, the current target is to ‘halve the length of rivers polluted by harmful metals from abandoned metal mines by 31 December 2038, against a baseline of around 930 miles (or 1,500km).’ To confirm this baseline an Environment Agency report will be published in Autumn 2024 to accurately confirm the baseline length of polluted rivers and estuaries, in kilometres, for the purposes of assessing progress towards the long-term legally binding target. This baseline report is based on a robust dataset using monitoring data collected between 1 January 2022 and 31 March 2024 to measure the polluted length of rivers and estuaries that were considered polluted in 2022, taking account of natural variations.

To measure the baseline length of polluted rivers and estuaries, the EA collected water quality samples at around 500 locations in English rivers known to be impacted by abandoned metal mines over the period from 1 January 2022 to 31 March 2024. Samples were analysed for various substances in the Environment Agency laboratories. The concentrations of metals in each sample were compared with the relevant Environmental Quality Standard (EQS) set by government. EQS concentrations are based on ecotoxicology data and set at a level that should prevent environmental impacts. When the concentration of a substance in a water sample is higher than the EQS, adverse impacts on aquatic wildlife can occur.

At most monitoring locations, at least 12 samples were collected to take account of the continual natural fluctuation in river water quality in response to rainfall. This enables calculation of the 'annual average' to reflect the overall range of higher and lower concentrations that occur within a year, and therefore the long-term environmental exposure of aquatic wildlife to these fluctuations.

Sample locations were selected to delineate the upstream and downstream extent of pollution by metals in impacted rivers. The total length of polluted river is calculated by measuring the total distance (in kilometres) between sampling points, where the results showed that rivers are polluted by the target substances released from abandoned metal mines.

Interim target:

Monitoring of progress is reported quarterly to the WAMM Programme Board (comprising senior representatives from Defra, the Environment Agency and the Coal Authority). In the 2023 to 2024 financial year, the monitoring focused on agreeing reporting mechanisms and defining how progress towards the interim target will be reported.

Between 31 January 2023 and 31 January 2024, the following measures were constructed.

Mine water treatment schemes:

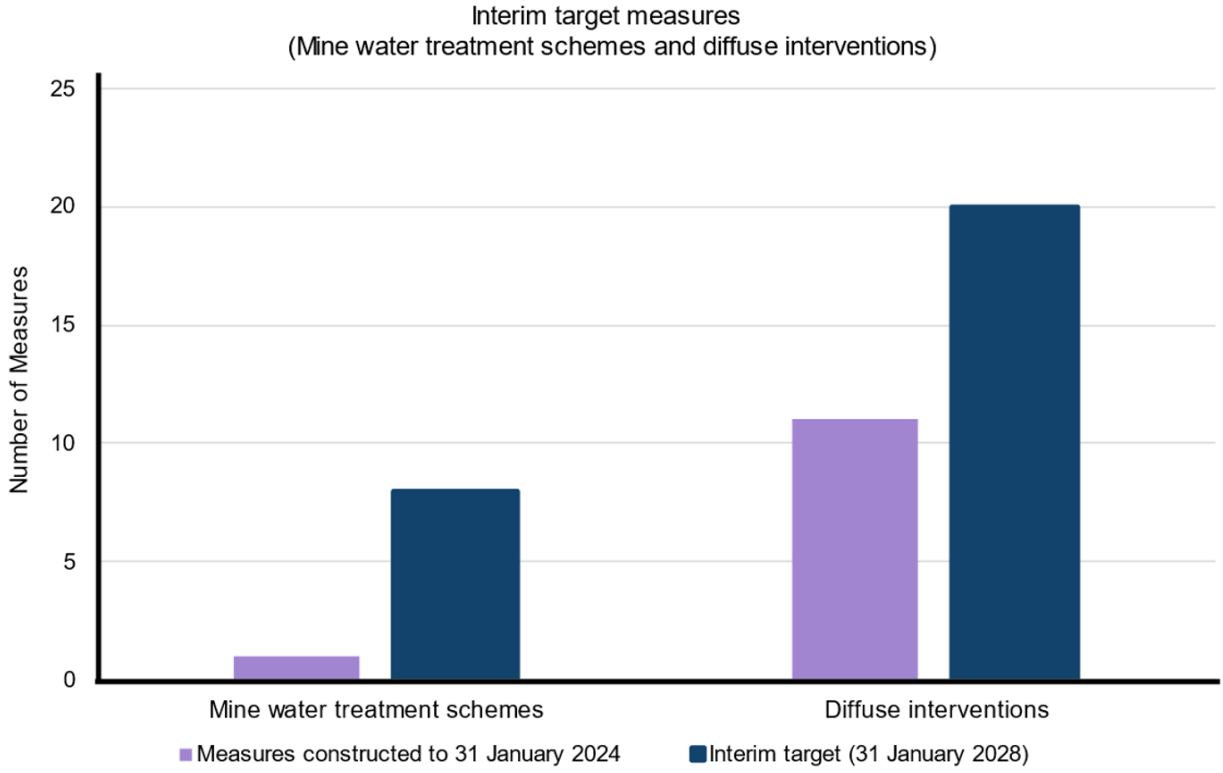
- one new mine water treatment scheme has been constructed and started operating in 2023 - find more information about Coombe mine water treatment scheme
- a second mine water treatment scheme will start operating during 2024 - find more information about Haggs mine water treatment scheme

Diffuse interventions:

- eleven diffuse interventions were constructed across 5 sites during 2023

What the data show

Figure 11: Interim target measures (mine water treatment schemes and diffuse interventions)



This bar graph shows the current number of mine water treatment schemes and diffuse interventions constructed by 31 January 2024 (light purple) and the number required by 31 January 2028 to achieve the interim target (dark blue). The legend follows the same order as the bars.

Figure 11 shows new activity (mine water schemes and diffuse interventions) constructed since 31 January 2023. Only measures constructed since the EIP was published count towards the interim target as these represent new interventions constructed between January 2023 and January 2024. As this interim target is in early stages, a trend cannot be identified.

Understanding this metric

Advancement towards the legally binding target is calculated by measuring metal concentrations in rivers that are polluted by abandoned metal mines and comparing the length of polluted rivers against the baseline value. The polluted river length will only decrease in rivers where new measures have been constructed. Therefore, it is currently proposed that every five years, the Environment Agency will monitor water quality in all the English rivers identified as being polluted in the Autumn 2024 baseline report.

To monitor the reduction in metal concentrations following the construction of new mine water treatment schemes and diffuse interventions, the Environment Agency will regularly monitor upstream and downstream of new measures for at least 12 months and measure any reduction in the length of polluted rivers. Furthermore, the CA will monitor the mass (in kilogrammes) of metals captured in each mine water treatment scheme, and the volume of water treated, as part of their performance assessment at each scheme.

Interim target: This is based on building new measures to limit the input of polluting substances to rivers (both mine water treatment schemes and diffuse interventions) to support progress towards the long-term target. This metric was adopted for the interim target because it takes several years to develop and build each mine water treatment scheme. Interim target progress will be reported annually.

Target: Reduce the use of public water supply in England per head of population by 20% from the 2019 to 2020 baseline reporting year figures, by 31 March 2038

Monitoring of the water demand target is ongoing and forms part of the Environment Agency's Annual Review of Water Resource Management Plans (WRMPs). The monitoring of government interventions will take place following the policies coming into effect. Any future consultations will consider how a policy to reduce demand could be appropriately monitored and future impact assessment will provide details on evaluation metrics.

As this target uses the same monitoring mechanisms as the interim target, they are discussed together here.

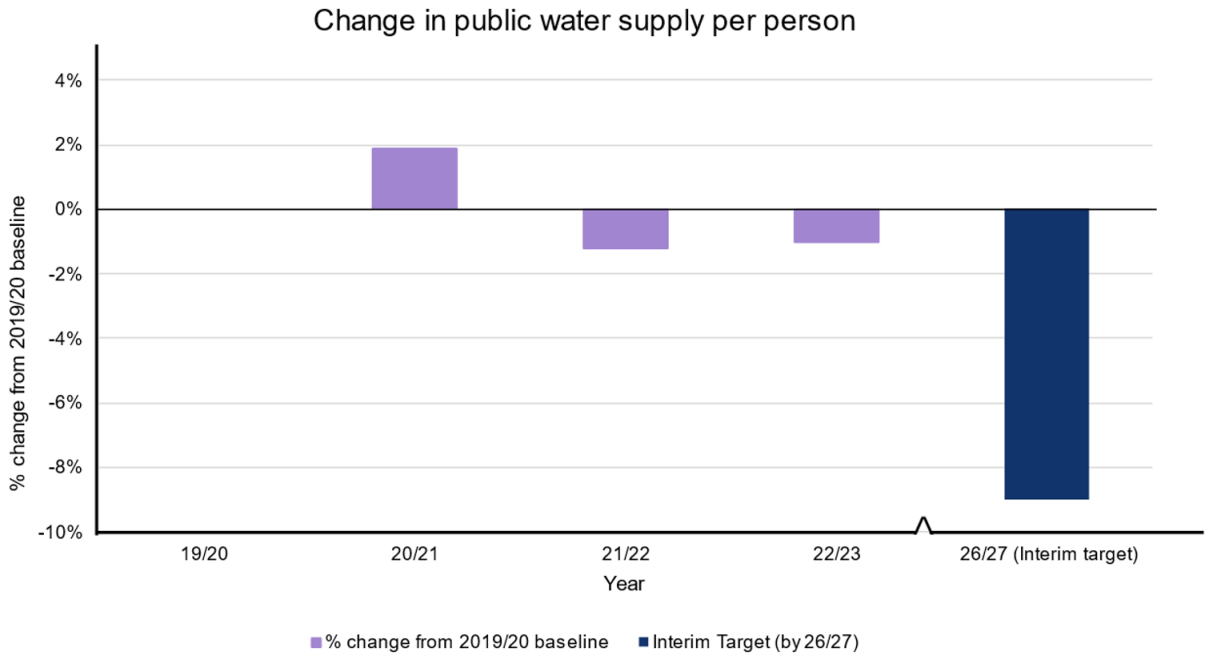
2023 to 2024 monitoring progress update

The latest Water Company Annual Review for the financial year 2022 to 2023 shows that demand has been reduced by 1% from the 2019 to 2020 baseline. Government expects that the Environment Agency Annual Review of WRMPs for 2023 to 2024, expected in September 2024, will provide an updated figure as part of the business-as-usual reporting cycle.

What the data show

The graph below shows the percentage demand reduction against the 2019 to 2020 baseline for all annual reviews of WRMPs post the target being set. The annual fluctuations can be linked to changes in water use patterns following the pandemic and variability in annual weather patterns. Ofwat use a rolling 3 year average to report on leakage and similar factors, however the demand target draws on annual data from water company WRMP annual reports.

Figure 12: Change in public water supply per person since 2019 to 2020



This bar graph shows the change in public water supply based on a 2019 to 2020 baseline figure with light purple bars representing historical data. The last bar is dark blue and represents the interim target to be achieved by 2026 to 2027 financial year.

The Environment Agency's review of emerging WRMPs showed that full delivery of water companies WRMPs would see the target exceeded by 2% with a 22% reduction from the baseline by 2038. The dependencies on delivery can be seen in further detail in the review.

Understanding this metric

The water demand target measures the distribution input of water (volume of water put into supply to meet demand, including leakage, household and non-household water consumption) divided by the number of people in the population – as set out in the Environmental Target (water) regulations. Distribution input is already regularly reported by water companies to both the Environment Agency and Ofwat on an annual basis. These data can also be broken down further to their component uses, household consumption, leakage and non-household consumption.

Population data are also reported by water companies, based on an agreed methodology in the Environment Agency Water Resources Planning Guidelines. The level of demand reduction will develop over time as water companies deliver their Water Resources Management Plans and government interventions are implemented. Water companies and the wider sector will continue to need to work together to mitigate against increased water demands from future extreme weather events (such as drought and freeze-thaw events that can cause leaks) and population growth.

Interim target: Reduce leakage by 20% by 31 March 2027 and by 30% by 31 March 2032

The above leakage target is a sub target to set government on the trajectory to meet the legally binding water demand target. It measures the reduction of leakage against 2017 to 2018 baseline. The water companies previously made a public interest commitment to halve leakage by 2050, both the water demand target and the sub target were created in alignment with this.

Water companies set out how they will reduce leakage in their 5 yearly WRMPs. Progress on their projected leakage reduction is then monitored as part of the Environment Agency's Annual Review process.

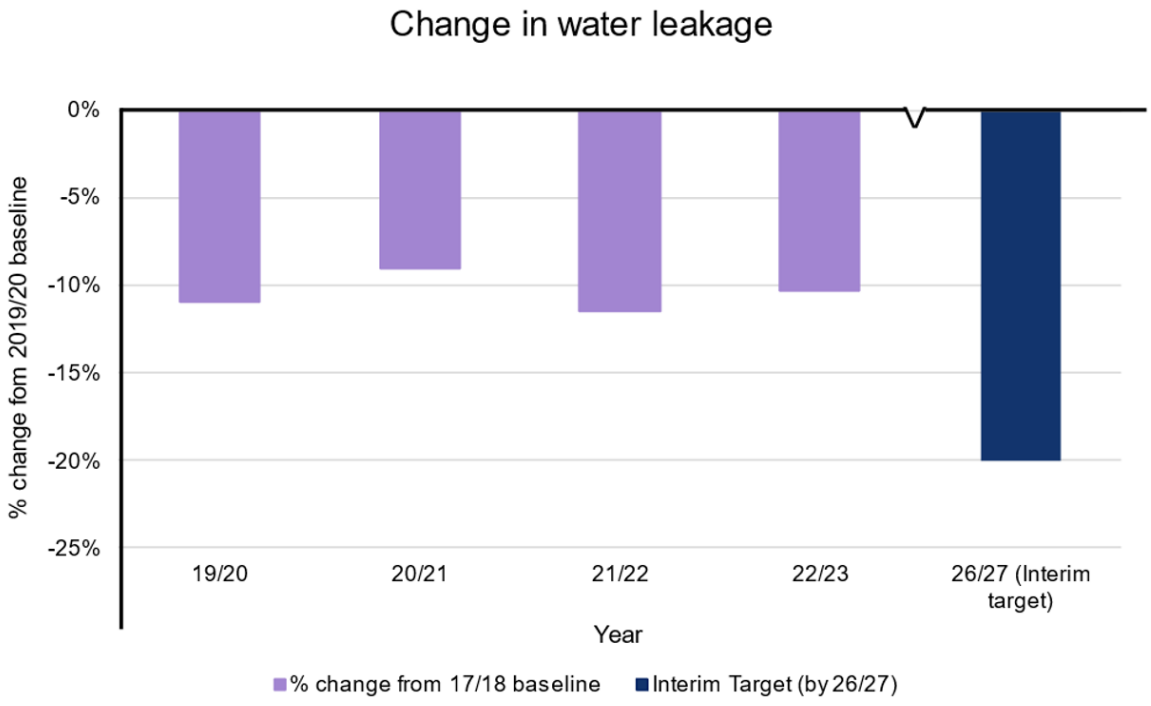
2023 to 2024 monitoring progress update

This target will continue to be monitored through the Environment Agency's Annual Reviews of WRMPs reported by water companies. Government will also work with Ofwat to manage companies who fail to meet their leakage targets.

What the data show

The latest Environment Agency annual review shows that leakage has decreased by 10.3% from the 2017 to 2018 baseline, and that water companies are projecting to exceed both the interim targets and the longer term 2050 projection reaching 26% reduction by 2027, 34% by 2032 and 63% reduction by 2050.

Figure 13: Change in water leakage levels since 2019 to 2020, based on a 2017 to 2018 baseline



This bar graph shows the change in water leakage levels, based on a 2017 to 2018 baseline figure with light purple bars representing historical data. The last bar is dark blue and represents the interim target to be achieved by 2026 to 2027 financial year.

The above graph shows fluctuation in the percentage reduction against the leakage target. Although projections show that there will be a continued leakage reduction government will closely monitor water company performance alongside regulators to ensure leakage reduces as projected.

Understanding this metric

Leakage has fluctuated since the 1990s and remained almost the same for 8 years until 2019. Since then, it generally decreased until last year. Total leakage across England increased in 2022 to 2023 by 36 Ml/d or 1.3%. This is 157 Ml/d or 6% above planned. Further information on this metric and historical levels of leakage is provided in Water UK's A Leakage Routemap to 2050.

Goal 4: Managing exposure to chemicals and pesticides

There are no legally binding Environment Act targets linked to this area.

Improving our use of natural resources

Goal 5: Maximise our resources, minimise our waste

Legally binding Environment Act targets:

1. By 31 December 2042, ensure that the total mass of residual waste excluding major mineral wastes in a calendar year does not exceed 287 kg per capita.

Interim targets:

1. By 31 January 2028, the total mass of residual waste excluding major mineral wastes in the most recent full calendar year does not exceed 437 kg per capita.
2. By 31 January 2028, the total mass of residual waste excluding major mineral waste in the most recent full calendar year does not exceed 25.5 million tonnes.
3. By 31 January 2028, the total mass of residual municipal waste in the most recent full calendar year does not exceed 333 kg per capita.
4. By 31 January 2028, the total mass of residual municipal food waste in the most recent full calendar year does not exceed 64 kg per capita.
5. By 31 January 2028, the total mass of residual municipal plastic waste in the most recent full calendar year does not exceed 42 kg per capita.
6. By 31 January 2028, the total mass of residual municipal paper and card waste in the most recent full calendar year does not exceed 74 kg per capita.
7. By 31 January 2028, the total mass of residual municipal metal waste in the most recent full calendar year does not exceed 10 kg per capita.
8. By 31 January 2028, the total mass of residual municipal glass waste in the most recent full calendar year does not exceed 7 kg per capita.

How legally binding Environment Act targets are monitored

Target	**Type of data** (direct, related or unavailable)	**What data are available**
By 31 December 2042, ensure that the total mass of residual waste excluding major mineral wastes in a calendar year does not exceed 287 kg per capita. Includes 8 interim targets set out above.	Direct	Data for long-term and interim targets were published for the first time this year, for the calendar years 2019 to 2022. These will be updated annually with an approximately 15-month reporting lag.

Target: By 31 December 2042, ensure that the total mass of residual waste excluding major mineral wastes in a calendar year does not exceed 287 kg per capita

Estimates of residual waste excluding major mineral waste (excluding MMW) generated in England have been published by Defra for the 2019 to 2022 calendar years. As only 4 years of data are available, it is too early to identify trends. This metric will be reported annually, noting that progress towards the target is expected to be reported with a lag (approximately 15 months).

Figures reporting the 2023 calendar year are anticipated to be published in the next update to Estimates of Residual Waste (excluding major mineral waste) and Municipal Residual Waste in England, provisionally scheduled for Spring 2025. This metric also corresponds with interim targets to ensure that by 31 January 2028, the total mass of residual waste excluding major mineral waste in the most recent full calendar year does not exceed a) 437kg per head of population in England, and b) 25.5 million tonnes.

The target to reduce residual waste excluding major mineral waste to no more than 287kg per capita by the end of 2042 is roughly equivalent to a 50% reduction from 2019 levels.

2023 to 2024 monitoring progress update

Estimates of residual waste excluding major mineral waste were published for the first time this year, and directly reflect and report progress against the target metric. They were published as official statistics under development (formerly known as experimental statistics). The assumptions and limitations of the estimates are described in more detail in the methodology document published alongside the figures, and it is expected that in the future the data will be improved through the introduction of digital Waste Tracking.

In addition to the new statistics under development, work has been undertaken to align the existing Outcome Indicator Framework (OIF) J4 indicator with the legally binding target. As a result, OIF J4 now reports residual waste excluding MMW for 2019 to 2022 using the same metric and method as used for reporting progress against the targets. For the purpose of showing historical trends, OIF J4 reports estimates of residual waste excluding major mineral waste for the 2010 to 2019 calendar years, which were calculated using a previous metric and method.

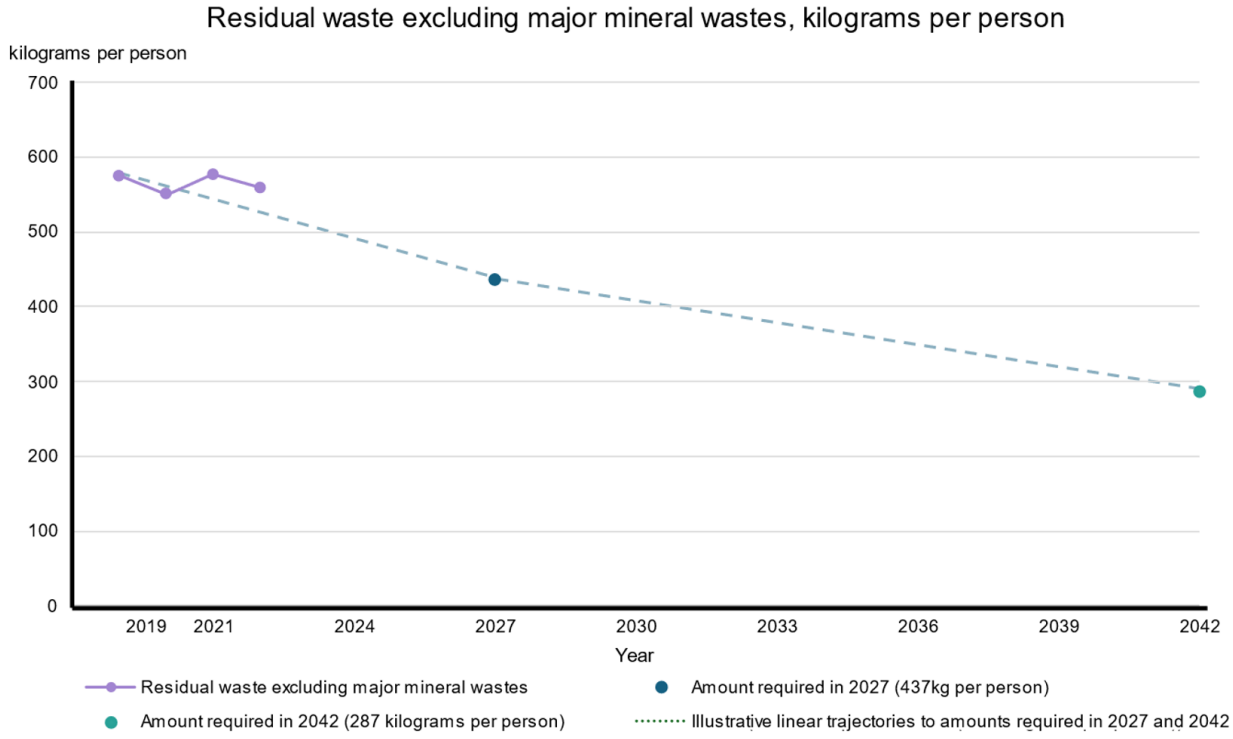
The 2019 to 2022 figures are an estimate of residual waste excluding major mineral waste generated in England and sent to landfill or put through incineration in the United Kingdom or sent overseas for energy recovery. They align with the target scope. The 2010 to 2019 estimates do not account for the movement of residual waste into and out of England, and instead show the total amount of residual waste excluding major mineral waste originating in the United Kingdom that is sent to landfill or put through incineration in England. They do not align with the target scope. Comparisons between estimates prior to and after 2019 should therefore be made with care. Further detail on the differences between these methods can be found in the statistics methodology document.

What the data show

After falling from 574.8 kilograms per person in 2019 to 550.1 in 2020, the amount of residual waste excluding major mineral waste increased to 576.8 kilograms per person in 2021 before falling again to 558.8 kilograms per person in 2022. This represented an increase of 0.3% in 2021 and a decrease of 2.8% in 2022, both from 2019 levels.

In tonnes, the amount of residual waste excluding major mineral waste in 2022 stood at 31.9 million tonnes. This was a decrease of 1.3% from 2019 (32.3 million tonnes).

Figure 14: Residual waste excluding major mineral wastes, measured in kilograms per person



This line graph shows the historical data behind municipal residual waste levels (purple) relating to the Residual waste Environment Act, with an illustrative linear trajectory depicting the progress required to reach the interim target of 437 kilograms per person (dark blue) in 2027, and the long-term Environment Act target of 287 kilograms per person (turquoise) in 2042.

It is too early to identify trends in the data. However, it is anticipated that residual waste excluding MMW both in tonnes and kilograms per person will remain at a similar level to that in 2019 until policies to reduce this waste are introduced.

Understanding this metric

Residual waste is defined as waste that is not recycled or reused, including material that is too degraded or contaminated for these purposes. It can originate from households and commercial businesses, but also from sectors such as:

- construction and demolition
- agriculture, forestry, and fishing
- mining and quarrying
- industry

Residual waste, when collected from households or commercial businesses, is often termed ‘black bag’ or ‘black wheelie bin’ waste. It is typically treated by methods other than recycling or reuse.

For the purpose of reporting progress against the targets, a treatment-based definition of residual waste is used, where residual waste generated in England means any waste originating in England that is either:

- sent to landfill in the United Kingdom
- put through incineration in the United Kingdom
- used in energy recovery in the United Kingdom
- sent outside the United Kingdom for energy recovery

This means that only residual waste originating in England, regardless of where it is treated, is included in the estimates, whereas waste treated in England that originated elsewhere is excluded. Ferrous metals removed from incinerator bottom ash, otherwise known as IBA metals, which have been put through incineration or used in energy recovery in England but are then sent for treatment other than landfill or incineration are also excluded from the estimates.

This is consistent with Defra’s reporting of Waste from Households recycling rates and was an amendment to the target scope made following public consultation, where a number of respondents suggested excluding ferrous metals removed from bottom ash and then sent for recycling.

For the purpose of reporting progress against the targets, waste put through incineration includes Energy from Waste (incineration with energy generation in the form of electricity or heat). Waste used in energy recovery other than conventional Energy from Waste is also included in the definition of residual waste. This includes any waste treatment (including gasification and pyrolysis but excluding anaerobic digestion) that generates energy such as electricity or heat or converts the waste into other energy products such as fuels and substitute natural gas.

Though this end-of-life treatment is included in the definition of residual waste used by the target, some other recovery treatment options other than conventional Energy from Waste, such as waste to fuel, are not included in the estimates. In the case of waste to fuel, this is because this is not yet an active waste treatment option in the UK. When waste to fuel facilities come online and begin accepting waste in the future, work will be done to ensure that these tonnages can be included in the metric.

Figure 15: Summary of the calculation method for the estimates of residual waste

The calculations below are used to estimate:

- residual waste excluding major mineral wastes
- municipal residual waste

Treatment method	Data source	Add to estimate	Subtract from estimate
Sent to landfill	Waste Data Interrogator (waste received and removed; Environment Agency)	Waste sent to landfill in England Waste originating from England sent to landfill in Northern Ireland, Scotland, Wales, or outside the UK	Waste sent to landfill in England originating from Northern Ireland, Scotland, Wales, or outside the UK
Put through incineration (including Energy from Waste)	Waste Data Interrogator (waste received and removed), incinerator monitoring reports (Environment Agency)	Waste put through incineration in England Waste originating from England put through incineration to Northern Ireland, Scotland, Wales, or outside the UK	Waste put through incineration in England that likely originated from Northern Ireland, Scotland, Wales, or outside the UK Ferrous metals removed from bottom ash sent for treatment other than landfill or incineration
Sent outside the UK for energy recovery	International Waste Shipments exported from England (Environment Agency)	Waste sent outside the UK for energy recovery	Nothing to subtract in this calculation

Other forms of energy recovery and not currently included in estimates.

Where estimates are reported in kilograms per person, tonnages are converted to kilograms and divided by mid-year population estimates for England (Office for National Statistics).

The metric excludes major mineral wastes. These are the predominant and largely inert wastes typically arising from the construction and demolition sector, such as concrete,

bricks and sand, as well as soils and other mineral wastes from excavation and mining activities. Tonnages of waste classed as major mineral wastes are identified in the data through a set of List of Waste (LoW) codes.

The metric uses Environment Agency data of tonnages sent to landfill, put through incineration, and sent overseas for energy recovery. These datasets rely on data returns from waste companies and/or exporters and are always produced with a lag. This is due to the time needed to cleanse the data and carry out quality assurance, as well as the administrative time taken to follow-up and chase late or non-compliant respondents. For these reasons, data for the 2023 calendar year are not yet available.

Further detail on the methodology underlying the figures has been published alongside Defra's Estimates of Residual Waste (excluding Major Mineral Wastes) and Municipal Residual Waste in England statistics release. This includes further information on which LoW codes are considered major mineral wastes.

Interim target: By 31 January 2028, ensure that the total mass of residual municipal waste in the most recent full calendar year does not exceed 333kg per head of population in England

Estimates of residual municipal waste generated in England have been published by Defra for the 2019 to 2022 calendar years. As only 4 years of data are available, it is too early to identify trends. This metric will be reported annually, noting that progress towards the target is expected to be reported with a lag (approximately 15 months) for the same reasons as those given for the long-term target. Figures reporting the 2023 calendar year are anticipated to be published in the next update to Estimates of Residual Waste (excluding Major Mineral Wastes) and Municipal Residual Waste in England, provisionally scheduled for Spring 2025.

2023 to 2024 monitoring progress update

In addition to the monitoring progress updates outlined for the long-term target, Defra has commissioned external research into the origin of several chapter 19 waste codes. This research will improve the accuracy of the reporting metric for this target, which defines municipal waste by a list of waste codes.

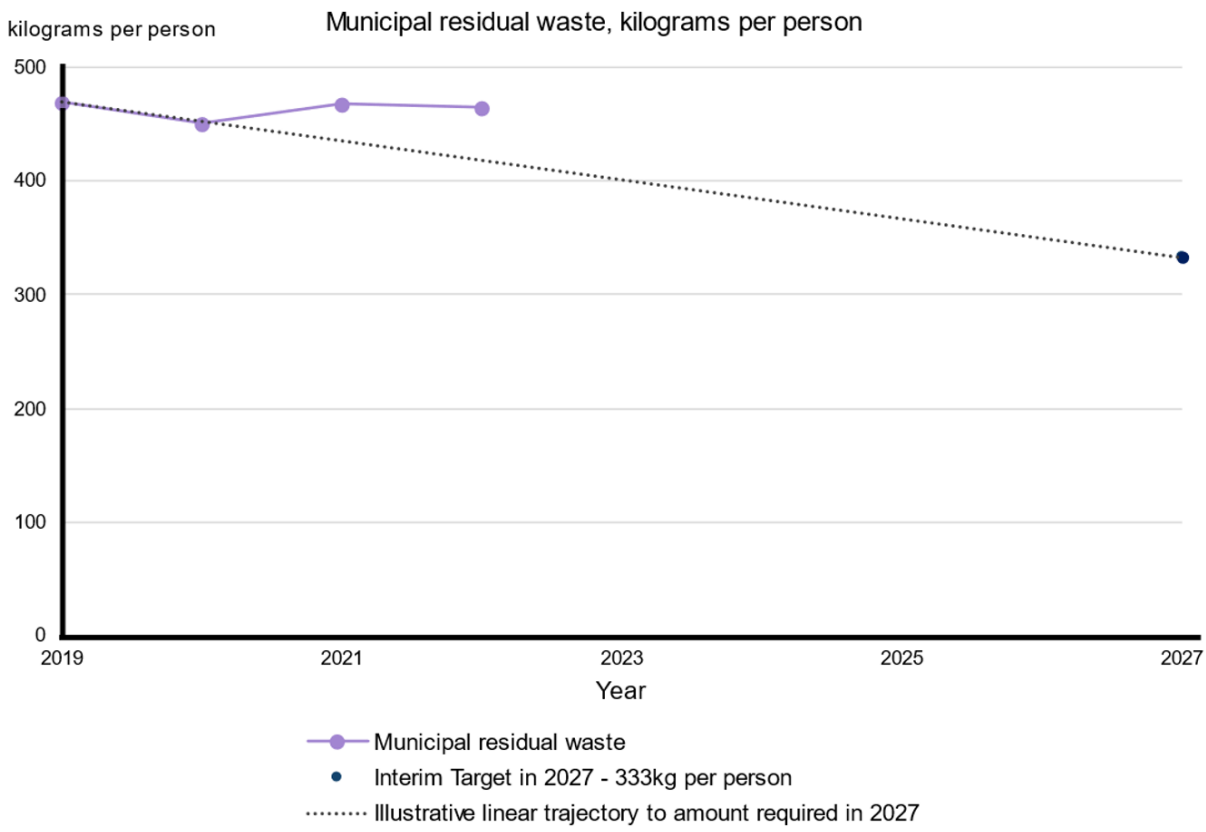
The commissioned research aims to update these assumptions and provide new evidence for what proportion of other chapter 19 codes may have originated from municipal sources. Applying these proportions will help to remove any non-municipal residual waste from the municipal residual waste metric. This aims to improve the accuracy of the reporting metric and help ensure that progress towards this target means a reduction in municipal residual waste as opposed to material from other waste streams.

What the data show

After falling from 468.8 kilograms per person in 2019 to 450.5 in 2020, the amount of municipal residual waste increased to 467.4 kilograms per person and 464.8 kilograms per

person in 2021 and 2022 respectively, representing decreases of 0.3% and 0.9% from 2019 levels. Figure 16 shows the amount of municipal residual waste in England for 2019 to 2022 in kilograms per person.

Figure 16: Municipal residual waste, measured in kilograms per person



This line graph shows the historical data behind municipal residual waste levels (dark blue) relating to the interim waste target, with an illustrative linear trajectory depicting the progress required to reach the interim target of 437 kilograms per person (turquoise) in 2027.

As with the long-term target, it is too early to identify trends in the data, though it is anticipated that residual municipal waste will remain at a similar level to that in 2019 (the interim targets baseline year) until policies to reduce this waste are introduced. The CPRs are anticipated to achieve the majority of the reduction required to meet the target, and further work will be undertaken to identify and implement measures to close any gaps. The reported figures for 2019 to 2022 are consistent with this as the CPRs have not yet been introduced.

Understanding this metric

This metric uses the same definition of residual waste as in the long-term target metric. It also uses the same data sources.

Municipal waste includes both waste from households and waste from other sources which is similar in nature and composition to waste from households, including "household-like" waste generated by businesses. Tonnages of waste classed as municipal are identified in the data through a set of LoW codes.

Further detail on the methodology underlying the figures has been published alongside Defra's Estimates of Residual Waste (excluding Major Mineral Wastes) and Municipal Residual Waste in England statistics release. This includes further information on which LoW codes are considered municipal waste.

Interim target: By 31 January 2028, ensure that the total mass of residual municipal food, plastic, paper and card, metal, glass waste in the most recent full calendar year does not exceed a given figure of kg per head of population in England

Estimates of residual waste generated in England have been published by Defra for the 2019 to 2022 calendar years. This includes estimates of residual municipal:

- food waste
- plastic waste
- paper and card waste
- metal waste
- glass waste

As only 4 years of data are available, it is too early to identify trends. These metrics will be reported annually, noting that progress towards the targets is expected to be reported with some lag (approximately 15 months), for the same reasons as given for the other targets. Figures reporting the 2023 calendar year are anticipated to be published in the next update to Estimates of Residual Waste (excluding Major Mineral Wastes) and Municipal Residual Waste in England, provisionally scheduled for Spring 2025.

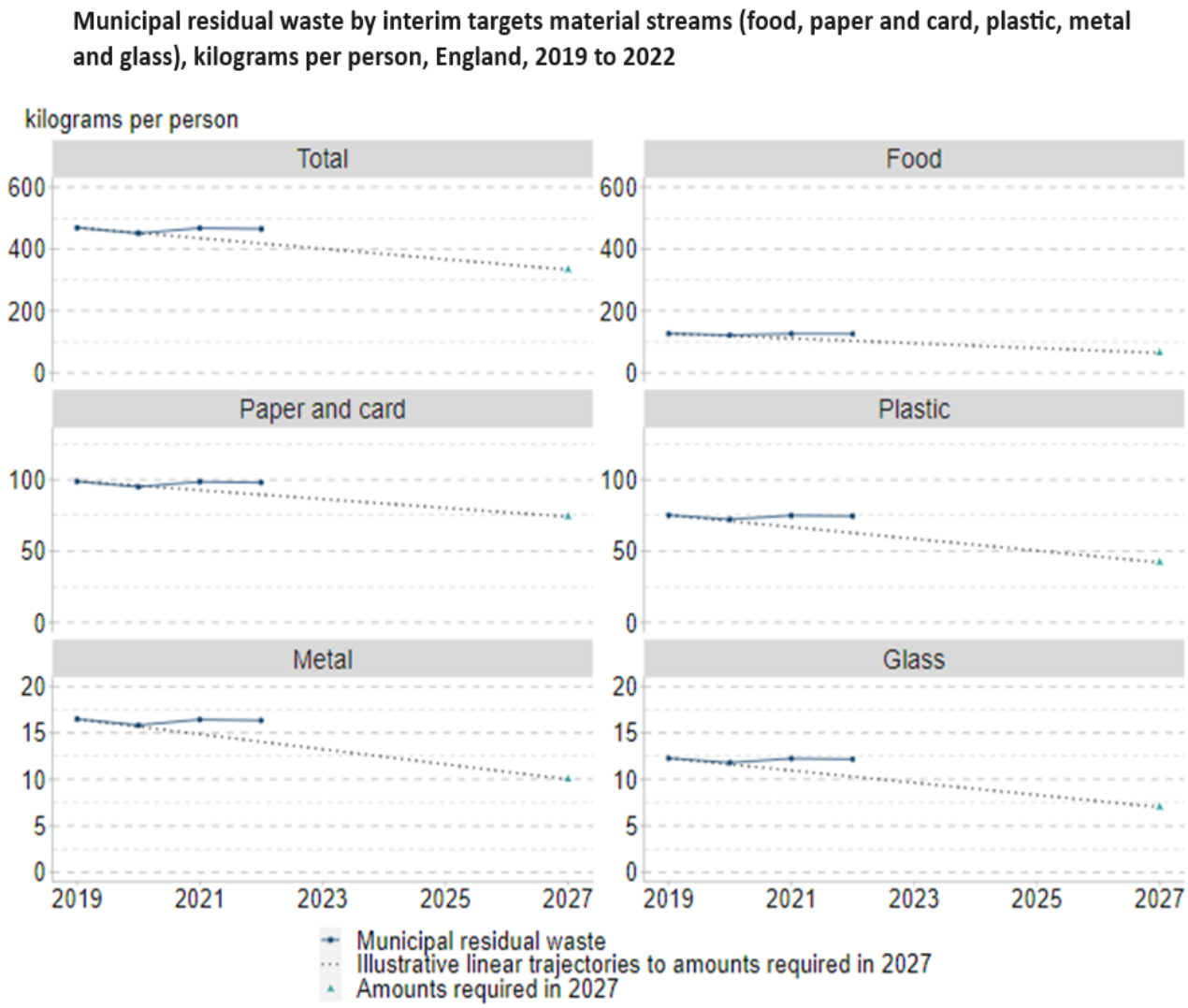
2023 to 2024 monitoring progress update

In addition to the monitoring progress updates outlined for the other targets, Defra have commissioned external research to obtain up-to-date estimates of material composition in the residual municipal waste stream. The outputs of this research will allow for more accurate estimates of the amount of food, plastic, paper and card, metal and glass waste in residual municipal waste.

What the data show

Figures 17 and 18 show the amount of municipal residual waste in England from 2019 to 2022 in kilograms per person for the different material streams including food, paper and card, plastic, metal and glass. Note that these material streams do not sum to total municipal residual waste as this would include other materials such as textiles and waste electricals.

Figure 17: Municipal residual waste by material streams, measured in kilograms per person in England, 2019 to 2022



These line graphs show the historical data behind residual waste by interim targets material streams (food, paper and card, plastic, metal and glass), kilograms per person in England from 2019 to 2022, as well as illustrative linear trajectories to reach the required interim targets in 2027.

Figure 18: Municipal residual waste by types of material in England from 2019 to 2022, measured in kilograms per person

Municipal residual waste	2019	2020	2021	2022
Food	126.7	121.8	126.4	125.6
Paper and card	98.8	94.9	98.5	97.9

Municipal residual waste	2019	2020	2021	2022
Plastic	75.1	72.2	74.9	74.5
Metal	16.5	15.8	16.4	16.3
Glass	12.3	11.8	12.2	12.2
Total	464.8	450.5	467.4	464.8

As with other targets, it is too early to identify trends in the data, though it is anticipated that residual municipal food, plastic, paper and card, metal, glass waste will remain at a similar level to that in 2019 (the interim targets baseline year) until policies to reduce this waste are introduced. The planned CPRs are anticipated to achieve the majority of the reduction required to meet the interim targets, and further work will be undertaken to identify and implement policies to close any gaps. The reported figures for 2019 to 2022 are consistent with this as the CPRs have not yet been introduced.

Understanding this metric

These metrics use the same definition of residual waste and municipal waste as in the other targets. To obtain estimates of the amount of food, plastic, paper and card, metal and glass in the residual municipal waste stream, scale factors are applied to the total tonnage of residual municipal waste. For example, if food waste comprises 27% of residual municipal waste and there were 100,000 tonnes of residual municipal waste, then there would be 27,000 tonnes of residual municipal food waste (not actual tonnage figures.) These scale factors are based on the latest available composition analysis, which was carried out by WRAP for the 2017 calendar year and are held flat for the 2019 to 2022 calendar years in the absence of more recent data. Defra have commissioned research to provide updated composition analysis.

Further detail on the methodology underlying the figures has been published alongside Defra's Estimates of Residual Waste (excluding Major Mineral Wastes) and Municipal Residual Waste in England statistics release. This includes further information on the assumed composition of residual municipal waste.

Goal 6: Using our resources from nature sustainably

There are no legally binding Environment Act targets linked to this area.

Improving our mitigation of climate change

Goal 7: Mitigating and adapting to climate change

There are no legally binding Environment Act targets linked to this area.

Goal 8: Reduced risk of harm from environmental hazards

There are no legally binding Environment Act targets linked to this area.

Improving our biosecurity

Goal 9: Enhancing biosecurity

There are no legally binding Environment Act targets linked to this area.

Enhancing beauty and our engagement with the natural environment

Goal 10: Enhancing beauty and our engagement with the natural environment

There are no legally binding Environment Act targets linked to this area.

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