Resilient and responsive to the impacts of climate change, storing more carbon each year than it produces

Facts, figures and trends

- Total net production-based greenhouse gas emissions from the National Park is 545,000 tonnes of CO_2 equivalent[1]. The predominant source of emissions is agriculture and land-use (73%), followed by transport and domestic (both 10%).
- Emissions have fallen by 20% since 2005, whereas for England as a whole they have fallen by 40%. The smallest falls have been in agriculture and land use (12%) and transport (7%).
- Emissions are very low per hectare (2t compared to the England average of 23t) but very high per person (23t per person vs England average of 5t per person)[2].
- Using consumption-based methodologies, total GHG emissions are estimated as 914,000t CO_2e per year. Agriculture and land-use is still the largest source of emissions but the results reveal the significant contributions from visitor travel to the National Park (18% of emissions) and the activities of visitors whilst here (13%)[3].
- The suggested 'Paris-aligned' pathway to net zero proposes emissions be reduced by 700,000t CO_2e by 2050, and natural sequestration increased by 870,000t (taking total annual emissions to -600,000tCO_2e by 2050).
- The National Park contains over 50,000 ha of peatland: 28,000 ha of which is 'blanket bog (with deposits up to 7 metres deep)[4]. The peat is estimated to store 32 million tonnes of carbon[5], making it nationally significant.
- Much of the peat is heavily degraded and is releasing carbon into the atmosphere. It has been estimated that the net cost to society from emissions from degraded peatlands in the National Park is around £4.4 billion over the next 60 years[6].
- More than 23,000 ha of peatland has been brought into restoration since 2009, through the work of the Yorkshire Peat Partnership[7].
- Around 4% is covered by woodland, of which around a quarter is commercial conifer plantation[8]. Almost 3,000 ha of native broadleaved woodland has been planted since1995[9].

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1 UK National Parks greenhouse gas emissions national statistics: 2005-2021, Department for Energy Security and Net Zero (2023)
2 UK local authority and regional greenhouse gas emissions national statistics: 2005-2021, Department for Energy Security and Net Zero (2023)
3 Yorkshire Dales National Park: Carbon footprint assessment & proposed pathway to Net Zero, Small World Consulting (2022)
4 Natural England (2021)
5 Estimated Peatland Carbon Storage and Greenhouse Gas Flux in English National Parks and Areas of Outstanding Natural Beauty, Natural England (2006).
6 Northern Upland Chain Natural Capital Account, eftec (2021) - see Appendix B.
7 Yorkshire Peat Partnership (2023)
8 Forestry Commission (2022)
9 YDNPA (2022).

- Increasing natural carbon stores is the fourth most important issue for the public[10].
- There are estimated to be 2,700km of hedgerows[11].
- Over 95% of the land in the National Park is in private ownership, with farmers and landowners responsible for the management of the significant natural carbon stores.
- The number of small-scale business and domestic renewable energy schemes is increasing steadily.
- Most of the housing stock is pre-1919 and a significant proportion of properties are still on solid fuel/fuel oil heating.
- Electric vehicle chargers have been installed in all of the National Park Authority's 10 public car parks.
- 87% of visitors to the National Park travel here by private car/van. Only 4% use public transport to access the National Park.[12]

Issues and opportunities

Farming and land management

- How to maximise opportunities for Dales' farmers and landowners to gain economic benefit from the range of environmental goods they could provide.
- The biggest reduction in emissions would come from a shift to 'High Nature Value Farming'/pasture-based grazing - reducing fertiliser use, concentrate use, importation of straw; and buying in of feed. Modified grazing regimes and use of herbal leys would also improve soil health.
- There is considerable evidence that switching to regenerative farming techniques would significantly improve farm business competitiveness and reduce costs in ways that reduce greenhouse gas emissions.
- How to incentivise and engage with farmers and landowners to deliver long-term natural flood management measures in critical target areas.
- What avoidance and resilience measures could be developed to reduce flooding and protect properties within the National Park itself?
- How can the established Peat Partnerships be resourced to complete initial restoration work across the whole National Park? How can farmers and land-managers then be resourced to manage the peat in the long term?
- What scope is there to improve the management and health of non-peat soils to reduce erosion and store more carbon?
- The suggested 'Paris-aligned' pathway to net zero suggests a minimum woodland creation target of 550 ha per year, and a theoretical higher level ambition of 1,100 ha

[10] Yorkshire Dales National Park Management Plan 2025-2030 - Consultation on Priorities: Summary of consultation results (2024)
[11] Rural Payments Agency and Natural England (2024)
[12] YDNP Visitor Survey (2022)

per year. How can new woodland be funded in a way that incentivises farm businesses to plant trees whilst also protecting core areas for important bird species like Curlew?

- How to reduce use of single-use plastic tree shelters in woodland planting schemes.
- There are a handful of remaining sites with conifer plantations that are located on peatland.

Transport and energy

- What realistic scope is there to increase the number of visitors who travel to the National Park by public transport? Is it time to look at radical options to encourage visitors to reduce car use once they get here?
- A small and highly dispersed population with few bus services means access to most services for residents is dependent on travelling by private car.
- What role can public and community transport schemes play in the future – given that free bus passes have rendered most rural commercial services unviable?
- How many more public EV chargers will be needed to meet projected demand?
- How to act on the recognised potential benefits from reinstatement of rail links to the National Park
- Addressing the barriers to wider take-up of small-scale renewable energy to reduce costs for businesses and residents.
- How to ensure that older, ‘hard to decarbonise’ properties that make up most of the housing stock are not overlooked by mainstream retrofit programmes.
- The need to upgrade the energy network – to create capacity for local renewable energy schemes etc.

Policy Context

Some of the key international, national, regional and local strategies that provide important context for updating the Management Plan include:

- ***Net Zero Strategy: Build Back Greener***, HM Government (2021) – sets out policies and proposals for keeping the UK on track to meet its statutory carbon budgets by 2050.
- ***A Green Future: Our 25 Year Plan to Improve the Environment*** , Defra (2018) - set out the Government's 10 goals for improving the environment, within a generation. It details a series of policies to achieve those goals, and how government will work with communities and businesses to do this.
- ***Environmental Improvement Plan 2023***, Defra - revises and updates the 25 Year Environment Plan. Includes a detailed delivery plan with policy actions allocated to different government departments, local government, and the private and third sector.
- ***Delivery Plan for Climate Leadership in National Parks***, National Parks England (2020) – sets out how national park authorities will work together with others, at scale, to achieve rapid action towards net zero in National Parks.
- ***York and North Yorkshire's Routemap to Carbon Negative***, York and North Yorkshire Local Enterprise Partnership (2022) – sets out a co-owned plan to accelerate the transformation to a carbon negative York and North Yorkshire by 2040.
- ***York, North Yorkshire & East Riding's Local Energy Strategy***, York and North Yorkshire Local Enterprise Partnership – sets out a clear pathway towards a low carbon economy, ensuring that the area is well-positioned to realise the economic, environmental and social benefits from the transition.
- **Cumbria's Pathway to Net Zero by 2037**, Zero Carbon Cumbria (2024) – sets out a co-owned plan to accelerate the transformation to net zero, including detailed plans for Buildings; Transport; Farming; and, Waste.
- ***Adapting to Climate Change in the Yorkshire Dales National Park***, National Park Management Plan Steering Group (2011) – anticipates some of the impacts, threats and opportunities posed by climate change in the context of the Yorkshire Dales National Park.
- ***Yorkshire Dales Strategic Flood Risk Assessment (2022)*** – looked at flood risks from fluvial, surface and ground water sources, including the projected impacts of climate change, and analysed implications for development sites.
- **Yorkshire Dales National Park Nature Recovery Plan**, Yorkshire Dales Biodiversity Forum (2023) – sets out aspirations and objectives for action between now and 2040, aiming to conserve and enhance the biodiversity within the National Park.
- ***YDNPA Statement on Public Transport*** (2023) – sets out the National Park Authority's views about how public transport should be developed in – and to - the National Park.