

**PEAK DISTRICT NATIONAL PARK AUTHORITY
CARBON MANAGEMENT PLAN PROGRESS REPORT 2021/22**

1. INTRODUCTION

1.1. *Our Vision – as defined within Peak District National Park Authority Carbon Management Plan 2020-2050 (CMP2¹)*

Our vision is to be a net zero carbon Authority no later than 2050

The Peak District National Park Authority (“the Authority”) is committed to reducing our own carbon emissions through improvements to our assets (including property and fleet), ways of working and enabling and encouraging behavioural change in our organisation. We will promote our approach and achievements within our local communities and to visitors.

We have previously set a target for carbon reduction. Following the publication of our second carbon management plan we are now looking forward towards achieving net zero.

1.2. *Scope*

The scope and data contained within this document reflects that within the Authority’s CMP2. This report serves not only as a performance reporting tool but also allows an annual review of progress against the net zero target in practical terms.

CMP2 and this performance report cover emissions from activities over which the Authority has operational control: including energy and fuel used by the Authority and within its property portfolio, as well as the operational emissions from transport, waste and water. All greenhouse gas emissions are measured and recorded as carbon dioxide equivalent (CO₂e).

The scope of a carbon footprint is defined according to the level of control that the organisation has over its emissions and are categorised as Scope 1, 2 or 3. These are summarised below:

Scope 1: Direct	Scope 2: Energy indirect	Scope 3: Other indirect
Fuels combustion (direct emissions): e.g. gas, oil & biomass burnt in boilers & furnaces	Purchased electricity generation	Purchased electricity (Transmission & Distribution losses)
Owned Transport: e.g. cars & vans	Purchased heat	Fuel combustion Well-to-tank (WTT) emissions
Emissions from fuel combustion in tenanted properties (e.g. oil, coal, gas, biomass)		Business travel: via transport not owned by the organisation
		Waste disposal
		Mains water supply
		Mains sewage treatment

More information concerning the scope of our reporting, CO₂e etc. can be found within our CMP2.

¹ [Peak District National Park Authority Carbon Management Plan 2020-2050](#)

1.3. *Authority owned land*

For the first time we now have data on the carbon emissions and sequestration from or to Authority owned land. Alongside this we have information concerning the amount of carbon that is stored within the land owned by the Authority.

The emissions / sequestration from land could be considered to be within scope 3 but at this stage is being treated as outside of the scope of our annual reporting and is considered in a separate section at the end of this report. This approach has been taken as the emissions alone do not reflect the full picture of carbon stored within the land and the avoidance of this carbon being released. The Authority also has limited control over some of the underlying factors causing the emissions (such as existing tenancies). A more detailed report is due to be published in 2023 concerning the emissions from land and when this is complete the reporting protocol will be reviewed for future years.

2. PERFORMANCE REPORT

2.1. Overall progress toward net zero

Our overall performance has shown a significant level of improvement since our baseline was first established in 2009/10 and again since it was 'rebased' with the 2017/18 data. While our focus is now looking forward at how we achieve net zero, there is some value in looking at what we have achieved to date and where this can be applied to other areas.

A summary of the sources of emissions each year for Scopes 1, 2 and 3 is shown in Figure 2, below:

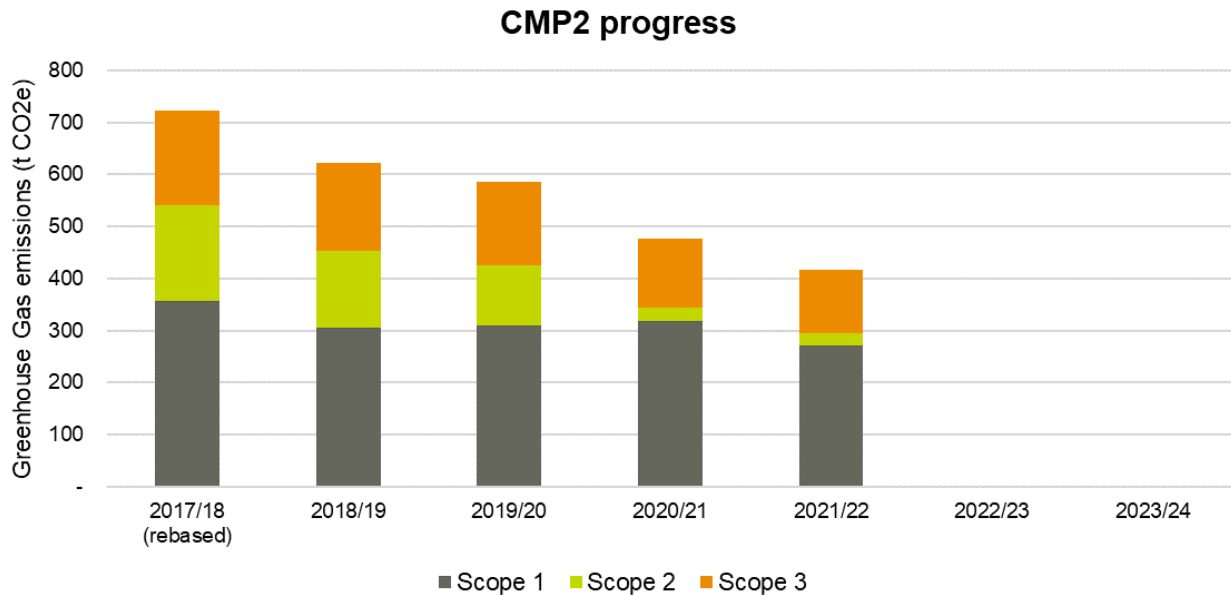


Figure 1. Graph showing total CO₂ emissions from scopes 1,2 and 3.

A breakdown of the sources of the emissions is given in the table below:

CMP2 reductions	Scope 1	Scope 2	Scope 3	Total CO2 emissions (tonnes)	Reduction from 2009/10 baseline	Annual achievement
2017/18 (rebased)	357	183	183	723	-24%	0
2018/19	306	146	171	623	-34%	-11%
2019/20	311	116	160	587	-38%	-4%
2020/21	318	26	127	471	-50%	-12%
2021/22	272	22	124	418	-56%	-6%

Table 1: Summary of all emissions since 2017/18

As you can see in Table 1, we are now over half way toward our goal of becoming net zero compared to our emissions in 2009/10. The following sections look at each scope in turn in an attempt to recognise where our efforts can be best focussed.

2.2. Scope 1 emissions

Scope 1 emissions have shown a notable reduction for the first time in the last 5 years with emissions falling by 46 T over the reporting period. This adds to the previous achievements to bring the total reduction to 85T since 2017/18.

Much of this year's decrease has come from reductions in heating gas emissions across our operational and visitor facing sites (accounting for 31T CO₂e of the reduction). This probably reflects the relatively mild winter and also increasing pressure on building users to reduce energy use and therefore costs.

We have also seen reductions from tenanted properties (9T CO₂e) which primarily reflects the conversion of a further property from solid fuel to renewable heating system. A reduction in fleet and pool vehicle fuel use has also resulted in a small emissions reduction of 4T CO₂e reflecting the move towards greater use of electric vehicles.

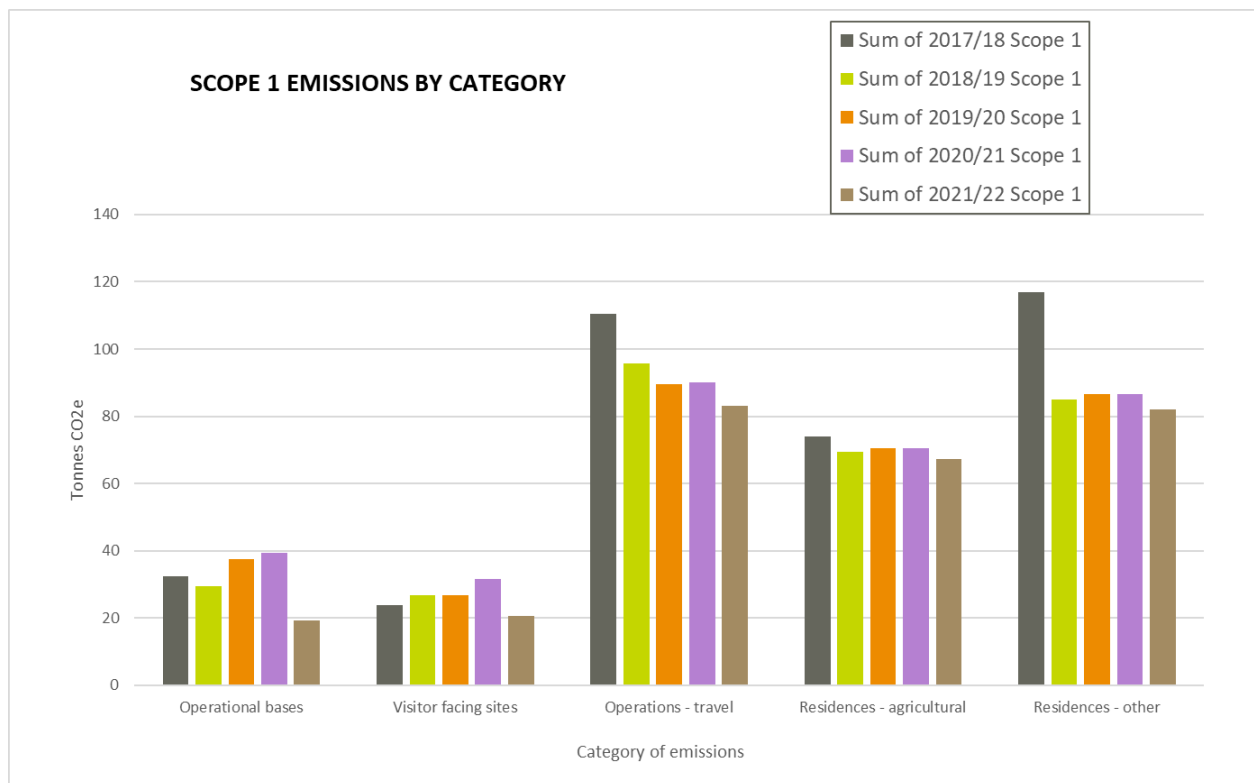


Figure 2. Scope 1 emissions

Scope 1 emissions arising from travel and tenanted properties (agricultural and residential) have proven to be the most difficult to reduce and must form an area of focus over the coming years. However, significant investment and changes to operational working practices will be needed to make significant improvements.

2.3. Scope 2 emissions

Scope 2 emissions have reduced significantly since 2017/18 dropping from a total of 183 tonnes in 2017/18 to 22 tonnes in 2021/22. More detail of this is shown in Figure 3 below:

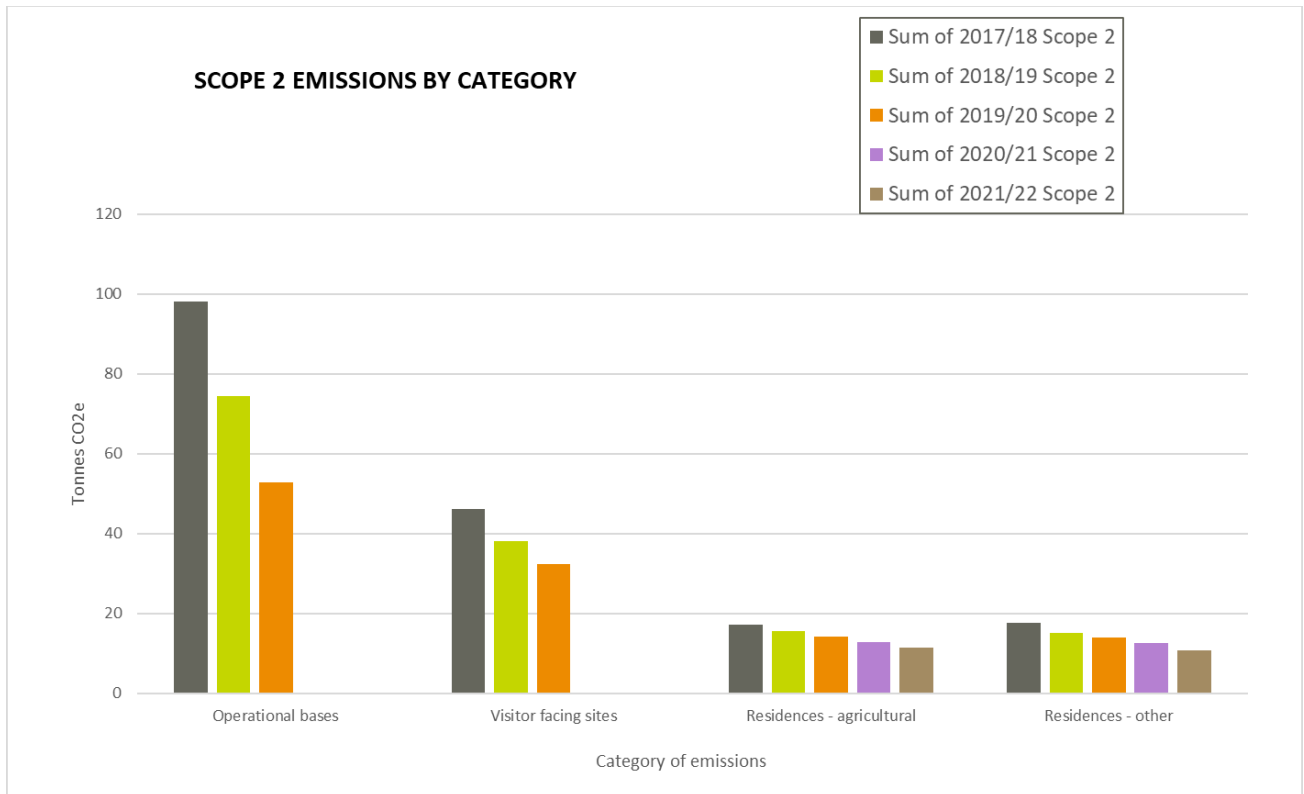


Figure 3. Scope 2 emissions

The reduction is primarily down to the change in the energy mix of electricity generation both nationally and also specifically by the supplier used for Authority operated properties. The most prominent change is that the Authority's main supply contract is now 100% renewable energy. This means that our operational and visitor facing sites do not cause any scope 2 emissions.

Improvements to the standard mix nationally have also resulted in improvements at tenanted properties as has the use of a clause within new tenancies to ensure that all tenants purchase only 100% renewable electricity. Once this is fully implemented across our estate, the scope 2 emissions will reduce to zero.

2.4. Scope 3 emissions

Scope 3 emissions have reduced by approximately 32% since the 2017/18 year leaving a residual emissions of 122 tonnes. The greatest reductions to date have arisen from travel emissions and waste production. A significant reduction in travel emissions has been achieved over the 2020/21 and 2021/22 years – this may be in part due to the impacts of Covid so some of these gains may be reversed in coming years. A summary of the scope 3 emissions is provided in figure 4 below.

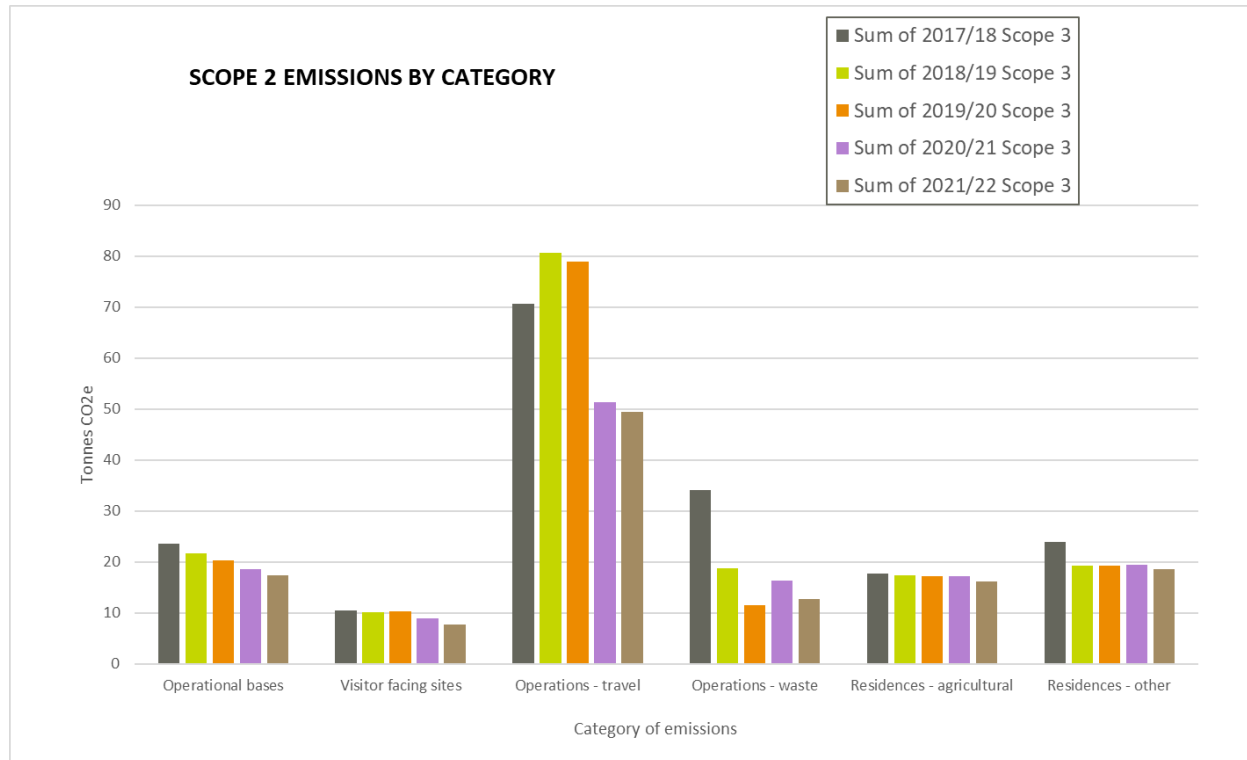


Figure 4. Scope 3 emissions

Emissions resulting from business travel in private vehicles are the major contributor to Scope 3 emissions and must form an area of focus over coming years. Some scope 3 emissions may also prove the most difficult to eliminate in future years such as:

- Water use in operational and tenanted properties can be reduced but will never be eliminated so will result in some residual emissions.
- Similarly, there will always be some waste produced from our activities and sites that will always result in some emissions in its processing, even if recycled.
- It is unlikely that, operationally, the Authority will ever eliminate travel in private cars and unless / until the entire UK fleet is electric and all electricity generation is 100% renewable, there will be residual emissions that are unavoidable.

3. EMISSIONS FROM LAND

The Authority has now gathered data concerning the emissions and sequestration to the land it owns across its estates and operational properties. This data is summarised below:

3.1. Carbon emissions from land

Emissions from land represent the net of emissions and sequestration and is currently a positive figure meaning that overall the Authority's estate is emitting Carbon.

Property type	Area (ha)	Total emissions (t CO2e/year)	Total sequestration (t CO2e/year)	Total carbon footprint (t CO2e/year)	Total emissions per hectare (t CO2e/year/ha)
Woodland	303.00	0.00	-242.00	-242.00	-0.80
Minor property	139.00	94.00	-6.00	88.00	0.63
Operational property	9.00	0.00	-9.00	-9.00	-0.97
Trails	128.00	0.00	-28.00	-28.00	-0.22
North Lees Tenancy	484.00	110.00	-1,021.00	-911.00	-1.88
Warslow Tenancies	918.94	3,175.00	-14.00	3,161.00	3.44
Warslow in hand land	569.00	87.00	0.00	87.00	0.15
Total	2,550.94	3,466.00	-1,320.00	2,146.00	0.84

Table 2: Emissions from Authority owned land

As can be seen from the data above and Figure 5 below, the key areas of sequestration are woodlands and North Lees Farm Tenancy. Some of the Warslow Moors Estate agricultural tenancies are the largest emitters of carbon. This is primarily due to these holdings being farmed more intensively mainly for milk and beef cattle production i.e. there is a focus on food production rather than conservation. Additionally, four of the twelve farms are still held under Agricultural Holdings Act tenancies which were inherited by the Authority in 1986 and do not reflect as stringent conservation practices that they would do if re-let today. This will be investigated in more detail once the full report is completed.

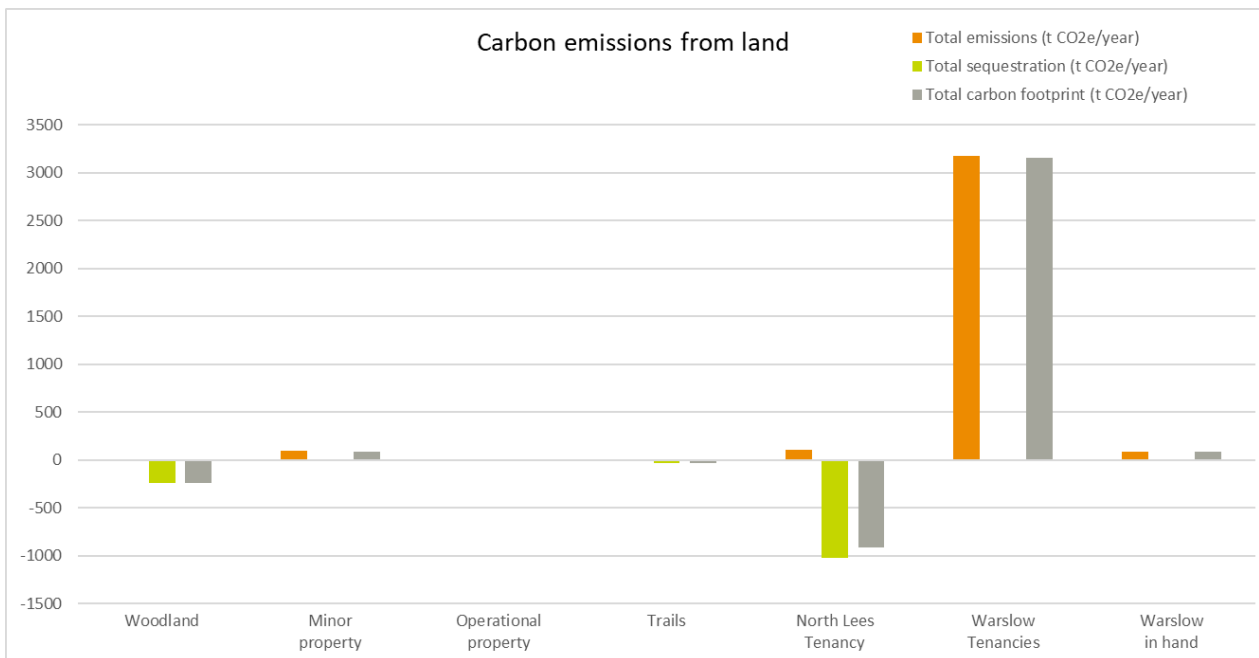


Figure 5. Carbon emissions from land

This information presents an excellent starting point for achieving reductions in carbon emissions through improving practices and making decisions around the best land use and it is envisaged that in time an action plan will be formulated that reflects this.

3.2. Carbon stored in the land

While the Authority's land is emitting overall, this does not recognise the fact that significant volumes of carbon are stored within the land and the practices across the estate ensure that this carbon is not released. The volumes of stored carbon are given in table 3 below:

Property type	Area (ha)	Carbon stored in plant material (t)	Carbon stored in soil (t)	Total Carbon stored (t)
Woodland	303	-115,000	-22,000	-137,000
Minor property	139	-5,000	-11,000	-16,000
Operational property	9	-2,000	-1,000	-3,000
Trails	128	-31,000	-10,000	-41,000
North Lees Tenancy	484	-2,000	-291,000	-293,000
Warslow Tenancies	919	-7,000	-339,400	-346,400
Warslow in hand	569	-1,000	-1,084,000	-1,085,000
Total	2,551	-163,000	-1,758,400	-1,921,400

Table 3: Carbon Storage in Authority owned land

Once a fuller understanding of the data presented above is gained, this information will prove valuable in decision making processes around our assets.

Please also see the notes relating to land-based emissions and storage in Appendix 1.

APPENDIX 1: NOTES ON LAND BASED EMISSIONS:

The carbon footprint for the Peak District National Park Authority's owned estate was modelled using 2022 v3.3 of the Authority's bespoke Peak Carbon Tool, developed by sector leading consultants ADAS in 2009 as part of a study of Environmental Quality Mark award holding businesses. The tool has periodically been updated, with this most recent update including the officially adopted UK carbon data from the Forestry Commission's Woodland Carbon Code and the Peatland Code, as well as Natural England publication NERR094 - Carbon Storage and Sequestration by Habitat 2021.

The incorporation of these nationally adopted codes and the Natural England data sets into the Peak Carbon Tool has led to significant changes in the results output compared to previous versions of the tool:

- Grassland: There is now no sequestration associated with grassland, as overall this is considered to be in equilibrium, emitting a similar amount of carbon over a year as it sequesters. This is based on 'low confidence' national data, rather than specific upland grasslands and so may not reflect the true picture for land managed for conservation in the Peak District National Park.
- Moorland and peat: Previous versions of the Peak Carbon Tool showed moorland peat as sequestering. Since then, a number of carbon codes and studies have been published by conservation bodies, including the 'Peatland Code' and 'Implementation of an Emissions Inventory for UK Peatlands 2017', the data from which has now been adopted and incorporated into UK carbon emissions reporting. These documents show UK peatland, on the whole, to be emitting carbon, even following restoration, with only 'near natural' peat sequestering small amounts.
- Stored carbon: the Natural England publication NERR094 - Carbon Storage and Sequestration by Habitat 2021 sets out much more conservative estimates for stored carbon in soils than previous Defra publications. The 2022 v3.3 Peak Carbon Tool can report either previous Defra data or 2021 Natural England data. For this study the more recent Natural England data has been used.

The result of these changes to the tool is a PDNPA owned estate carbon footprint with significant net carbon emissions, largely from farming practices and livestock. In previous versions of the Peak Carbon Tool (based on older data sets), sequestration from grassland and particularly moorland, 'balanced off' these emissions.

However, it should be noted that the emissions from the owned estate are the by-product of land management that delivers a range of already well recognised public benefits e.g. habitat, species, cultural heritage, access. These results also highlight the importance of the estate in terms of carbon storage - with nearly two million tonnes of stored carbon within vegetation and soils, even using the more conservative Natural England dataset. This highlights the role of the Authority, and their tenant farmers and graziers as carbon stewards, protecting stored carbon through their land management activities.