

Rewild the Commons Interim Research Report

Materiality with Studio Mothership for Wild Card

This research surveys the likely ecological health and climate impact of common land in England. We use a variety of data to indicate the condition of the commons, using the most recent and/or best available evidence. Between peatlands and Sites of Special Scientific Interest (SSSIs), the two predominant sources, we can indicate the health of 85% of common land by area. This interim report moves through evidence themes, from SSSIs until the rights of the commons.

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Headline Findings

SSSIs

58% of English common land has Site of Special Scientific Interest (SSSI) status. Only 7% of all other land in England has this designation which points to its unique ecological significance for the country.

However, based on SSSI data, **nature on commons is 3x more ecologically depleted** than other areas of England.

Sadly, **only 14% of SSSIs on common land are in a good state for nature**, based on a favourable condition assessment, less than 1% of all English common land. This is compared to 38% of SSSIs on English land excluding commons pointing to an exceptional level of degradation on common land.

Drainage is the single largest pressure affecting areas of common land classed as SSSIs, suggesting the deliberate and sustained **drainage of upland peatlands is the primary ecological problem on common land** in England.

Total grazing pressure affects the greatest area of the common land: overgrazing livestock and undergrazing (likely wild and livestock) are the largest pressures after drainage.

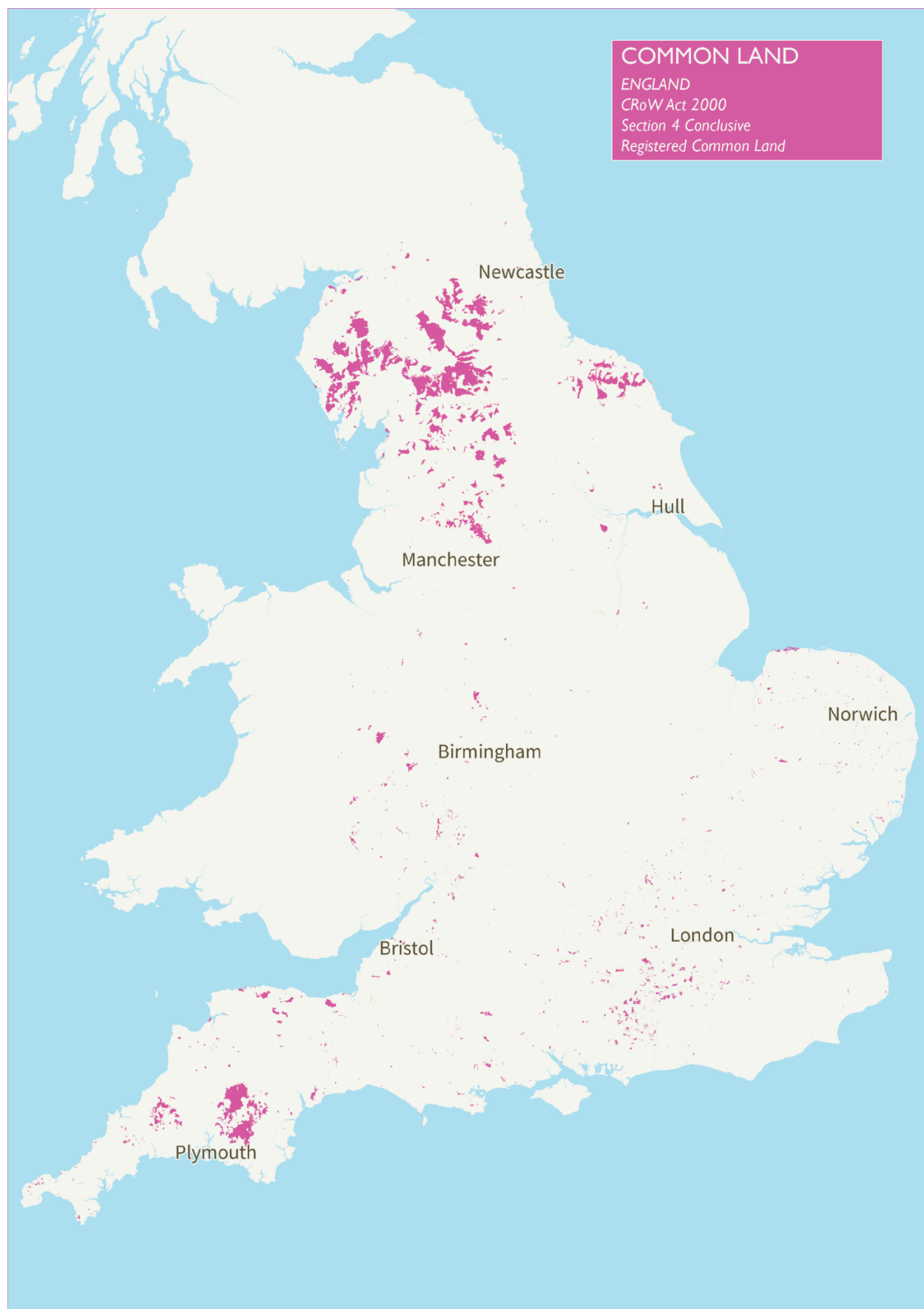
Peatland

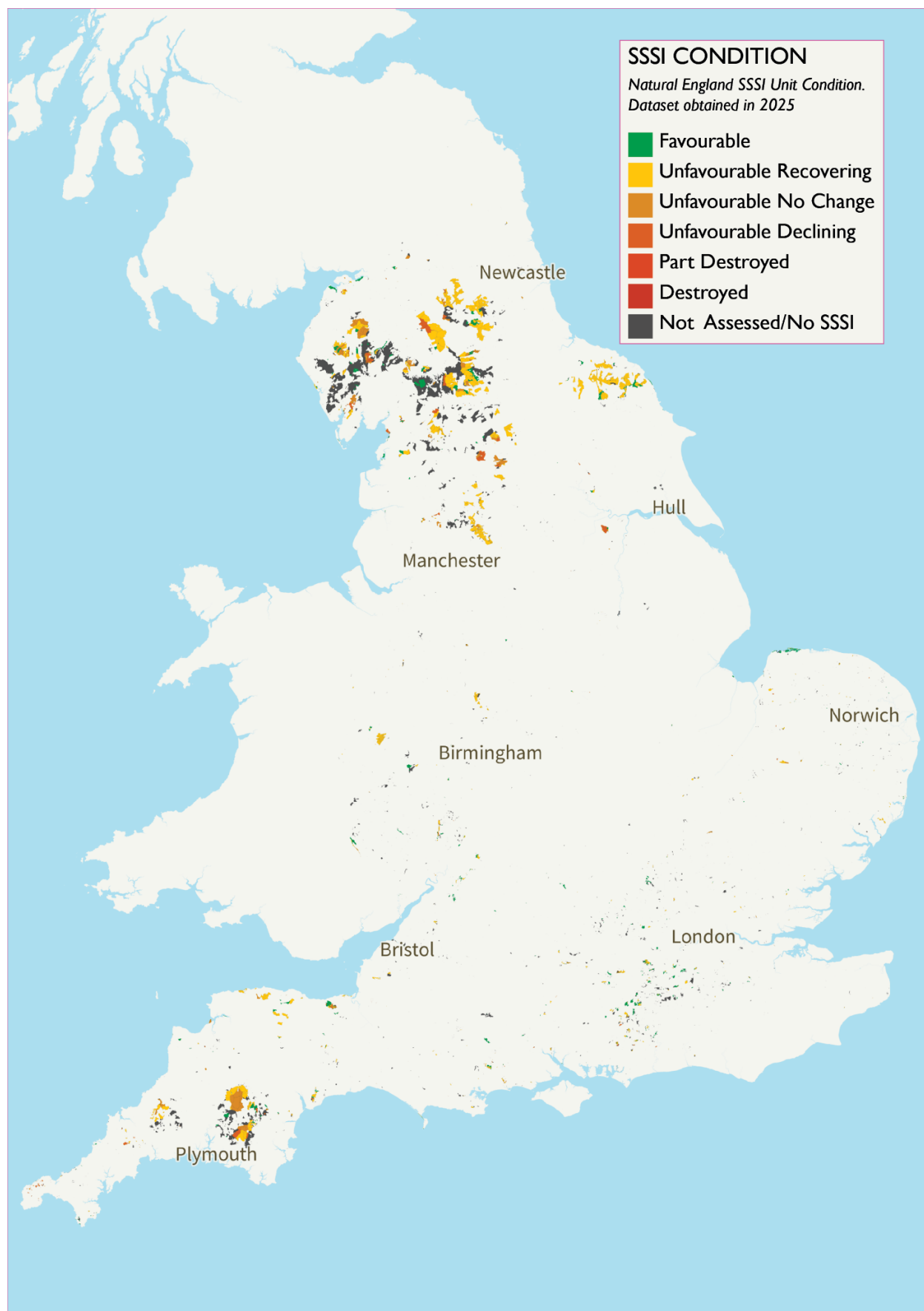
52% of peat bogs on common land are ancient and deep, which are the type that store the most carbon. 36% of peatland in National Parks are deep peat and on English peatland outside of the commons, 47% is deep peat. This tells us that peat, by a small margin, is better protected on commons than outside of it.

Of the 10 commons that have the largest carbon stores, only 2 are currently sequestering CO₂, while 5 are contributing to CO₂ emissions. This suggests large gains for climate action could be made by restoring peatland across common land.

Livestock

DEFRA does not hold a record of the number of livestock grazed on the commons, or know of any government department that does, according to responses to our Environmental Information Requests. With our data pointing to grazing as the most extensive pressure on common land, this is a major data gap in the governance of commons.





Sites of Special Scientific Interest

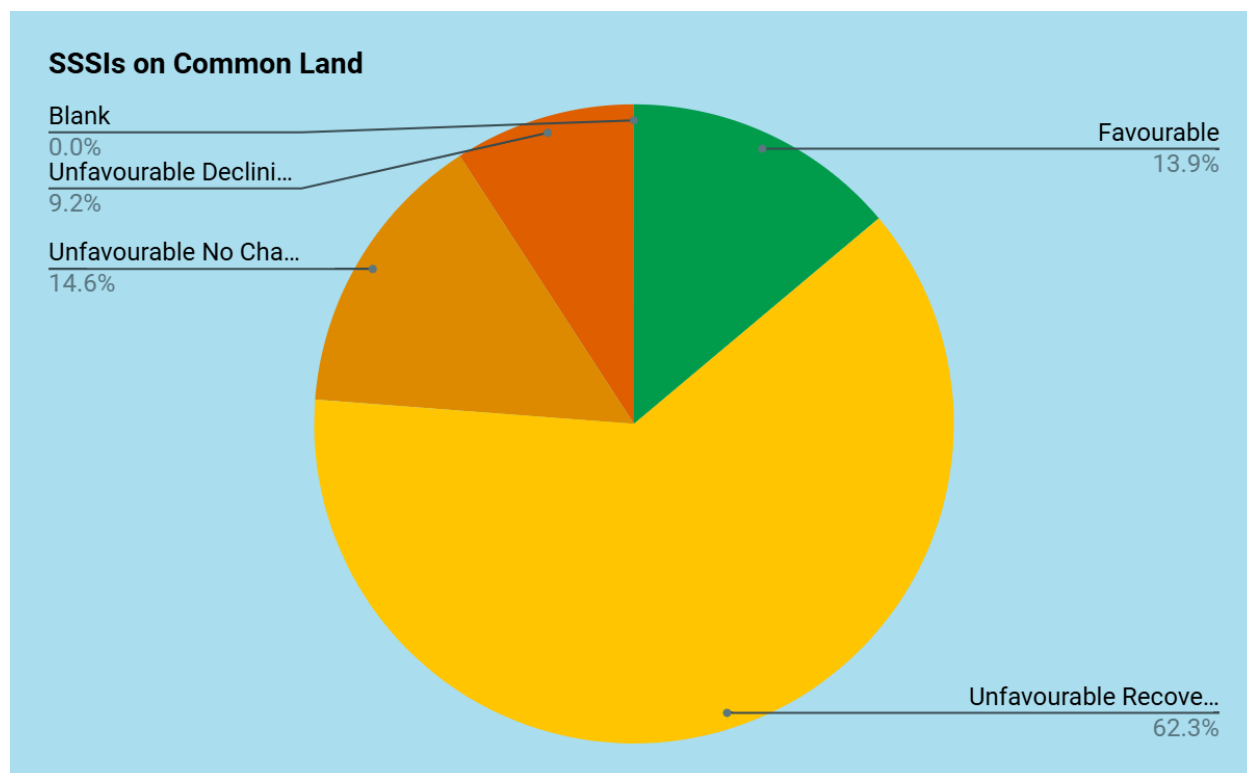
Condition

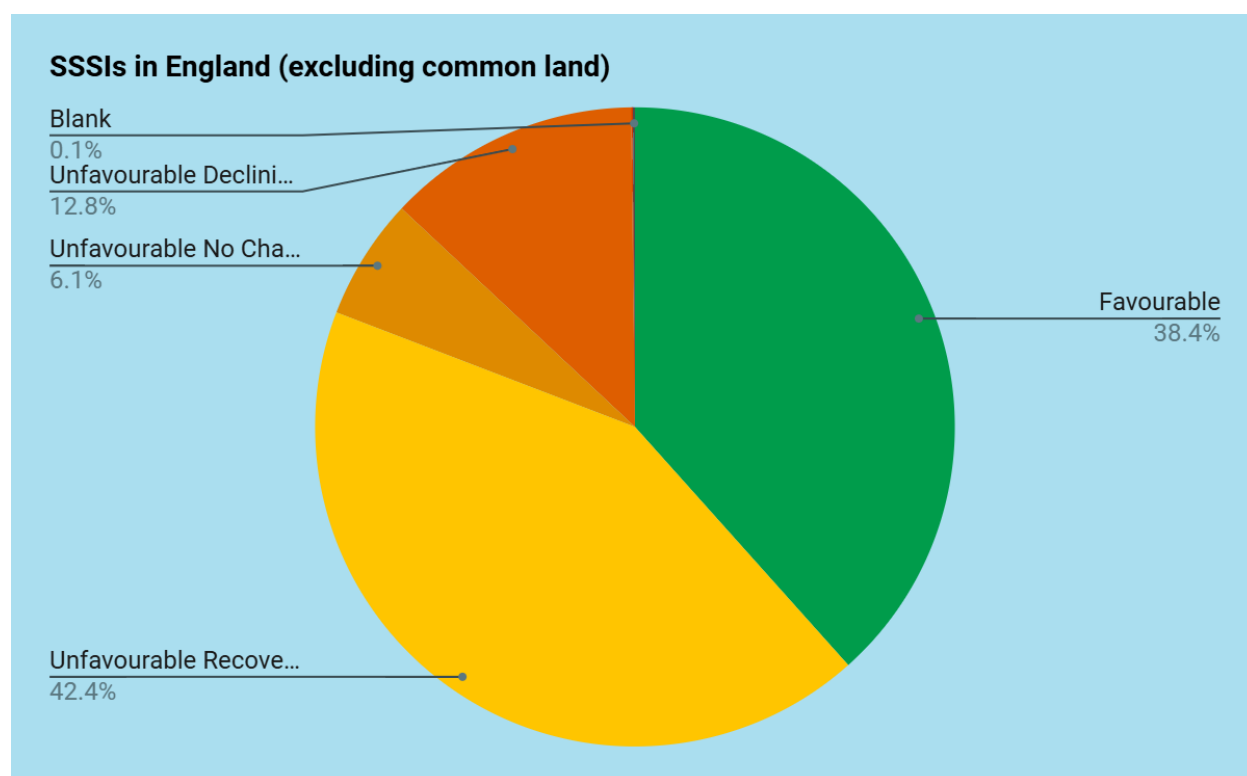
58% of English common land has Site of Special Scientific Interest status, while only 7% of all other land in England has this designation.

Up to 17% of common land SSSI area could currently contribute towards 30x30, when *favourable* and the most reliable *unfavourable recovering* assessments are combined. 43% of SSSI land outside of the commons could contribute to 30x30 under the same methodology.

Sites of Special Scientific Interest (SSSIs) on common land are in worse health compared to SSSIs outside of common land. By area, just 14% of SSSI land within commons is in *favourable* condition, compared to 38% on all other English land.

However, more SSSIs on commons are potentially recovering, with 62% assessed as *unfavourable recovering*, while 42% are recovering outside of common land. Proportionally, less SSSI land is classed as *unfavourable declining* within the commons than outside, 9% compared to 13%.





Conservation groups have argued, however, that Natural England *unfavourable recovering* assessments from 2003 until 2014 may be unreliable, a time period when guidance interpretations allowed an upgrade to *recovering* without on the ground evidence (Cockburn 2020; Shrubsole 2025; Natural England 2025b). This may have affected 66-76% of *unfavourable recovering* SSSI land area (the subdivisions used for recording assessments) that overlaps common land.

70% of SSSI units on common land are overdue for re-assessment, the subdivisions of individual SSSI sites, according to the Joint Nature Conservation Committee guidance for government. This amounts to 76% of the land area shared between SSSIs and common land not having been inspected in the last six years.

SSSI Condition	Common Land (ha)	%	England excl. CL (ha)	%
Favourable	29550	14	341664	38
Unfavourable Recovering	132794	62	377805	42
Unfavourable No Change	31133	15	54707	6
Unfavourable Declining	19514	9	114175	13
Part Destroyed	4	0.002	428	0.05

Destroyed	0.1	0.00005	193	0.02
Not Assessed	0.03	0.00001	279	0.03
Blank	9	0.004	822	0.09

Arkengarthdale Common in the North Yorkshire Pennines has the highest area of overlap with favourable SSSI land. The most overlap with unfavourable recovering is on Northumberland's Allendale Common. Common land on Dartmoor has the largest overlap with unfavourable no change. A common in South Devon, 'Hentor Warren and part of Crownhill Down' has the highest area of unfavourable declining SSSI. Bugs Hole Fen in Suffolk has the largest area overlap with a part destroyed SSSI. Only one common overlaps a destroyed SSSI, Breeze Hill and Melbury Hill in Dorset, with a 0.1% overlap.

SSSI Condition	Overlapping Commons
Favourable	688
Unfavourable Recovering	747
Unfavourable No Change	326
Unfavourable Declining	294
Part Destroyed	4
Destroyed	1

Methods Note:

We used two methods to compare common land to SSSI units - one for national level figures and the other to compare within the common land dataset. At a national level (1), we used the clip and difference tools to cut the SSSI unit dataset into areas inside and outside common land. We then used this to compare the land by area, which was calculated in QGIS before and after cutting the dataset. At a commons level (2), we used the overlap analysis tool to produce areas and percentages of overlap for each SSSI condition, attached to each section of common land. These two methods were used consistently for each section of analysis, from woodland to peatland. Primarily, the national method was developed to calculate the most accurate figure when calculating carbon and greenhouse gas flux at a national level, using clip and difference. There are small discrepancies in area between the two methods as set out below, but not significant to the broad trends.

SSSI Condition	Method 1 Area (ha)	%	Method 2 Area (ha)	%
Favourable	29549.91	13.87	31364.07	14.73

Unfavourable Recovering	132793.73	62.34	133229.75	62.55
Unfavourable No Change	31132.85	14.62	30850.77	14.48
Unfavourable Declining	19514.37	9.16	17535.16	8.23
Part Destroyed	4.33	0.002	4.33	0.002
Destroyed	0.12	0.00005	0.11	0.00005
Not Assessed	0.031	0.00001	0.031	0.00001
Blank	8.68	0.004	8.68	0.004

Condition Caveats:

The austerity policy environment surrounding Natural England and internal assessment interpretations have clouded the condition of Sites of Special Scientific Interest.

Unearthed reported in 2024 that most favourable condition assessments were out of date, older than the six year recommended deadline for re-inspection set by the Joint Nature Conservation Committee (Howard 2019). The number of Environment Agency inspections plummeted during the last Conservative governments and the onset of austerity policy (Wild Justice 2023). As of 2024, a quarter of SSSIs were not assessed at all during successive Conservative governments, and “72% of SSSI land” was due for re-assessment (Howard 2019). The more recently a SSSI is assessed, the more likely it is to be in a degraded condition (Wild Justice 2023).

Sites of Special Scientific Interest are split into units for recording condition status. Of the 679 SSSIs that overlap with common land, 513 contain units that were assessed over six years ago. 70% of units overlapping with common land should be reassessed according to the Joint Nature Conservation Committee guidance, while 30% have assessments within six years.

From 2003, Natural England upgraded unfavourable SSSIs to *recovering* when a management plan or funded agreement had been reached with the landowner, rather based on changes made on the ground, according to the RSPB (Cockburn 2020; Shrubsole 2025). This was referred to as the *Tew Rule* by Natural England, who maintain that this was only the case when “reasonable expectation that the necessary actions would be implemented, even if tangible works had not yet begun” and that this “was in use from around 2003 and continued until 2014” (Defence Estates and Natural England 2009; Natural England 2025b).

In 2023, Wildlife and Countryside Link (WCL) ruled out *unfavourable recovering* as contributing towards 30x30, the government target to protect 30% of the UK for nature by 2030 (WCL

2023). It is not clear if this refers to the Tew Rule specifically, or another similar policy. Their most recent report continued this line, despite updated assessment guidance issued by Natural England in the spring of 2024 (WCL 2024). This was due to difficulty in assessing which SSSIs had been granted their condition status subsequent to a Spring 2024 guideline change. While Natural England said that from 2014 “unfavourable recovering should only be used where there is tangible evidence of recovery actions being implemented on the ground”, WCL refers to policy change a decade later (Natural England 2025b).

Between 213 and 260 SSSIs that overlap common land may have been affected by the Tew Rule, when SSSI condition dates within 2014 and counted and discounted respectively. Up to 71% of *unfavourable recovering* SSSI units related to common land may have been affected by the policy, with a minimum of 61% if the cut-off point is set at the start of 2014 rather than the end.

599 SSSIs on common land may meet the 30x30 standards as expressed by WCL, 18% of the overlapping common and SSSI land area. This was calculated by including the unfavourable recovering SSSI units assessed after the publication date ([01/02/2024](#)) of guidance WCL was prepared to accept into 30x30 status, alongside the favourable SSSI already accepted by WCL (WCL 2024).

We asked Natural England when the Tew Rule was in use, and the full response from their internal Protected Sites team was:

“The ‘Tew Rule’ was not a formal policy but a pragmatic interpretation of the Common Standards Monitoring Guidance, developed within English Nature in the early 2000s. It allowed a Site of Special Scientific Interest (SSSI) unit to be assessed as being in unfavourable recovering condition where there was a credible and approved management plan or funded agreement in place, with a reasonable expectation that the necessary actions would be implemented, even if tangible works had not yet begun. At the time, Tom Tew was General Manager for Designated Sites at English Nature, and the approach became informally associated with his name.

This interpretation was in use from around 2003 and continued until 2014, when revised guidance clarified that unfavourable recovering should only be used where there is tangible evidence of recovery actions being implemented on the ground.

While the specific ‘Tew Rule’ is no longer applied in that form, the principle of assessing recovery based on management actions remains part of Natural England’s approach. The current published standard defines unfavourable recovering as applying when: ‘The feature is not yet fully conserved but all the necessary management measures are in place. Provided that the recovery work is sustained, the feature will reach favourable condition in time. At least one of the designated feature’s mandatory attributes is not meeting its targets (as set out in the site-specific FCT).’

(Natural England 2025b)

Pressures

The pressures affecting the largest areas of common land are drainage, overgrazing livestock, undergrazing*, recreational disturbance and scrub encroachment. Across SSSIs outside of common land, recreational disturbance affects the largest area, followed by drainage and land use change. The following tables highlight the most common pressures on common land by area, at all risk levels identified by Natural England, and at high risk levels only.

**Undergrazing most likely encompasses livestock and wild grazing, while overgrazing livestock excludes wild grazing, which Natural England have listed separately.*

Pressures affecting **common land compared to England** at **all risk levels:**

Common Land (CL) Pressures (all risk levels)	Rank by area affected	England excl. CL Pressures (all risk levels)
Drainage	1	Recreational Disturbance
Overgrazing Livestock	2	Drainage
Undergrazing	3	Land Use Change
Recreational Disturbance	4	Undergrazing
Scrub Encroachment	5	Agricultural Sources of Water Pollution
Weeds / Inappropriate Species	6	Extreme Events
Uncontrolled Vegetation Fire	7	Energy Development
Ditch Management Regime	8	Sea Level Rise
Water Level Changes (Not FRM or Abstraction Related)	9	Terrestrial Plants
Managed Burning	10	Scrub Encroachment

Pressures affecting **common land compared to England** at **high risk levels:**

Common Land (CL) High Risk Pressures	Rank by area affected	England excl. CL High Risk Pressures
Drainage	1	Recreational Disturbance
Overgrazing Livestock	2	Drainage

Undergrazing	3	Agricultural Sources of Water Pollution
Recreational Disturbance	4	Extreme Events
Scrub Encroachment	5	Energy Development
Ditch Management Regime	6	Sea Level Rise
Managed Burning	7	Undergrazing
Water Level Changes (Not FRM or Abstraction Related)	8	Development (Other)
Physical Modification	9	Utilities and Telecoms (Pipes, Cables, Infrastructure, etc.)
Rainfall	10	Water Company Discharges Causing Water Pollution

Rank (Common Land)	Pressure (all risk levels)	Area Affected (ha)
1	Drainage	27784
2	Overgrazing Livestock	16000
3	Undergrazing	13655
4	Recreational Disturbance	8003
5	Scrub Encroachment	7582
6	Weeds / Inappropriate Species	6857
7	Uncontrolled Vegetation Fire	4175
8	Ditch Management Regime	4038
9	Water Level Changes (Not FRM or Abstraction Related)	3827
10	Managed Burning	3667

Rank (England excl. CL)	Pressure (all risk levels)	Area Affected (ha)
1	Recreational Disturbance	68689
2	Drainage	55110
3	Land Use Change	50912

4	Undergrazing	42728
5	Agricultural Sources of Water Pollution	39109
6	Extreme Events	38389
7	Energy Development	38011
8	Sea Level Rise	36225
9	Terrestrial Plants	33593
10	Scrub Encroachment	29826

Rank (Common Land)	High Risk Pressure	Area Affected (ha)
1	Drainage	27029
2	Overgrazing Livestock	15750
3	Undergrazing	11623
4	Recreational Disturbance	5194
5	Scrub Encroachment	4067
6	Ditch Management Regime	3986
7	Managed Burning	3667
8	Water Level Changes (Not FRM or Abstraction Related)	3539
9	Physical Modification	2901
10	Rainfall	2824

Rank (England excl. CL)	High Risk Pressure	Area Affected (ha)
1	Recreational Disturbance	58651
2	Drainage	53473
3	Agricultural Sources of Water Pollution	38388
4	Extreme Events	38181
5	Energy Development	38011
6	Sea Level Rise	36113

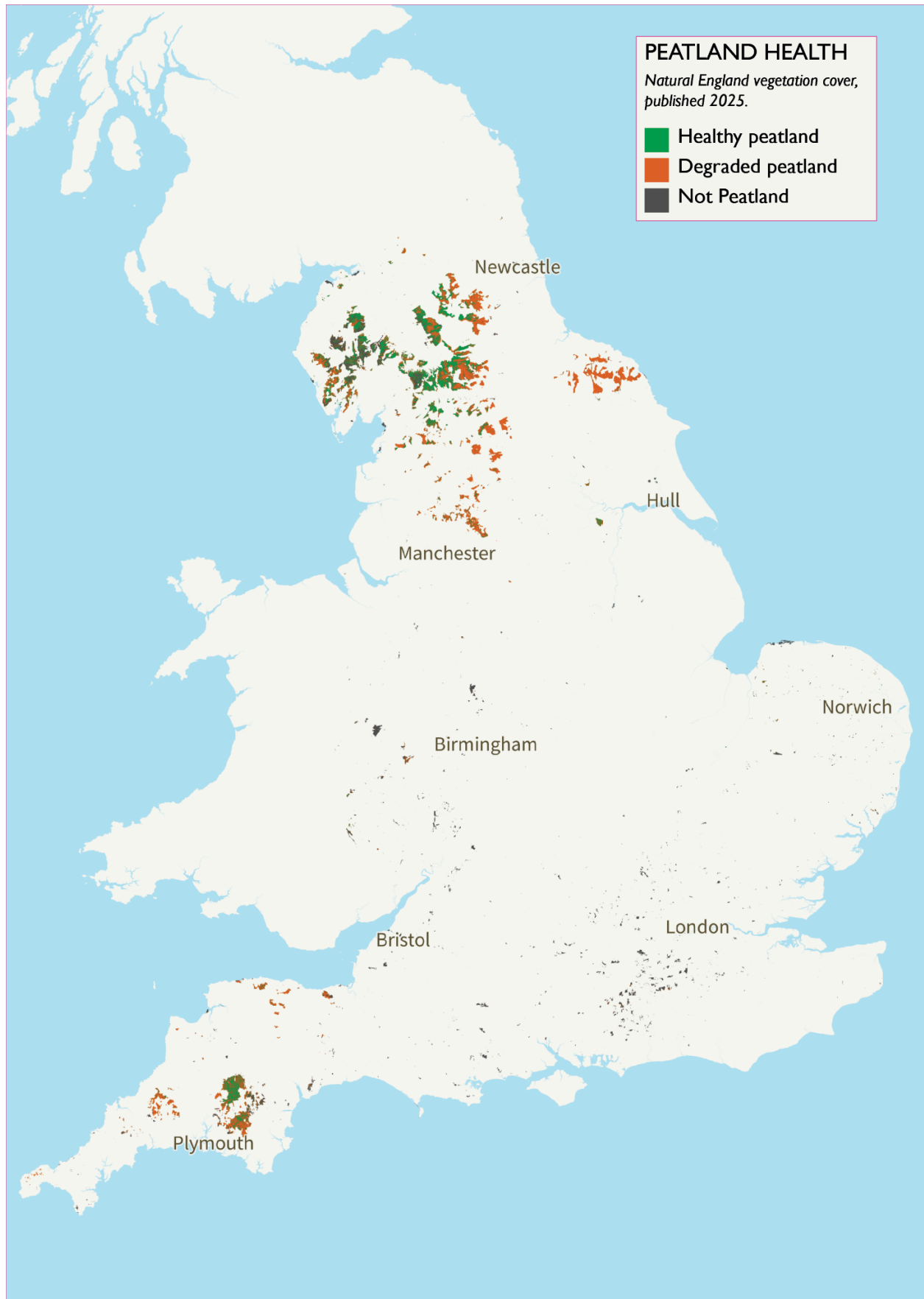
7	Undergrazing	33860
8	Development (Other)	27938
9	Utilities and Telecoms (Pipes, Cables, Infrastructure, etc.)	27891
10	Water Company Discharges Causing Water Pollution	23810

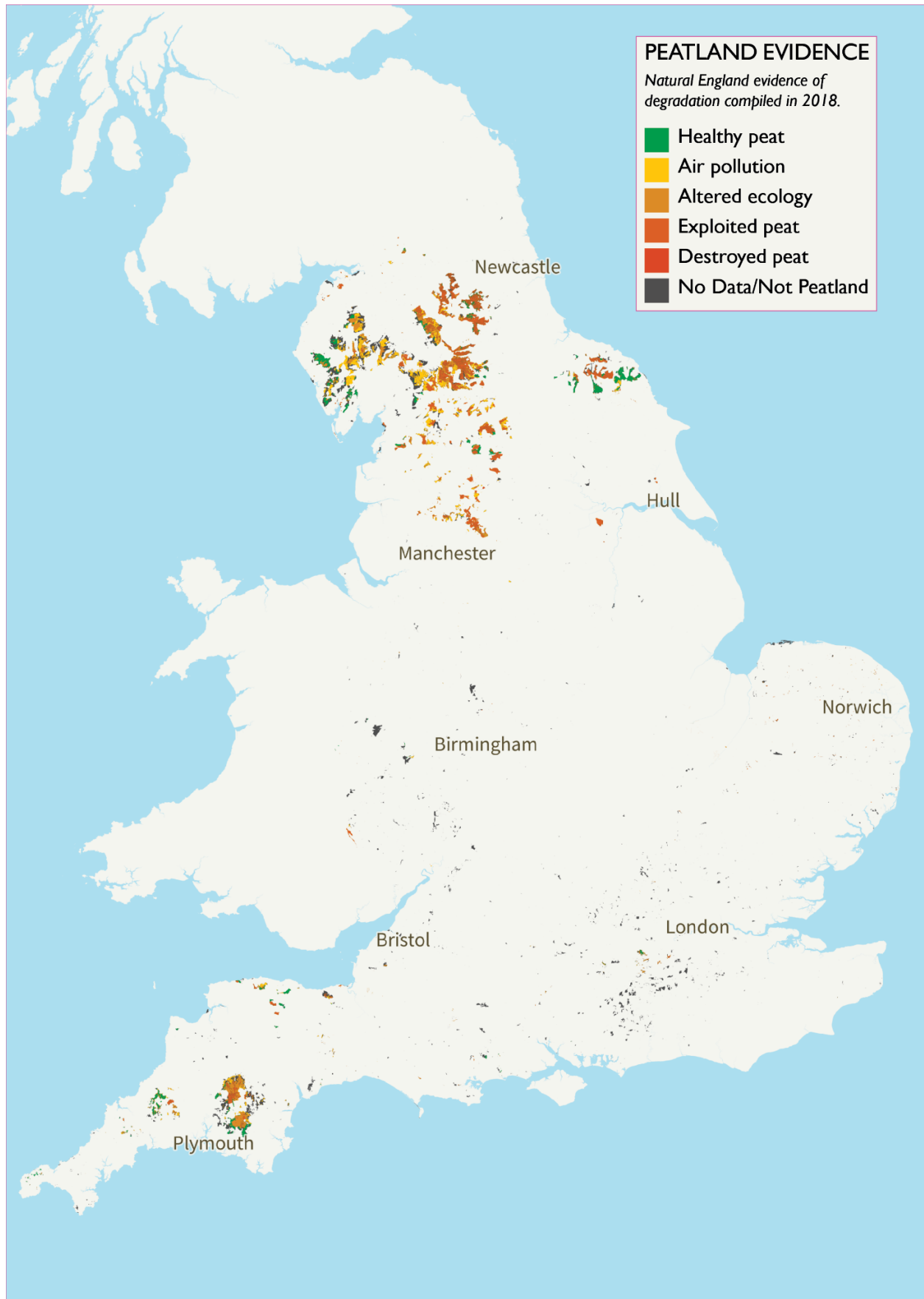
SSSI pressures overlapping with common land areas will be shortlisted for display on the interactive score cards for each section of common land. A combination of the risk column and area affected will be used. Duplicate rows were removed from the SSSI pressures for units dataset (DEFRA 2025c). Pressures marked as inactive or potential were removed.

Peatland

Peat Condition

This section intends to combine an older but reliable peat dataset and a new but slightly controversial peat dataset, both from Natural England (discussion below). However, due to the size and processing time involved, analysis of the second dataset is ongoing (a map has been produced however). Common by common analysis of the first dataset is also in process. Present here is a national analysis of the first dataset for condition, and full analysis of carbon content and emissions.





Peat is a significant characteristic of common land, 70% of the commons by area have peaty soils, and 37% is deep peat. Despite making up only 3% of England, the commons hold 18% of the nation's peatlands. Peatlands within common land have a higher proportion of deep peaty soils than the English national parks, and English peatlands outside of common land. Deep peat is defined as more than 40cm in depth in this dataset (Natural England 2021), and deep peaty soils are areas where the majority meet deep peat status. Deeper peat is older and has more carbon stored than shallower depths. Areas of deep peat that are in bad condition are a higher climate risk, with a greater store of carbon that could be released.

	Deep Peaty Soils (ha)	Deep Peat %	Shallow Peaty Soils (ha)	Soils with Peaty Pockets (ha)
Common Land	134,973	52	107,781	14,416
National Parks*	197,526	36	287,307	56,642
England excl. CL	545,330	47	419,775	197,130

*National Parks and Common Land areas overlap. National Parks and England excl. CL areas have overlap. Common Land and England excl. Common Land does not overlap.

55% percent of peaty soils on common land have evidence of degradation, assessed according to Natural England data and evidence descriptions (Natural England 2010; 2021). 41% have no physical evidence of degradation, and 4% have no recorded data. Some peatlands within this 41% are recorded as polluted, healthy or both. 81% of common peatlands are degraded when those with pollution records are included. 15% of the peatlands on common land are classed as healthy and have no recorded evidence of degradation or pollution.

Peatlands on common land, however, are in a better state than outside of common land. 21% of peaty soils outside of the commons have no evidence of degradation, compared to 41% on common land. Just 8% of English peatlands outside of common land are classed as healthy. A higher proportion of peat on common land is recorded as polluted (with no other evidence of health or degradation) at 26% compared to 13% elsewhere.

Peat Condition Evidence	Common Land (ha)	%	England excl. CL (ha)	%
No Evidence of Degradation	104,301	41	243,848	21
Evidence of Degradation	141,614	55	855,724	74
No Data	11,254	4	62,663	5

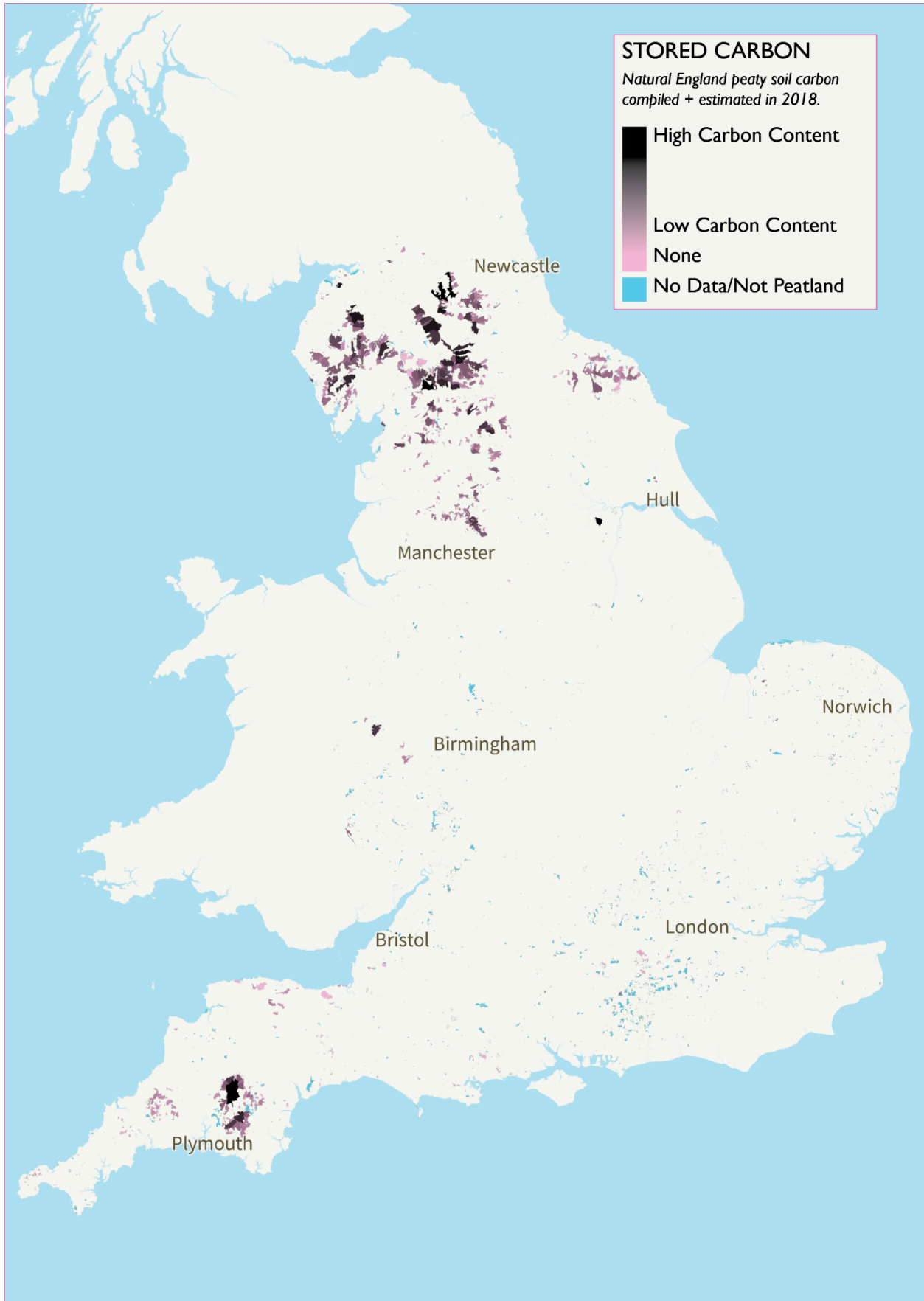
Peat Condition Group	Common Land (ha)	%	England excl. CL (ha)	%
Destroyed	1178	0.5	26851	2
Exploited	100550	39	728104	63
Altered	39886	16	100768	9
Polluted	65583	26	150662	13
Healthy	38718	15	93186	8
Unknown	11254	4	62663	5

Goathland Moor in the North York Moors National Park has the highest area of healthy peatland. A common by Coniston* in the Lake District National Park has the highest area of peatland that would be healthy, but has evidence of air pollution. Dartmoor's common land has the highest area of peatland ecology negatively altered from a natural state. Allendale Common** in the Northumbrian North Pennines has the highest area of peatland with evidence of exploitation. Hallas Rough Park, on the Black Moor near Bradford has the greatest area with evidence of destroyed peatland.

**Land known as Coniston Fell, Dunnerdale Fell, Seathwaite Fell and Torver High Common (Lancashire)"

***"and land at Mohope Moor and Pinch park" included in common land section name.

Peat Condition Group	Overlapping Commons
Destroyed	769
Exploited	1113
Altered	731
Polluted	756
Healthy	354
Unknown	512



Common land with peaty soils across England may store 71,528,794 tonnes of carbon, based on Natural England data (Natural England 2021). 104,935 tonnes of CO₂ may be released annually from these areas of common land.

	Total Peat Area (ha)	Carbon Content (tonnes)	Carbon Emissions (CO ₂ -e yr ⁻¹)
Common Land	257,170	71,528,794	104,935
National Parks*	541,474	131,339,619	377,785
England excl. CL	1,162,235	513,650,710	2,876,600

	Total Peat Area (ha)	Carbon Content (tonnes)	Carbon Density t/ha (area/carbon)
Common Land	257,170	71,528,794	278
National Parks*	541,474	131,339,619	243
England excl. CL	1,162,235	513,650,710	442

	Total Peat Area (ha)	Carbon Content (tonnes)	Emission Rate (t CO ₂ -e ha ⁻¹ yr ⁻¹) (area/emissions)
Common Land	257,170	71,528,794	0.4
National Parks*	541,474	131,339,619	2.48
England excl. CL	1,162,235	513,650,710	0.7

Commons Carbon Comparison (Two Methods)

Analysis when sorted by Common Land name (my preference), some small commons may be erroneously joined as some share more generic names:

Of the most significant commons for carbon sequestration, half are actively emitting CO₂, four are neutral, while only two are sequestering emissions. The top 10 carbon commons are releasing 40,379 tonnes of carbon per year.

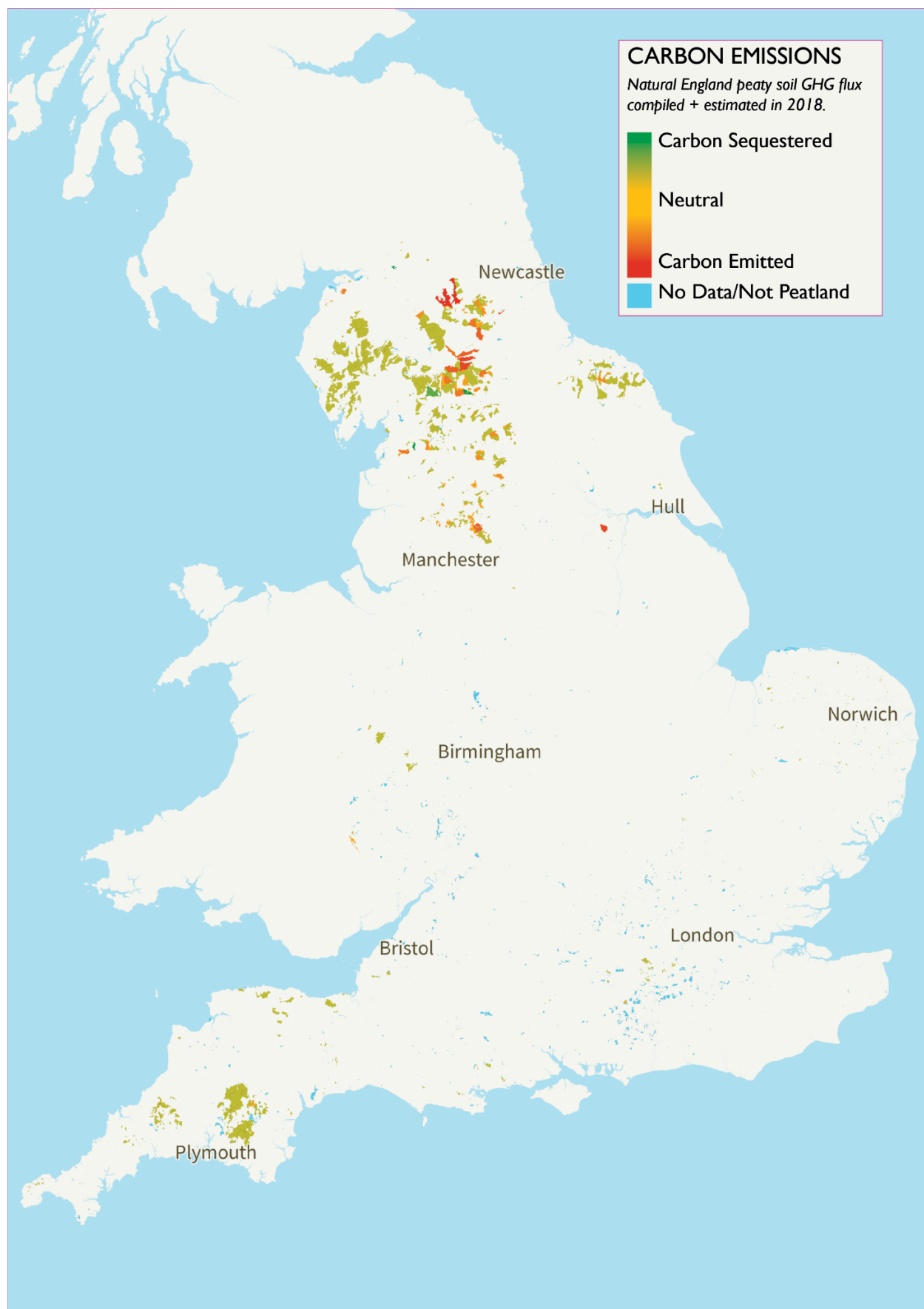
The five commons that are the worst sources of carbon emissions release a total of 7,398,930 tonnes of CO₂ per year. In comparison, the five commons that are the best performing carbon sinks sequester 2,933,481 tonnes. Almost 4.5 million tonnes more carbon is released than sequestered.

Allendale Common* Northumberland is emitting the most CO₂ of any English common, followed by commons in Durham, Doncaster and Cumbria. Allendale is the second largest single store of carbon of any English common land.

Askrigg Common (North Riding) in North Yorkshire is sequestering the most carbon, compared to other commons in England, followed by common lands in Lancashire, Cumbria and another in North Yorkshire.

Note: the authority names above are likely outdated and should be replaced by regions.

***“and land at Mohope Moor and Pinch park” included in common land section*



Top 10 Carbon Stores	Carbon Stored (tonnes)	Carbon Emissions
Part of the Forest of Dartmoor	3096052	0
Allendale Common and land at Mohope Moor and Pinch park	2581228	18008
Bluecaster Fell (West Riding)	2355328	-610
Thorne Moors or Thorne Waste	2131446	6429
Bowes Moor (North Riding)	1526316	10067
Abbotside Common (North Riding)	1545389	3681
Dufton Fell (Westmorland)	1453855	0
Burnhope Moor	1286495	-333
Arkengarthdale Common (North Riding)	1222349	3137
Caldbeck Common (Cumbria)	1158559	0

Worst Sources	Carbon Stored (tonnes)	Carbon Emissions
Allendale Common and land at Mohope Moor and Pinch park	2581228	18008
Bowes Moor (North Riding)	1754419	10067
Thorne Moors or Thorne Waste	2131446	6429
Cornsay and Hedleyhope Common	95496	5529
Winton and Kaber Regulated Common (Westmorland)	836341	4942

Best Sinks	Carbon Stored (tonnes)	Carbon Emissions
Askrigg Common (North Riding)	94596	-2841
Goodber Common	63964	-1926
Oxnop Common (North Riding)	38993	-1117
Walton Moss and Little Moss (Cumbria)	380600	-960
Bluecaster Fell (West Riding)	2355328	-610

Analysis when sorted by UNIQUEID (common land section), this misrepresents some larger commons that are split into separate map polygons:

Allendale Common* Northumberland is emitting the most CO₂ of any English common, followed by commons in Durham, Doncaster, Cumbria and Calderdale. Allendale Common is the largest carbon store of any common. More of the most significant commons for carbon storage are emitting carbon rather than sequestering emissions. Goodber Common in Lancashire is sequestering the most carbon, compared to other commons in England, followed by common lands in North Yorkshire, Cumbria and Durham.

Top 10 Carbon Stores	Carbon Stored (tonnes)	Carbon Emissions
Allendale Common and land at Mohope Moor and Pinch park	2580969	18005
Bluecaster Fell (West Riding)	2355328	-610
Part of the Forest of Dartmoor	2272189	0
Thorne Moors or Thorne Waste	2131446	6429
Bowes Moor (North Riding)	1526316	9410
Dufton Fell (Westmorland)	1448090	0
Burnhope Moor	1286451	-333
Caldbeck Common (Cumbria)	1158559	0
Wedholme Flow (Cumbria)	1147080	3430
Walden Moor (North Riding)	915138	-237

Worst Sources	Carbon Stored (tonnes)	Carbon Emissions
Allendale Common and land at Mohope Moor and Pinch park	2580969	18005
Bowes Moor (North Riding)	1526316	9410
Thorne Moors or Thorne Waste	2131446	6429
Cornsay and Hedleyhope Common	95496	5529
Winton and Kaber Regulated Common (Westmorland)	804466	4960

Best Sinks	Carbon Stored (tonnes)	Carbon Emissions
Goodber Common	2580969	-1926
Askrigg Common (North Riding)	1526316	-1373
Askrigg Common (North Riding)	2131446	-1195
Oxnop Common (North Riding)	95496	-1117
Walton Moss and Little Moss	804465	-960

(Cumbria)		
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***“and land at Mohope Moor and Pinch park” included in common land section*

Peat Problems

The latest peat map from Natural England was released to a mixed reception, a project that promised unprecedented detail received criticism from locals for misidentifying moorland features. According to the Natural England announcement, the map “relies on the integration of AI techniques with other survey methods. It uses satellite imagery, pre-existing peat survey data, new field survey data, and data on geology, topography (LiDAR), and historic land use. These are then analysed using AI algorithms (machine learning and deep learning)” (Natural England 2025a).

Criticism started in the comments on Natural England’s blog post, then repeated and reported on elsewhere. Farmers noted that their land was erroneously classed as peat, while the tors (large rock formations) were classed as degraded peat features (Natural England 2025a). Replies from Natural England addressed some of these concerns with technical explanations.

Reporting from a journalist critical of AI describes the research process as reasonable but that it was “5% to 6% complete nonsense” (Gerard 2025). This cites Natural England’s statement of a 94-95% accuracy overall (Natural England 2025a). The Moorland Association described the map as useless, due to misclassification of land at a local scale and that “land managers shouldn’t rely on the map to identify where deep peat actually is on their land” (Gilruth 2025). The article frames the problem in relation to efficient use of taxpayer’s money and refers to Natural England as a quango. Gerard described the Moorland Association as “an interested party”, “who pushed hard for the map” (Gerard 2025). The researcher and campaigner Guy Shrubsole, however, describes the Moorland Association as “a lobby group that represents grouse shooting interests” (Shrubsole 2025). The author cites the Moorland Association’s formation by grouse moor owners, that a director was convicted for illegal burning on deep peat, and their lobbying against effective environmental protection.

An article in the American Geographical Society points to the Peat Map as an example where nuance is needed, that the map is useful but researchers need to be aware of its limitations (Cooper 2025). The Peat Map launch announcement noted that “as a national-scale map it will be a vital part of the decision-making toolkit for local scale management” it “needs to be used in conjunction with local evidence for site-level decisions” (Natural England 2025a). Many comments seem to revolve around local map resolutions, whether asking if individual plants can be distinguished or pointing out local classification errors. Natural England’s marketing prior to the release does not make any accuracy caveat, and the press release could have been clearer on why local evidence or ground-truthing is needed for local decision

making (Williams and Tabor 2025). The Natural England User guide addresses the problem of scale as follows:

“Inaccuracies in the model predictions are expected and can take the form of overestimation or underestimation. However, on average these differences mostly cancel each other out, leaving residual errors which we have reported in our accuracy metrics. This means that while an individual prediction (e.g. a single 10 m square) may be very different to an observation on the ground, the prediction will be closer to the real world as scale broadens out. With this in mind, the outputs should be seen as giving stronger predictions at broader scales, such as whole regions or counties, and giving weaker predictions at finer scales such as individual sites.”

(Hunt et al. 2025)

This research seeks to **indicate** the condition of common land across England, acknowledging that the data available is partial and has limitations. We have cross referenced the England Peat Map with earlier Natural England data on peat condition and carbon. Vegetation cover from the England Peat Map has been used to indicate if peatland within common land is in a broadly healthy or degraded state, categories used by Natural England. We have calculated carbon content and flux from an earlier dataset, as used by the Campaign for National Parks Health Check Report (Natural England 2021; CNP 2024)*. This dataset was created in 2008, published in 2010 and revised in 2021. Peat type and degraded features from this dataset have been compared to common land areas. Degraded features in this dataset have been collated from a wide range of surveys and environmental datasets, not using AI tools (Natural England 2010; 2025c). This data is however older than the latest peat map, and the carbon concentrations are indicative extrapolations from local research.

**Carbon content is not comparable between this report and the Campaign for National Parks Health Check Report. While they are based on the same data, this report used area to calculate total carbon, while the health check report used carbon concentration instead.*

Vegetation Cover

Natural England used vegetation cover to class peat as healthy or degraded on the release of their peat map this year (Natural England 2025a). We followed Natural England’s methodology for classifying peat vegetation cover as healthy or degraded (see first peat map), which was not publicly available but clarified by Natural England as follows:

Arable and Horticultural	Degraded
Bare Peat	Degraded
Broadleaved Woodland	Degraded
Built-up Areas and Gardens	Degraded
Calluna Bog	Degraded

Conifer Woodland	Degraded
Dry Grass and Scrub Bog	Degraded
Eriophorum Bog	Healthy
Molinia Bog	Degraded
Other Grassland	Degraded
Scrub and Tree Fen	Healthy
Short Fen Vegetation	Healthy
Sphagnum Bog	Healthy
Tall Fen Vegetation	Healthy
Water	Healthy

Due to the size of the vegetation cover files, analysis of the specific vegetation cover classes compared to common land was not feasible.

As a comparison (see second peat map), we analysed the land cover and presence of degraded features for the previous peat map (Natural England 2021). Features were grouped into classes following the review of positive or negative features in the accompanying report (Natural England 2010). We have grouped them into six categories for use on the interactive map, matching the number of categories for SSSI condition. Alongside this, we have followed the example of Map 7 in the N, charting peatland with evidence of degradation.

Categories	Natural England Feature Presence	Natural England Report Description
Exploited	Afforested	Degradation
Exploited	Rotational Burning	Degradation
Exploited	Cultivated	Degradation
Exploited	Eroded (hagged and gullied)	Degradation
Exploited	Extracted	Degradation
Exploited	Gripped	Degradation
Exploited	Improved Grassland	Degradation
Exploited	Overgrazed	Degradation
Exploited	Peat Cutting (historic/not active)	Degradation
Polluted	Polluted (exceeding NH4 deposition critical load for peat forming habitat)	No Evidence
Healthy	Pristine (active peat-forming)	No Evidence

Destroyed	Removed or Developed	Degradation
Healthy	Restored (hydrological restoration only)	No Evidence
Altered	Scrub	Degradation
Exploited	Wasted (peat lost through agricultural drainage, leading to erosion and decompositional loss of peat)	Degradation
Exploited	Bare peat	Degradation
Altered	Wooded	Degradation
Altered	Semi-natural non peat-forming vegetation*	Dependent on soil type
Altered	Molinia (purple moor-grass) dominated	Degradation

*We have counted semi-natural non peat-forming vegetation as altered on deep peaty soils, and healthy on shallow peaty soils or soils with peaty pockets, following the Natural England report description (Natural England 2010).

Interactive Map Nature Score Groupings:

The nature map score is based on SSSI condition where available, and where this is not available peatland condition evidence is used. Simple language has been chosen for a public audience and to reflect the nuances of both datasets, more detail in the discussion sections on SSSI and peatland data.

SSSI Condition	Peatland Evidence of	Nature Map Score
Favourable	Healthy	Good
Unfavourable Recovering	Polluted	Fair
Unfavourable No Change	Altered	Degraded
Unfavourable Declining	Exploited	Poor
Part Destroyed	Destroyed	Bad
Destroyed	N/A	Destroyed

Nature Score	SSSI Description	Peatland Description
Good	Favourable assessments	Healthy peatland
Fair	Unreliable recovering assessments, see SSSI	Peatland with evidence of air pollution but otherwise healthy

	discussion	
Degraded	Unfavourable no change assessments	Peatland with evidence of ecology altered from a natural state
Poor	Unfavourable declining assessments	Evidence of human exploitation such as cutting
Bad	Part destroyed assessments	Evidence of development on peatland, ranked alongside part-destroyed as evidence is based on sightings rather than area covered
Destroyed	Destroyed assessments	N/A

Woodland

Due to the size and complexity of the National Forest Inventory, a common by common overlap analysis has not yet been completed due to the processing time. Peat vegetation cover will take priority over this and is closer to being completed. Ancient woodland common by common overlap analysis has been included.

While common land has less forest cover than the national average, a larger proportion of these forests are likely to be native woodlands. 7.8% of English common land is woodland, while 9.4% of all other land in the country is forested. 75% of woodland cover in common land is more likely to be native, while 11% is likely plantation woodland, and 14% could be either native or plantation. On English land outside of the commons, 67% is likely native, 23% plantation and 9% is unclear woodland.

Category	Common Land (hectares)	%	England (excl. commons) (hectares)	%
Likely Natural Woodland	21838	75	804741	67
Likely Plantation Woodland	3076	11	275858	23
Unclear Woodland	4024	14	111725	9

The 2023 National Forest Inventory for England was used to indicate forest coverage of common land (Forestry Commission 2025). We grouped the land cover classes into those most likely to be natural or native woodland, most likely conifer or plantation, woodland that could be either, and non-woodland land cover. Non-woodland cover was excluded from analysis above. The generalised categories were created and limited to three to make analysing the large forestry dataset feasible and decrease the computation time for comparison with common land.

Forest Inventory Classes	Generalised Categories	Common Land (ha)	England excl. CL (ha)
Assumed woodland	Unclear	3098	44750
Broadleaved	Likely Native	21373	777348
Conifer	Likely Plantation	2796	247529
Coppice	Likely Native	3	2525
Coppice with	Likely Native	2	262

standards			
Failed	Removed	17	789
Felled	Removed	1445	95983
Ground prep	Removed	24	8607
Low density	Unclear	486	3904
Mixed mainly broadleaved	Likely Native	460	24606
Mixed mainly conifer	Likely Plantation	280	28329
Shrub	Removed	243	3776
Windblow	Removed	4	2074
Young trees	Unclear	439	63071

Ancient Woodland

There are 774 commons with semi-natural woodland, 5 have ancient wood pasture or parkland and 309 have plantations on former ancient woodland sites, according to the latest complete ancient woodland map (Natural England 2024a).

78% of ancient woodland on common land is semi-natural, 22% are plantations on ancient woodland sites (ghost woods), and 0.1% are wood pasture or parkland.

Common lands in Wiltshire, West Sussex and Gloucestershire have the most area of semi-natural ancient woodland. Wiltshire, Hampshire and Surrey have the largest area of ghost woods on common land. *Note: these authority areas are from the commons GIS file and are likely out of date, a new area dataset should be used for published statistics.*

Livestock Grazing

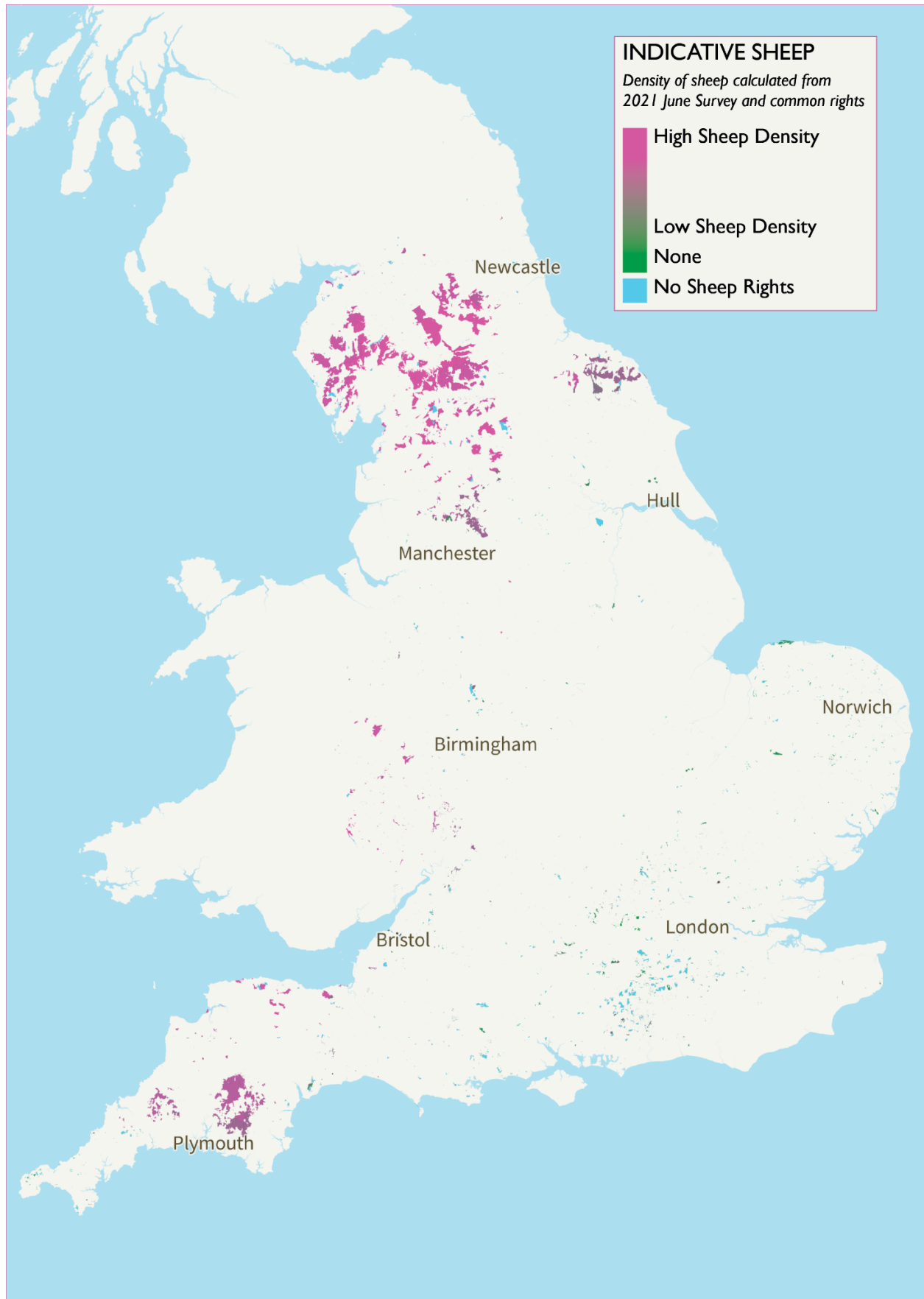
According to the 1990s Commons Register, 1139 commons have rights to graze sheep, 1404 cattle, and 910 horses (DEFRA 2015). Ranked by the area listed in the register, sheep could have been grazed on 84% of common land, cattle on 74% and horses on 60%. Cumbria, North Yorkshire and Devon had the largest common grazing areas for sheep, cattle and horses. While Hereford and Worcester had a significant number of commons with rights to graze sheep, cattle and horses, this amounted to less area than other counties.

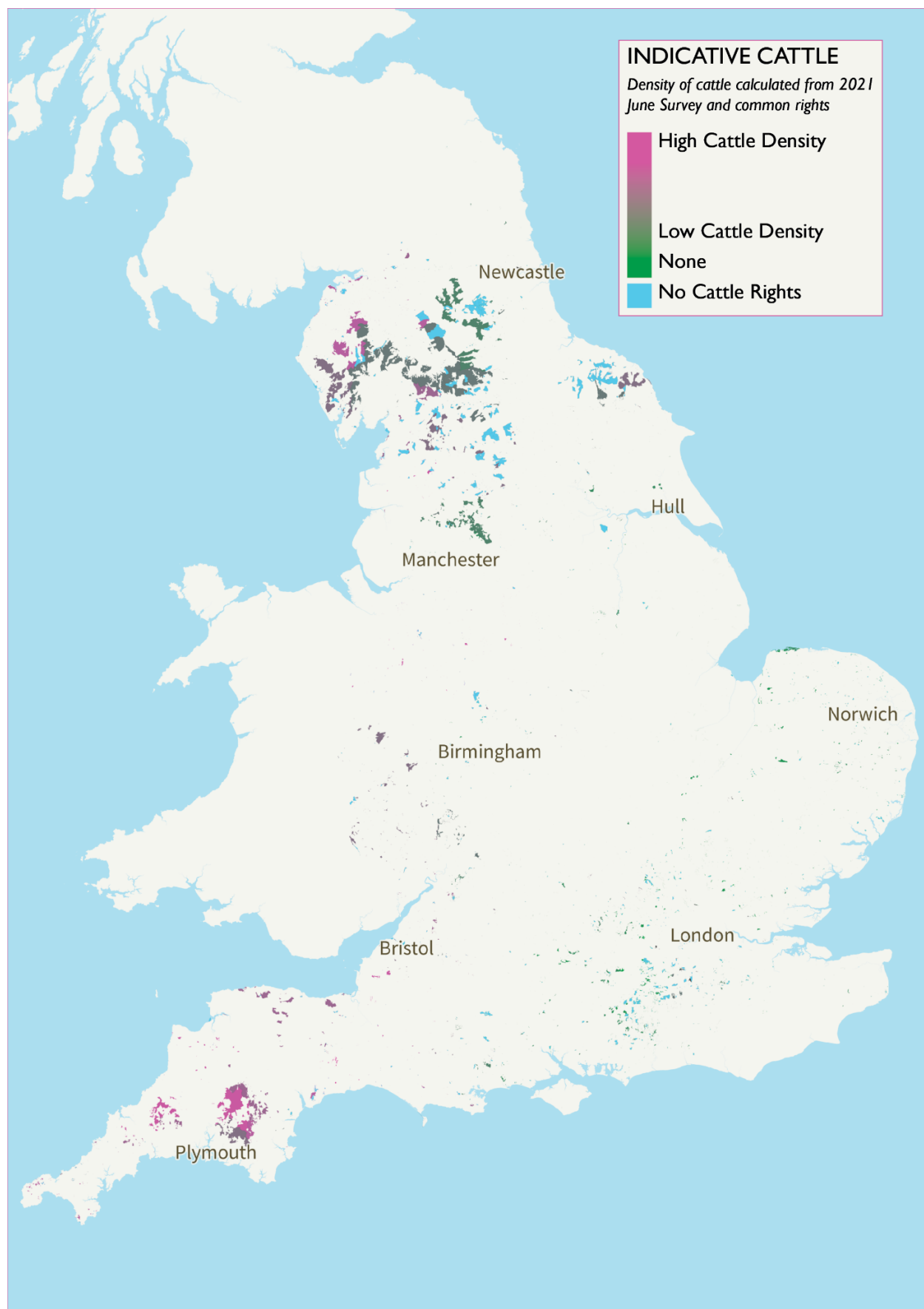
The June Agriculture Survey was used to indicate which sections of common land, that have grazing rights, are in areas with high sheep or cattle population densities. We used the newest version of the June Agriculture survey with the highest spatial resolution: populations by parliamentary constituency in 2021 (DEFRA 2021). The population density by area of cattle and sheep was calculated in QGIS. We joined this to overlapping commons, taking the mean population value in case multiple constituencies overlapped a common. The Commons Register was cross-referenced with the *Section 4 Conclusive Registered Common Land GIS file** to filter out commons that likely do not have the rights to graze sheep and/or cattle (Natural England 2024b). The area of commons within each constituency was taken into account in the ranking.

**Methodology in the common rights section below.*

Constituency	Region	Sheep Density Rank
Westmorland and Lonsdale	North West	1
Richmond and Northallerton	Yorkshire and the Humber	2
Bishop Auckland	North East	3
Skipton and Ripon	Yorkshire and the Humber	4
Penrith and Solway	North West	5

Constituency	Region	Cattle Density Rank
Westmorland and Lonsdale	North West	1
Torridge and Tavistock	South West	2
Penrith and Solway	North West	3
Richmond and Northallerton	Yorkshire and the Humber	4
Central Devon	South West	5





We asked DEFRA if they hold statistics on either the number of livestock grazed on English common land, the number of livestock included in common rights, or the number of farms using common land for grazing. DEFRA replied that the “information that you have requested is not held by Defra” and “to the best of our knowledge the information is not held by another public authority” (DEFRA 2025a).

We also asked DEFRA if they could provide statistics from the June Agricultural survey relevant to common land. DEFRA replied that:

“The June Survey does not collect common land, it's added separately as a total figure to the area estimates, to avoid any duplication of areas. Therefore, we have no link between holdings (and their activity) and common land. We don't know which holdings are using common land from the June Survey.” (DEFRA 2025b)

We have asked DEFRA for the number of livestock held by the County Parish Holdings named in the commons database from the 1990s (DEFRA 2019). DEFRA referred this to the Rural Payments Agency, who asked for clarifications, which have been sent back. The date expected for reply is the 31st of October.

We asked the Animal and Plant Health Agency (APHA) if they could provide statistics from their Livestock Demographic Data Group reports relevant to common land. APHA replied that:

“The data utilised by the LDDG reports for both sheep and cattle do not designate the land parcels where the animals are grazed. In addition, as the survey takes place during the winter (the LDDG report is reflective of December 1st for England) the common land attribute in the Sheep and Goat Inventory is very likely a vast under-representation of the true population on common land, which is often grazed most heavily in summer. Additionally, lambs are often not counted in the population numbers, as they are typically born in the spring and culled before the following winter's report.” (APHA 2025)

We have therefore used the 2021 June Agricultural Survey to indicate grazing activity on common land, for cattle and sheep (DEFRA 2024). As the highest spatial resolution available is by Westminster Parliamentary constituency, the figures reflect the livestock population and number of holdings in the vicinity of each section of common land.

Common Rights

The Commons Database, compiled during the 1990s, synthesised the rights registered for each section of common land in the 1980s with more contemporary biological surveys (DETR 2015; DEFRA 2015). The database included the full 7039 commons registered in the 1980s, and surveyed 3388. The GIS file of *Section 4 Conclusive Registered Common Land*, used for spatial analysis in this project, contains around 6963 commons* (Natural England 2024b).

While some rights were logged in separate columns, a large number of the diverse forms of rights were listed in one other column, making analysis of these rights unfeasible for this research project.

**Some smaller separate commons have repeated names, while larger commons have been split into sections but share the same name. This number was arrived at after merging county and common land number information with the common name to account for separate commons sharing the same name.*

Rights recorded in 1980s	Area covered by right	%
Sheep	308,049	84
Other**	270,010	73
Cattle	257,389	70
Horses	224,971	61
Turbary	200,669	55
Estovers	189,587	52
Soil	156,761	43
Other Livestock	111,128	30
Piscary	51,264	14
Pasture	32,353	9
Pannage	31,218	8
No Rights	22,919	6

***Unfortunately it was beyond the scope of the research to convert the other rights category into an analysable format.*

Rights recorded in 1980s	Number of commons in	Cross-referenced number of
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	database with right	current commons
No Rights	1497	1455
Other	1447	863
Cattle	1404	1409
Sheep	1139	1133
Horses	910	914
Estovers	723	704
Turbary	570	564
Other Livestock	513	511
Soil	330	325
Piscary	191	193
Pannage	142	132
Pasture	111	113

The Commons Database and the Registered Common Land GIS file do not share a system for cross-referencing sections of common land. There are shared columns but these have issues for cross-referencing. Authorities or their boundaries have been changed or merged over time. While both datasets have a common land number column, this is based on a county or authority level system, with numbers repeating across counties. Since there are no clear dates for the production of these numbers, we could not use historic county or authority boundaries to work around this issue. Common land names are repeated - some names re-occur in different areas - while the GIS file has names repeated within the dataset. The UNIQUEID used to distinguish rows in the GIS file and the COMMONCD in the database do not match.

The rows of the GIS file correspond to sections of common land, some of which form parts of larger commons, e.g in Dartmoor. The rows were merged by combining the authority name, common land number and common name to ensure that larger commons were merged without accidentally joining smaller commons that share a name, or joining common land numbers that repeat across counties. This resulted in 6963* commons, a similar number to the 7039 registered in the 1980s.

Rights were joined using two spatial methods, necessary to cross-reference between the accurate polygons of the GIS file and the point coordinate of the database. A spatial overlap method was used after indicative areas were generated for the commons database points.

This extrapolated an indicative circle area, drawn around each point, which corresponded to the hectare area listed per common in the database. The commons that had the most overlap were joined to each of the 6963 GIS commons, where there were overlaps. The second method was to convert the 6963 commons into points, using the QGIS centroid function. The nearest common database *point* was then added to the 6963 commons. A comparative and iterative process was used to cross-reference from the two methods. Common land numbers and names were used to determine matches and the certainty of a match. This process resulted in an indicative cross-referenced dataset, as it was beyond the scope of the research to check each entry.

**Currently double checking the dataset as there were some typos in the original dataset. Should only be a reduction of 2-3 in the total number of commons.*

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