



Farm Payments and Peatlands Analysis

Phase 1 Report (2023 Revision)

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Glossary

Acronym	Full Text	Acronym	Full Text
AECS	Agri-Environment Climate Scheme	LMO	Land Managers Options
BB	Broadband	NECG	New Entrant Capital Grants
BEIS	(Department for) Business, Energy and Industrial Strategy	NESUG	New Entrant Start Up Grant
BES	Beef Efficiency Scheme	P1	Pillar 1
BPS	Basic Payment Scheme	P2	Pillar 2
BRN	Business Reference Number	PGRS	Permanent Grassland
CAGS	Crofting Agricultural Grant Scheme	RPS	Rural Priorities Scheme
CEH	Centre for Ecology and Hydrology	SAF	Single Application Form
FGS	Forestry Grant Scheme	SIACS	Scottish Integrated Administration and Control System
FPMC	Food Processing, Marketing and Co-operation	SBCS	Scottish Beef Calf Scheme
FPS	Farmland Premium Scheme	SFGS	Small Farms Grant Scheme
FWPS	Farm Woodland Premium Scheme	SFPS	Single Farm Payment Scheme
FWS	Farm Woodland Scheme	SSBSS	Scottish Suckler Beef Support Scheme
JAC	June Agricultural Census	SUSSS	Scottish Upland Sheep Support Scheme
KTIF	Knowledge Transfer and Innovation Fund	VCS	Voluntary Coupled Support
LFASS	Less Favoured Area Support Scheme	YFSUG	Young Farmers Start Up Grant



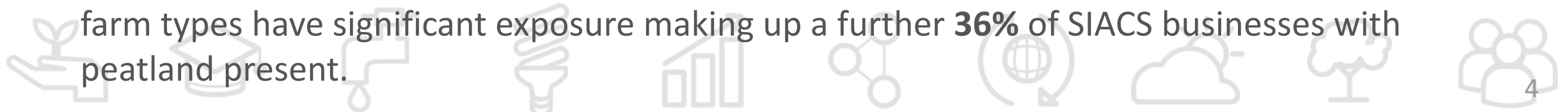
Notes on the 2023 revised version

- The original Peatlands and Payments analysis (Phase 1) was undertaken in early 2021. This was an unpublished report for RESAS and SG policy teams. This used 2018 farm payments data and a version of the peatlands mapping that did not report the area of woodlands on peat.
- The Peatlands and Payments (Phase 2) analysis undertaken in early 2022 updated the payments to 2019 and added the woodland class, but the summary data focused only on the businesses >1000 ha. This was again an unpublished report for RESAS and SG policy teams.
- Following the 3 Feb 2023 ARIOB meeting where peatlands and future agriculture support were discussed, the materials from both Phase 1 and 2 analyses were reviewed and enhanced with the Phase 1 reporting also updated to use the 2019 payments and improved peatland mapping (this document).



Executive Summary

- The **majority of SIACS businesses** (~10k out of ~19k) **have exposure to peatlands** somewhere within their boundaries.
- These are **not exclusively upland businesses** – but also multi-holding businesses with both lowland and upland areas.
- The **degree of exposure to peatlands varies greatly** – with ~7.5k holdings having less than 100 ha but 321 having more than 1,000 ha for a total of 1M ha or 57% of the SIACS peatlands.
- The **claimed area of peatlands** within **SIACS businesses** is estimated as **1.8m ha** of which **341k ha** are in **common grazings**.
- There is a further 250k ha of peatland in SIACS businesses that is not claimed as a basis for agricultural or agri-environmental payments and **211k ha of peatlands in non-SIACS holdings**.
- **For payments**, businesses with peatlands present account for **57% of all Pillar 1** payments and **78% of Pillar 2**, with higher percentages for voluntary coupled support (beef mainland - 100%, beef island, 79% and upland sheep, 100%) and less favoured areas (LFASS, 81%).
- **Regionally, Highland** has the largest SIACS peatland area – **961k ha** but noting that it is by far the largest region. Regions with the **highest percentage of peatlands** are **Eileanan an Iar (71%), Shetland (61%) and Highland (56%)** but it is worth noting that the lowest percentages are still substantial with Lothian at 14% and Fife at 11%.
- **Sectorally** (farm types) – **specialist sheep and goats** make up **32%** of the businesses with peatlands present, but at business level both **sheep and cattle combined**, and **specialist cattle** farm types have significant exposure making up a further **36%** of SIACS businesses with peatland present.



Executive Summary 2

- The **analysis of peatland condition classes is indicative and provisional**; pending further analysis but has highlighted the potential for such analysis to better understand:
 - the *mix of peatland types* and their **relationship(s) to land management** regimen at **national, regional and business scales**;
 - the **balance between near natural bog and other peatland classes** with progressively greater levels of emissions and thus their degree of need for restoration;
 - where there may be **more intensive agricultural use of peatlands** that, while not extensive, can result in substantial aggregate emissions because of the higher rates of loss per hectare (these may also be challenging to restore when they are a core element of local farming systems).
- The analysis has also identified where there are **limitations on the analysis** that could affect its **utility for policy making** and how these might be mitigated both by further integration of existing data and knowledge and where there is the need for additional strategic, underpinning, research or data collection. This is being addressed in the 2022-27 RESAS Strategic Research Programme e.g., in the [Land Use Transformations](#) and CentrePeat projects.



Background

Introduction

- The Scottish Government are committed to restoring 250,000 hectares of peatland by 2030, in order to meet the ambitious greenhouse gas emissions reductions, set out in the 2020 Climate Change Plan Update. In order to maximise the emissions reductions and associated co-benefits achieved as a result of peatland restoration, the Scottish Government are currently working with partners to consider the optimal mix of peatland types for restoration.
- Related to that work, the Scottish Government wish to improve their understanding of the location of different types of degraded peatland in relation to agricultural practices and agricultural support payments. This information will allow agriculture and peatland restoration policy decision makers to make more informed choices about the preferred areas for targeting peatland restoration offers.

Purpose

- The purpose of this project is to contribute to the evidence base on which policy decisions will be made by Ministers and supported by the Natural Resources Division and the Agriculture Policy Division.



Scope

- James Hutton Institute (Hutton) staff assessed the extent (numbers and areas) and characteristics of businesses that have peatlands present by combining administrative data from SIACS (land use and the mix of farm support payments) and Agricultural Census with maps of peatland types.
- The analysis was based on business extent and payments data in hand at Hutton (for 2014-2019) and the peatlands classification from Department for Business, Energy and Industrial Strategy (BEIS)/Centre for Ecology and Hydrology (CEH) but reimplemented, in a linked project, using new sources of peatlands mapping that are emerging from the SG Strategic Research Programmes – both 2016-21 and 2022-27.



Data Sources

- **Peatlands Extent and Classification**
 - The BEIS/CEH typology and mapping is the *de facto* standard dataset identifying the location of, and classifying the condition of, UK peatland types for their emissions potential, as detailed in [Evans et al. \(2017\)](#).
 - For Scotland, however, new peatlands mapping and characterisations are also being developed e.g., first by [Aitkenhead et al. \(2019\)](#) and later revised by [Aitkenhead et al. \(2021\)](#).
 - The analysis in this report is based on the Aitkenhead et al. (2021) dataset but with the National Forest Inventory (2019) mapping used to define where peatlands have woodland present.
- **Business Extent Mapping** – this was derived per business from SIACS/LPIS data using claim, field and business relationships combined with field boundaries. This includes permanent land, seasonal rentals, shared use and common grazing.
- **Farm Payments Data** - per business from RPID for 2019 (most recently available year).



Data Integration and Processing

■ Geographical Information System

- Combines peatland extent and classification maps (100m grids) with business extent maps.
- Derives per field peatland type mix (areas).
- Calculates peatland type mix for the area beyond the SIACS fields. This is reported as a single line in the outputs to allow comparison between the peatland areas receiving agricultural or agri-environmental support and those not.

■ Database

- Calculates **peatland type mix per claimed land use** (including exclusions) – derived from the peatland type mix per field and the proportions of the field per claim.
- Derives **peatland type mix per business** grouping claims.
- Calculates the **peatland mix for land that is mapped** (i.e., inside SIACS businesses) **but unclaimed**. This land is reported as single (**Mapped but Unclaimed**) line in the outputs. This occurs for both Permanently held land and Common Grazings but is much more prevalent in the latter.

■ Data Integration and Processing Caveats

- Each SIACS field can contain multiple land use claims and/or multiple peatland types – the relationship between land use claim and peatland type mix within fields is unknown so each claim is assigned a share of the area of peatland types present in the field.



Data and Analysis Caveats

- **Land Use Data** – the Aitkenhead et al. (2021) analysis was not able to use SIACS land use data as an appropriate Data Sharing Agreement was not in place when the analysis was undertaken. The land use/cover data use was Land Cover Map (2007). This does not affect the overall area of peatlands but is potentially significant for the classification of some peatland condition classes. Further, the scope of the Aitkenhead et al. (2021) analysis did not prioritise quantifying the presence of forestry on peatlands. This latter limitation was mitigated in this analysis by using data from the National Forest Inventory (2019) but updating the land use data from 2007 would be a priority where decisions based on the peatland condition classes are significant.
- **Peatlands Classification** – in classifying the peatland areas into peatland condition classes the Aitkenhead et al. (2021) analysis used similar land cover/use data sources but took a significantly different approach to deriving the classes. This means the mapped classes differ from BEIS sources.
- **Business Extent** - the data has been checked for over- and under-claims / duplicate claims in Permanent, Seasonal and Commons tables – the potential errors have been identified and resolved (just over 70k ha) but some errors are likely still present. All remaining errors will be small individually and likely insignificant in aggregate, but this would need to be verified.

Before any policy decisions are made using the peatland condition classes presented in the document it is essential to:

- make a more in-depth comparison of the differences between the BEIS/CEH data and the Aitkenhead et al. datasets than has been possible within this project.

The data and mapping for both peatland condition and associated emissions should thus be regarded as indicative and provisional pending further analysis.



Outputs

- Tabulation of businesses with peatlands present, the area of peatlands and the mix of payments per business, plus businesses classification data – region, farm type, standard labour requirements, standard outputs.
- Maps of those business with exposure to peatlands, the peatland condition classes present, the degree of exposure (areas and percentage) per business and the rates of greenhouse gas emissions.



Summary Table – Elements

Results grouped by area of peatlands present per business – count of businesses and land areas

Peatland areas broken down by peatland types – differentiated by emissions rates

Note Extraction Domestic will include areas (~2,500 ha) classified in the BEIS/CEH analysis as Industrial

Areas where there is no peatland mapping coverage – usually due to difference in digital mapping (coasts and lochs)

Business Peat Exposure (ha)	Count Businesses	Area (000's ha)			Peat Classes (Emission Factor - t/ha/y of CO2e) - Area (ha)											Area (ha) No peatland mapping
		All Land	No peat	All Peat Classes	Cropland (39)	Grassland Intensive (30)	Grassland Extensive (19)	Woodland (10)	Extraction Domestic (8)	Eroded Drained (5)	Grass Dominated Drained (3)	Heather Dominated Drained (3)	Dominated Undrained (2)	Dominated Undrained (2)	Near Natural Bog (0.01)	
>0-100	7,544	1,222	1,061	159	32	10,101	25,009	8,212	9,965	39,682	12,327	13,742	637	371	39,337	1,898
100-200	909	346	219	127	5	2,012	12,847	6,069	6,087	34,753	12,601	15,763	1,024	643	35,042	422
200-300	412	249	149	100	1	1,003	7,889	4,141	4,273	28,342	11,210	15,030	777	631	26,691	329
300-400	215	169	94	74	3	562	5,861	2,727	3,189	20,297	8,871	11,266	436	569	20,646	127
400-500	151	160	92	67	0	289	4,441	2,910	1,590	19,020	11,350	9,057	1,085	262	17,457	106
500-600	115	154	91	63		385	5,201	2,998	979	17,387	9,566	9,169	647	610	16,068	54
600-700	93	141	80	61		405	2,914	3,293	1,224	14,973	9,555	11,112	654	478	15,921	61
700-800	69	119	67	52		204	2,161	1,740	1,254	14,022	8,647	7,634	1,049	498	14,311	34
800-900	60	107	57	50		192	1,780	1,834	651	13,796	8,303	6,801	674	734	15,613	55
900-1000	43	91	51	40		164	1,639	1,644	689	11,620	6,818	5,888	681	261	11,094	18
>1000	321	1,931	873	1,057	2	1,441	15,320	37,095	5,396	258,664	225,127	207,607	17,248	13,209	275,529	1,060
Grand Total	9,932	4,688	2,833	1,851	43	16,758	85,062	72,661	35,297	472,556	324,375	313,069	24,912	18,266	487,709	4,164
Commons within SIACS Businesses	3,718	474	133	341	6	405	4,693	6,289	19,552	89,699	36,991	58,661	3,486	2,901	117,961	716
% of Peatlands in Commons				18%	15%	2%	6%	9%	55%	19%	11%	19%	14%	16%	24%	
All SIACS Businesses	19,292	5,668	3,817	1,851												
SIACS Mapped - Unclaimed		816	566	250		1,883	9,848	26,036	2,519	58,772	51,432	39,119	3,445	1,120	56,135	1,171
Beyond SIACS Boundaries		1,391	1,180	211	1	2,336	8,864	36,055	2,834	46,159	30,362	30,085	1,769	1,613	49,765	4,361
All Land		7,875	5,561	2,311	61	4,219	103,727	134,748	41,365	406,146	382,246	30,125	21,000	593,564	9,392	
Included % of Peatlands				80%	70%		82%	54%	85%		80%	82%	83%	87%	82%	

Areas beyond the SIACS coverage – the share of peatlands beyond SIACS

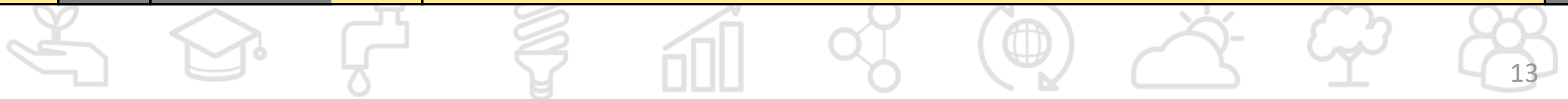
Overall areas of land receiving farm support payments for context

Highlighting the common grazing areas since these may have particular governance issues

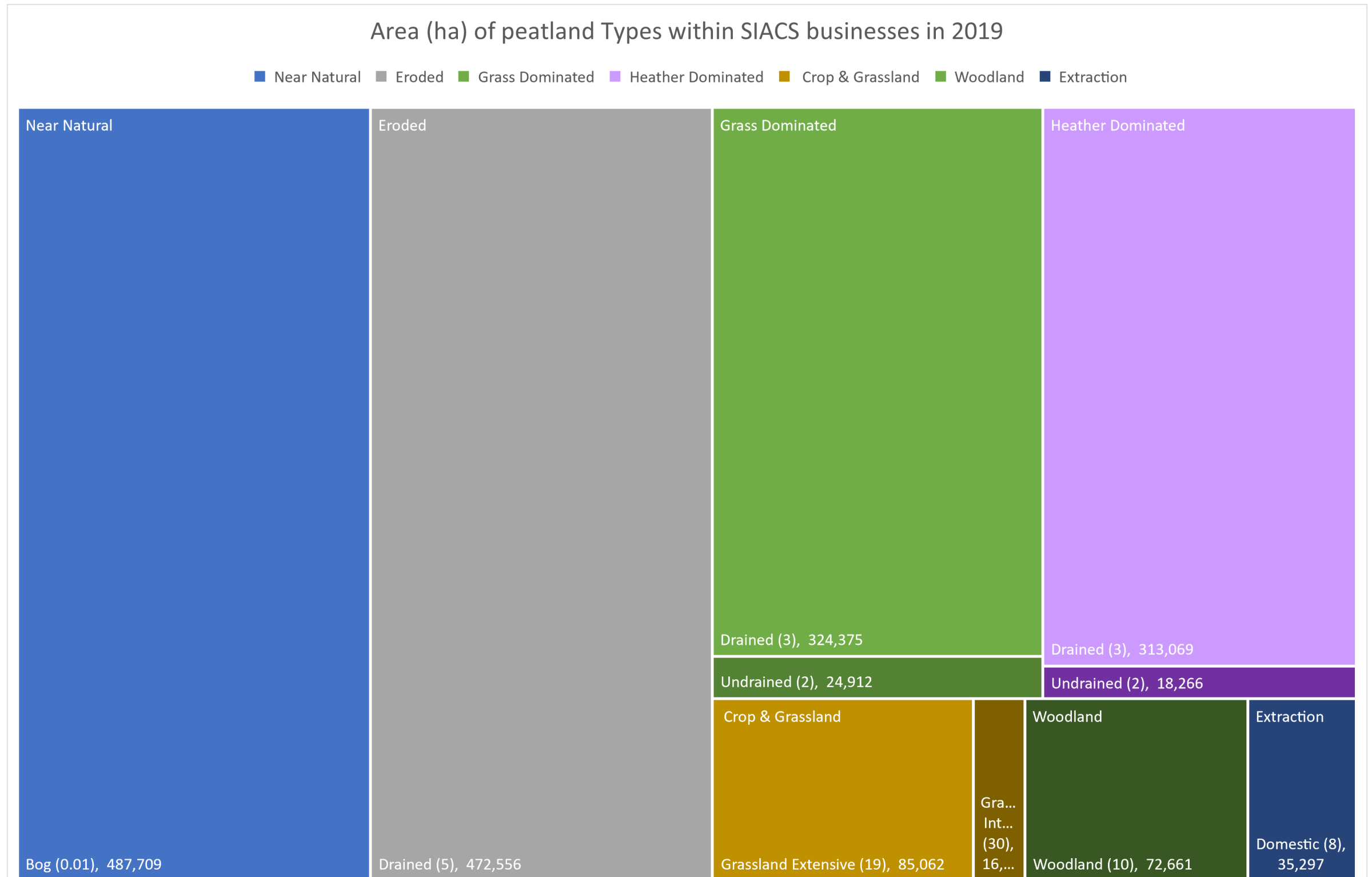
Summary Table – Peatlands Area

- Note the area within SIACS businesses potentially requiring restoration is the total area of all peat classes minus the near natural bog area - ~1.2M ha.

Business Peat Exposure (ha)	Count Businesses	Area (000's ha)			Peat Classes (Emission Factor - t/ha/y of CO2e) - Area (ha)											Area (ha) No peatland mapping
		All Land	No peat	All Peat Classes	Cropland (39)	Grassland Intensive (30)	Grassland Extensive (19)	Woodland (10)	Extraction Domestic (8)	Eroded Drained (5)	Grass Dominated Drained (3)	Heather Dominated Drained (3)	Dominated Undrained (2)	Dominated Undrained (2)	Near Natural Bog (0.01)	
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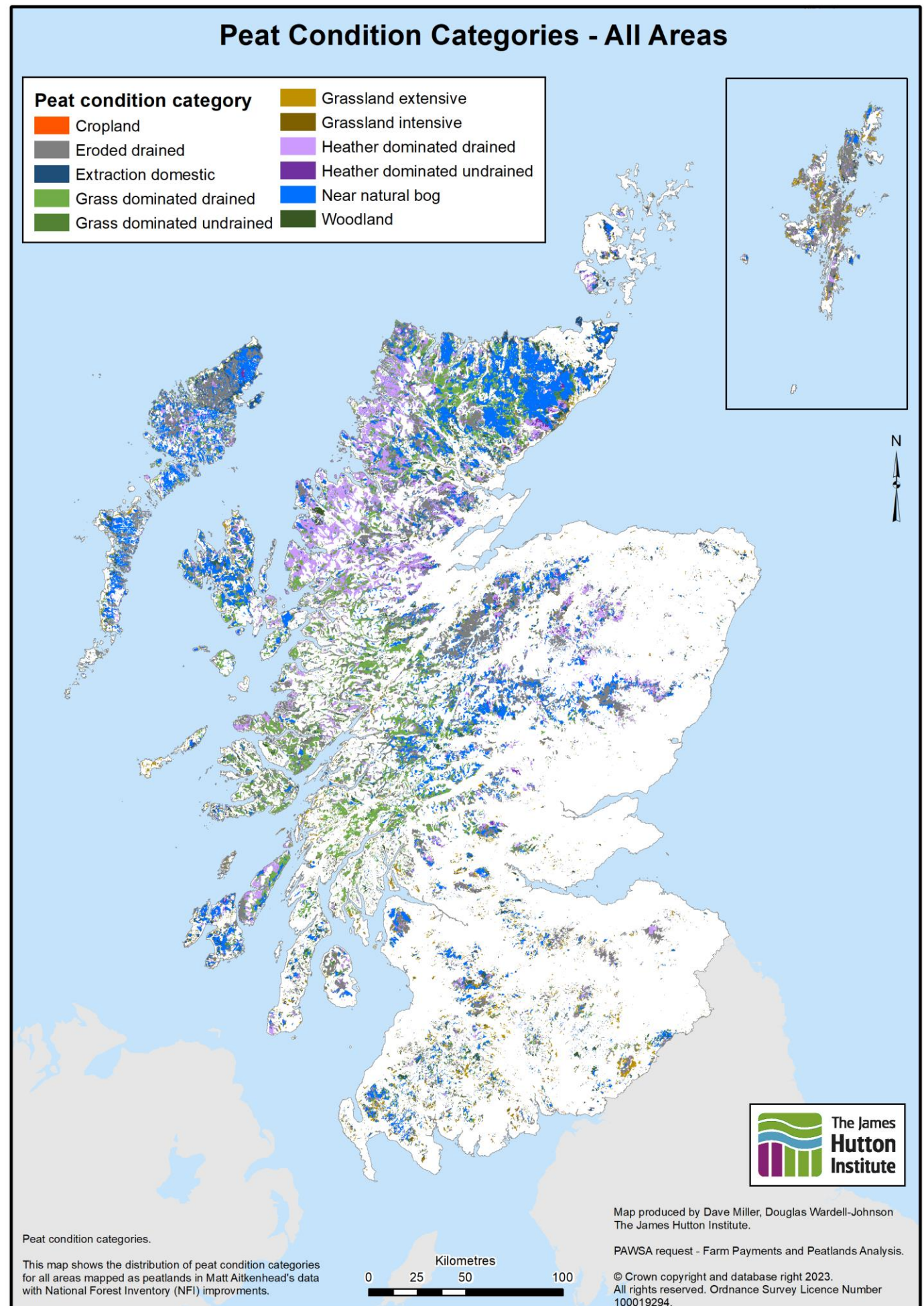


Summary Chart – Peatlands Area



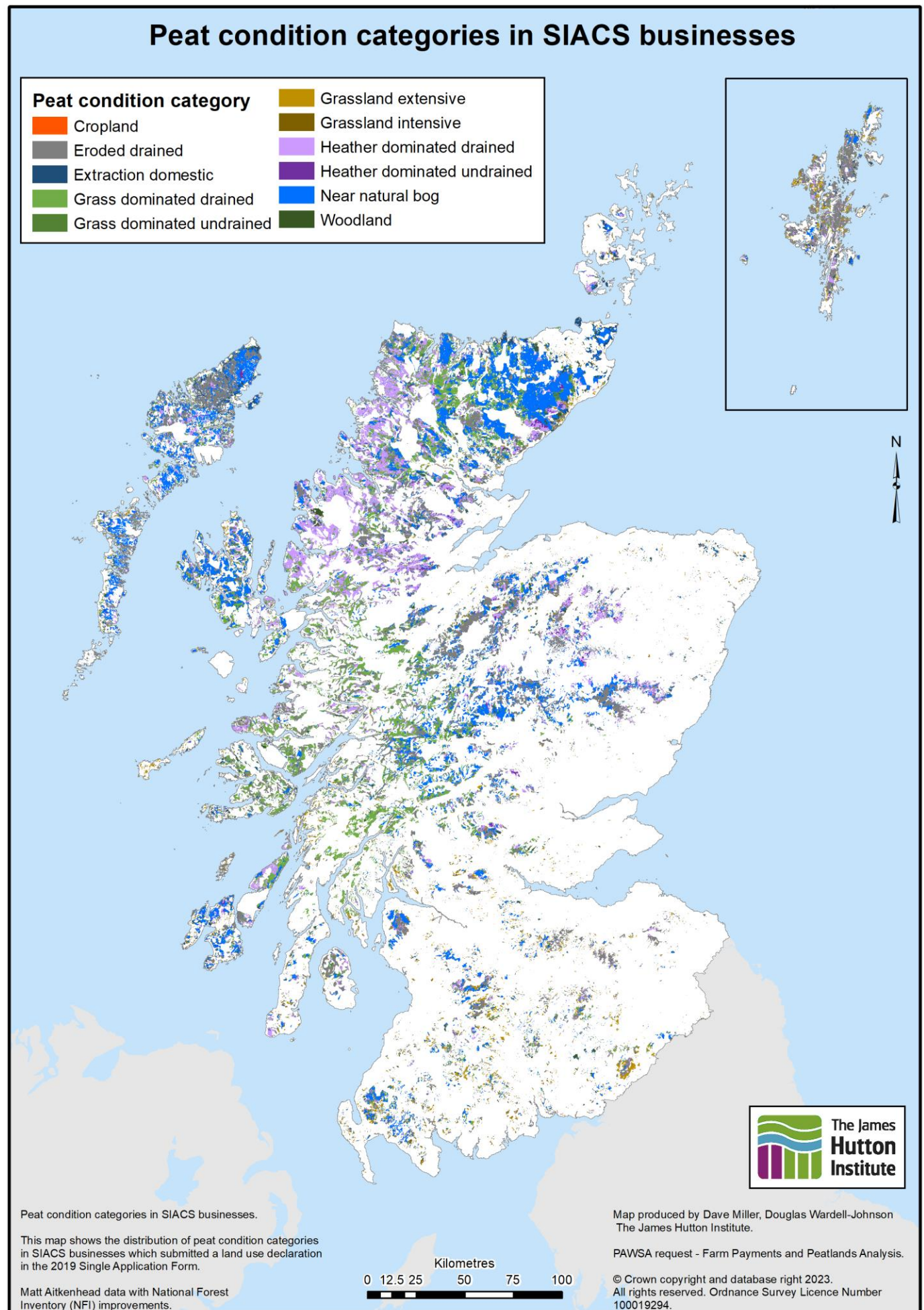
Mapping – Peatlands

- The spatial distribution of the 11 peatland condition categories are mapped opposite.
- The maps shows clear regional patterns for the categories and local concentrations of the categories associated with higher emissions factors.
- The maps shows all peatlands since this makes interpretation of pattern simpler but the categories for SIACS businesses only are shown in the next slide.



Mapping – Peatlands 2

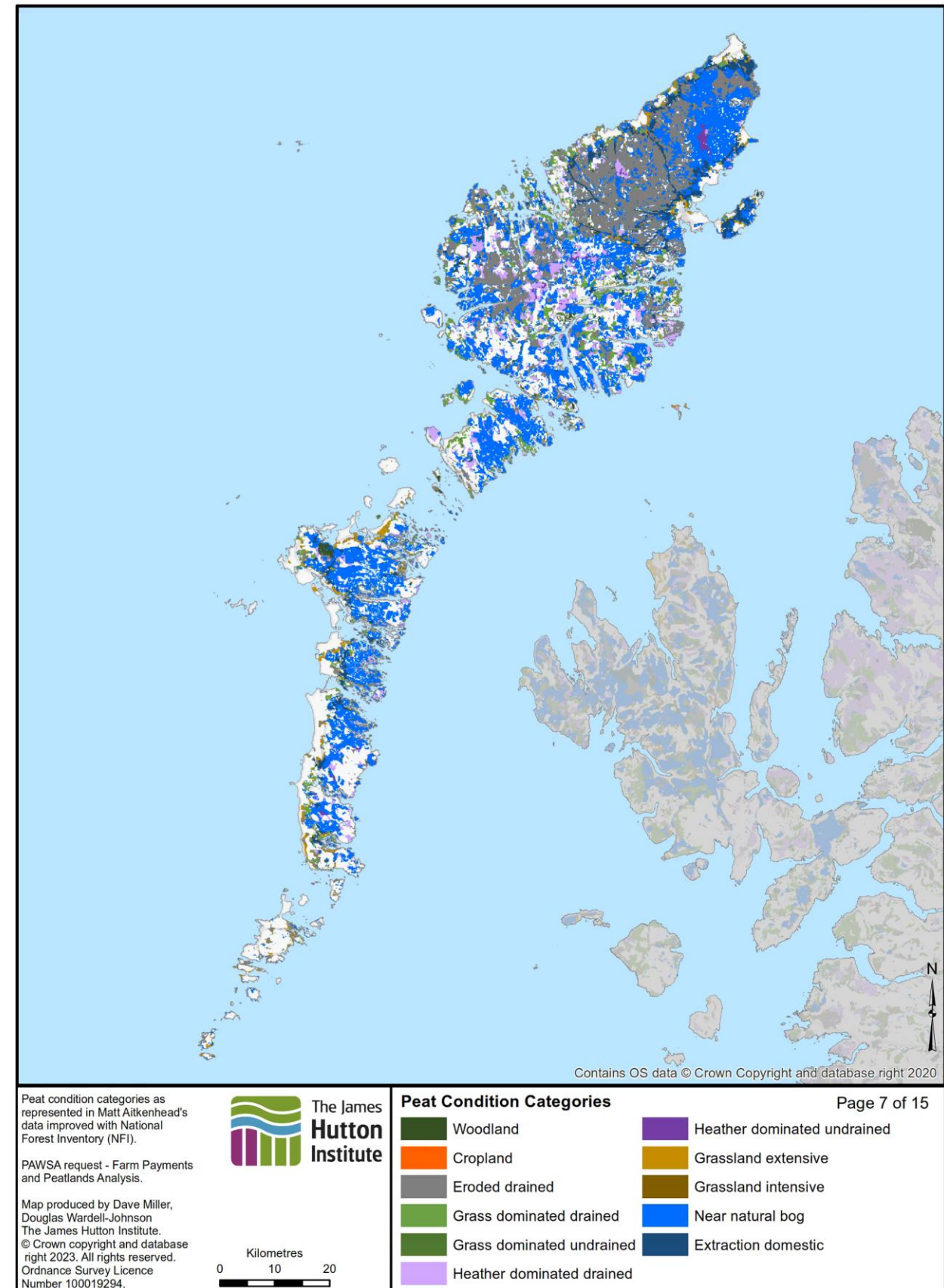
- The peatland condition classes for just SIACS businesses



Regions – Peatlands

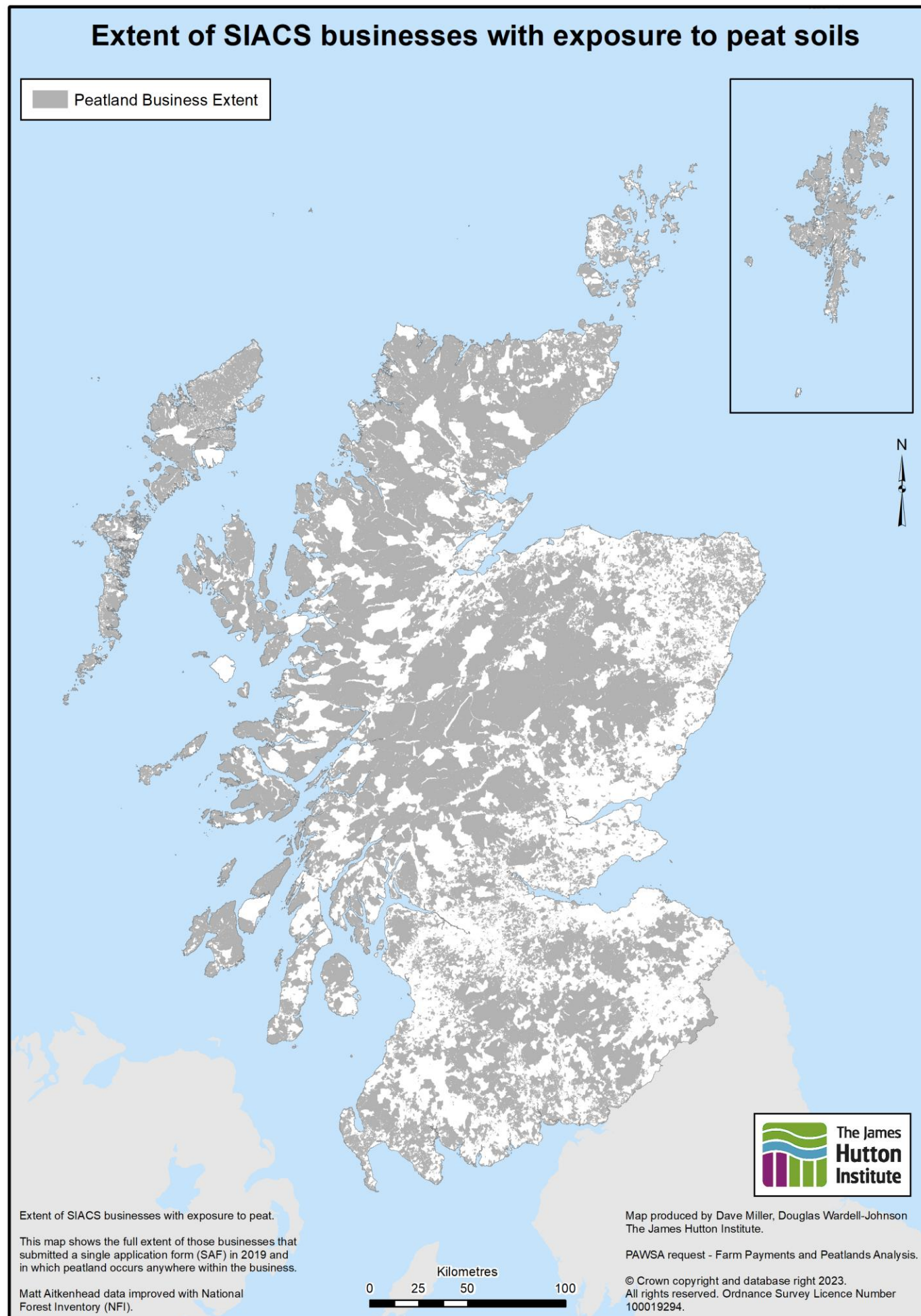
- Regional mapping of the peatland types can be useful in highlighting details of the extent and mix of restoration challenges faced by a region.
- An example of regional mapping is shown for Western Isles.
- Such regional interpretations need to be undertaken carefully since the region boundaries can have a powerful influence on the mix of peatland types present.
- The detail visible within the regional mapping does though enhance the interpretation of patterns seen within the national mapping – while reiterating the limitations of the current version of the peat condition categories mapping.

Peat Condition Categories - All Areas: Eileanan an Iar



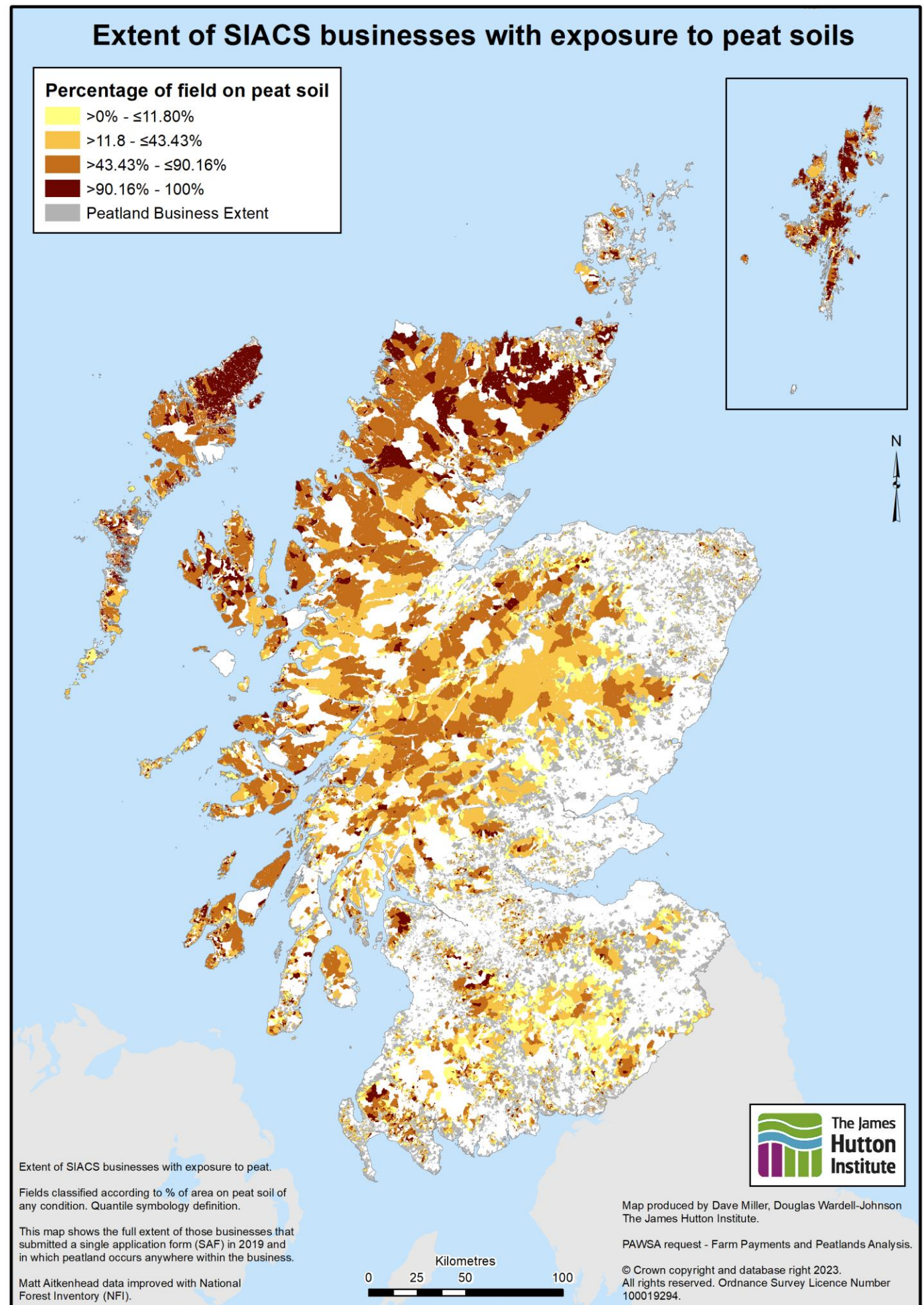
Mapping – Businesses

- By taking a business-focused perspective on peatlands mapping it is possible to generate alternative views of the data that can highlight factors relevant to policy making.
- Peatlands can occur in businesses that also have land in the lowlands (e.g., multi-holding businesses). The map opposite shows **all land** in businesses with peatland **present anywhere** within the boundary of the business.
 - Grey – businesses with peatlands present.
- This highlights that it is **not only “upland” businesses** that could be involved in restoration (or that could have restoration obligations).



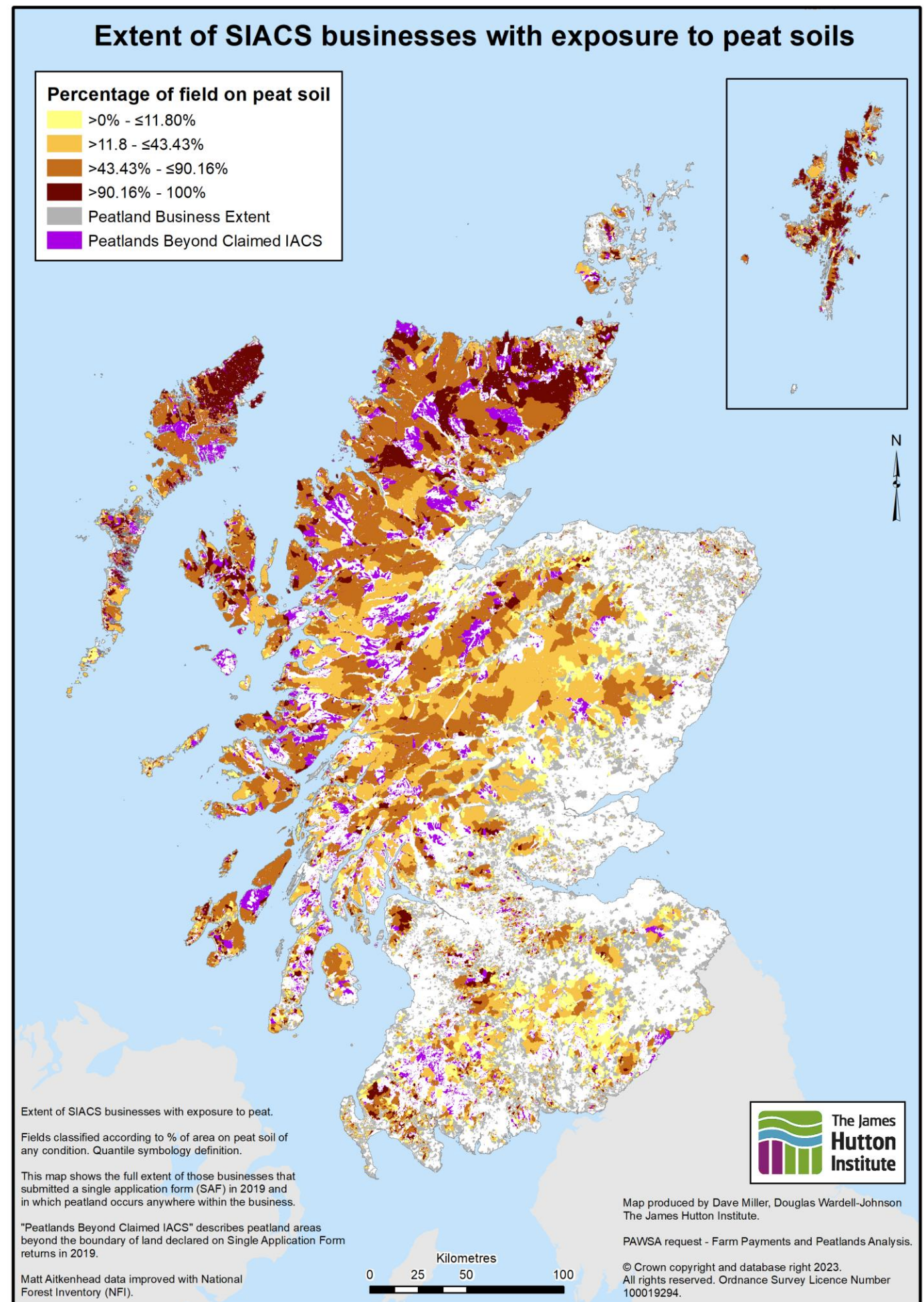
Mapping – Businesses 2

- Peat soils often **occur as one part of a mix of soils** within management units (in this case the fields within the SIACS mapping).
- To that end the map opposite highlights those fields where peats are part of the soils mix in the field.
 - The brown colour ramp in the map classifies the fields by percentage of the field area on peat soils.
- The map highlights both **where** the presence of peatlands may be influential and the **degree** of influence **at field level**.
- This is a much larger area than just the peatlands themselves – 3.8M ha vs 1.8M ha.



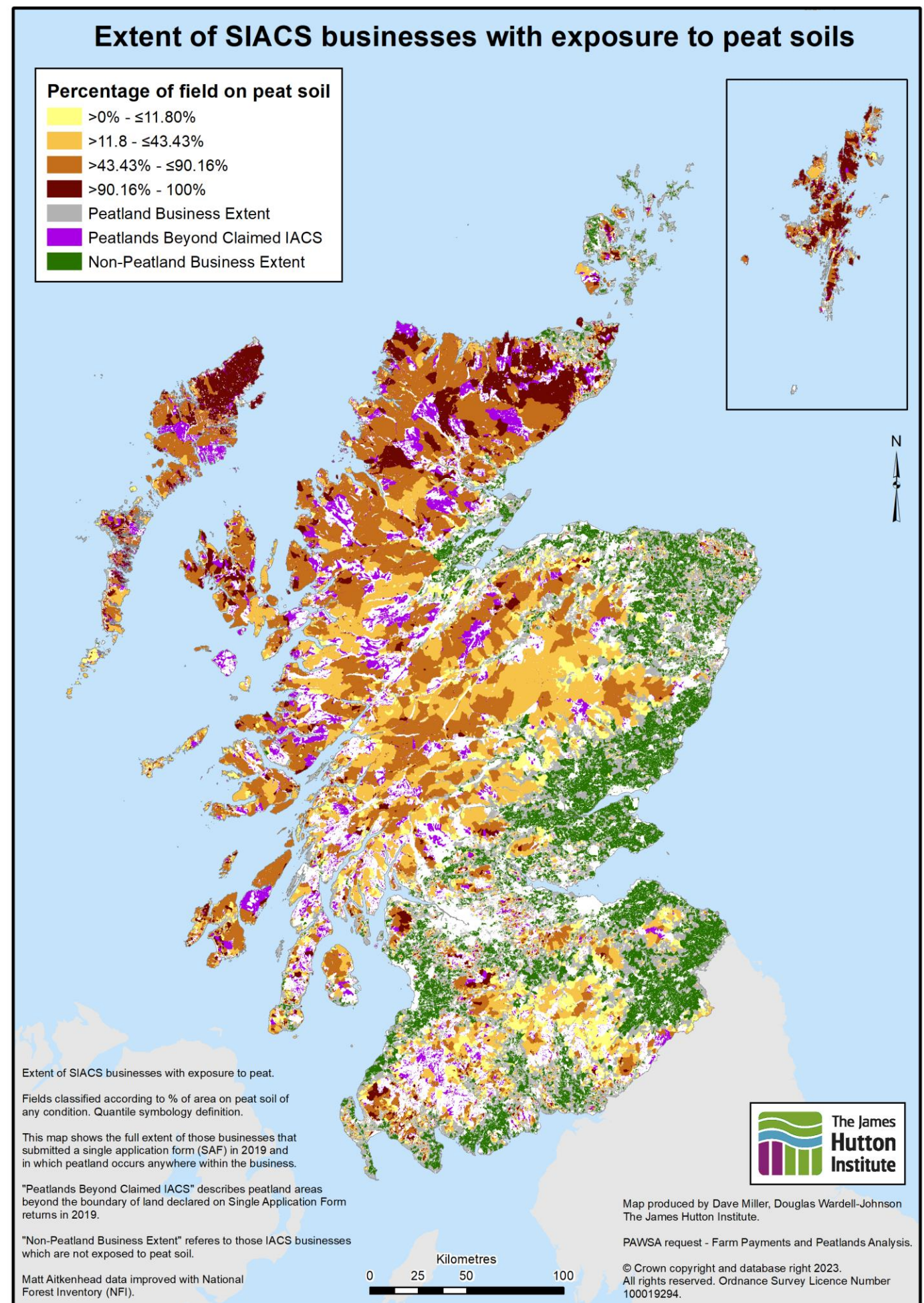
Mapping – Businesses 3

- Significant areas of peatlands are present beyond the area of the SIACS businesses (~211k ha).
- The map opposite adds these areas.
 - Purple the non-SIACS peatland



Mapping – Businesses 4

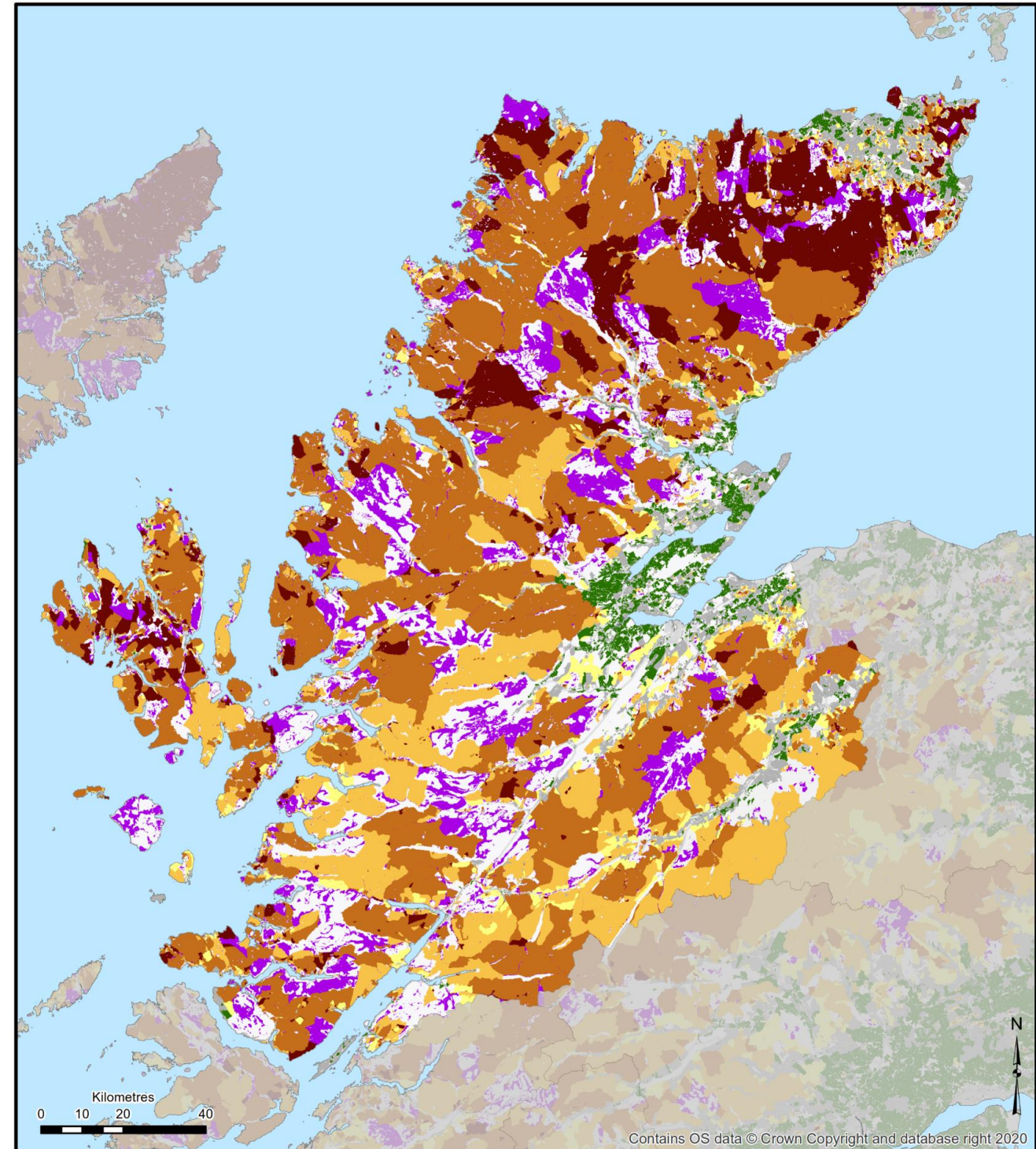
- Those SIACS businesses with no exposure to peatlands are added to the map opposite.
 - Green – SIACS businesses with no exposure to peatlands.



Regions – Businesses

- As with the peatland condition class mapping the business level data can support mapping at regional or finer scales.

Extent of SIACS businesses with exposure to peat soils: Highland



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Extent of SIACS businesses with exposure to peat soils.

Fields classified according to % of area on peat soil of any condition. Quantile symbology classification.

"Peatland Business Extent" refers to the full area of businesses which contain peat, but these areas do not themselves have peat within them.
 "Peatland Beyond Claimed SIACS" describes peatland areas beyond the boundary of land declared on Single Application Form returns in 2019.
 "Non-Peatland Business Extent" refers to those SIACS businesses which are not exposed to peat soil.

PAWSA request - Farm Payments and Peatlands Analysis.

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Percentage of field on peat soil

<ul style="list-style-type: none"> >0% - ≤11.80% >11.8 - ≤43.43% >43.43% - ≤90.16% >90.16% - 100% 	<ul style="list-style-type: none"> Peatland Business Extent Peatlands Beyond Claimed IACS Non-Peatland Business Extent
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 The James Hutton Institute.
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Payments

- Breakdown of payments for each of the business peat exposure classes (£M).
- Measures of agricultural activity – standard outputs and livestock units, plus the standard labour requirements.

Business Peat Exposure (ha)	Count	Area (000's ha)			Payments (2019) (£m)										Activity			
		Business	All Land	No Peat	All Peat Classes	Beef										Standard Outputs (£m)	Livestock Units ('000s BPS)	Standard Labour Requirments (FTE)
						P1 ALL	P2 All	BPS	Greening	Mainland	Beef Island	Sheep	LFASS	AECS				
0-100	7,544	1,222	1,061	159	166.8	48.8	96.2	49.4	0.5	3.3	0.5	23.6	8.1	800	533	16,564		
100-200	909	346	219	127	20.8	9.5	12.1	6.0	0.5	0.4	0.5	5.5	0.9	63	67	1,887		
200-300	412	249	149	100	12.0	7.2	7.0	3.4	0.5	0.2	0.5	3.7	0.8	30	39	1,087		
300-400	215	169	94	74	7.3	3.8	4.2	2.0	0.3	0.1	0.3	2.3	0.3	18	23	626		
400-500	151	160	92	67	5.7	3.6	3.4	1.6	0.4	0.1	0.4	1.9	0.4	13	17	485		
500-600	115	154	91	63	6.3	3.5	3.7	1.8	0.4	0.1	0.4	1.9	0.4	26	18	660		
600-700	93	141	80	61	4.4	2.7	2.4	1.2	0.4	0.1	0.4	1.3	0.3	9	14	348		
700-800	69	119	67	52	4.2	2.0	2.3	1.1	0.4	0.1	0.4	1.2	0.3	19	12	456		
800-900	60	107	57	50	3.2	1.8	1.8	0.9	0.3	0.0	0.3	1.0	0.2	7	9	303		
900-1000	43	91	51	40	2.5	1.5	1.4	0.7	0.3	0.0	0.3	0.7	0.1	6	7	201		
>1000	321	1,931	873	1,057	24.9	18.6	13.7	6.9	2.8	0.3	2.8	7.0	1.9	49	56	2,598		
SIACS Businesses w'peat	9,932	4,688	2,833	1,851	257.9	102.8	148.1	74.9	6.8	4.6	6.8	50.1	13.9	1,041	795	25,216		
All SIACS Coverage	19,292	5,672	3,817	1,851	452.5	131.4	263.9	135.1	6.8	5.8	6.8	61.7	20.7	2,379	2,585	50,200		
Businesses w'peat %	51%	83%	74%	100%	57%	78%	56%	55%	100%	79%	100%	81%	67%	44%	31%	50%		

Label	Description
P1 ALL	All CAP Pillar 1 Payments
P2 All	All CAP Pillar 2 Payments
BPS	CAP Basic Payment
Greening	CAP Greening
Beef	Suckler Beef
Beef Island	Beef Island
Sheep	Upland Sheep Support
LFASS	Less Favoured Areas
AECS	Agri-Environment and Climate Change

- Options for more detailed breakdowns of tenure and/or activity are possible, as are using more specific payment schemes.



Region

- As for overall summary but grouped by Agricultural Region and ordered by the all-peat-classes area.

Business Peat Exposure (ha)	Business Count	All Peat Classes			Crop (39)	Grass	Grass	Woodland (10)	Extraction	Eroded Drained (5)	Grass	Heather	Dominated Undrained (2)	Dominated Undrained (2)	Near Natural Bog (0.01)	No peat map coverage
		All Land	No Peat	All Peat Classes		Intensive (30)	Extensive (19)		Domestic (8)		Dominated (3)	Dominated (3)				
Highland	2,282	1,722	761	960	1	2,131	17,013	35,649	12,704	193,737	202,544	217,258	17,147	11,947	249,823	1,109
Argyll & Bute	725	475	281	193	3	2,662	12,256	9,765	3,721	50,047	54,663	17,413	2,005	727	40,192	384
Eileanan an Iar	1,475	216	62	154	6	177	3,561	2,025	9,905	45,514	10,114	11,999	386	1,307	68,805	696
Tayside	308	444	324	120		153	2,622	4,711	2	39,634	17,848	13,935	2,200	1,324	38,044	8
NE Scotland	1,077	460	362	98		1,608	2,829	3,850	1,380	26,322	7,004	22,927	861	2,483	29,090	36
Shetland	798	123	46	77	5	318	10,359	1,649	3,500	44,114	3,008	7,848	83	8	5,839	726
Dumfries & Galloway	955	324	263	61	5	5,683	13,265	4,551	481	10,146	5,742	3,674	672	17	16,306	412
Ayrshire	394	170	120	50		1,021	5,793	2,761	196	17,748	3,115	4,785	724	113	13,867	4
East Central	245	142	102	41	0	468	2,674	1,517	225	10,713	11,975	2,959	489	7	9,589	16
Scottish Borders	311	218	188	29		440	7,085	992	346	12,725	2,543	2,152	101	5	2,666	579
Clyde Valley	503	133	109	24	22	1,177	4,237	1,011	106	8,057	1,148	1,751	49	7	6,852	4
(blank)	278	96	76	20	1	201	905	3,208	229	4,981	2,510	3,012	116	171	4,249	59
Orkney	338	55	45	10		388	941	264	2,452	2,040	177	1,945	79	145	1,302	124
Lothian	143	73	63	10		182	1,140	487	48	5,679	167	893			954	8
Fife	100	36	32	4		146	382	221	0	1,098	1,816	519		5	130	0
SIACS Businesses w' peat	9,932	4,688	2,833	1,851	43	16,758	85,062	72,661	35,297	472,556	324,375	313,069	24,912	18,266	487,709	4,164



Farm Type

- As for overall summary but grouped by farm type (combined) and ordered by all-peat-classes area.

Business Peat Exposure (ha)	Business Count	All Land	No Peat	All Peat Classes	Grass		Woodland (10)	Extraction Domestic (8)	Eroded Drained (5)	Dominate d Drained (3)	Dominate d Drained (3)	Dominate d Undraine	Dominate d Undraine	Near Natural Bog (0.01)	No peat map coverage	
					Crop (39)	Intensive (30)										Extensive (19)
Specialist sheep and Goats	3248	1,512	783	727	8	2,420	30,759	20,776	12,287	196,668	134,927	113,107	10,429	7,142	198,906	1,525
Sheep and cattle combined	1049	828	482	345	1	2,882	23,023	13,251	5,000	99,137	62,651	47,578	4,527	3,052	83,996	409
Specialist cattle - rearing and fattening	2576	902	597	304	12	6,059	17,375	12,239	10,092	62,982	40,355	49,093	5,035	2,463	98,149	706
Graziers	858	445	249	195	4	1,017	4,356	13,585	1,471	40,383	50,006	40,002	2,670	1,555	40,385	127
Various grazing livestock	447	262	154	107	5	569	2,621	3,389	1,045	23,436	15,806	35,992	945	1,856	21,390	745
Non Classified	136	113	46	66	3	74	869	2,015	3,695	19,843	5,238	6,449	730	761	26,295	170
Mixed Crops - Livestock	356	173	141	31	0	739	1,547	1,754	380	7,549	6,034	8,064	92	766	4,479	30
(blank)	278	96	76	20	1	201	905	3,208	229	4,981	2,510	3,012	116	171	4,249	59
General Field Cropping	189	139	111	28		235	570	761	468	10,647	3,596	5,981	275	275	4,982	86
Specialist dairying	456	104	93	11	6	2,128	1,920	713	218	2,384	628	875	18	2	2,264	131
Specialist cereals, oilseeds and protein crops	242	88	77	10	3	291	516	822	318	2,187	2,061	2,276	51	183	1,441	161
Specialist granivores	41	16	12	4		121	550	125	49	1,921	211	528	14	37	236	2
Specialist Horticulture and Permanent Cropping	37	10	8	2		16	29	13	37	352	276	77	4	3	794	9
Various granivores combined	19	3	3			6	21	10	10	84	77	36	6	0	143	4
SIACS Businesses w'peat	9932	4,688	2,833	1,851	43	16,758	85,062	72,661	35,297	472,556	324,375	313,069	24,912	18,266	487,709	4,164



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Previous related analyses are also available from the Hutton Land Systems Research Team website -
<https://ics.hutton.ac.uk/research/land-systems-research-team/>

The sets of slides and maps generated in Agriculture Policy analysis from 2010 onwards are available from -
<https://ics.hutton.ac.uk/research/land-systems-research-team/cap-analysis/>

For woodland expansion analysis see - [online mapping](#) and [paper](#).

Further research in the RESAS Strategic Research Programme 2022-27, in the [Land Use Transformations](#) (C3-JHI-1) and [Land Reform](#) (E3-JHI-1) projects.

[Story Map for Land Use Transformations](#) - land use change modelling.

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