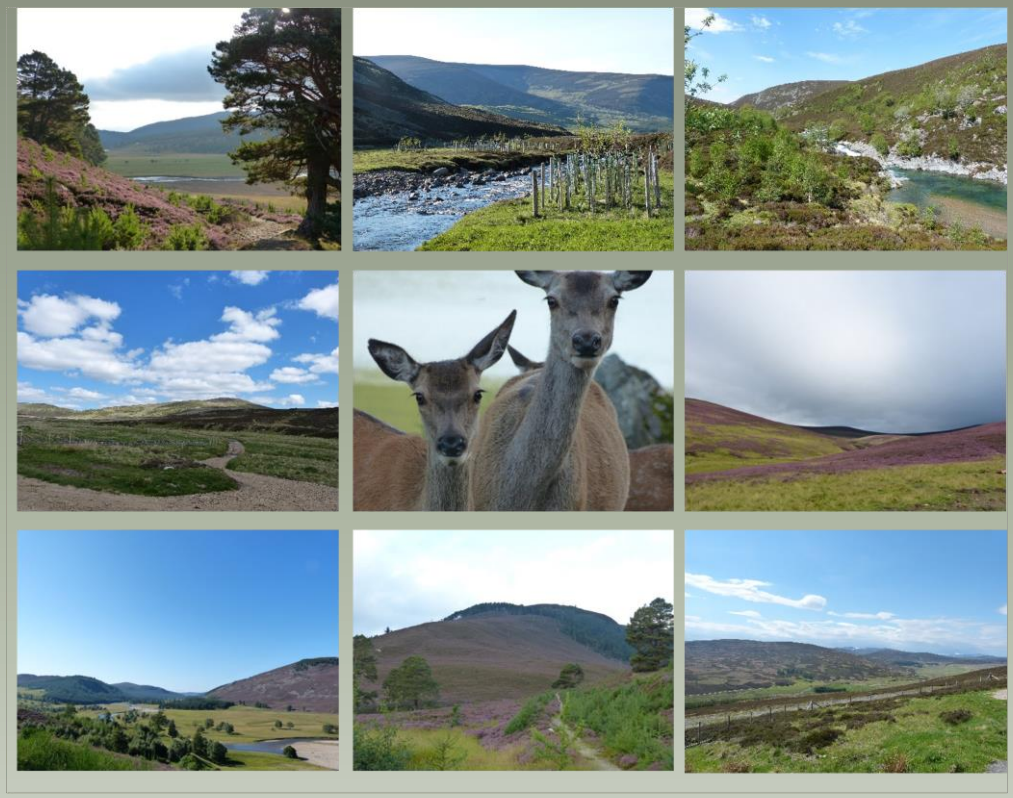
Upper Deeside and Donside Land Management Group



Deer Management Plan

2022 – 2027

caorann

DMG Chairman: Angus McNicol

DMG Secretary: Linzi Seivwright

Email: UDDLMG1@gmail.com

Prepared by:

Dr Linzi Seivwright BSc CF Phd

www.caorann.com

linzi@caorann.com

DMG Website: upperdeesidedonsidedmg.deer-management.co.uk/

Adopted: 28th April 2023

Acknowledgements

The author would like to thank:

- The Chair Angus McNicol for useful comments on the drafts
- Members of Upper Deeside and Donside LMG for their time and input
- Sarah Daniels for GIS and Mapping support.

Funding

This plan has been funded entirely through private contributions from LMG Members.

Table of Contents

Foreword

Faced with a cost of living crisis, Climate Emergency, Biodiversity loss at an unprecedented scale, and the impact of a global pandemic, the way in which we use land in Scotland, particularly the uplands, is vital to how Scotland as a nation responds to these challenges.

With focus on the appropriate management of Scotland's natural capital assets, such as soil, water quality and carbon-sequestering habitats, the successful achievement of these nature-based targets is wholly dependent on the continued voluntary cooperation, support and contribution from landowners and the rural land management sector.

Deer management and effective collaboration will be key components of delivering landscape scale land management objectives. Upper Deeside and Donside Land Management Group has already demonstrated a successful track record in managing deer effectively on a voluntary basis to deliver a range of public benefits at a landscape scale through the implementation of the 2016 Deer Management Plan. Key achievements in the last 5 years include:

- **A reduction in deer numbers from 8.4 deer per km^2 to 4.2 deer per km^2**
- **2,000 ha of woodland regeneration**
- **19 Peatland Restoration Sites capturing around 10,000 tonnes of CO2 per annum.**

The Group will continue to build on its environmental and socio-economic achievements, working collaboratively and in partnership with each other, wider stakeholders and the local community. Through the implementation of this plan, the Group will champion and actively undertake opportunities to address Biodiversity Loss and Climate Change, whilst building resilience and capacity within the deer and land management sectors to support them in tackling the challenges of the future.

Collaborative Land Management

1.1 Upper Deeside and Donside Land Management Group

Located in the northeast of Scotland within the Local Authorities of Aberdeenshire and Moray Councils, Upper Deeside and Donside Land Management Group (UDDLMG) falls entirely within the Cairngorms National Park (CNP), representing **22.4%** of the CNP area **(*Figures 1a & 1b*).**

The Land Management Group membership comprises individual landowners and land managers. Representatives from NatureScot and Cairngorms National Park Authority area invited to attend meetings. The Group structure and function has evolved from a core membership of **6** land management units covering **59,603 ha** to a Land Management Group with membership of **17** land management units in 2022, securing a landscape collaborative approach to land management over an area of around **101,592 ha.**

1.2 Land Management Activities

Originally formed in 1996 as a Deer Management Group, the Group changed its name in 2021 to reflect the diverse and complex mosaic of land use objectives and land management activities of its increasing membership (**Table 1**). The Constitution of the Group was changed and can be found on the Group website.

Activities undertaken or facilitated by Group members range include:

- Biodiversity restoration through the management of Designated Sites and wider ecosystem management.
- Mitigating climate change by improving the health of carbon-rich habitats including peatland restoration and natural regeneration of woodland and scrub.
- Livestock production (sheep, cattle and arable) and food production (venison).
- Timber production.
- Contributing to the rural economy through deer stalking, salmon fishing & game shooting activities (grouse, partridge & pheasant).
- Enabling access for all through waymarking and signage of paths and tracks.
- Providing educational experiences through Ranger services & wildlife tourism.
- Provision of visitor facilities including car parks, caravan and camping sites, two ski centres, golf courses and event management.
- Provision of affordable housing and commercial premises including shops, offices and workshops

- Supporting ecosystem function and natural capital benefits: helping contribute to clean water and flood prevention measures.

Many of these activities are undertaken as private enterprises providing direct and indirect substantial public benefits to the area Underpinning all these activities is balancing the sustainability of three elements: environment, economy and local community.

Table 1: Land Management Group Management Units

	Management Unit	Area (Ha)	Objectives
1	Allargue	2,310	Farming, Forestry, Grouse Shooting, Holiday lets
2	Baddoch (Invercauld)	4,359	Economically, environmentally and socially sustainable farming (predominantly sheep), deer stalking, grouse shooting, woodland management including new plantation at Morrone and established woodland at Baddoch, natural regeneration (mainly of heather), mitigation of wildfire risk, public access, designation management, water quality and temperature improvement through riparian works, biodiversity conservation and carbon sequestration.
3	Candacraig	1,459	
4	Corndavon (Invercauld)	5,694	Economically, environmentally and socially sustainable farming (principally sheep), roe deer stalking, grouse shooting, woodland management, natural regeneration of heather, mitigation of wildfire risk, public access, designation management, water quality and temperature improvement, biodiversity conservation and carbon sequestration.
5	Delnadamph	3,184	Conservation, grouse management, peatland restoration and sheep grazings.
6	Dinnet & West Tillypronie	7,034	Conservation & grouse management.
7	Dinnet Lowground	1,402	
8	Edinglassie	5,242	
9	Gairnshiel (Invercauld)	3,191	Economically, environmentally and socially sustainable farming (principally sheep but some cattle), roe deer stalking, grouse shooting, pheasant and partridge shooting, woodland management, natural regeneration of heather, mitigation of wildfire risk, public access, designation management, biodiversity conservation and carbon sequestration.
10	Glenavon	16,997	Grouse shooting, deer stalking, sheep farming, fishing, forestry & peatland restoration.
11	Homebeat (Invercauld)	10,375	Economically, environmentally and socially sustainable farming (principally sheep), deer stalking, grouse shooting, woodland management, natural regeneration (both heather and woodland), mitigation of wildfire risk, public access, designation management, water quality and temperature improvement, biodiversity conservation and carbon sequestration.
12	Kinnord (National Forest Estate)	268	Forestry, conservation & access.
13	Mar Estate	5,940	Conservation, forestry, tourism, fieldsports & peatland restoration
14	Mar Lodge Regen Area	12,487	Conservation, access & enjoyment.
15	Mar Lodge South	16,736	Conservation, fieldsports, access & enjoyment.
16	Micras (Invercauld)	4,012	Economically, environmentally and socially sustainable farming (principally sheep but some cattle), roe deer stalking, grouse shooting, pheasant and partridge shooting, woodland management, natural regeneration of heather, mitigation of wildfire risk, public access, designation management, biodiversity conservation and carbon sequestration.
17	RSPB Crannach	547	Nature conservation.
18	Tullich Wood	355	
		101,592	

Figure 1a: Upper Deeside and Donside Land Management Group

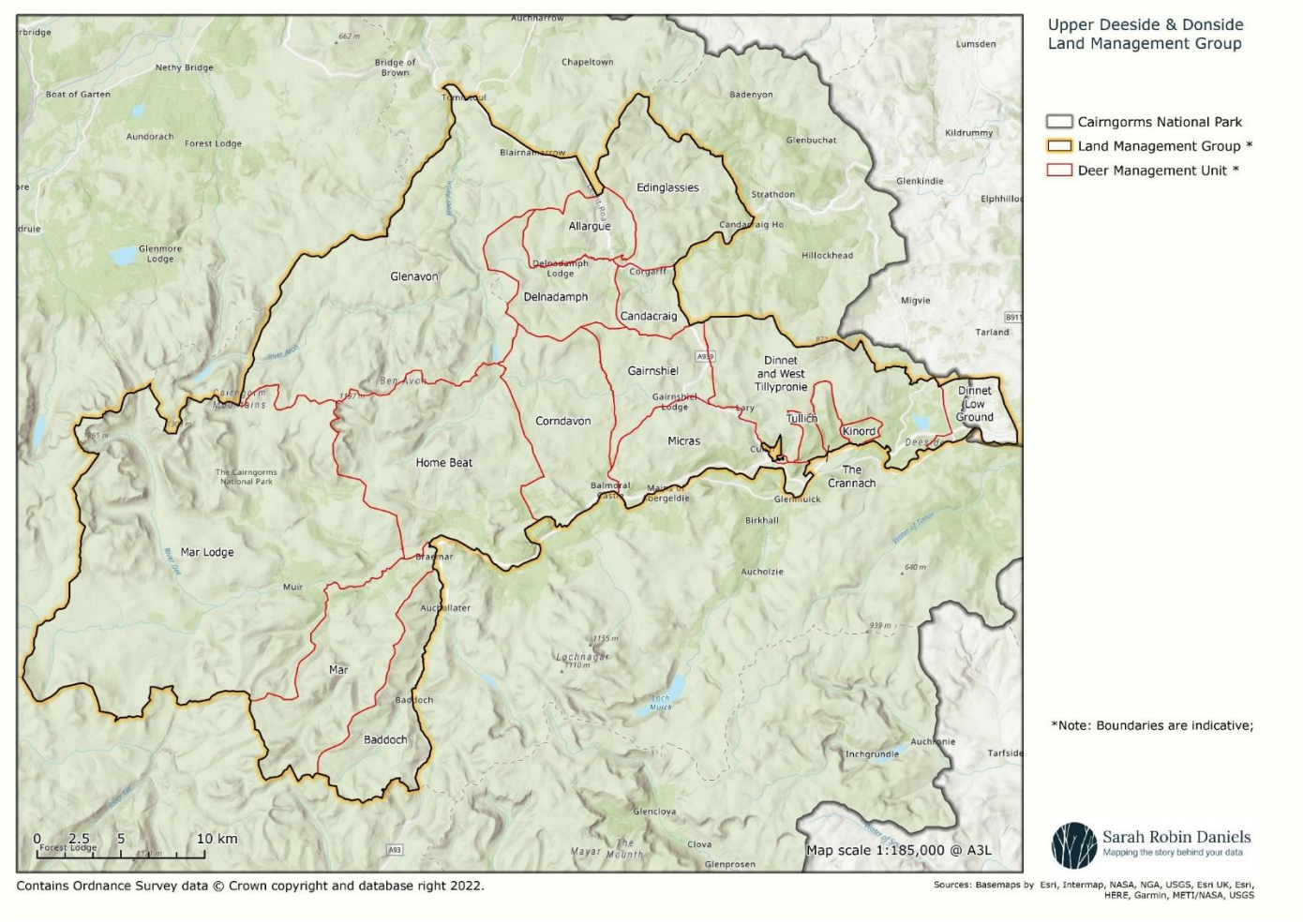
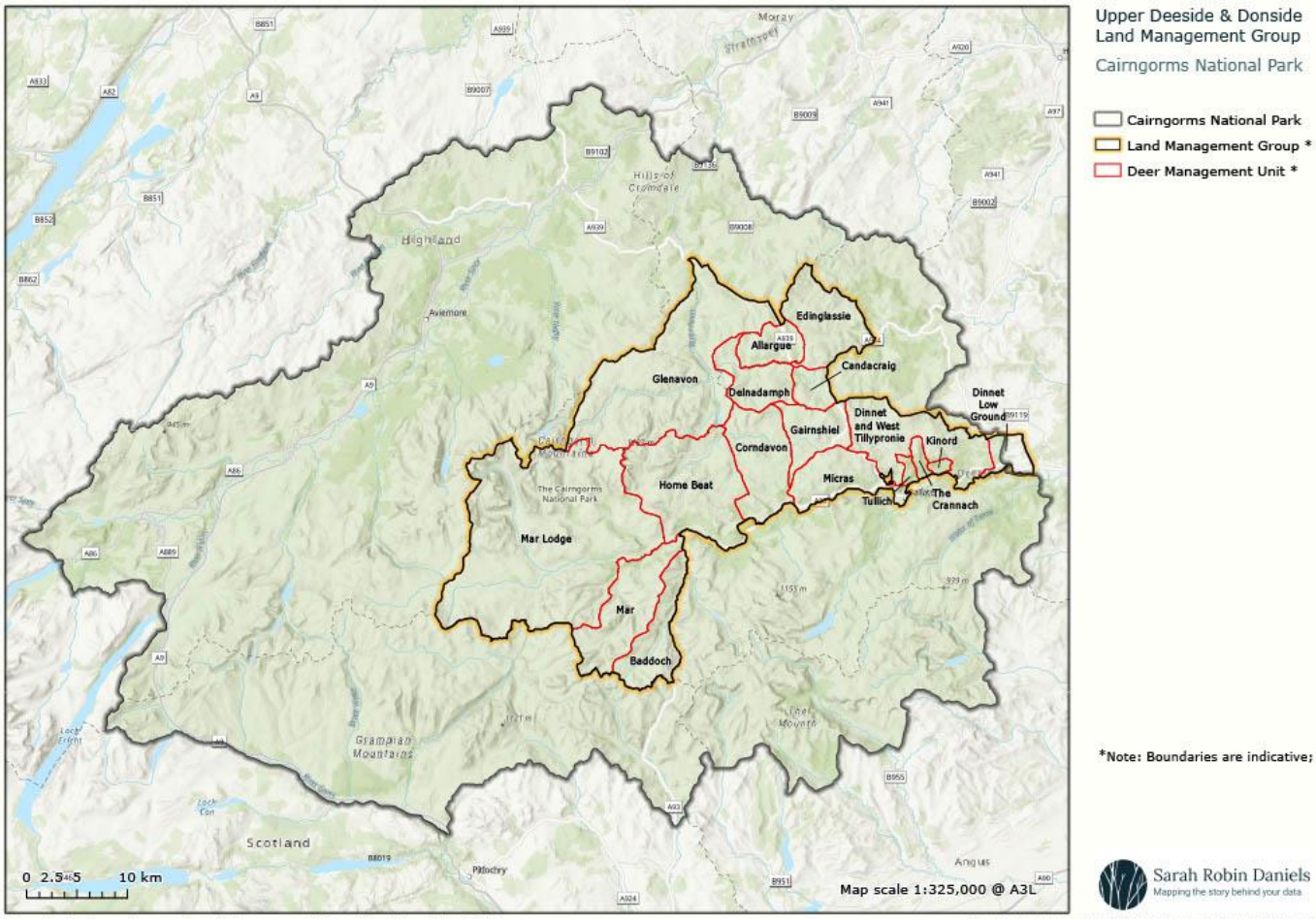


Figure 1b: Upper Deeside and Donside Land Management Group



Contains Ordnance Survey data © Crown copyright and database right 2022.

Sources: Basemaps by Esri, CGIAR, N Robinson, NCEAS, USGS, Esri UK, Esri, HERE, Garmin, Foursquare, FAO, METI/NASA, USGS

1.3 Group Vision

The vision of the Upper Deeside and Donside Land Management Group (UDD LMG) is to continue to manage land in collaborative and sustainable way, recognising the objectives of individual ownerships and the wider community (***Figure 2***).

Figure 2: Land Management Vision

1.4 Group Remit

The Upper Deeside and Donside Land Management Group has evolved as a forum to discuss not just deer management but other land management matters that may affect members at a landscape scale. The Group will act as a facilitator to take up topical activities or issues and may set up smaller sub-groups or task-and-finish groups from time to time, to address these.

As well as delivering collaborative action on deer management, the Group will act as a conduit for wider information sharing and gathering, through a range of media including the production of an annual report and a regular monthly bulletin, covering local as well as national topic land management issues.

1.5 Group Objectives

The Group's objectives are to:

- Promote the **sustainable management of deer** in the UDDLMG area in accordance with the UDDLMG Deer Management Plan, Scottish Government strategy, the Code of Practice on Deer Management, and in a manner that integrates different land-use objectives. Members support and fully endorse the long-term vision for deer populations and their management as laid out in;
    - "Scotland's Wild Deer – A National Approach"
    - Code of Practice on Deer Management
    - Wild Deer Best Practice Guidance

- **Promote collaboration** which supports the wider environmentally, economically, and socially sustainable management of land, flora and fauna within the Group area, achieving both private and public benefits, and where this is better enabled by co-operation between land management units.

The Group is run on an entirely voluntary basis at significant cost to members not just in terms of time to attend meetings and undertake Group activities, but also financial cost through engaging a consultant to facilitate meetings and keep the working plan up to date, as well as a secretary to undertake the administration of the Group.

1.5 The Purpose of the Deer Management Plan

Wild native deer are an integral part of Scotland's biodiversity. Their management underpins many of the land management objectives undertaken by Group members, contributing to a wide range of benefits. The benefits of deer management include securing the health of the environment including climate change mitigation and halting biodiversity loss, supporting economic resilience of fragile rural economies, enhancing the health and wellbeing of people and the safeguarding of deer welfare. Providing a natural food source.

The Code of Practice on Deer Management recognises that although wild deer do not belong to anyone, those who own the land over which they range freely have a responsibility to manage them. The size and extent of the red deer range is determined by a combination of natural and man-made factors and may include numerous landholdings. Therefore, in order to manage this free-ranging population effectively, an inclusive, collaborative approach is required. Wild red deer range across all the main landholdings within the Group area (**Chapter 2**). This Deer Management Plan (DMP) is intended to provide an effective mechanism to manage deer populations sustainably in the LMG area in line with the Deer Code.

The DMP will run from 2022 to 2027 and has been formally adopted by all the Members of the Group. The overall purpose of this Deer Management Plan (DMP) is to:

- Set out an **effective framework** of agreed collaborative actions and monitoring to ensure the **sustainable landscape scale management of wild deer** to deliver multiple land use benefits, safeguarding their welfare and minimising any negative impacts they might have;
- Provide the background to consider other relevant upland management activities involving livestock, habitat & wildlife management and wider conservation activities and practices.
- **Agree actions** and key performance indicators to measure success;
- **Implement monitoring** protocols to measure change and support adaptive management.
- Ensure that the planning process is **consultative, transparent, and open**.

1.6 Plan Structure

The Deer Management Plan will take account of all land management interests and objectives as well as those of other Statutory Organisations and the wider public interest. The Plan will build on the achievements of the **previous DMP** which ran from 2016 to 2021 (Table 2) and will identify specific actions for the Land Management Group (LMG) and targets to be delivered by 2027. These will be reviewed on an annual basis. Annual Reports will set out the key management activities undertaken by members and highlight future actions and priorities for the Group.

1.7 Actions to be delivered by 2027.

The Group are committed to working collaboratively to achieve the wider objectives of the Group and to address land management issues that arise in the local and wider area.

1a	*The Working Plan will be reviewed and updated annually. Management actions will be adjusted and agreed accordingly.*

Table 2: Key Group Achievements 2016 – 2022

	Action	Progress to 31st March 2022
Collaborative Land Management	To secure landscape scale collaboration between neighbouring properties.	• Group membership evolved from **6** land management units covering **59,603 ha** to a Land Management Group with membership of **17** land management units in 2022, securing landscape collaboration across **101,592 ha.**
Deer Management	To manage the shared deer population collaboratively, to achieve environmental, social and economic land management objectives.	• Red deer numbers have been reduced from 8.4 to **4.2 deer per km^2** across the LMG, within the density included in the new Cairngorms National Park Partnership Plan. • Roe deer culls have increased across the Group area.
Deer & Green Recovery	To ensure that deer management contributes to the rural economy providing income and employment opportunities and helping develop a skilled and qualified workforce.	• Deer management contributes to the rural economy supporting 28 FTE jobs as well as bringing in 700K of income through stalking and venison sales. The annual cull produces around 56 tonnes of venison.
Deer & Carbon Rich Soils	To identify opportunities to restore and safeguard valuable carbon rich habitats.	• Members delivered 19 Peatland Restoration projects sequestering around **10,000 tonnes of CO2** annually.
Deer & Woodland	To maximise opportunities for native woodland restoration and woodland expansion.	• Over **2,000 ha** of new native woodland has been created in the last 10 years.
Deer & Impacts	To ensure designated habitats are in favourable condition and to monitor and manage herbivore impacts across these and wider habitats.	• Mar Lodge Section 7 agreement concluded early due to ecological targets having been met. • Habitat Impact Assessment of upland habitat monitoring to Wild Deer Best Practice standards is in place covering **82,250 ha** (84% of Group area).
Deer & People	To provide local communities and wider public with opportunities for education, engagement and enjoyment.	• Two community engagement events held throughout the duration of the last plan. • Members hosted numerous educational events over the last 5 years for students.

2. Deer Numbers and Distribution

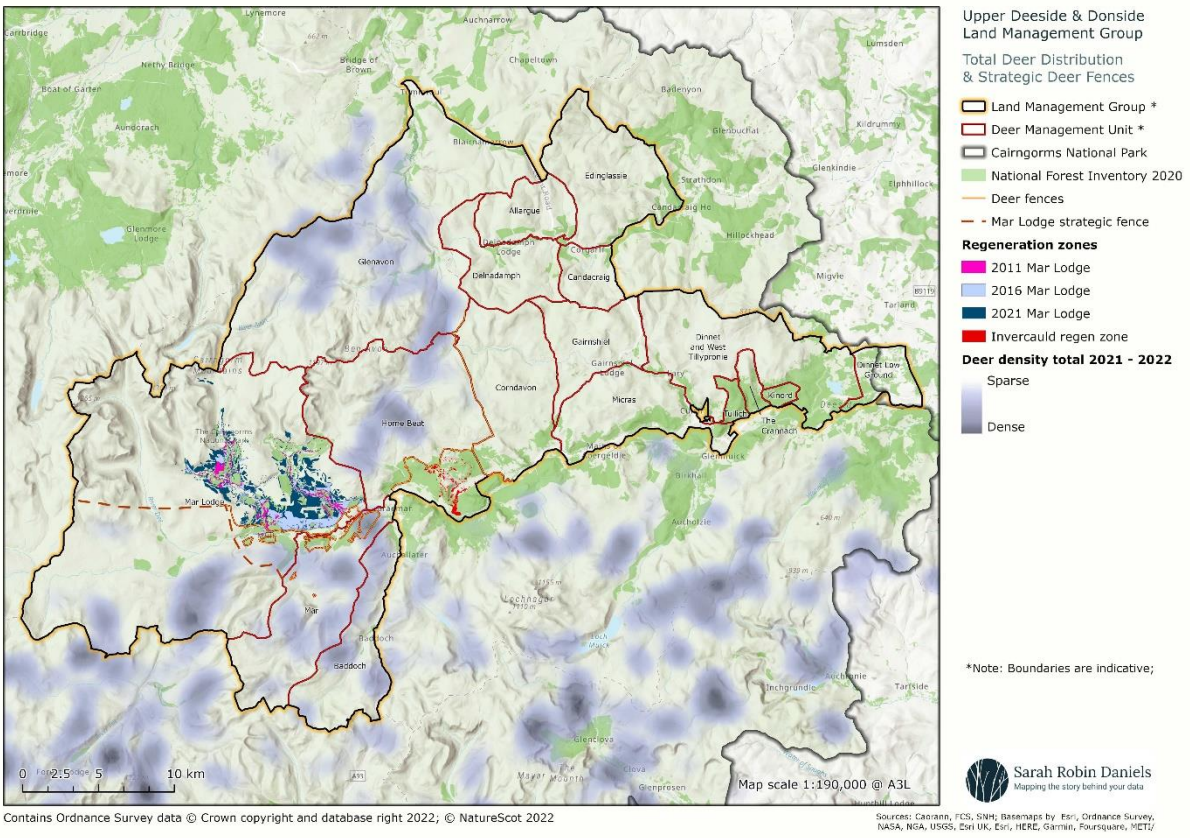
2.1 Deer Species

- **Red deer** (*Cervus elaphus*) are the main deer species found throughout the Group area, and along with sheep are the main grazing herbivores on the hill ground.
- **Roe deer** (*Capreolus capreolus*) are widely distributed throughout woodland and occasionally on the open hill.
- There are no **fallow** (*Dama dama*) or **sika deer** (*Cervus nippon*) currently resident within the area although the occasional sika has been seen locally.

2.2 Deer Numbers 1996 to 2022

Within the wider Group area, open range deer movements are restricted due to a strategic fence which separates Glenavon, Baddoch, Homebeat, Mar and Mar Lodge Estates (referred to as the West Area) with those in the east. The fence enables the East Area properties to maintain very low numbers of red deer. A strategic fence also separates the moorland area from the regeneration zone on Mar Lodge. (***Figure 3***).

Figure 3: Total Deer Distribution and Strategic Deer Fencing

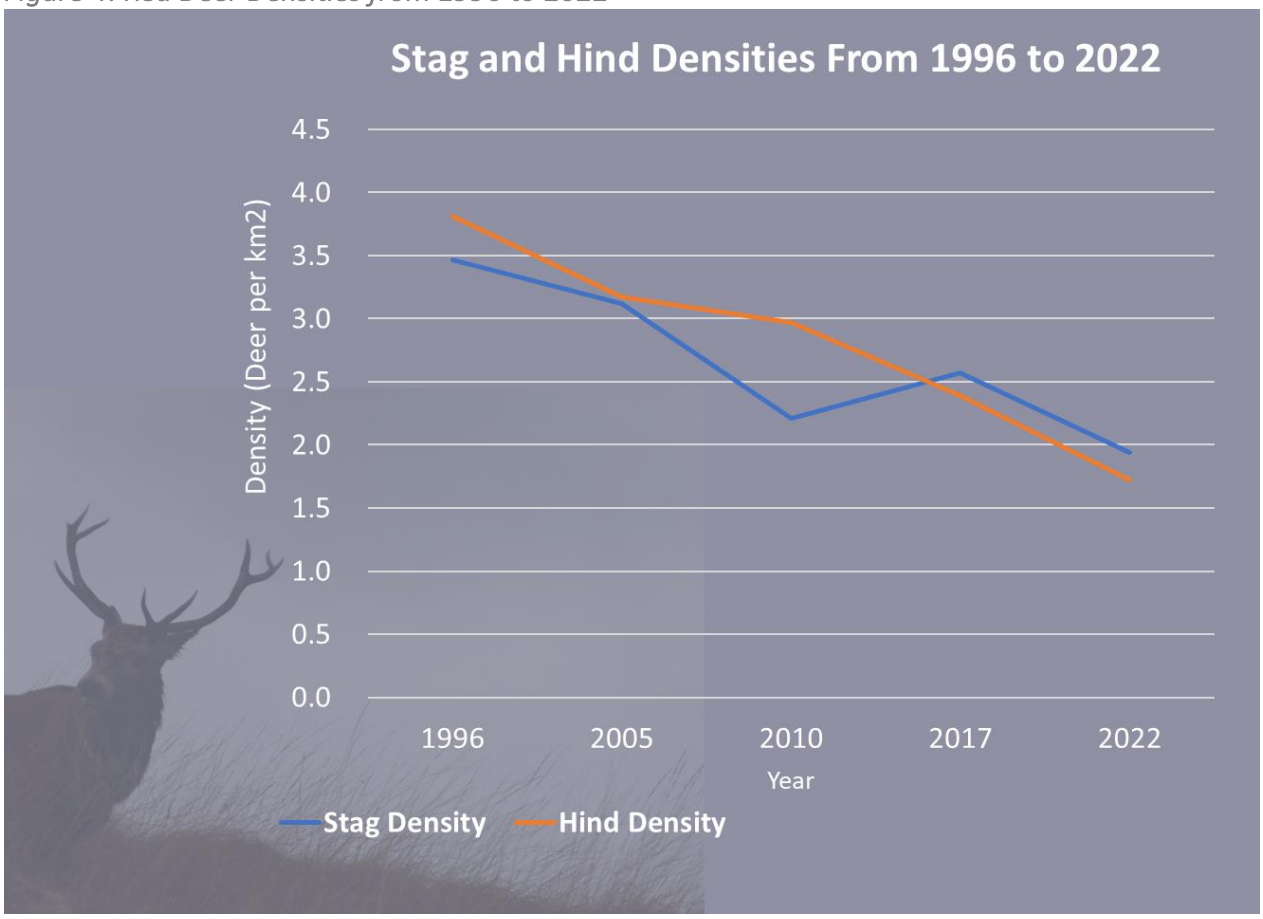


Red deer throughout the group area have been counted regularly since 1996 by foot and by helicopters. Since 1996, deer numbers across the whole DMG have been steadily falling from 8.4 deer per km^2 to a current density estimate of around **4.2 deer per km^2** ***(Table 3 & Figure 4).*** Current red deer numbers are estimated to be 4,181 with a **stag: hind ratio of 1 to 0.9.**

Table 3: Historic Count Figures (note Density is presented as deer per km2)

Count Type	Year	Whole DMG Total (99,921 ha)							West Area Totals (67,798 ha)					East Area Totals (32,126 ha)				
		Stags	Hinds	Calves	Total	Stag Density	Hind Density	Density	Stags	Hinds	Calves	Total	Density	Stags	Hinds	Calves	Total	Density
Heli & Foot	*1996*	3,465	3,808	1,138	8,411	3.5	3.8	8.4	3,323	3,467	1,036	7,826	11.5	142	341	102	585	1.8
Heli & Foot	*2005*	3,120	3,168	992	7,280	3.1	3.2	7.3	3,055	2,822	890	6,767	10.0	65	346	102	513	1.6
Heli & Foot	*2010*	2,207	2,964	956	6,127	2.2	3.0	6.1	2,069	2,536	830	5,435	8.0	138	428	126	692	2.2
Heli & Foot	*2017*	2,566	2,389	866	5,821	2.6	2.4	5.8	2,522	2,342	846	5,710	8.4	44	47	20	111	0.3
Heli & Foot	*2022*	1,935	1,723	523	4,181	1.9	1.7	4.2	1,901	1,676	506	4,083	6.0	39	55	24	118	0.4

Figure 4: Red Deer Densities from 1996 to 2022



Across the 5 main estates within the main open red deer range in the West Area, deer numbers have been reduced from 11.5 deer per km^2 to **6.0 deer per km^2** (***Figure 5***). This figure is within the range of average red deer open range densities of five to eight per km^2, included in the Cairngorms National Park Plan.

Figures 6 & 7 show the relative distribution of hinds and stags as heat maps across the Cairngorms National Park area. Note that counts are usually conducted in white-ground winter conditions and represent a snap-shot of the deer distribution at that time.

Figure 5: West Area Deer Densities By Property from 1996 to 2022

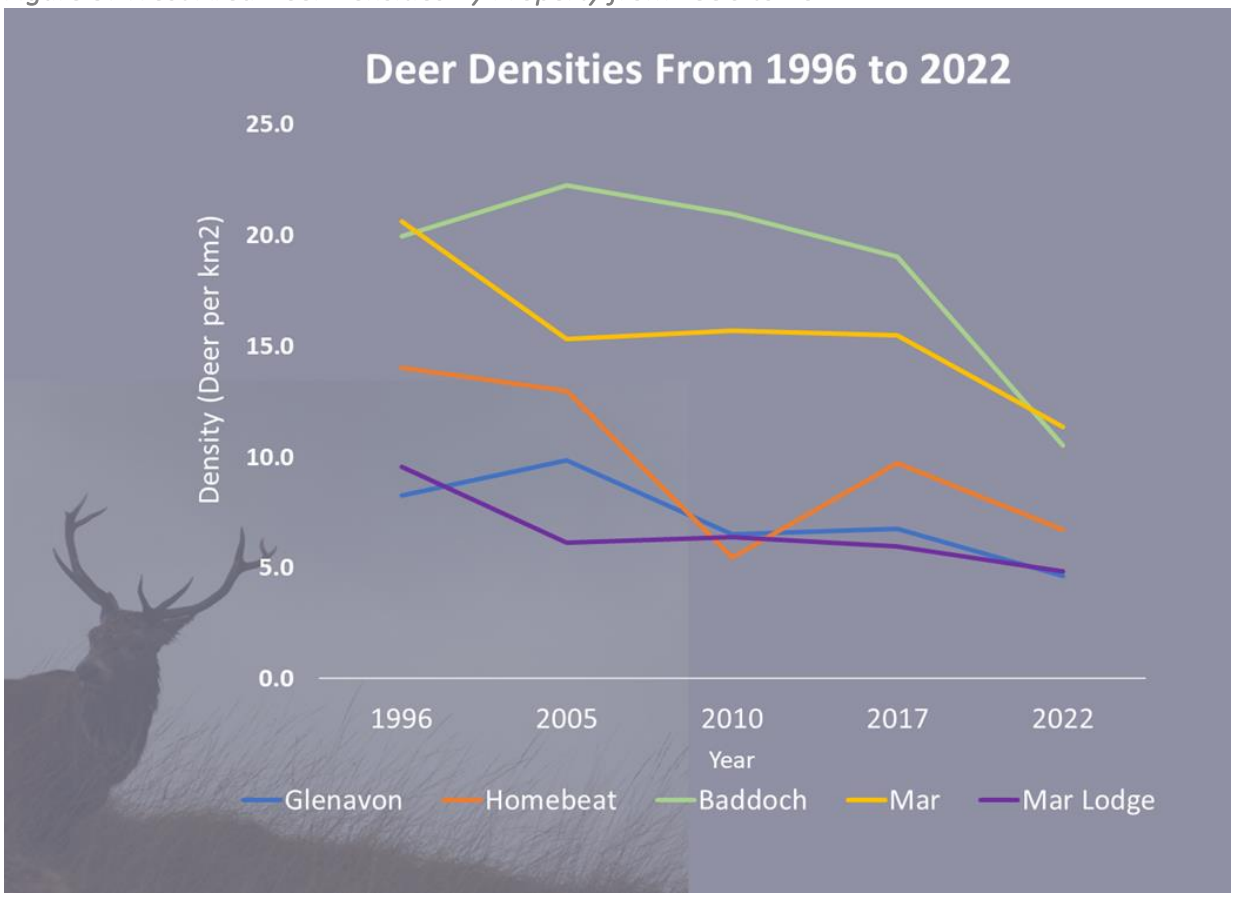
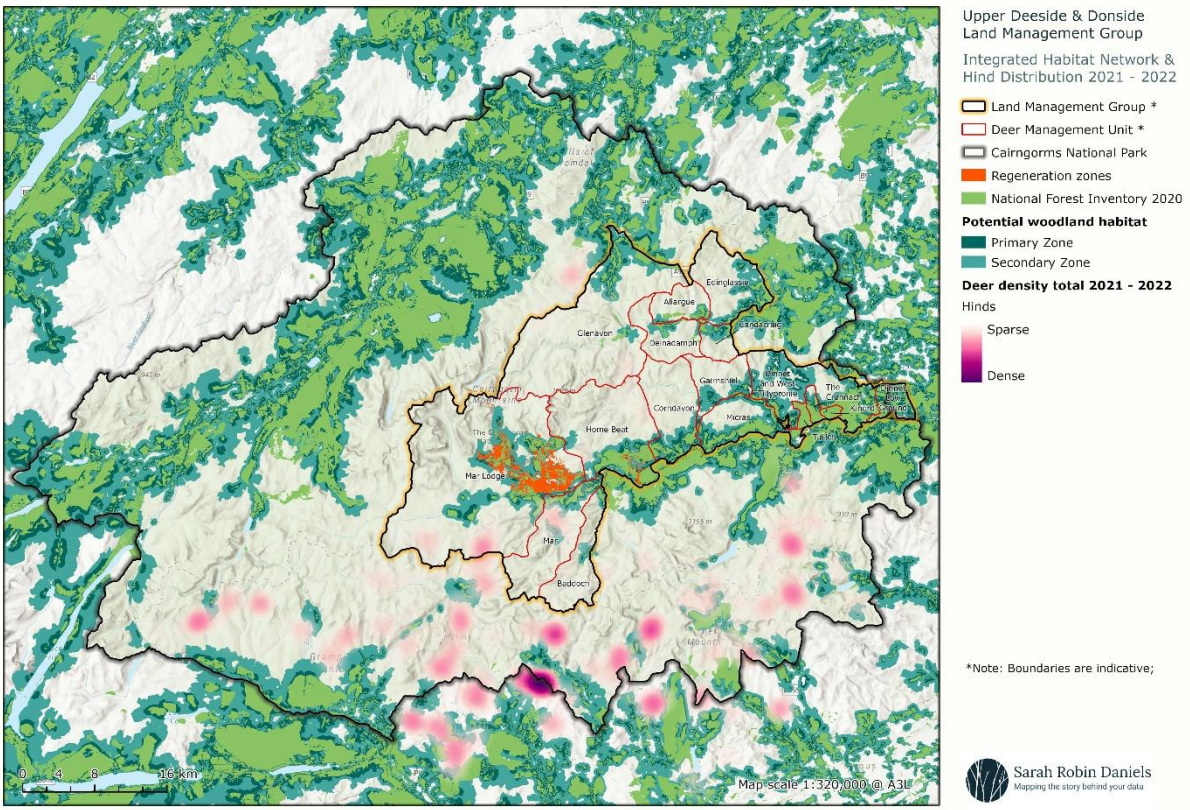


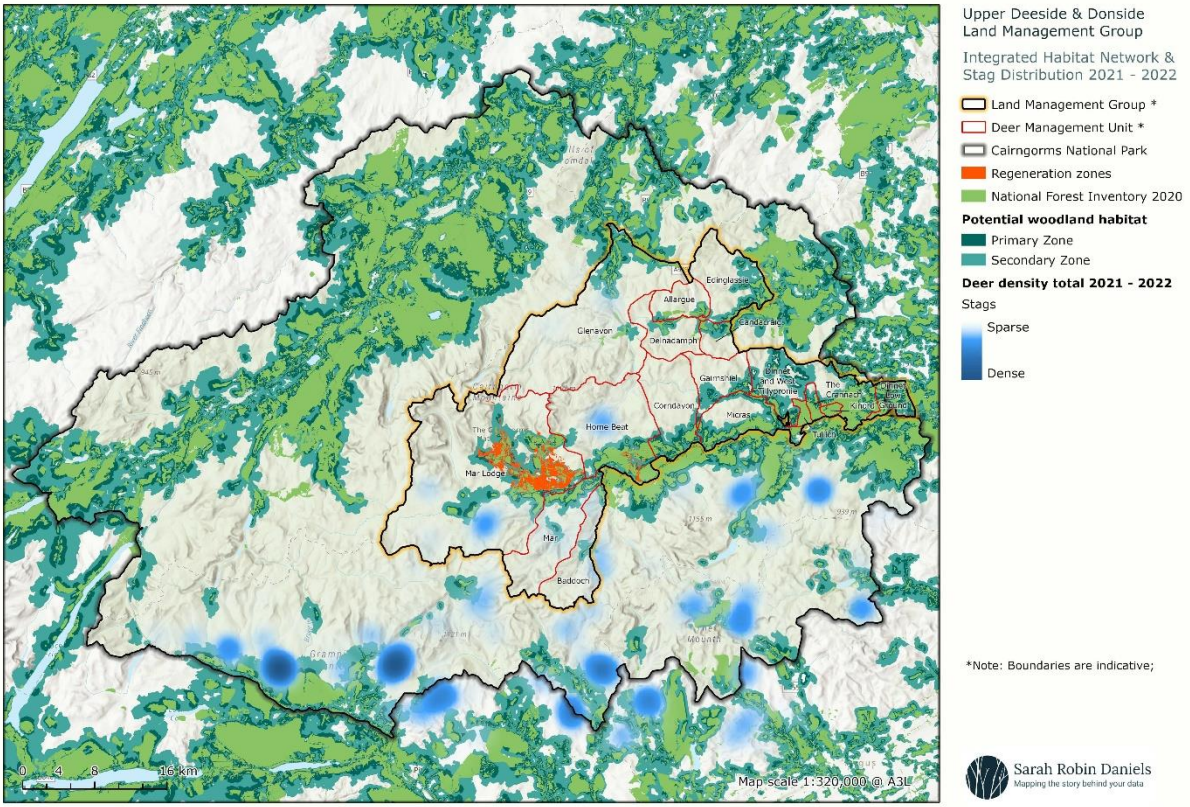
Figure 6: Density Heat Map of Hinds Across CNPA Area (2022)



Contains Ordnance Survey data © Crown copyright and database right 2022; © NatureScot 2022

Sources: Cairnn, FCS, SNH; Basemaps by Esri, CGIAR, N Robinson, NCEAS, USGS, Esri UK, Esri, HERE, Garmin, Foursquare, FAO, METI/

Figure 7: Density Heat Map of Stags Across CNPA Area (2022)



Contains Ordnance Survey data © Crown copyright and database right 2022; © NatureScot 2022

Sources: Cairnn, FCS, SNH; Basemaps by Esri, Intermap, NASA, NGA, USGS, Esri UK, Esri, HERE, Garmin, Foursquare, FAO, METI/NASA, USGS

2.3 Changes in Deer Numbers 2017 to 2022

From 2017 to 2022, all properties in the west of the group have reduced deer numbers throughout the period of the previous deer management plan. Note that for properties in the east, where a figure of 0 appears against a property, this means either a count was conducted and 0 deer returned or in some cases a count was not undertaken due to extremely low numbers of deer being present. Note the count refers to red deer only.

Table 3: Red Deer Densities from 2017 to 2022

			2021/22					2017					Changes in Hinds				Changes in Stags			
Type	Property	*Area (Ha)*	2022 Stags	2022 Hinds	2022 Calves	2022 Total	**2022 Density**	2017 Stags	2017 Hinds	2017 Calves	2017 Total	**2017 Density**	Hind Density 2022	Hind Density 2017	Hind Den Diff 2022	Hind No Diff 2022	Stag Density 2022	Stag Density 2017	Stag Den Diff 2022	Stag No Diff 2022
Heli	Glenavon	*17,815*	375	341	112	828	**4.6**	494	516	214	1224	**6.9**	1.9	3	-1.0	-175	2.1	2.8	-0.7	-119
Heli	Baddoch	*4,141*	202	177	57	436	**10.5**	294	355	140	789	**19.1**	4.3	9	-4.3	-178	4.9	7.1	-2.2	-92
Heli	Homebeat	*10,332*	357	260	76	693	**6.7**	352	487	168	1007	**9.7**	2.5	5	-2.2	-227	3.5	3.4	0.0	5
Heli	Mar Estate	*6,188*	287	320	95	702	**11.3**	458	387	113	958	**15.5**	5.2	6	-1.1	-67	4.6	7.4	-2.8	-171
Heli	Mar Lodge	*29,322*	680	578	166	1424	**4.9**	938	602	213	1753	**6.0**	2.0	2	-0.1	-24	2.3	3.2	-0.9	-258
Foot	Allargue	*2,310*	0	0	0	0	**0.0**	0	16	6	16	**0.7**	0.0	1	-0.7	-16	0.0	0.0	0.0	0
Foot	Delnadamph	*3,184*	0	0	0	0	**0.0**	12	19	7	38	**1.2**	0.0	1	-0.6	-19	0.0	0.4	-0.4	-12
Foot	DWTS	*7,034*	0	0	0	0	**0.0**	0	0	0	0	**0.0**	0.0	-	0.0	0	0.0	0.0	0.0	0
Foot	Candacraig	*1,459*	0	0	0	0	**0.0**	0	0	0	0	**0.0**	0.0	-	0.0	0	0.0	0.0	0.0	0
Foot	Corndavon	*5,694*	34	47	17	98	**1.7**	32	18	7	57	**1.0**	0.8	0	0.5	29	0.6	0.6	0.0	2
Foot	Edinglassie	*5,242*	0	0	0	0	**0.0**	0	0	0	0	**0.0**	0.0	-	0.0	0	0.0	0.0	0.0	0
Foot	Micras	*4,012*	0	0	0	0	**0.0**	0	0	0	0	**0.0**	0.0	-	0.0	0	0.0	0.0	0.0	0
Foot	Gairnshiel	*3,191*	0	0	0	0	**0.0**	0	0	0	0	**0.0**	0.0	-	0.0	0	0.0	0.0	0.0	0
	Total UDD LMC	***99,924***	**1935**	**1723**	**523**	**4181**	**4.2**	**2580**	**2400**	**868**	**5842**	**5.8**	**1.7**	**2**	**-0.7**	**-677**	**1.9**	**2.6**	**-0.6**	**-645**

2.4 Target Deer Numbers 2022 to 2027

Ongoing management of the open range red deer herd involves setting population targets that take into account the ecological needs of a range of habitats across the landscape and deer welfare, as well as the economic costs and benefits derived from the sustainable harvest of stags and hinds. Subject to ongoing habitat monitoring results, the Group will maintain a shared population of around **4,000 red deer (4 deer per km^2).**



2.5 Deer Culls

The Group currently meets bi-annually. Culls for individual properties are discussed and agreed in advance and are informed by the Spring count as well as information relating to the distribution and general health of the herd. The Group are consistent in carrying out and reporting agreed culls, with stalkers tending to focus culls in areas where required. Red deer cull data for the last 9 years is shown below (***Table 4 & Figure 8***).

Figure 8: Deer Culls from 1996 to 2022

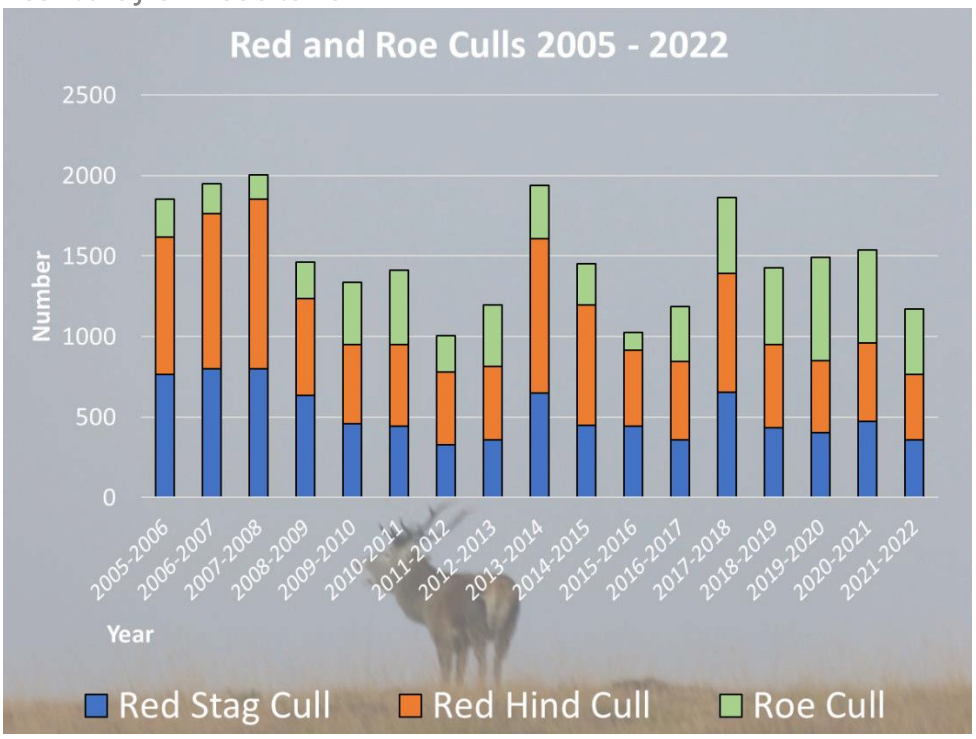


Table 4: Deer Culls from 1996 to 2022

YEAR	TOTAL RED DEER CULL				TOTAL ROE DEER CULL			
	Stags	Hinds	Calves	Total	Bucks	Does	Kids	Total
2005-2006	766	854	233	1853	71	147	15	233
2006-2007	801	960	264	2025	83	75	30	188
2007-2008	802	1052	190	2044	55	69	24	148
2008-2009	632	606	180	1418	76	130	19	225
2009-2010	456	495	144	1095	179	156	52	387
2010-2011	444	508	250	1202	196	219	46	461
2011-2012	330	451	146	927	101	105	17	223
2012-2013	358	458	172	988	151	180	48	379
2013-2014	648	958	394	2000	130	159	46	335
2014-2015	448	750	322	1520	83	118	53	254
2015-2016	445	471	167	1083	78	34	0	112
2016-2017	356	488	238	1082	131	184	27	342
2017-2018	652	740	333	1725	179	216	79	474
2018-2019	433	519	200	1152	233	191	51	475
2019-2020	402	448	162	1012	285	261	98	644
2020-2021	472	487	215	1174	228	240	109	577
2021-2022	359	408	151	979	112	125	60	403

2.6 Other herbivores

The summering of sheep on the open hill is a common management practice across the Group. In 2016, around 6,200 sheep were summered across the Group. In 2022, 8 properties graze over **9,050 sheep** (hoggs and ewes) from April/May through to October/November (**Table 5 and Figure 9**). Breeding ewes represent 0.15 of a Livestock Unit, with the equivalent figures for (farmed) red deer being stags (0.4 LU), hinds (0.3 LU) and calves (0.2 LU) -Scottish Government figures.

Current Habitat Impact Assessment methodology being undertaken by the Group will take into account the impact of other herbivores.

There are no feral goats within the LMG area and hare numbers tend to fluctuate markedly.

Figure 9: Types of Sheep Grazing Undertaken by LMG Members

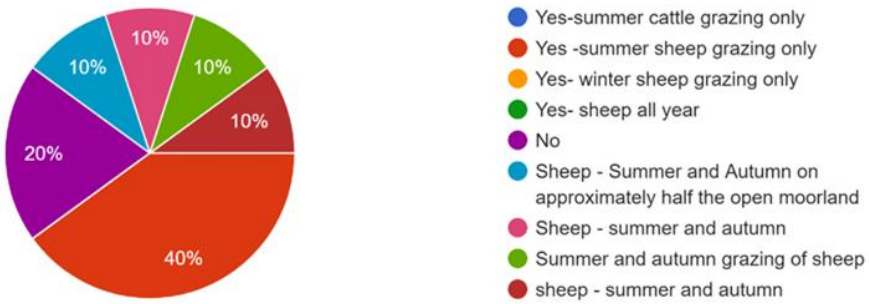


Table 5: Sheep Numbers Update

Sheep Grazing 2022			
Property	*Area (Ha)*	Type of Grazing	Sheep Numbers
Glenavon	*17,815*	April to November	3000
Baddoch	*4,141*	June to October	550 ewes
Homebeat	*10,332*	June to October	350 hoggs and 600 ewes
Mar Estate	*6,188*	May to September	500
Allargue	*2,310*	May to October	600
Delnadamph	*3,184*	May to October	600 hoggs and 700 ewes
Corndavon	*5,694*	June to September	350 hoggs and 700 ewes
Gairnshiel	*3,191*	June to October	1100 hoggs and ewes
Total UDD LMG	*52,855*		***9,050***

2.7 Deer Distribution and Movements

Figures 10 & 11 show heat maps for stags and hinds from helicopter count data collected in 2022. Glenavon was not included in 2022, so data from 2021 were used. Both the counts were conducted in March and whilst they provide a snapshot of where deer were located on that particular day, they give an indication of areas of ground preferred by the species during winter/early spring, which tend to be lower and more sheltered.

Heat maps from count data have been mapped alongside existing woodland (National Forest Inventory Scotland), areas of successful woodland regeneration and also Integrated Habitat Network data (in grey) showing potential woodland areas highlighted as zones represent the differing dispersal abilities of generic woodland species across surrounding land. These maps show areas where current or future woodland may be likely to be utilised by deer.

As well as deer movements within the immediate Land Management Group area, deer also move between neighbouring properties in the Cairngorms & Speyside and West Grampians Deer Management Groups. **Figures 10 and 11** shows the main areas of movement throughout the DMG. Main routes of movement are between Mar Lodge and Wildland Glenfeshie (Cairngorms & Speyside DMG) to the west, and hinds from Mar Lodge will move south into Glen Tilt on Atholl Estate (West Grampian DMG) in bad weather (**Figure 6**). To the north, during the winter months deer (mainly hinds) will move between Glenavon and Dorback. To the east, some movement of stags occurs between Glen Tanar Estate and Dinnet Low Ground and occasionally between Balmoral and Micras. The movements of deer in and out of Mar Lodge and Glenavon in particular are likely to explain difficulties in modelling red deer populations.

2.8 Actions to be delivered by 2027.

2a *Members will use information gathered on habitats and herbivore numbers to manage deer sustainably, agreeing and delivering cull targets.*

2b *Foot counts of deer will be repeated annually. Count coordinators will ensure the count is conducted accurately and effectively.*

2c *Group will continue to review deer movements within the LMG.*

Figure 10: Density Heat Map of Hinds and Deer Movement

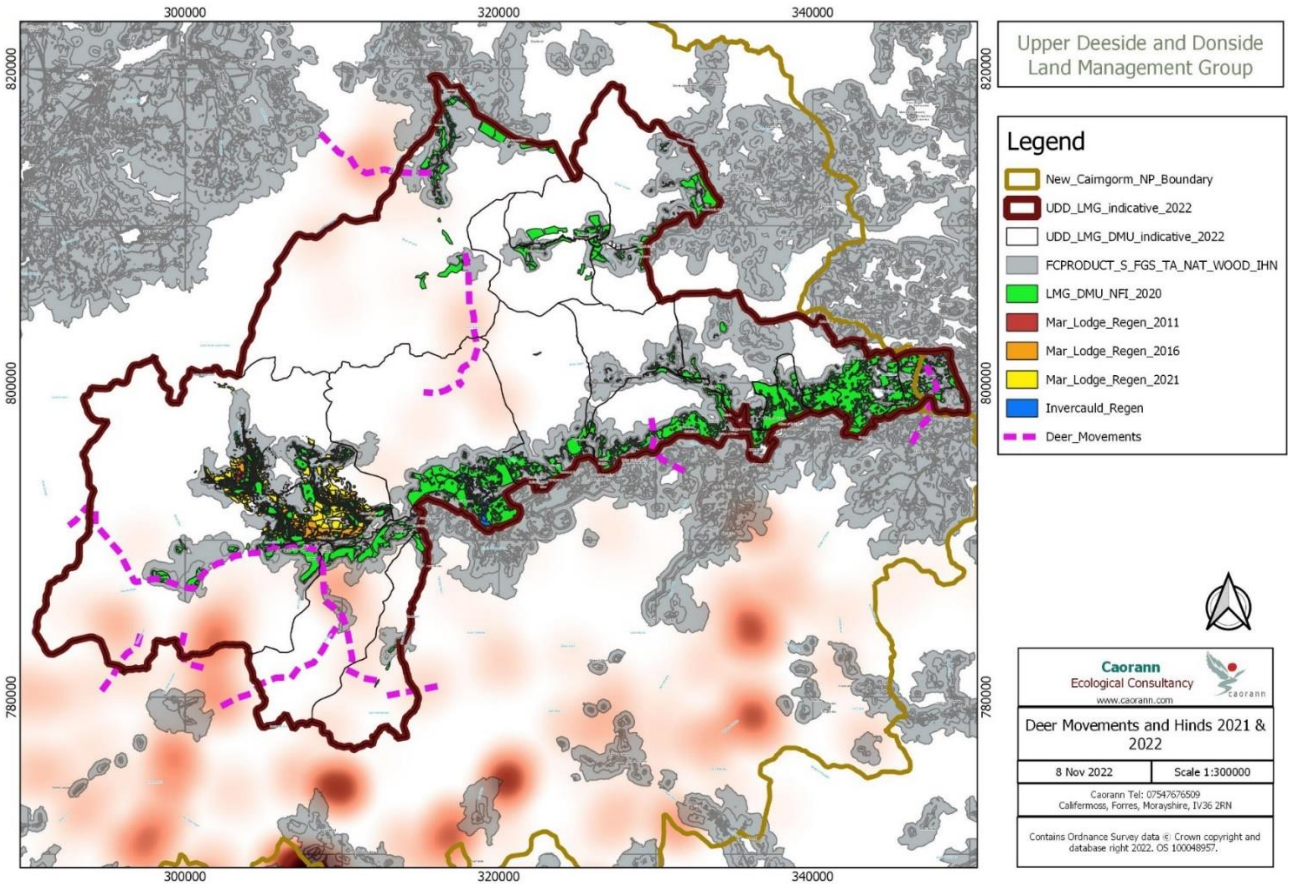
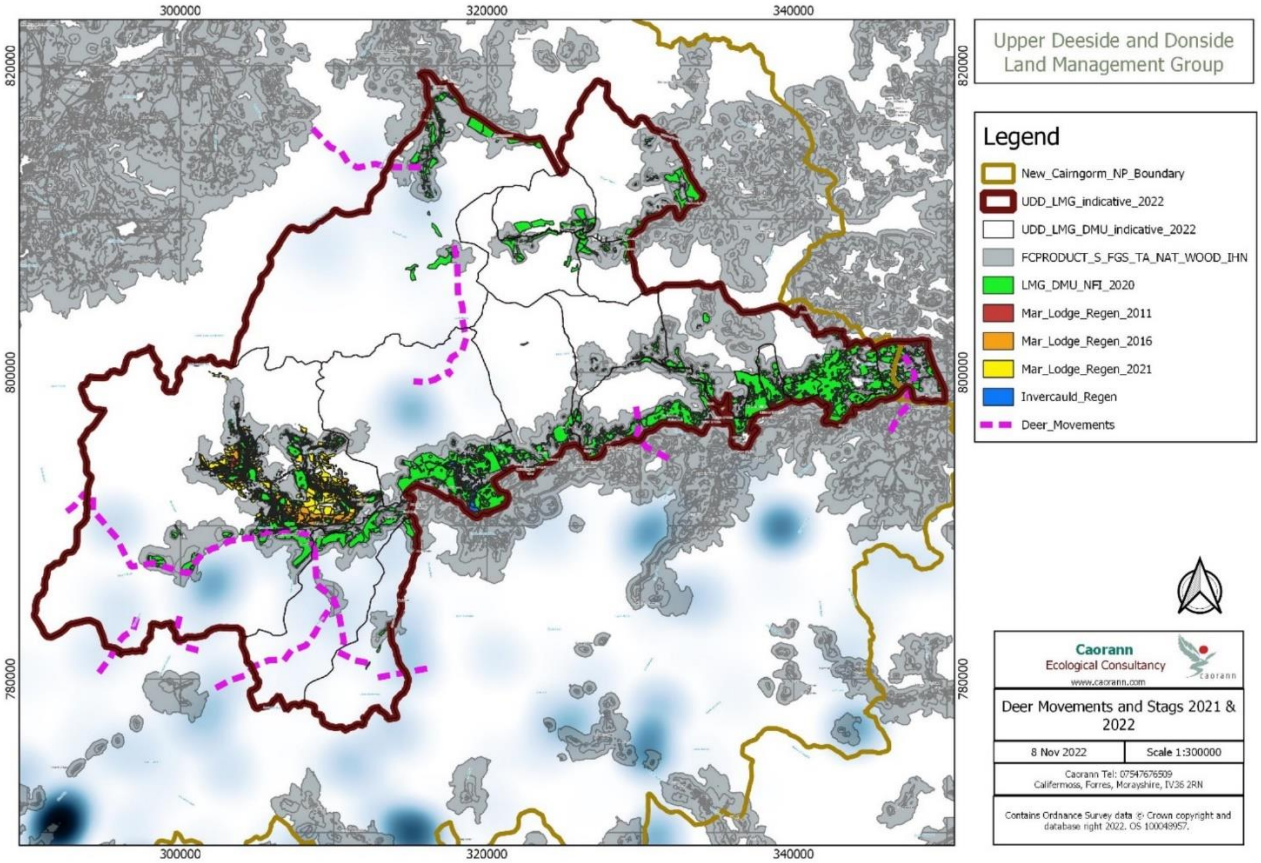


Figure 11: Density Heat Map of Stags and Deer Movement



8. Deer and Green Recovery

3.1 Land Management Employment & Income

As society is faced with the economic impacts of a global pandemic, climate change and energy shortages, the Scottish Government is committed to rebuilding our society and economy in a greener, fairer and more sustainable way.

Scotland's fragile rural economy is dependent on good, quality jobs and the availability of affordable rural housing. The LMG will continue to be an important contributor to the rural economy, securing employment, bringing investment into local communities and providing additional benefits through the provision of sustainable food.

The LMG members currently employ **28 FTE stalkers/gamekeepers**, **17 FTE roles involved in agriculture/forestry** and **22.5 FTE others covering a range of roles including managers, ecologists, rangers and seasonal workers**. Direct income from commercial stalking and the sale of venison is worth **£700K** annually with the Group producing around **56 tonnes** of venison annually. As well their own businesses, members also support other enterprises operating on the land including tenant farmers and nature-based tourism operators and providers.

3.3 Deer Management Competence

The LMG recognises the importance of delivering high standards of competence in deer management. As well as adopting a Training Policy, the Group will continue to promote and offer formal training opportunities, continuous professional development activities and will ensure Wild Deer Best Practice guidance is followed.

3a *LMG to organise annual CPD opportunities for LMG members.*

8. Deer and Carbon Rich Soils

4.1 Peatlands

Carbon rich soils and peatland areas provide multiple benefits, e.g. good water quality, biodiversity and climate change mitigation as soil carbon stores and through carbon sequestration. Soils are the main terrestrial store of carbon in Scotland and peatlands hold most of our carbon store (53%). Within the LMG area, there is **13,797 ha** of Category 1 peatland (**Tables 6 & 7, Figure 12**)

4.2 Peatland Restoration Completed

- To date, **19 peatland restoration projects** have been carried out on Mar, Edinglassie, Candacriag, Dinnet, Invercauld Estates and Mar Lodge **(Figures 12, 13 & 14).**
- Projects on Mar, Candacraig and Invercauld Estates have **restored 647 ha of peatland, 30 km of drains and 98 km of hags/gullies – accounting for 9,939 tonnes of CO^2 per annum.**
- Mar Lodge has restored **94 ha** of peatland over a 130 ha site.

4.3 Future Peatland Restoration

- Allargue, Delnadamph and Mar Lodge intend to restore a further **885 ha of peatland over the next five years.**
- Glenavon, Baddoch, Homebeat, Corndavon and Gairnshiel are all undertaking **peatland feasibility studies. Figures 13 and 14** provide heat maps showing the distribution of stags and hinds relative to areas of important peatland.
- Figures 12 & 13 show the main areas of peatland, project locations and heat maps showing the relative distribution of stags and hinds during winter when sites may be particularly vulnerable to damage from trampling and browsing.
- The Cairngorms National Park Authority (CNPA) has developed an online Peatland Restoration Planning Tool to assist land managers.

4a *Members will aim to significantly increase the areas of restored peatland over the next 5 years and will provide regular updates on peatland restoration activity.*

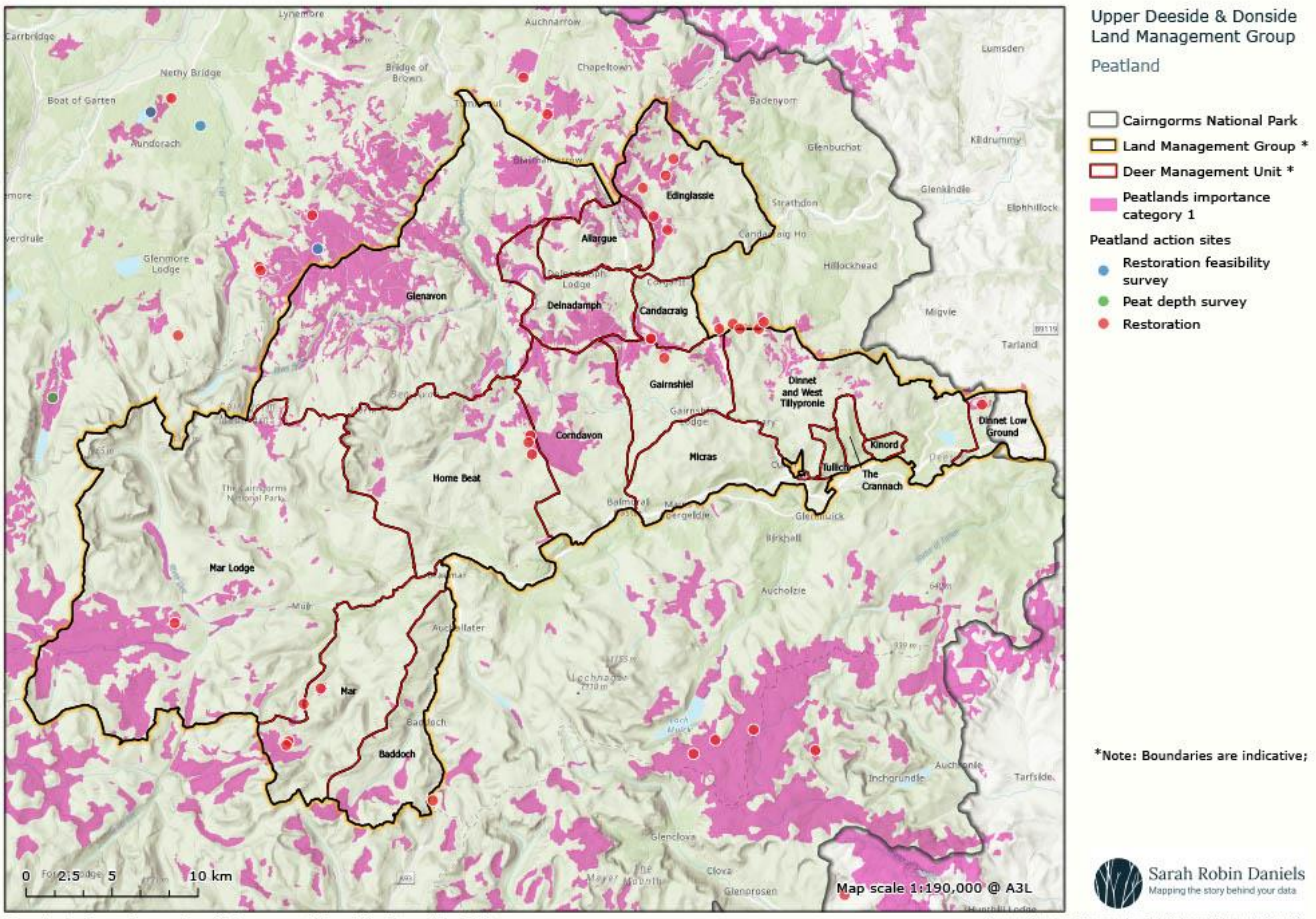
Table 6: Peatland Area By Property

	Peatland Importance Category							
	-2	0	1	2	3	4	5	**Total**
Baddoch	9	2,723	378	376	189	197	269	*4,141*
Glenavon	34	8,928	4,237	155	33	2,589	1,840	*17,815*
Homebeat		7,992	541	379	781	557	83	*10,332*
Mar		4,789	342	137	448	271	200	*6,188*
Mar Lodge	11	17,648	4,071	1,488	1,507	3,341	1,256	*29,322*
Total West Area	*54*	*42,080*	***9,568***	*2,535*	*2,958*	*6,955*	*3,647*	***67,797***
Allargue		709	367	120	1	913	200	*2,310*
Tullich		382				0		*382*
Candacraig		794	142	2	3	248	271	*1,459*
RSPB Crannach		320	0	0		201	1	*522*
Corndavon	1	2,042	1,172	370	119	1,334	657	*5,694*
Dinnet Low Ground	4	1,245	52		10	52	39	*1,402*
Edinglassie		2,861	784	26	6	1,086	479	*5,242*
Micras		2,611				1,401		*4,012*
Delnadamph		817	960	80	2	1,005	363	*3,228*
Gairnshiel		1,681	415	15		700	380	*3,192*
DWTP	104	5,487	336	97	17	691	312	*7,045*
Total East Area	*109*	*18,947*	***4,229***	*711*	*158*	*7,631*	*2,703*	***34,488***

Table 7: Description of Peatland Importance Categories

	Class description	Indicative soil	Indicative vegetation
	Class 1 - Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas likely to be of high conservation value	Peat soil	Peatland
	Class 2 - Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas of potentially high conservation value and restoration potential	Peat soil with occasional peaty soil	Peatland or areas with high potential to be restored to peatland
	Class 3 - Dominant vegetation cover is not priority peatland habitat but is associated with wet and acidic type. Occasional peatland habitats can be found. Most soils are carbon-rich soils, with some areas of deep peat	Predominantly peaty soil with some peat soil	Peatland with some heath
	Class 4 - Area unlikely to be associated with peatland habitats or wet and acidic type. Area unlikely to include carbon-rich soils	Predominantly mineral soil with some peat soil	Heath with some peatland
	Class 5 - Soil information takes precedence over vegetation data. No peatland habitat recorded. May also include areas of bare soil. Soils are carbon-rich and deep peat.	Peat soil	No peatland vegetation
	Mineral soil - Peatland habitats are not typically found on such soils (Class 0)	Mineral soils	No peatland vegetation
	Non-soil (e.g. loch, built up area, rock and scree) (Class -2)	No soil	Not applicable
	Unknown soil type – information to be updated when new data are released (Class -1)	Not classified (unknown soil type)	Not applicable

Figure 12: Areas of Peatland Important Category 1



Contains Ordnance Survey data © Crown copyright and database right 2022.

Sources: Caorann; Basemaps by Esri, Ordnance Survey, NASA, NGA, USGS, Esri UK, Esri, HERE, Garmin, Foursquare, METI/NASA, USGS

Figure 13: Peatland and Hind Distribution

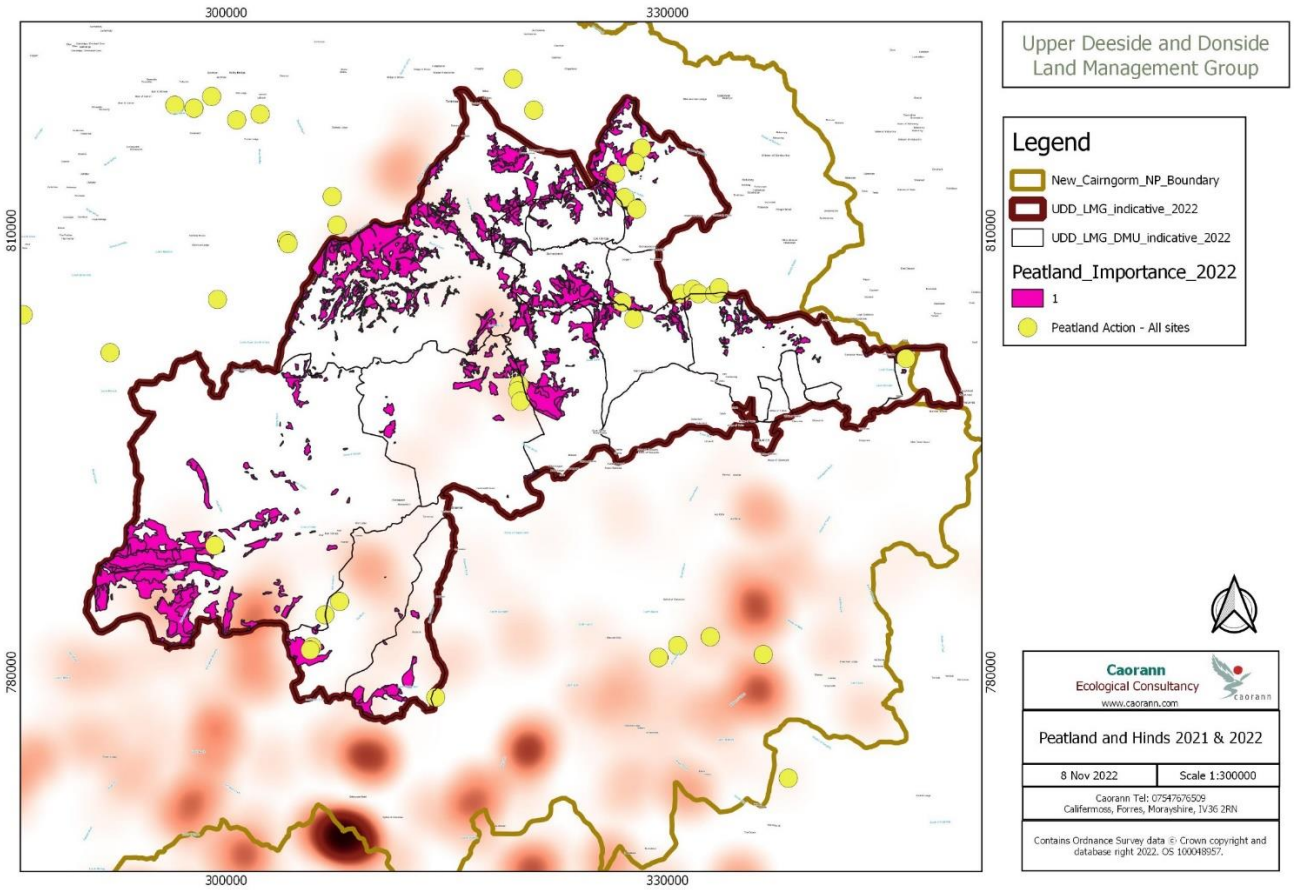
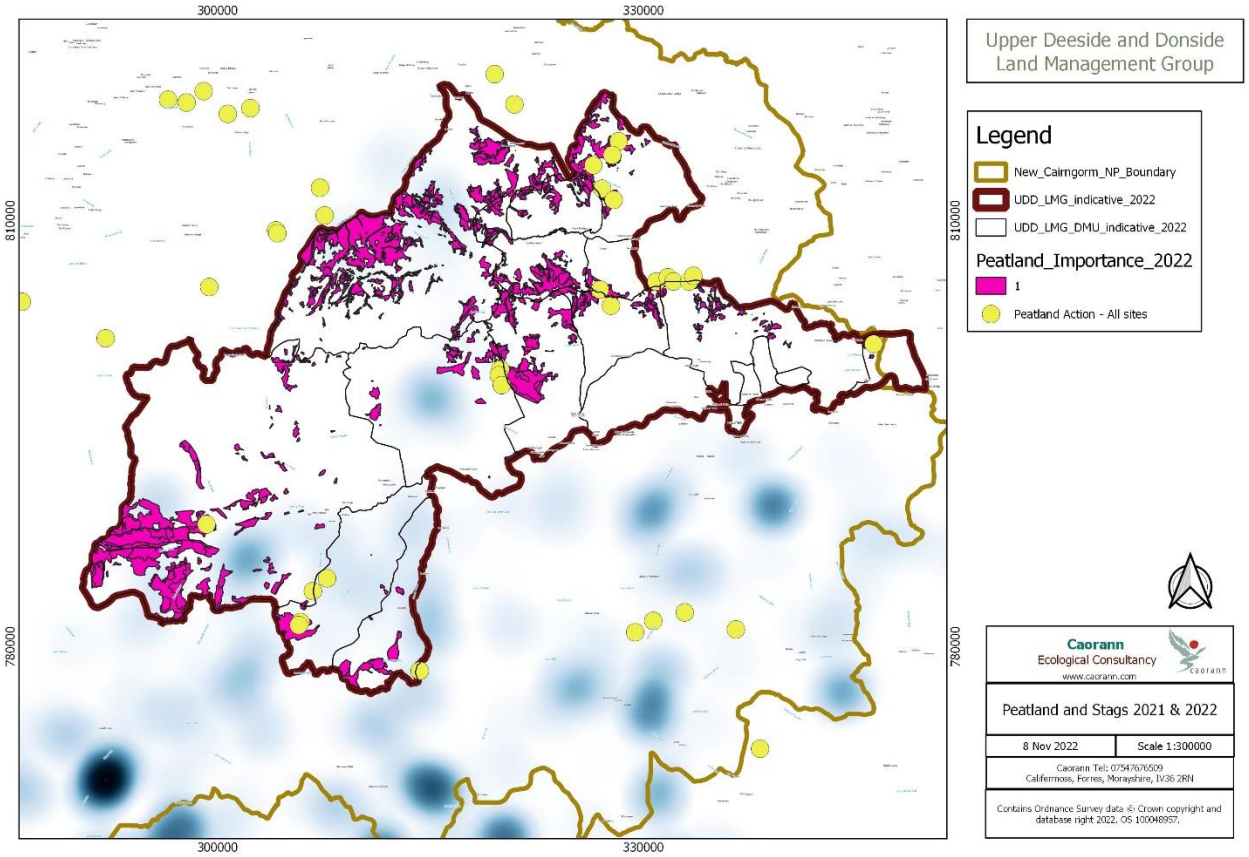


Figure 14: Peatland and Stag Distribution



5. Deer and Woodland

5.1 Woodland Creation, Restoration and Habitat Connectivity

Twin crises of climate change and biodiversity loss have heightened the need for urgent action to improve the resilience of Scotland's woods and forests, along with the need to contribute to lowering the amount of carbon dioxide in the atmosphere.

Coniferous and broadleaved woodlands are important habitats within Upper Donside and Deeside and accounts for **13%** of the land area (**12,902 ha** according to the National Forest Inventory Scotland) (**Figure 15**). This map also shows the buffer zone around existing woodland which could act as a seed source for further regeneration with the Primary Zone (light green) 200m from an existing seed source and the Secondary Zone (pale yellow) 500m from seed source. This can be used to identify areas of potential habitat connectivity.

Group members have been addressing the need for woodland restoration and creation for some time and over the last decade Mar Lodge has created **1,972 ha** and Invercauld **140 ha** through natural regeneration (**Figure 16**).

Figure 15: National Forest Inventory Scotland

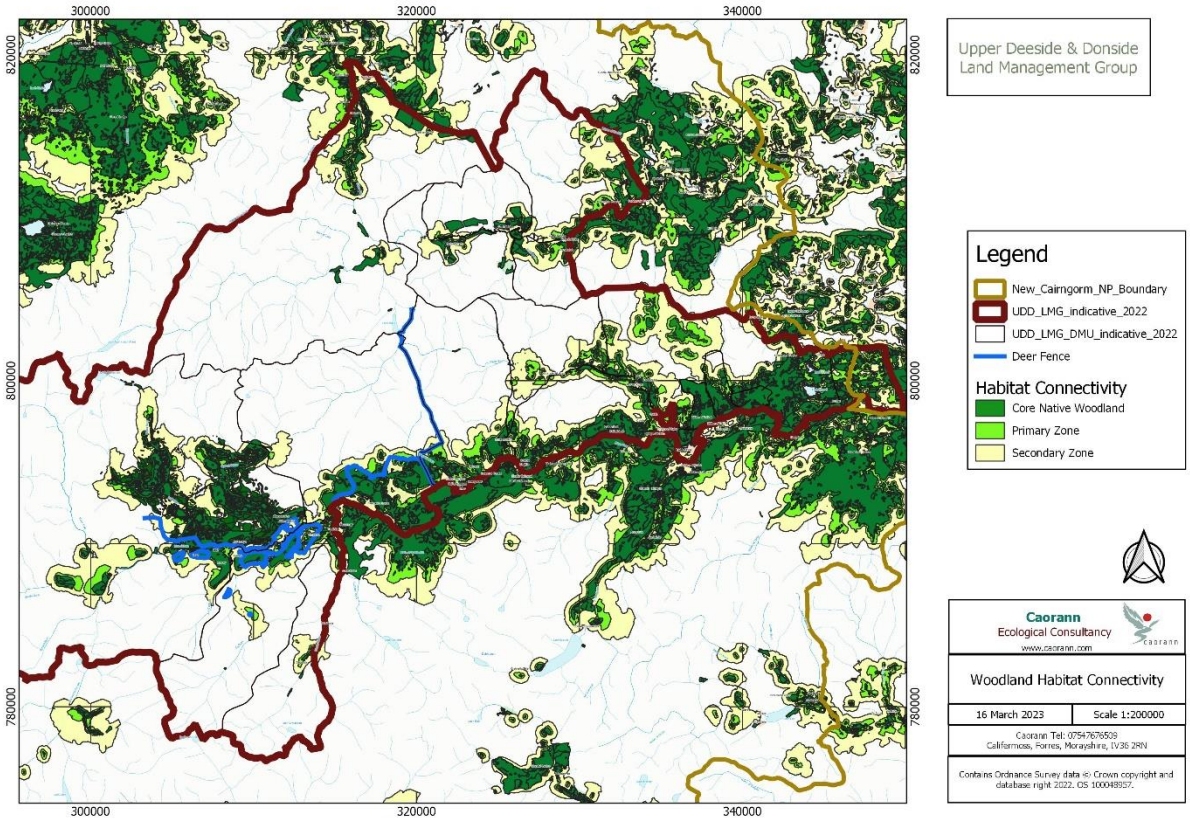
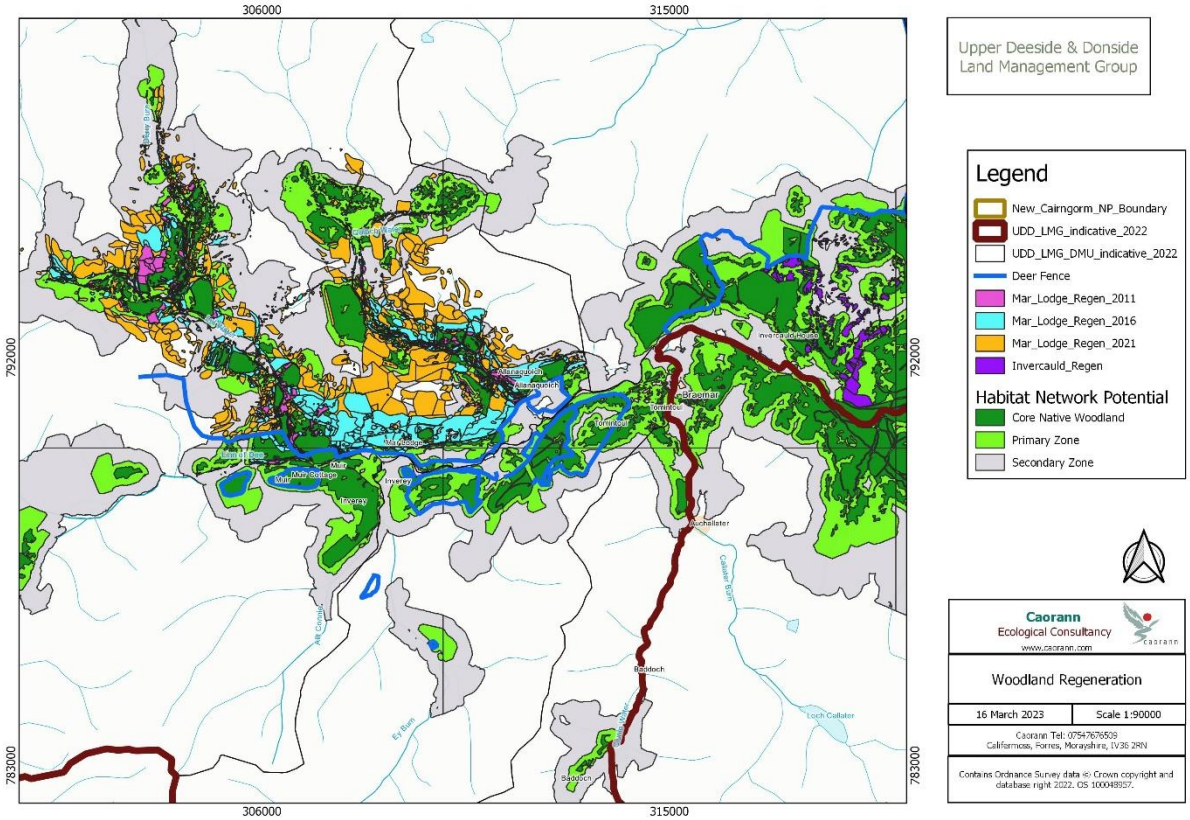


Figure 16: Area of Woodland Regeneration



5.2 Existing Woodland Condition

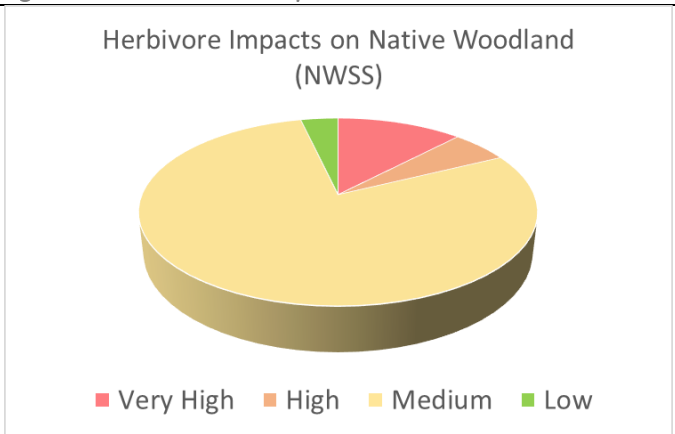
The Native Woodland Survey of Scotland (NWSS) was published in 2014. This mapped 311,153 ha of non-designated native woodland in Scotland, reported condition and highlighted herbivore impacts which threatened their medium to long term condition.

A total of 7,388 ha of native woodland has been identified within the West Area of the Group (***Table 8 and Figures 17 & 18***). According to the NWSS 83% of impacts are in the Low or Medium impact class.

Table 8: NWSS Herbivore Impacts

HERBIVORE IMPACT	Area (ha)	% Impact Class
Very High	897	**12%**
High	411	**6%**
Medium	5,812	**79%**
Low	267	**4%**
Total	**7,388**	

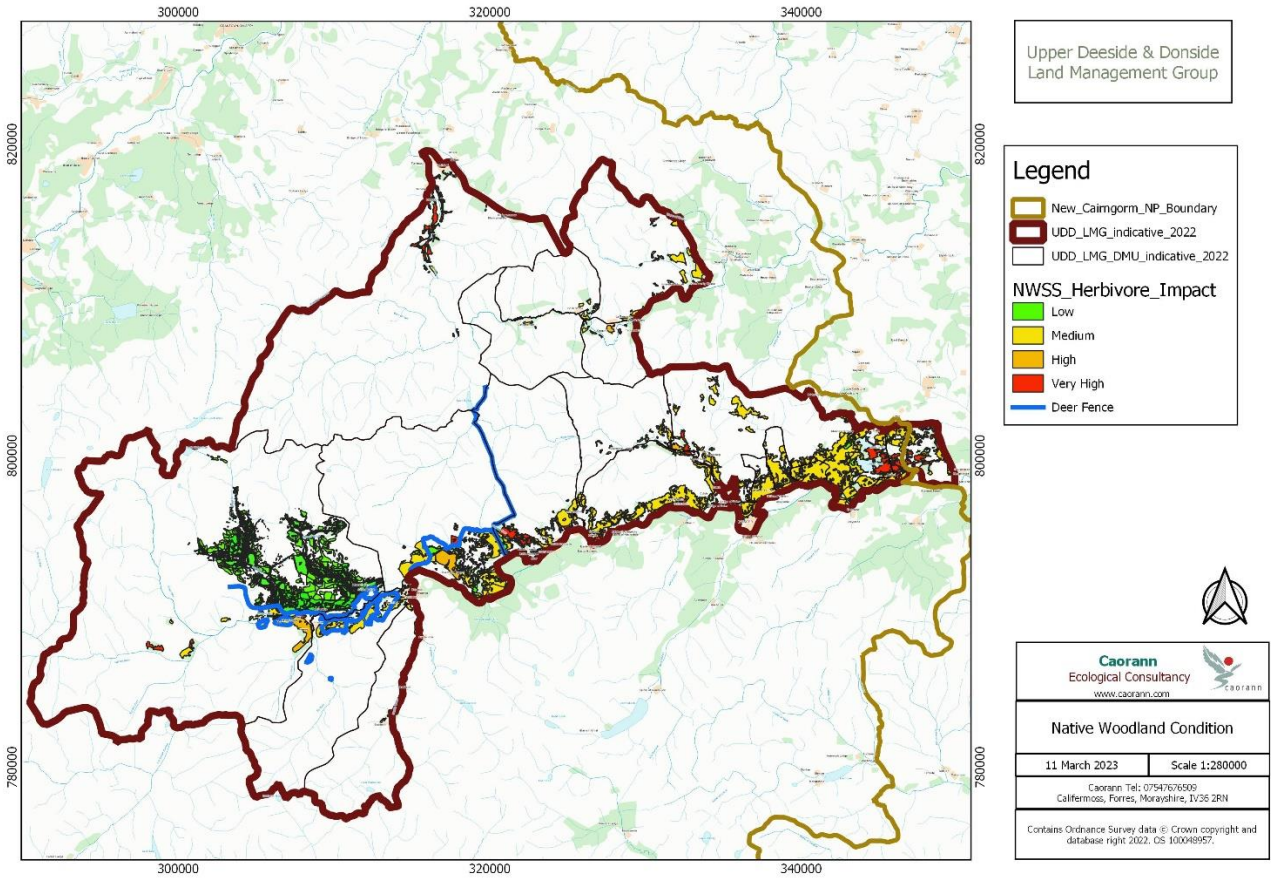
Figure 17: Herbivore Impacts on Native Woodland



By way of an update since the NWSS was carried out:

- 791 ha of woodland in the Mar Lodge Regeneration zone have now impacts low enough that an additional 151 ha of regeneration had been created in 2011, 837 ha in 2016 and 1,972 ha in 2021.
- A further 139 ha of regeneration has been created on Invercauld Estate
- A total of 129 ha of native woodland thought to have Very High or High impacts from the survey was identified on Invercauld Corndavon. Over the last 5 years, deer numbers have been reduced to around 1 deer per km2 which is a figure where natural regeneration should occur.
- Approximately 122 ha of native woodland thought to have Very High or High impacts was identified on Glenavon has been deer fenced within a wider 200 ha native woodland exclosure.

Figure 18: Native Woodland Survey for Scotland Herbivore Impacts



5.2 Riparian Woodland and Atlantic Salmon

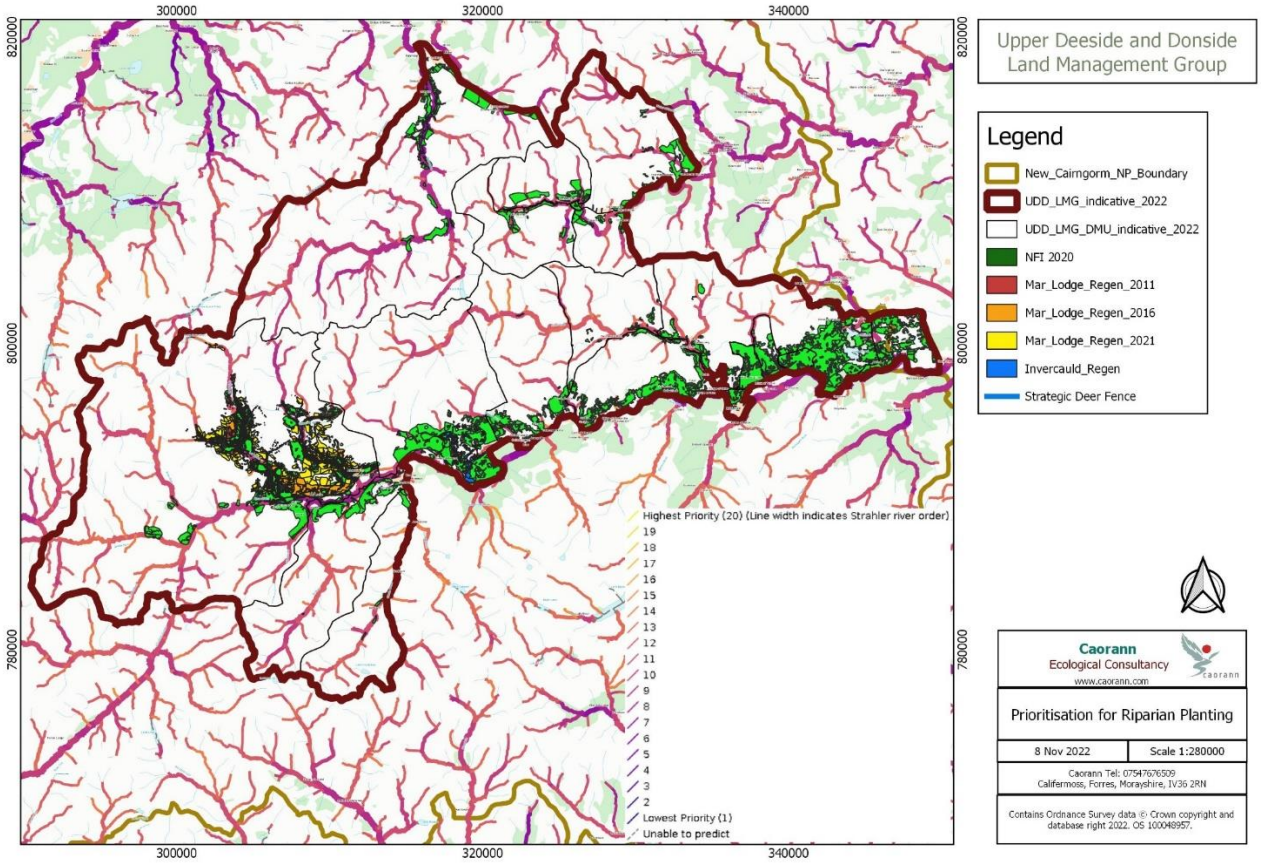
Wild salmon are in crisis, with a decline of 70% in just 25 years. There are many factors affecting the survival of the iconic Atlantic salmon (*Salmo salar*), on their return journey from spawning grounds to sea. One critical factor is river temperature. Adapted to live in relatively cool water, salmon prosper when temperatures are in the teens but struggle much above 20°C. Where river temperatures exceed 23°C this can cause thermal stress and behavioural change. At 33°C salmon can no longer survive, even for a few minutes.

During the summer of 2018, it is estimated that around 70% of rivers in Scotland experienced temperatures over 23°C. UK climate change projections provided by the Met Office indicate that summers like these could occur every other year by 2050, increasing concerns over the future of salmon in Scotland. Maximum summer river temperatures can be reduced by increasing the amount of water in the river channel, or reducing the amount of sunlight reaching the water surface. The amount of sunlight reaching the river surface can be reduced by riparian planting; shading the river channel with trees located on river banks. Scotland has around 108,000 km of rivers, of which only 35% are protected by any substantial tree cover.

It is therefore important that riparian tree planting is prioritised to areas where it can have greatest benefits for river temperature, specifically, where rivers are (1) hottest (2) most sensitive to climate change (see SRTMN Predictions) and (3) can be effectively cooled by riparian woodland (see tree planting prioritisation layer). These three individual criteria can be combined with an equal weight to provide a single riparian woodland prioritisation score that looks to maximise the benefits of riparian tree planting for protecting Scotland's rivers from the adverse effects of climate change (***Figure 19***).

The LMG area sits within the river catchments of the Dee, the Don and the Spey and the District Salmon Fishery Boards and River Trusts in all three catchments are working toward visions of thriving rivers supporting abundant biodiversity. The Dee District Salmon Fishery Board and River Dee Trust, have planted over 200,000 native trees along the river banks of the upper Dee and its tributaries since 2013. The new programme focusses on restoring the Dee catchment and protect salmon and freshwater pearl mussel populations with an aim to plant a million trees by 2035. Invercauld Estate have done 4 fenced riparian plantings: one on Corndavon and three on Baddoch.

Figure 19: Priority Areas for Riparian Woodland (SRTMN Data)



5.3 Future Woodland Creation and Restoration

For natural woodland regeneration to occur, managing temporal, localised densities of deer will be required across the LMG area, particularly during winter and early spring. ***Figures 20 and 21*** present deer count data from the helicopter count in 2022 as heat maps, showing proximity of stags and hinds to areas of existing woodland and where woodland regeneration might be likely to occur (shaded in grey).

Over the next 5 years, LMG members will continue to identify opportunities for woodland creation and to support the natural regeneration woodland (**Table 9).**

Table 9: Woodland Proposals

Name of Estate	Woodland Proposals 2022 -2027
Mar Lodge Estate	124 hectares riparian woodland to be planted in Glen Geldie autumn 2022. New exclosure to support natural regeneration at Allanaquoich 150 hectares. New application for FGS support for natural regeneration currently in preparation.
Delnadamph	Area of c 40ha in 2021 for Juniper regeneration.
Allargue	Delivery of Long Term Forest Plan and restocking of a clear fell from 3 years ago to be undertaken in 2023.
RSPB Scotland Crannach	Woodland continues to expand and develop on Crannach via natural regeneration (there is no planting planned on Crannach).
Glenavon Estate	Long term forest plan currently under development
Invercauld Home Beat	Within woodland zone there are various areas of continuing natural regeneration as well as planted restocking of clearfelled coups. There are no current plans for additional planted woodland.
Invercauld Corndavon	None currently proposed.
Gairnshiel and Micras	Potentially- area subject to confirmation.
Invercauld Badoch	Removal of conifers adjacent to river cluny in Baddoch wood and replacement with broadleaved species.
Mar Estate	None currently planned.

5a *Members will seek to create/regenerate new woodland, particularly focussing on areas which would benefit habitat connectivity.*

5b *Members will identify opportunities for riparian woodland improvement and creation to support the recovery of Atlantic salmon and to promote river health.*

5c *Members will provide annual updates on woodland activity.*

5d *Members to carry out woodland monitoring to assess herbivore impacts.*

Figure 20: Woodland and Hind Densities

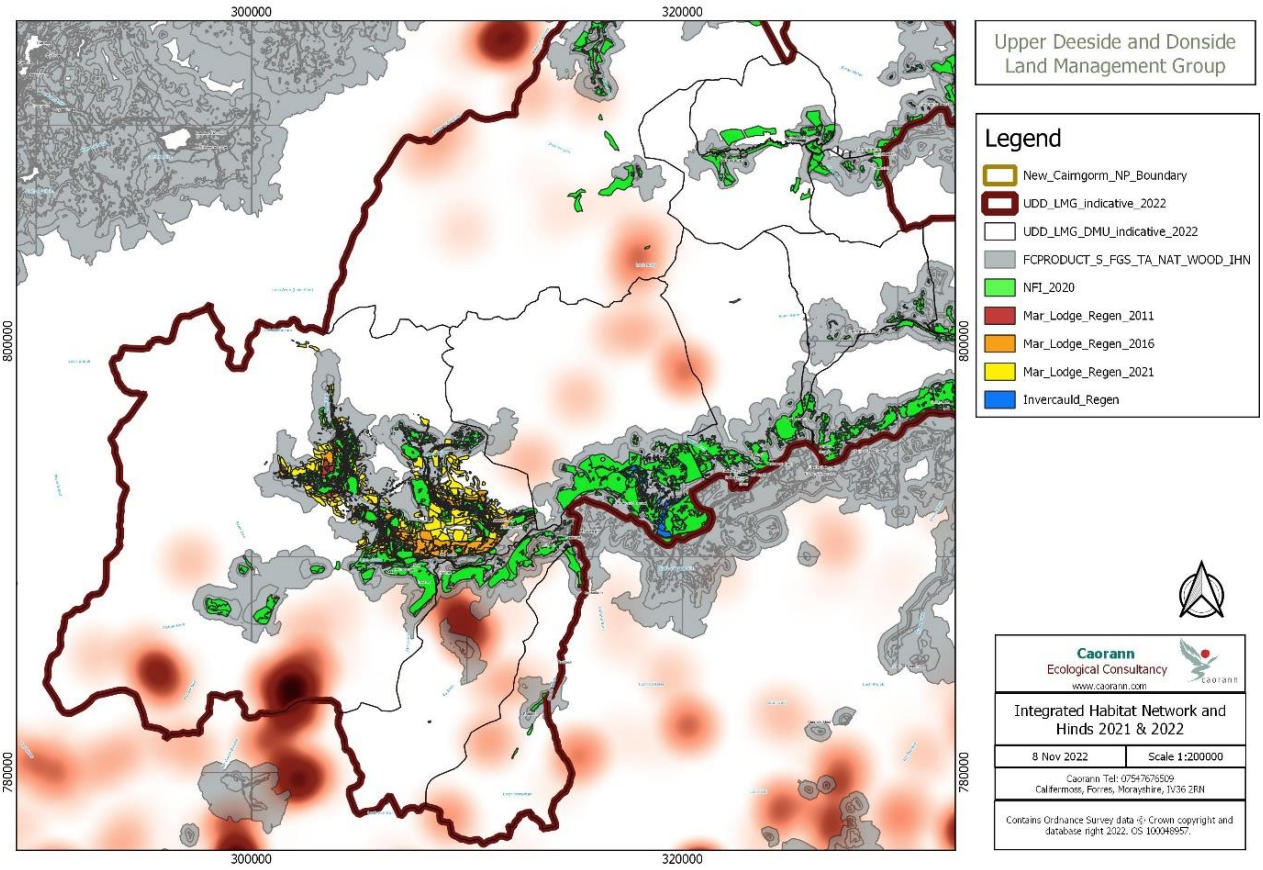
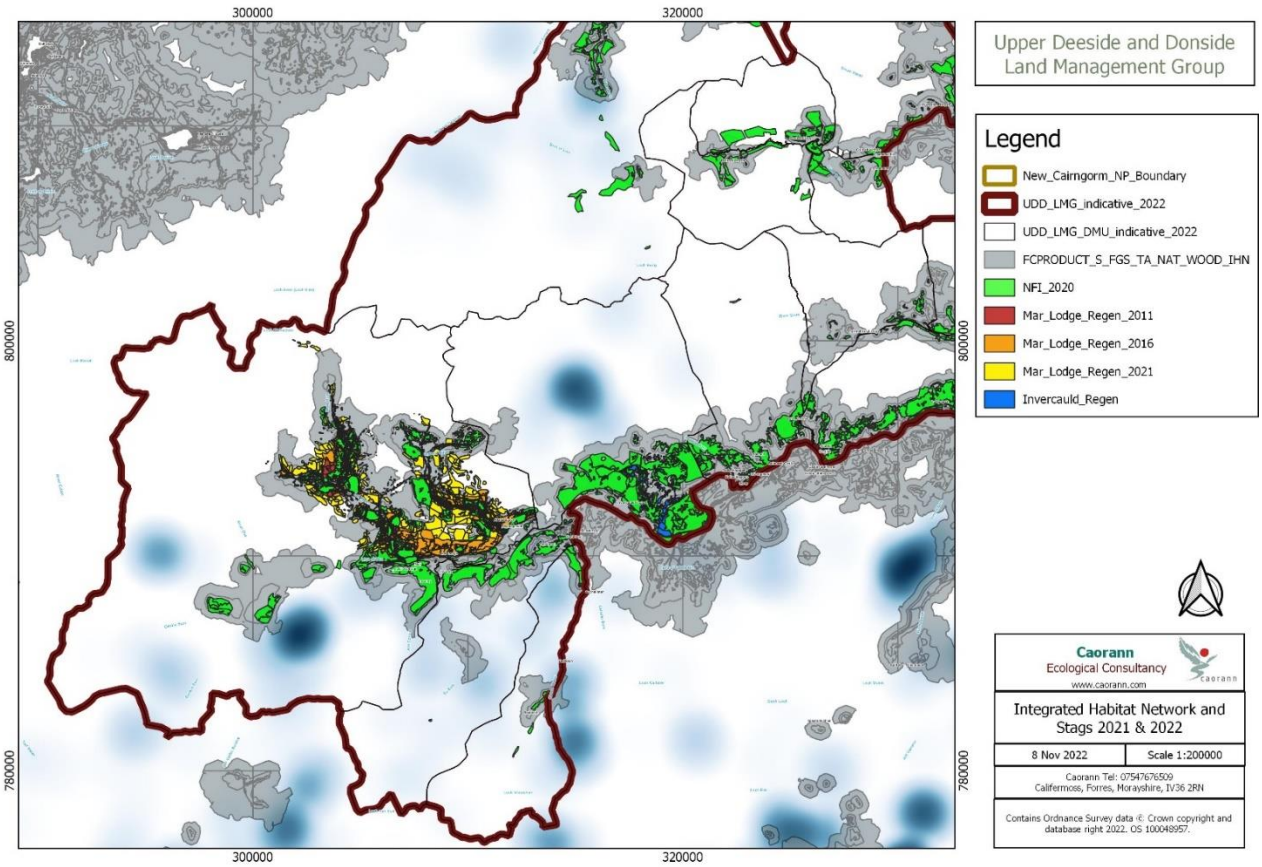


Figure 21: Woodland and Stag Densities



6. Deer and Habitats

6.1 Herbivore Impacts

Herbivores (deer, sheep, cattle, hares etc) naturally have an impact upon the environment in which they live through the browsing, grazing and trampling of vegetation. Herbivores are an important part of any ecosystem and at the right herbivore carrying capacity, impacts can be beneficial creating valuable vegetation mosaics and providing additional benefits through dunging.

Research has shown that the activities of deer and other free-grazing herbivores are not distributed evenly across the landscape. The distribution and availability of key resources such as shelter, access to water as well as the quality and quantity of preferred vegetation types will all influence where, when and how the landscape is utilised. Distribution may also be influenced by other factors such as human activity through disturbance, live-stock grazing or exclusion from preferred habitats This uneven pattern of distribution results in localised impacts on resources and this can have consequences (both positive and negative), both for the population as a whole and the wider ecosystem.

The management of Impacts is a key consideration for deer managers. The concentration and distribution of impacts has been found to be strongly linked to the relative distribution and availability of preferred and non-preferred habitat types. Effective deer management decisions to manage or reduce impacts will therefore have to consider more than just the overall population size and take full account of a range of factors in determining the appropriate stocking density for any given landscape. And the full range of herbivores contribution from other herbivores

Different habitats may require different levels of grazing e.g woodland regeneration without fencing may require densities of less than 4 deer per km^2 whereas upland features such as Dwarf Shrub Heath may withstand grazing at higher densities, which will be informed by habitat monitoring. Around 5-10 deer/km^2 is likely to result in low to moderate impacts across most large upland areas (FAS Technical Note, 2017).

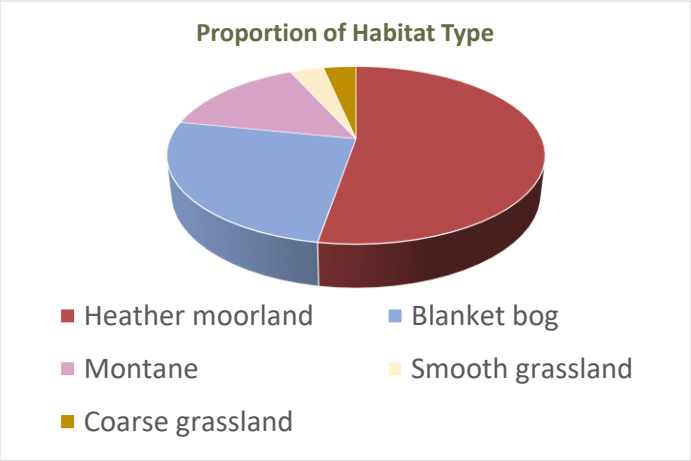
6.2 Habitat Types

The open-range available to red deer across the Land Management Group area is approximately 99,924 ha. In addition to woodland, the Land Cover 88 Data identifies 5 main upland habitat types across the Group area (***Figures 22 & 23)***.

Main Upland Habitat Types:

- Heather moorland (51,087 ha)
- Blanket bog and peatland (24,710 ha)
- Montane (14,579 ha)
- Smooth grassland (3,340 ha)
- Coarse grassland (3,219 ha)

Figure 22: Proportion of Main Upland Habitats



More detailed habitat maps have also become available and are shown in ***Figures 24 & 25***. From the analysis of the Habitat Land Cover Mapping (2020) Table 10 sets out the extent of the main habitats identified (Figure 24).

Table 10: Habitat Land Cover Map Extents

HLCM Habitat	Temperate Scrub Heath	Raised & Blanket Bog	Alpine & Subalpine Grass	Dry Grassland	Arctic Scrub	Inland Cliff	Temperate Scrub	Mesic Grassland	Seasonal Wet Grassland	Valley mires, poor fens
Area (ha)	54078	18424	4962	3936	3785	2472	1425	1414	1263	1107

Figure 23: Land Cover Scotland (JHI)

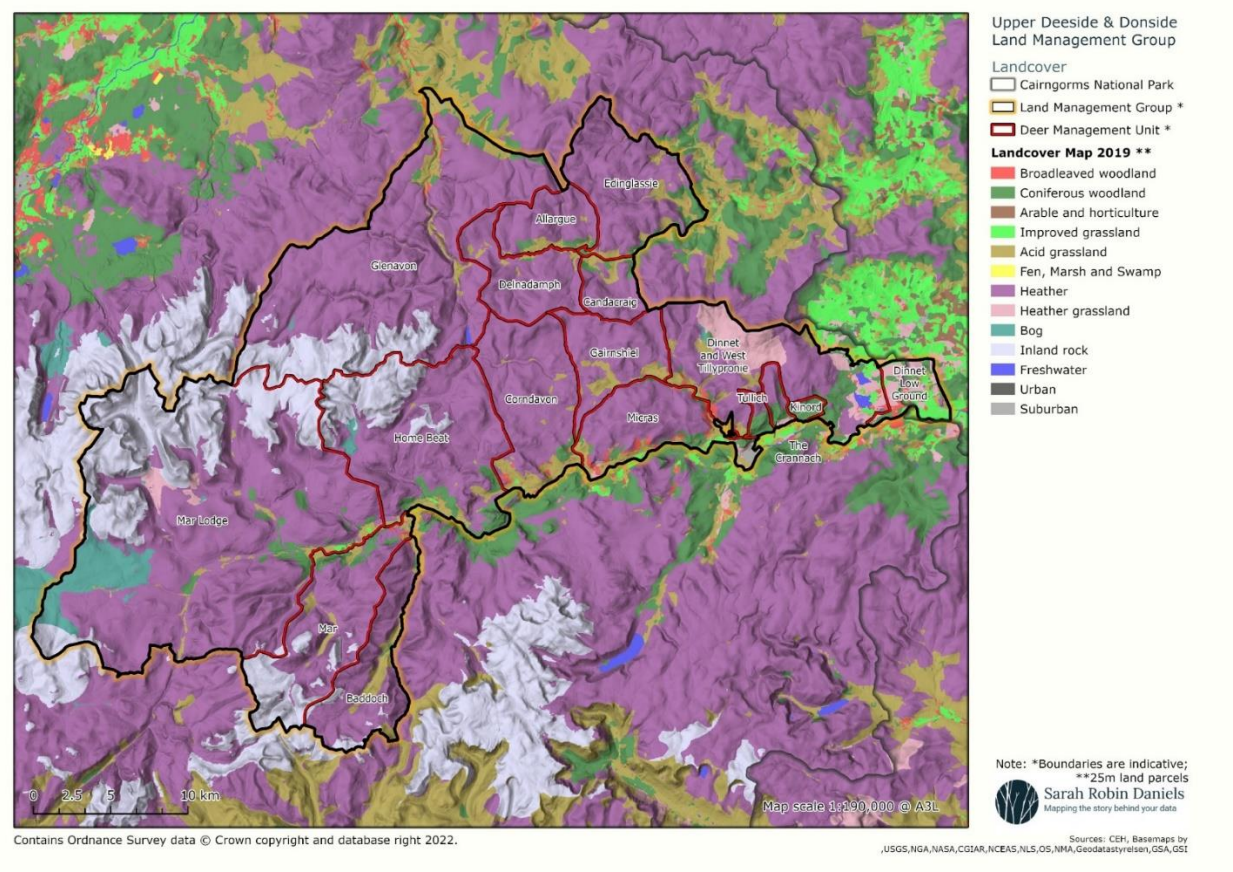
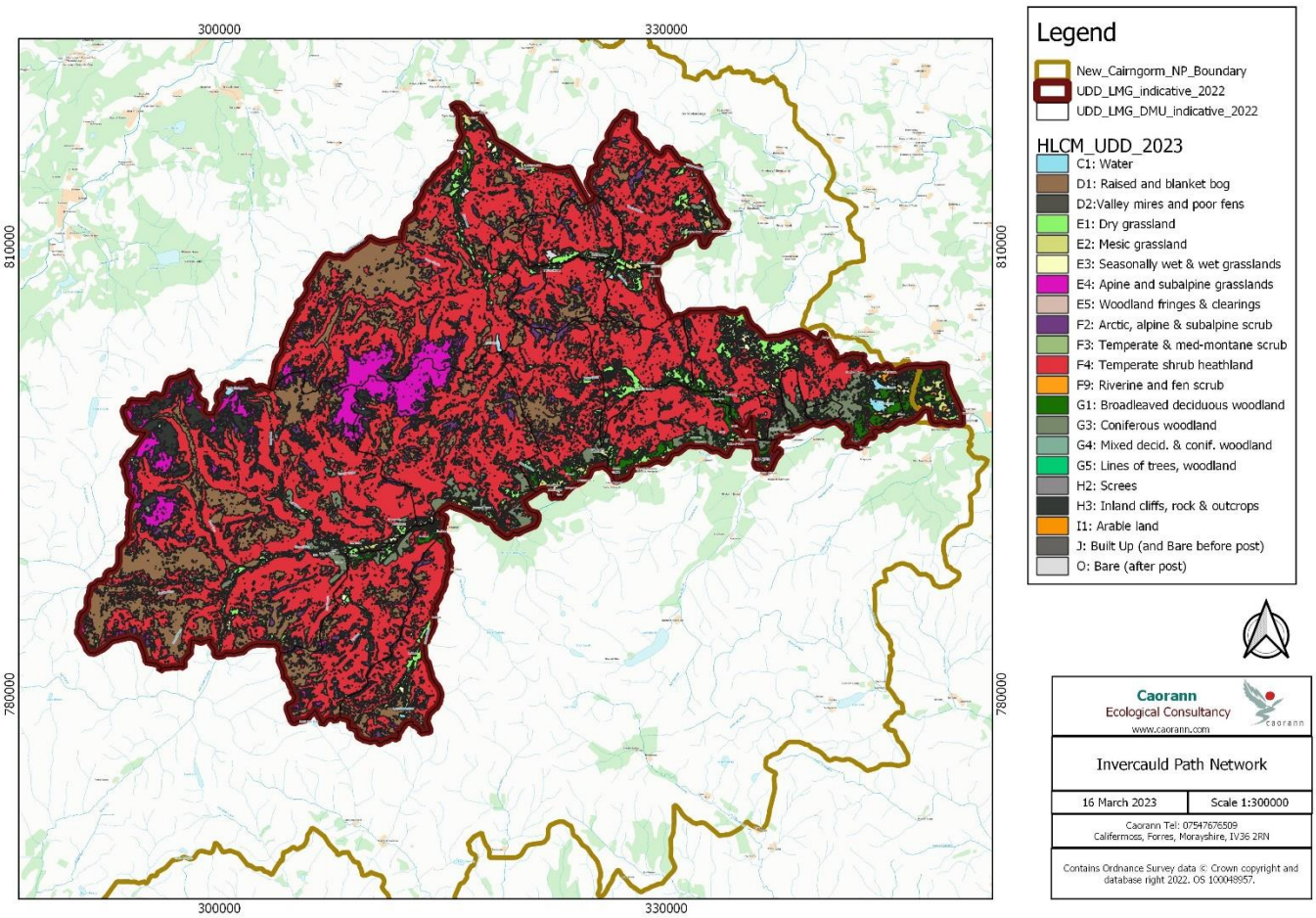


Figure 24: Habitat Map of Scotland (Space Intelligence)



6.3 Current Impacts on Blanket Bog and Dwarf Shrub Heath

Blanket bog & peatlands and heather moorland are two of the habitats that NatureScot have recommended deer managers monitor for herbivore grazing and trampling impacts. Blanket bog is a type of peatland found in the uplands covering some 1.8 million hectares, 23% of our land area. Although blanket bog is a rare habitat globally and is restricted to cool, wet, typically oceanic climates, Scotland holds a significant proportion of the European and world resource.

The Group is responsible for the monitoring of herbivore impacts on across the deer range and seeks to manage these within acceptable ranges to contribute to wider ecosystem health.

Some members of the Group are also involved with the East Grampians Moorland Partnership who are working together with CNPA to deliver a landscape scale approach to integrating moorland management objectives.

In April and May 2018, the DMG carried out habitat monitoring of two key habitats (Blanket bog & DSH) across the DMG area. A total of 125 plots were sampled according to BPG methodology. Between 2020 and 2022, 159 plots were resampled/sampled. ***Table 10*** and ***Figures 26, 27 and 28*** show the results for grazing impacts.

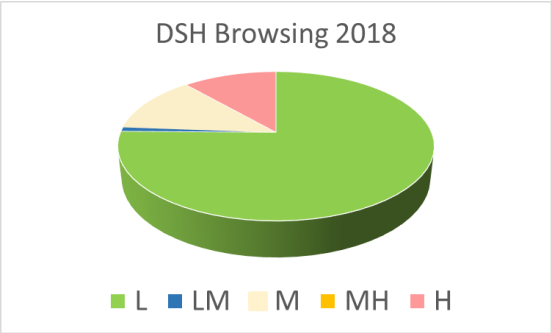
Herbivore browsing impacts falling in the low or low/moderate impact class increased from 75% in 2018 to 77% in 2021/22 on dwarf shrub heath habitat and increased from 85% to 89% in the low or low/moderate category in years 2020 to 2022.

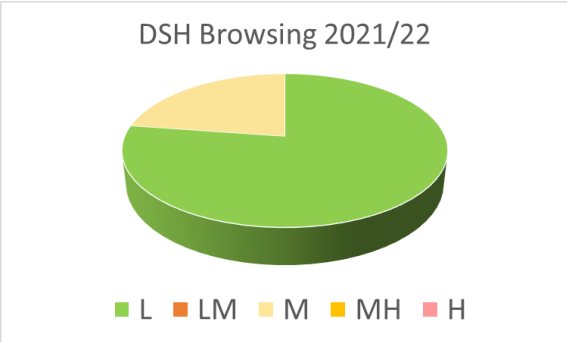
In 2018 overall trampling impacts were mostly low/moderate on Dwarf Shrub Heath (91%) and Blanket Bog (93%) increasing to 100% low for both habitat types between 2020 to 2022 (data not shown).

Table 10: Summary of Browsing Impacts

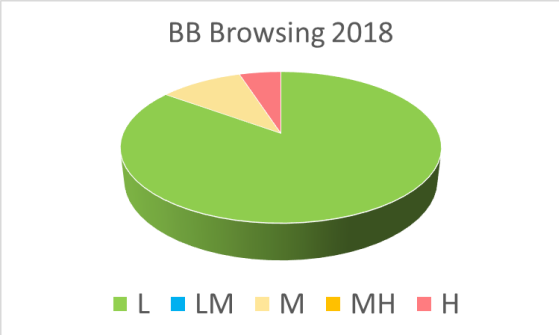
			Browsing Impacts						
	Year	Habitat	Low	Low Mod	% L/ LM	Moderate	Mod High	High	Total
Allargue	2018	Dwarf Shrub Heath	5	0	100%	0	0	0	5
	2021		5	0	100%	0	0	0	5
Glenavon	2018	Dwarf Shrub Heath	12	0	80%	2	0	1	15
	2022		13	0	87%	2	0	0	15
Mar Estate		Dwarf Shrub Heath	8	0	53%	6	0	1	15
	2022		8	0	57%	6	0	0	14
Invercauld Home Beat		Dwarf Shrub Heath	30	1	97%	0	0	0	31
	2021		24	0	96%	1	0	0	25
Invercauld Baddoch		Dwarf Shrub Heath	14	0	48%	5	0	10	29
	2021		15	0	54%	13	0	0	28
Invercauld Corndavon		Dwarf Shrub Heath	10	0	100%	0	0	0	10
	2021		10	0	100	0	0	0	10
	2018		**79**	**1**	**75%**	**13**	**0**	**12**	**105**
	2021/22		**75**	**0**	**77%**	**22**	**0**	**0**	**97**
Glenavon	2018	Blanket Bog	12	0	80%	2	0	1	15
	2022		15	0	100%	0	0	0	15
Allargue	2018	Blanket Bog	5	0	100%	0	0	0	5
	2022		5	0	100%	0	0	0	5
Corndavon	2020	Blanket Bog	29	0	97%	1	0	0	30
Baddoch	2020	Blanket Bog	3	3	50%	5	1	0	12
	2018		**17**	**0**	**85%**	**2**	**0**	**1**	**20**
	2021/22		**52**	**3**	**89%**	**6**	**1**	**0**	**62**

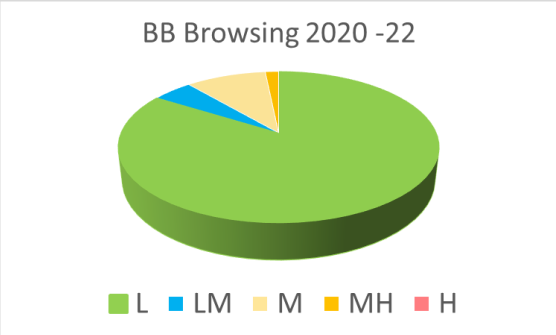
Figures 26 a&b: Browsing on Dwarf Shrub Heath





Figures 27 a&b: Browsing on Blanket Bog





6.5 Impacts on Mar Lodge Estate 2021

A repeat survey was conducted in 2021 for all survey areas (355 sample plots). Dwarf-shrub heath was recorded in 321 sample plots. 90% had Light impacts, 7% had Light-Moderate impacts and 0.3% had Moderate impacts. No Moderate-heavy or Heavy impacts were recorded. Blanket bog was found in 221 plots. 92% had Light impacts and 8% had Light-moderate impacts. No Moderate, Moderate-heavy or Heavy impacts were recorded (***Figures 29 to 32***).

Signs of deer were found in 97% (344 plots) and signs of grouse in 96% (340 plots) of all plots. Hare evidence was seen in 9% (29 plots) and sheep in 8% (32 plots) of plots.

Natural tree regeneration was present in 41% (147 plots) of the survey plots. Pine was most widespread and was found in 29% of plots (102 plots), rowan was found in 28% (101 plots), willow in 29% (102 plots), birch in 24% (86 plots), juniper in 21% (76 plots), broom in 6% (22 plots), larch in 4% (15 plots), alder in 2% (6 plots) and aspen in 1% (5 plots) of all survey plots.

Figure 28: Summary of Herbivore Impacts

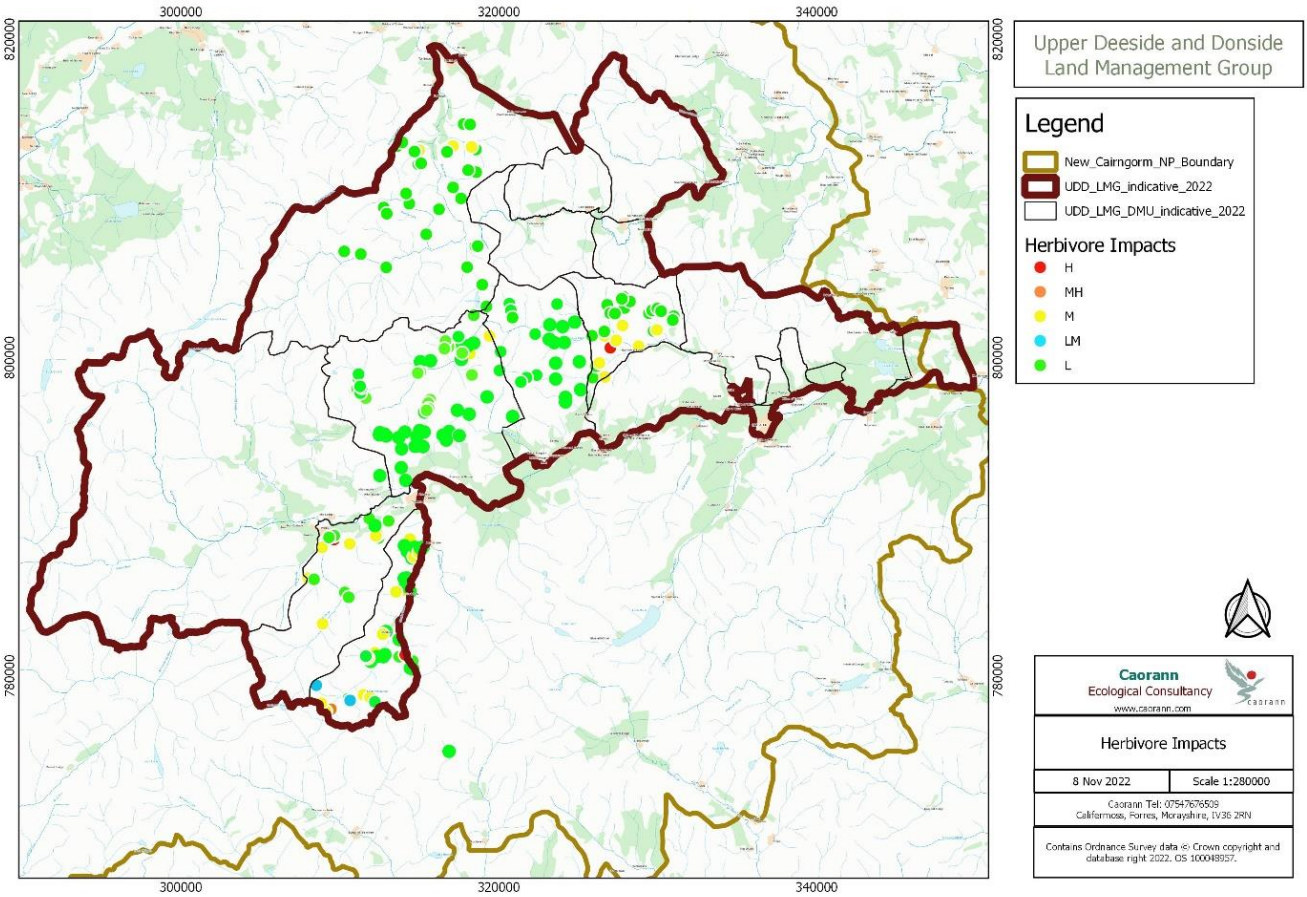


Figure 29. Changes in impact levels in blanket bog in the Regeneration Zone. Due to the differences in blanket bog plot numbers percentage was used to demonstrate changes.

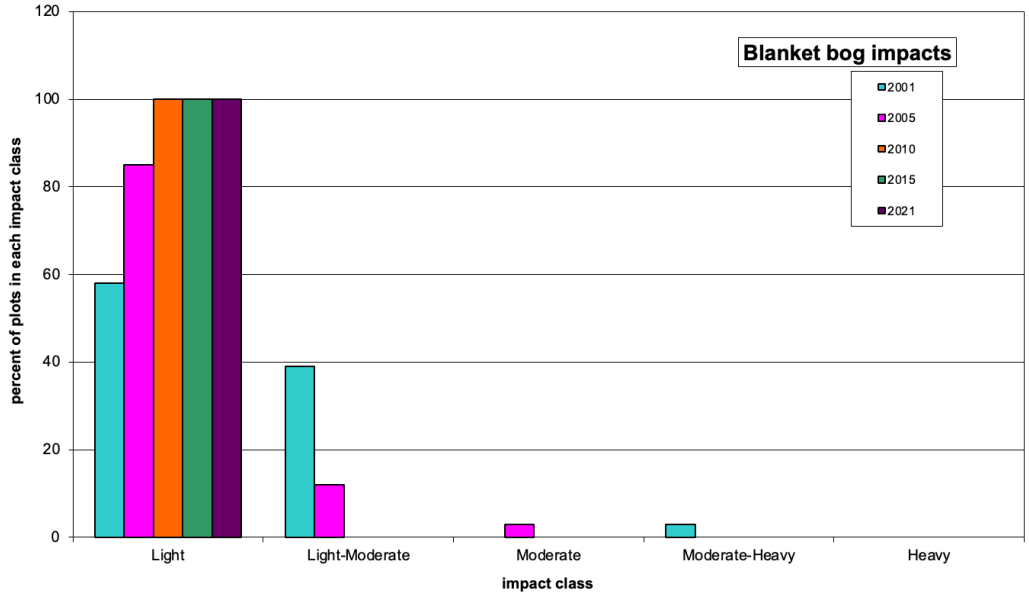


Figure 30. Changes in impact levels in dwarf shrub heath in the Regeneration Zone. Due to the differences in dwarf shrub heath plot numbers percentage was used to demonstrate changes.

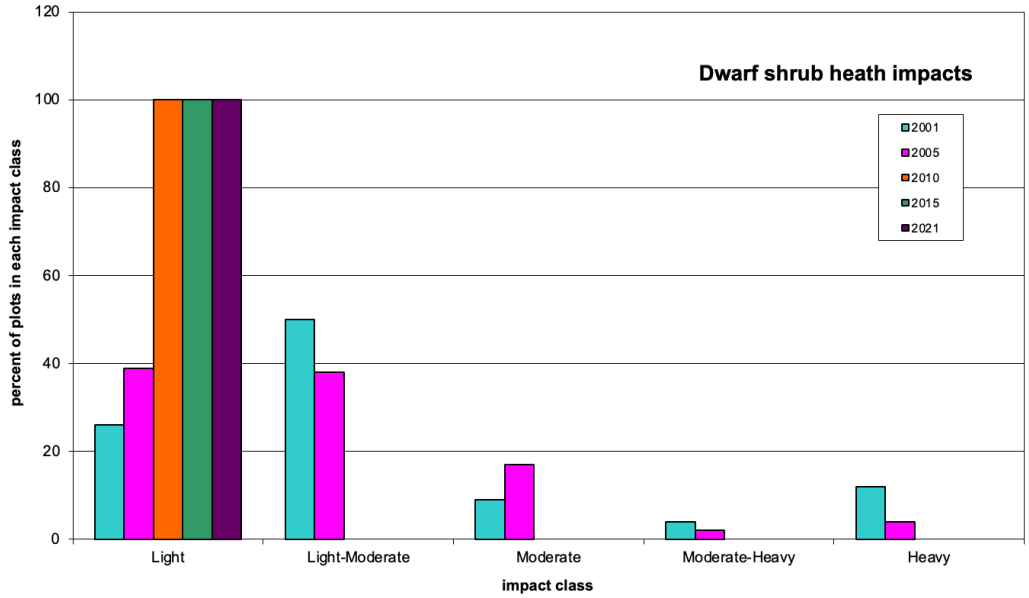


Figure 31: Changes in impact levels in dwarf shrub heath in the Moorland Zone. Due to the differences in dwarf shrub heath plot numbers percentage was used to demonstrate changes.

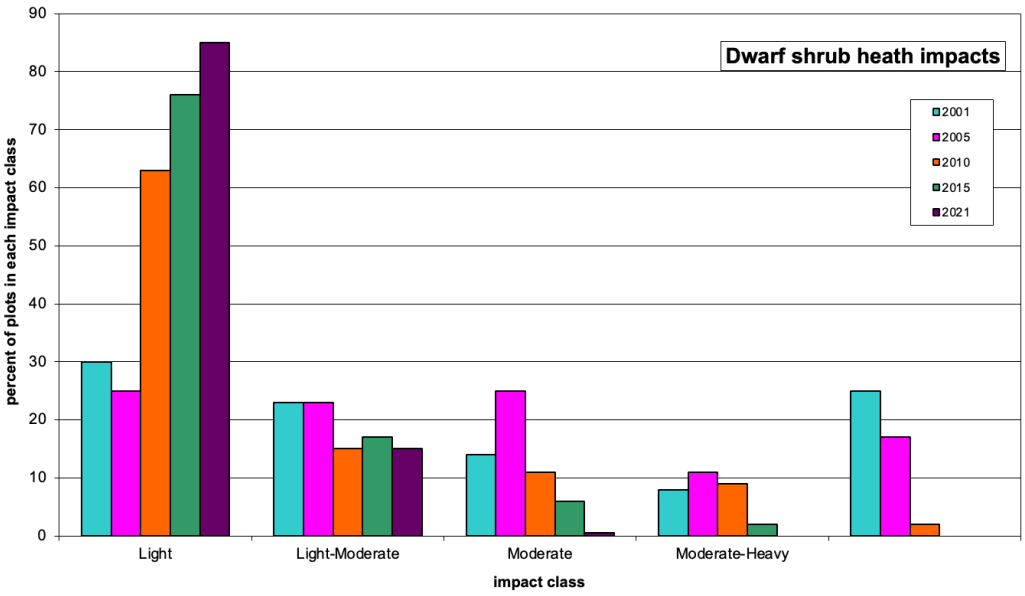
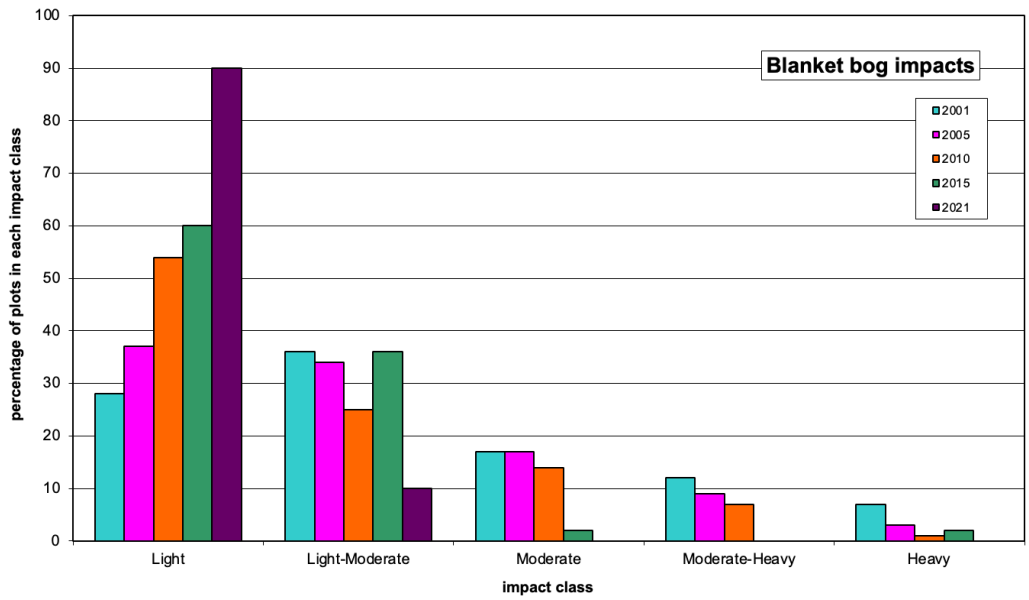


Figure 32: Changes in impact levels in blanket bog in the Moorland Zone. Due to the differences in blanket bog plot numbers percentage was used to demonstrate changes.



6.4 Designated Sites

The Group is very heavily designated, containing a number of high-profile sites of national importance. These sites are covered in more detail in the 2016 Deer Management Plan.

A total of **24,363 ha** (24% of the Group) is designated as a Special Area of Conservation (SAC) and **27,843 ha** (28%) as Site of Special Scientific Interest covering 11 sites. Most management units have at least one designation (Table 9). More than half the Group also falls within the Cairngorms, Cairngorms Massif and Muir of Dinnet Special Protection Area (SPA).Details of Designated Sites can be found in the 2016 Deer Management Plan.

Table 9: Properties with Designated Features

Name	Designation Type	*Area (ha)*	NTS Mar Lodge	Glenavon	Dinnet & West Tillypronie	Invercauld Homebeat	Mar	Invercauld Micras Moor	Edinglassie	Invercauld Baddoch	Invercauld Corndavon	Allargue	Dinnet Lowground	FCS Kinnord
Cairngorms	NNR	*25,964*	✓											
Muir of Dinnet	NNR	*1,166*			✓									
Morone Birkwood	NNR	*320*					✓							
The Cairngorm Mountains	NSA	*65,540*	✓	✓		✓								
Deeside & Lochnagar	NSA	*39,790*	✓			✓	✓	✓		✓	✓			
Cairngorms	SAC	*57,714*	✓	✓		✓								
Ladder Hills	SAC	*4,353*		✓					✓			✓		
Ladder Hills	SSSI	*4,353*		✓					✓			✓		
The Maim	SAC	*484*						✓						
Muir of Dinnet	SAC	*418*			✓									
River Dee	SAC	*2,430*	✓		✓	✓	✓	✓			✓		✓	
Morven & Mullachdubh	SAC	*916*			✓									
Green Hill of Strathdon	SAC	*641*							✓					
Cairngorms Massif	SPA	*29,322*	✓	✓		✓	✓			✓				
Cairngorms	SPA	*50,915*	✓	✓		✓								
Muir of Dinnet	RAMSAR	*416*			✓									
Muir of Dinnet	SPA	*417*			✓									
Crathie Wood	SSSI	*194*						✓						
Muir of Dinnet	SSSI	*2,311*			✓								✓	✓
Morone Birkwood	SSSI	*333*					✓							
Morven & Mullachdubh	SSSI	*2,506*			✓									
Green Hill of Strathdon	SSSI	*640*							✓					
Inchrory	SSSI	*1,093*		✓										
Eastern Cairngroms	SSSI	*16,506*		✓										
Cairngorms	SSSI	*29,230*	✓											
Craig Leek	SSSI	*185*				✓								
Craigendarroch	SSSI	*67*						✓						

There are a total of 133 designated features within the Group. Of these **84%** are in Favourable/Not Assessed/Unfavourable Recovering Due to Management condition. There are **5 main sites** where herbivore impacts could potentially be considered to be a contributing factor to the site condition. These are summarised in **Table 10**.

Table 10: Designated Sites With Ongoing Actions

Designated Site	Property	Progress
Craig Leek SSSI: **Upland Assemblage and Bryophyte Assemblage** located within deer fence. Unfavourable condition not due to deer impacts but extensive birch regeneration and bracken cover.	Homebeat	*Sufficient grazing is required to maintain the species-rich grassland and dwarf shrub heath habitats. NatureScot are in ongoing discussions to manage scrub which is affecting the bryophyte assemblage. IC have agreed Agri Environment scheme.*
Eastern Cairngorms SSSI: **Bryophyte Assemblage.** Unfavourable condition not due to deer impacts.	Home Beat, Mar Lodge, Glenavon	*No action required. loss of area of important, bryophyte-rich late snow-bed communities since 1989, likely caused by changes in the climate.*
Inchrory SSSI: **Species-rich calcareous grasslands, springs & flushes and juniper scrub.** currently under grazed and flushes which show slight signs of trampling (deer and sheep).	Glenavon	*AECS contract in place to manage sheep grazing. Some trampling impacts may be due to movement of deer between the Estate and Invercauld- Homebeat. Estates to continue to discuss collaborative approach to deer management.*
Ladder Hills SSSI: **Sub-alpine dry heath** in the past have been due to muirburn and high levels of localised browsing on blaeberry heaths. Deer numbers starting to increase indicating a change in migration patterns.	Glenavon & Allargue	*Estates follow Muirburn Code of practice. Both Estates have relatively few deer but sheep grazing the open hill and hares present. Estates have implemented Habitat Impact Assessment on Dwarf Shrub Heath to monitor herbivore grazing impacts*
Cairngorms SAC: The main issues affecting the features have been Muirburn on **heaths**, undergrazing of **calcareous grassland**, trampling of **blanket bog**, browsing on **Caledonian forest.** Red deer are primarily responsible for the trampling impacts on the Blanket bog habitat, but mountain hares are probably as important as red deer in terms of browsing for the majority of the Cairngorms SAC.	Glenavon, Mar Lodge, Invercauld Homebeat	*A collaborative approach between all properties is being undertaken to reduce impacts across the main site features.* *NTS Mar Lodge has a full programme of monitoring across its site on a range of habitats.* *Glenavon conducts muiburn according to the Muirburn Code*

6.5 Wider Biodiversity

A key consideration for the Group is addressing biodiversity loss and Group members are committed to actively identifying opportunities to restore biodiversity. The BTO Wader Priority Zone data set identifies high priority areas for a range of wader species within the Group including curlew (*Numenius arquata*) – ***Figure 29***. Part of the group area sits within a Scottish wildcat (*Felis silvestris silvestris*) priority area (***Figure 30***).

Mar Lodge has been implanting management for key species such as narrow headed wood ants and waders in Quoich floodplain and will continue with monitoring of a range of species such as black grouse (*Lyrurus tetrix*), dotterel (*Charadrius morinellus*), ptarmigan (*Lagopus muta*), narrow-headed wood ants (Formica exsecta), water vole (Arvicola amphibius), mink (*Neovison vison*) and montane scrub (*Salix sp*). Twinflower (*Linnaea borealis*) conservation projects are underway on two properties.

6a *Members will continue to monitor herbivore impacts on key habitats and use the information to manage impacts to within acceptable ranges and for the benefit of wider ecosystem health.*

6b *Members will work with NatureScot collaboratively to reduce negative herbivore impacts on designated sites and undertake management actions as required.*

6c *Members will seek to implement management practices and actions to restore and enhance biodiversity throughout the LMG area.*

6d *Members will follow all management Codes of Practice including Muirburn Code*

6e *Members will actively seek opportunities to conserve and restore species and contribute to biodiversity restoration.*

Figure 33: Wader Priority Zones for Curlew (Data Source)

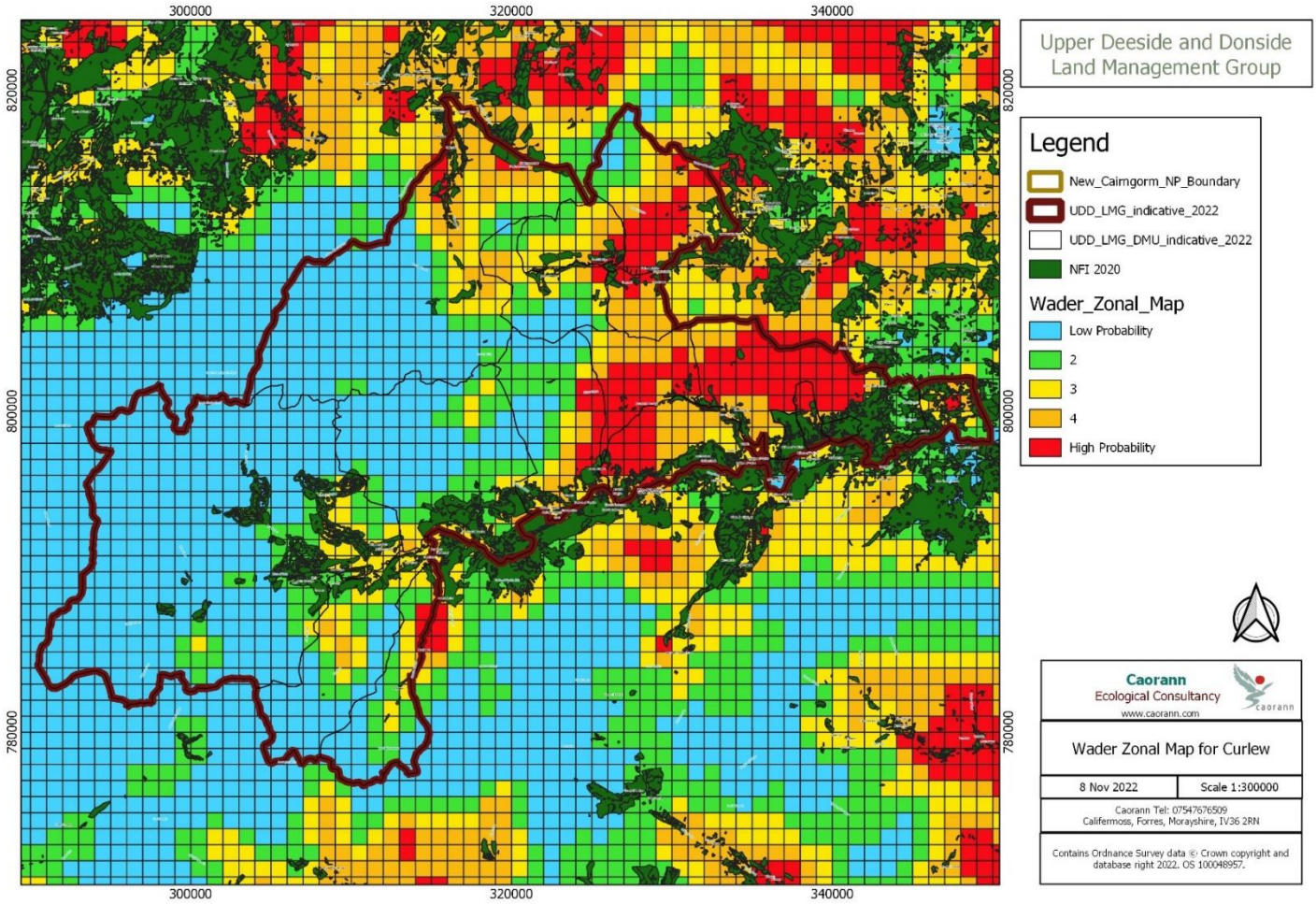
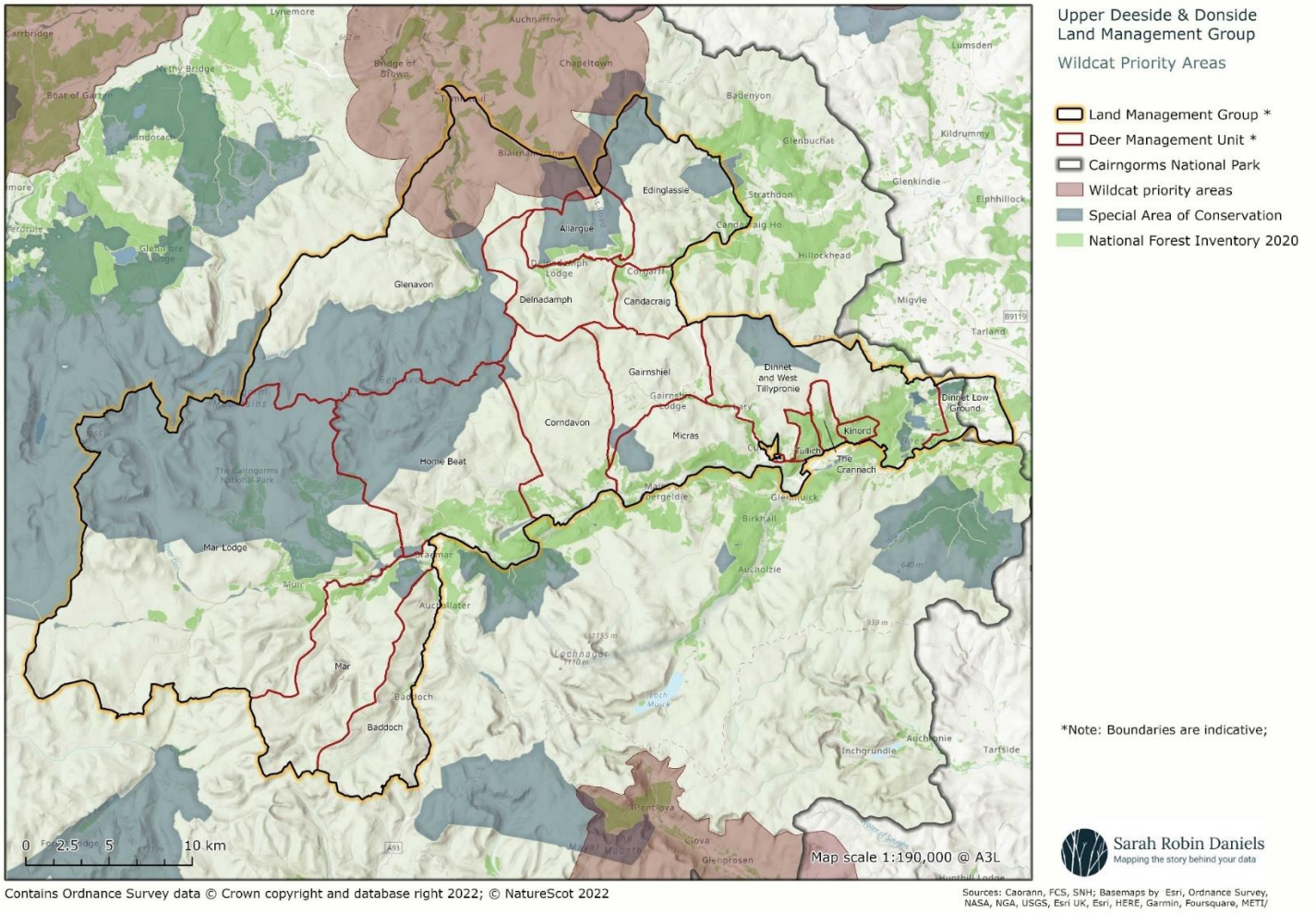


Figure 34: Wildcat Priority Areas



7. Deer and People

7.1 Background

Wild deer are considered a resource and can play an important role in promoting and sustaining economic activity. Deer are also of great social and cultural value to Scotland. As one of Scotland's top iconic wildlife species they provide a range of benefits, for example through their contribution to tourism and people's enjoyment of the outdoors. Venison is also a healthy meat enjoyed by many. However, they can also create costs to other land-use objectives and have a negative impact on other economic activities including agriculture and forestry. Deer Vehicle Collisions may also incur an economic as well as social cost. Deer can also lead to health and safety risks e.g. road traffic accidents and deer related disease such as Lyme disease.

Chronic wasting disease (CWD) is a highly contagious and fatal transmissible spongiform encephalopathy (TSE) disease that affects deer. It has had devastating effects on many populations of wild and farmed deer in the USA and Canada and has been confirmed in Norway. It is not known to affect humans. There is no evidence of TSEs in deer in the UK but if it were to become established in the wild deer population it would have major consequences for the UK deer industry. Chronic wasting disease is a notifiable disease. This means that if you suspect it you must tell your nearest Animal and Plant Health Office (APHA) office immediately. Failure to do is an offence. For information on how to spot CWD see https://www.gov.uk/chronic-wasting-disease

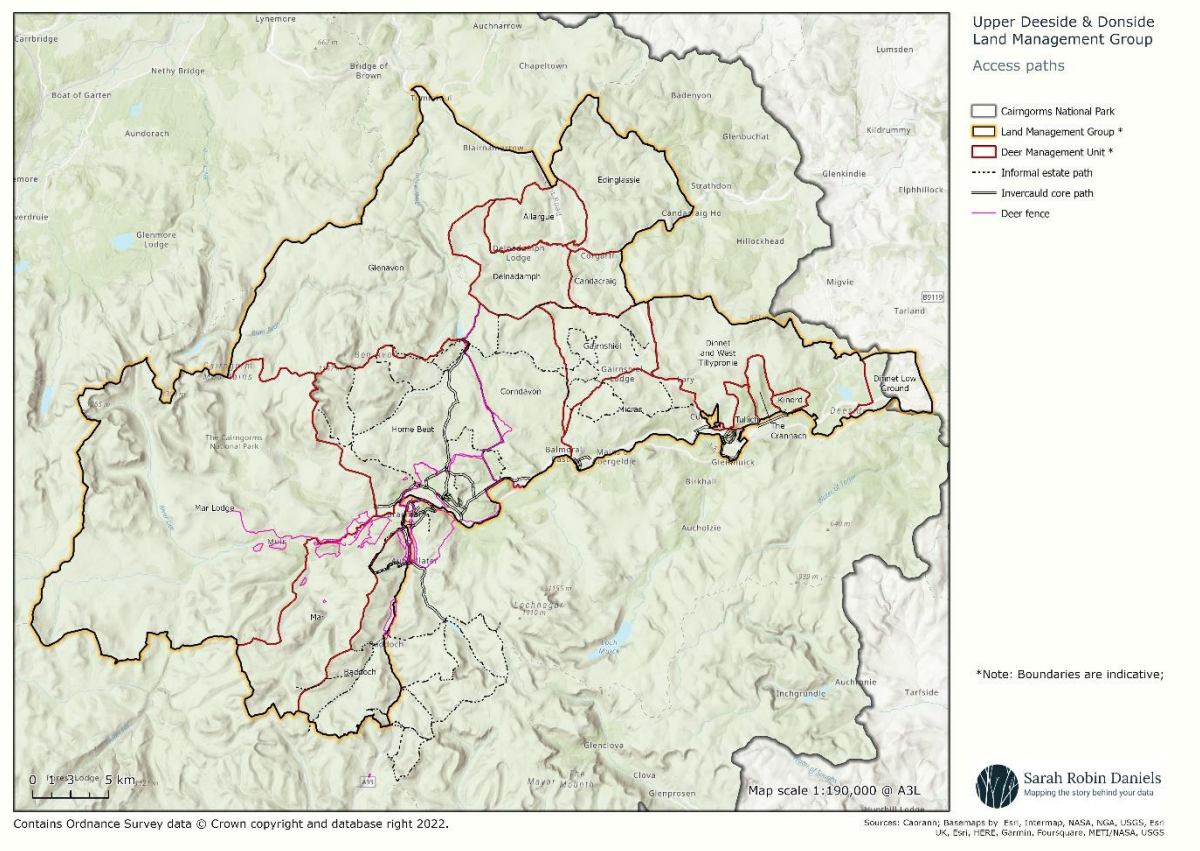
Deeside is a popular tourist destination, and wildlife tourism in particular is important to the local economy as a whole. Deer, as one of Scotland's top iconic species, are an important element of this. The Group area is heavily utilised visitors, with Mar Lodge Estate alone recording 10,000 cars to their car park. Responsible access is encouraged and welcomed by all properties within the area which has a network of 83.5 km of paths on Invercauld Estate alone (Figure 30).

Members actively engage in a range of measure to safeguard public safety and engage with the local community. ***Table 11*** sets out actions already undertaken by group members.

Table 11: Actions undertaken by members

	Actions Undertaken By Group Members
Public Safety	• Tick awareness already discussed with estates and staff on all estates. Tick information provided for holiday cottage visitors. • Members are collectively signed up to principles of Best Practice which provides guidance on safeguarding public safety and food safety. • Warning signage has been implemented at particular spots along A93 between Braemar and the Ski Centre at Glenshee where deer frequently cross the road.
Community Engagement	• Good information on access is available on the HFTSH Website. • The Group actively promotes positive deer and moorland management throughout the area through a series of initiatives and information provision • Invercauld Estate has its own web site and provides information at two car parks. Others. Signage being developed by Invercauld. • Mar Lodge Estate hosts educational events with schools as well as a Senior Schools Leadership Programme. It also provides training opportunities in deer management for College students (groups of 16 students at a time during the hind cull). The Estate has a Community Action Plan. • Venison is provided to the local butcher. • The whole Group area is promoted through the BBC Winterwatch series.

Figure 30: Core Paths Network



Community Engagement

Members of the Land Management Group will promote and encourage effective communication on deer management issues both within the LMG and throughout the wider community in order to promote better awareness and education of deer and deer management.

7a	*Group will seek opportunities to promote deer management through training, educational or awareness raising events and social media.*
7b	*Members to identify, raise awareness and where possible minimise the local health and safety risks ie incidents of Deer Vehicle Collisions and Tick Awareness*
7c	*Members to promote responsible Access and the following of the Scottish Outdoor Access Code.*
7d	*Members to raise awareness of CWD with Clients and Visitors from USA, Canada and Norway and undertake the appropriate Bio-Security protocols prior to their visit.*
7e	*Group to actively engage with local community through Community Council, newsletters and events and promote good news stories.*
7f	*Group to seek active engagement with Rural Land Use Partnership Scheme.*

Chapter 8: Group Operation

8.1 Effective Collaboration

To manage deer populations at a landscape scale a collaborative approach is required and the need to negotiate and compromise may be necessary. This requires a Group to be functioning effectively, to be inclusive and to operate in the spirit of openness and transparency. The Association of Deer Management Groups (ADMG) has provided some guiding principles through the ADMG Benchmark and the ADMG Principle of Collaboration (***Figure 30***).

The Deer Management Plan (DMP) should ensure that representation and Membership of the Land Management Group enables integration of different land-uses at a local level. The planning process should also be consultative, transparent, and open.

Figure 30: ADMG Principles of Collaboration

8.2 Meetings

Strategic Land Management Spring Meeting. The group holds one principal strategic meeting each year in spring which is also the AGM. The LMG has a strong level of participation with all properties being represented by owners and or stalkers/managers at this meeting. Small, flexible "task and finish" groups may be set up to deal with emerging issues or actions as required. These will report back to the Chair and the SLM Meeting.

The purpose of the Strategic Land Management meeting is to discuss:

- Relevant Scottish Government & CNPA Policy
- ADMG Business
- NatureScot Business
- Land use changes: peatland & woodland schemes etc
- Training and CPD Needs
- Educational & Community Engagement Opportunities
- Access Issues
- Wider Public Health Issues: DVCs, Ticks & Lyme Disease
- Other awareness issues.

Spring & Autumn Deer Meetings.

A key element of the spring (stags) and autumn (hinds) deer meetings is to agree cull targets amongst the membership, taking into account the results of any recent information that might be relevant. The spring and autumn meetings also review:

- Culls achieved against cull targets set at the previous meetings;
- Deer numbers, based on latest counts and such indirect monitoring as might be carried out by members as well as updates on planned counts for the year;
- Any changes in deer management required based upon evidence gathered from monitoring procedures as set out in the Working Plan.
- Any current issues in the Group area. If necessary, issues will be prioritised and a plan of action agreed upon.
- Progress with delivering the actions set out in the Deer Management Plan.

Advisory representatives from NatureScot, CNPA and area representatives from ADMG will be invited to contribute to meetings as appropriate.

Agendas will be circulated in advance for these meetings and minutes produced soon afterwards, with the minutes circulated to all Members and attendees. Minutes and Agendas will be publicly available on the LMG's website.

8.3 Reporting

The Deer Management Plan will be delivered through the **actions** set out in **the plan and summarised in the Working Plan.**

- Prior to the Spring Deer meeting, Members will complete an annual return. The return will enable key information to be collated prior to the Spring SLM meeting and the Deer Meeting.
- The Working Plan, with any maps and spreadsheets will be updated and circulated along with the Agenda to all Group Members prior to meetings.
- The Working Plan will be discussed at the meeting, and progress against targets noted. The Working Plan will be continually reviewed and actions agreed and implemented by LMG members on an annual basis.
- A review of the entire Deer Management Plan will be conducted in 2027.

8.4 LMG Constitution

The constitution for the Upper Deeside and Donside Land Management Group was formally adopted on 11th March 2021.

8.5 Plan Delivery 2022 -2027

- **Habitat Monitoring**: Blanket Bog to be repeated in 2023 and Dwarf Shrub Heath in 2025.
- **Counts**: Foot counts undertaken annually with a helicopter count to be completed in 2027.
- **Events**: Annual Community Events to be organised.

8.6 Summary of Actions to be delivered by 2027

1a	*The Working Plan will be reviewed and updated annually. Management actions will be adjusted and agreed accordingly.*
2a	*Members will use information gathered on habitats and herbivore numbers to manage deer sustainably, agreeing and delivering cull targets.*
2b	*Foot counts of deer will be repeated annually. Count coordinators will ensure the count is conducted accurately and effectively.*
2c	*Group will continue to review deer movements within the LMG.*
3a	*LMG to organise annual CPD opportunities for LMG members.*
4a	*Members will aim to significantly increase the areas of restored peatland over the next 5 years and will provide regular updates on peatland restoration activity.*
5a	*Members will seek to create/regenerate new woodland, particularly focussing on areas which would benefit habitat connectivity.*
5b	*Members will identify opportunities for riparian woodland improvement and creation to support the recovery of Atlantic salmon and to promote river health.*
5c	*Members will provide annual updates on woodland activity.*
5d	*Members to carry out woodland monitoring to assess herbivore impacts.*
6a	*Members will continue to monitor herbivore impacts on key habitats and use the information to manage impacts to within acceptable ranges and for the benefit of wider ecosystem health.*
6b	*Members will work with NatureScot collaboratively to reduce negative herbivore impacts on designated sites and undertake management actions as required.*
6c	*Members will seek to implement management practices and actions to restore and enhance biodiversity throughout the LMG area.*
6d	*Members will follow all management Codes of Practice including Muirburn Code*
6e	*Members will actively seek opportunities to conserve and restore species and contribute to biodiversity restoration.*
7a	*Group will seek opportunities to promote deer management through training, educational or awareness raising events and social media.*
7b	*Members to identify, raise awareness and where possible minimise the local health and safety risks ie incidents of Deer Vehicle Collisions and Tick Awareness*
7c	*Members to promote responsible Access and the following of the Scottish Outdoor Access Code.*
7d	*Members to raise awareness of CWD with Clients and Visitors from USA, Canada and Norway and undertake the appropriate Bio-Security protocols prior to their visit.*
7e	*Group to actively engage with local community through Community Council, newsletters and events and promote good news stories.*
7f	*Group to seek active engagement with Rural Land Use Partnership Scheme.*

8.7 References

Where river temperature data or plots exported from this application are subsequently included in publications or reports they should be cited as: Shilland, E.M., Proudlock, P., Shilland, J.D., Monteith, D.T., Millidine, K., Jackson, F.L, & Malcolm I.A.(2021) UK Upland Water Monitoring Network (UKUWMN) Rivers Summary Data. DOI: 10.7489/12387-2