

Technical Appendix 6.1:
Quadrat Data, Target Notes and Plant Species

Site:	T1	T1	T1	T1	T1	T1	T1	T1
Date:	01.03.22	01.03.23	01.03.24	01.03.25	01.03.26	01.03.27	01.03.28	01.03.29
Recorder:	BS	BS	BS	BS	BS	BS	BS	BS
NVC habitat type:	MG7	M23b	MG7	MG7	MG7	U5	MG7	M23b
Notes:	Reseeded improved grassland	Patchy rushes in improved grassland	Reseeded improved grassland	Reseeded improved grassland	Reseeded semi-improved grassland	Acid grassland	Semi-improved grassland	Rush pasture
Grid ref:	310895, 421060	310908, 421063	310929, 421042	311006, 421057	311065, 421034	311121, 421018	311160, 420995	311180, 420977
Quadrat no:	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Peat depth (cm):	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Average sward height (cm):	5	6	7	5	6	20	5	
Average rush height (cm):		40						40
Max vegetation height:								
Species	% cover	% cover	% cover	% cover	% cover	% cover	% cover	% cover
<i>Agrostis capillaris</i>					<1		<1	
<i>Agrostis stolonifera</i>								2
<i>Anthoxanthum odoratum</i>				2				
<i>Aulacomnium palustre</i>				<1				
<i>Calliergon cuspidatum</i>				<1				
<i>Calluna vulgaris</i>						1		
<i>Cardamine pratensis</i>			1	<1			<1	1<1
<i>Carex binervis</i>						1		
<i>Carex nigra</i>						<1		
<i>Cerastium fontanum</i>							<1	
<i>Cirsium palustre</i>			5		2	1	2	1
<i>Cynosurus cristatus</i>				<1	2		<1	
<i>Dactylis glomerata</i>								
<i>Deschampsia cespitosa</i>					1			
<i>Galium saxatile</i>					<1			
<i>Holcus lanatus</i>		3	4		6		8	15
<i>Hylocomium splendens</i>					15	15	10	
<i>Juncus acutiflorus</i>						<1		
<i>Juncus effusus</i>		25						70

Site:	T2	T2	T2	T2	T2	T2
Date:	01.03.22	01.03.23	01.03.24	01.03.25	01.03.26	01.03.27
Recorder:	BS	BS	BS	BS	BS	BS
NVC habitat type:	M19/U5	M19	M19	M19	M19	M23a
Notes:	Heath/acid grassland mosaic	Heath	Heath	Heath	Heath	Saturated hollow
Grid ref:	310975, 420533	310999, 420563	311056, 420606	311130, 420632	311233, 420735	311287, 420777
Quadrat no:	Q9	Q10	Q11	Q12	Q13	Q14
Peat depth (cm):	50	50	15	20	18	>1m
Average sward height (cm):						
Average rush height (cm):						
Max vegetation height:						
Species	% cover	% cover	% cover	% cover	% cover	% cover
<i>Calluna vulgaris</i>	20	80	40	75	50	2
<i>Cardamine pratensis</i>						
<i>Carex binervis</i>	<1			<1		
<i>Carex nigra</i>			<1			
<i>Erica tetralix</i>		1		1		
<i>Eriophorum angustifolium</i>						
<i>Eriophorum vaginatum</i>		7	20	4		8
<i>Galium saxatile</i>	<1		<1			
<i>Holcus lanatus</i>						
<i>Hylocomium splendens</i>	20		15			2
<i>Juncus acutiflorus</i>						55
<i>Molinia caerulea</i>	10	20	25	15	40	8
<i>Nardus stricta</i>	35					
<i>Pleurozium schreberi</i>			1			
<i>Polytrichum commune</i>						2
<i>Potentilla erecta</i>	<1					1
<i>Pseudoscleropodium purum</i>	20		5			
<i>Rhytidiadelphus squarrosus</i>	30		5			8
<i>Sphagnum auriculatum</i>				1		8
<i>Sphagnum capillifolium</i>		4		2		2
<i>Sphagnum subnitens</i>				2		
<i>Trichophorum cespitosum</i>			12	20		
<i>Vaccinium myrtillus</i>			<1			

<i>Bare ground/litter/water/rock/mud</i>						
<i>Juncus squarrosus</i>		1	2	2		
<i>Hypnum jutlandicum</i>			2			
<i>Erica cinerea</i>			1			
<i>Thuidium tamariscinum</i>			1			
<i>Sphagnum papillosum</i>				15		
<i>Campylopus atrovirens</i>					5	
<i>Blechnum spicant</i>					<1	
<i>Sphagnum cuspidatum</i>						10
<i>Sphagnum palustre</i>						2
<i>Narthecium ossifragum</i>						2
<i>Hypnum jutlandicum</i>						2

Site:	T3	T3	T3	T3	T3	T3	T3	T3	T3	T3
Date:	23.03.22	23.03.23	23.03.24	23.03.25	23.03.26	23.03.27	23.03.28	23.03.29	23.03.30	23.03.31
Recorder:	BS	BS	BS	BS	BS	BS	BS	BS	BS	BS
NVC habitat type:	M25	M25	M6	M23a	M25	M23b	H9	NK	NK	H9
Notes:	Heavily grazed mossy grassland	Moss-dominated with patchy grasses	Minor flush	Rush pasyure	Molinia dominated tussocky grassland	Broad linear area dominated by rushes	Calluna dominated area to E of track	Heavily grazed grass and moss dominated slope	Heavily grazed grassland	Low relief ridge dominated by Calluna
Grid ref:	111122, 420126	111248, 420119	111288, 420133	111330, 420206	111374, 420283	111396, 420374	111414, 420376	111410, 420433	111428, 420433	111451, 420547
Quadrat no:	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24
Peat depth (cm):	32	21	55	>100	45	60	65	N/A	N/A	>100
Average sward height (cm):	5	2	3	30	5		25	3	2	20
Average rush height (cm):	40			30		45				
Max vegetation height:										
Species	% cover	% cover	% cover	% cover	% cover	% cover	% cover	% cover	% cover	% cover
<i>Calliergon cuspidatum</i>								<1		
<i>Calluna vulgaris</i>			1				55			75
<i>Carex binervis</i>	<1	<1		1	<1					
<i>Carex nigra</i>				1						
<i>Cerastium fontanum</i>									<1	
<i>Eriophorum vaginatum</i>			30				20			3
<i>Euphrasia officinalis agg.</i>										
<i>Festuca ovina agg.</i>					5	10				
<i>Galium saxatile</i>		<1						<1		
<i>Hylocomium splendens</i>	2			<1	10		10	6	1	4
<i>Juncus acutiflorus</i>				40	35					
<i>Juncus articulatus</i>										
<i>Juncus bulbosus</i>			10	<1	<1					
<i>Juncus effusus</i>	15					95				
<i>Leontodon autumnalis</i>										
<i>Lolium perenne</i>					<1	<1			x	
<i>Luzula multiflora</i>	<1	1						1	1	
<i>Molinia caerulea</i>	10	10	6	35	30	5	25	5	x	8
<i>Nardus stricta</i>	8	3						20		
<i>Pleurozium schreberi</i>		<1								
<i>Polygala serpyllifolia</i>	<1		<1		<1		<1			
<i>Polytrichum commune</i>	<1		9							<1

Site:	T4	T4	T4	T4
Date:	01.03.2022	01.03.2022	01.03.2022	01.03.2022
Recorder:	KH	KH	KH	KH
Habitat type:	Blanket mire	Blanket mire	Rush pasture	Blanket mire
NVC habitat type:	M20a	M20a	M23b	M20a
Notes:	Alternative T4. Grazing pressure low>mod. GWDTE within M20a.	T4. Grazing pressure low>mod	Grazing pressure low.	Grazing pressure low>mod
Grid ref:	311935 420081	311858 420037	312006 419969	312210 419913
Quadrat no:	Q25	Q26	Q27	Q28
Peat depth (cm):	>100	>100	30	65
Average sward height (cm):				
Average rush height (cm):	N/A	70	130	N/A
Max vegetation height:	50	70	130	40
Species	% cover	% cover	% cover	% cover
<i>Agrostis stolonifera</i>			30	
<i>Calliergon cuspidatum</i>		1	5	
<i>Calluna vulgaris</i>		5		8
<i>Cardamine pratensis</i>			2	
<i>Eriophorum angustifolium</i>				
<i>Eriophorum vaginatum</i>	25	15		85
<i>Galium saxatile</i>		1		
<i>Hypnum jutlandicum</i>		3		
<i>Hylocomium splendens</i>		3		35
<i>Juncus acutiflorus</i>			8	
<i>Juncus effusus</i>		3	50	
<i>Juncus squarrosus</i>		10		
<i>Luzula sylvatica</i>				8
<i>Molinia caerulea</i>		3		5
<i>Montia fontana</i>			1	

<i>Pleurozium schreberi</i>				2
<i>Polytrichum commune</i>	10	8		5
<i>Potentilla erecta</i>	2	1		
<i>Rhytidiadelphus loreus</i>		15		45
<i>Rhytidiadelphus squarrosus</i>		35	35	15
<i>Rumex acetosa</i>			2	
<i>Sphagnum capillifolium</i>				2
<i>Sphagnum fallax</i>	70	15		15
<i>Sphagnum palustre</i>	2			3
<i>Vaccinium myrtillus</i>				8
Bare ground/litter/water /rock/mud/dung		2		

Site:	T5	T5	T5	T5	T5	T5
Date:	01.03.2022	01.03.2022	01.03.2022	01.03.2022	01.03.2022	01.03.2022
Recorder:	KH	KH	KH	KH	KH	KH
Habitat type:	Meso G/L	Meso G/L bare ground	Rush pasture	Acid grassland	Wet heath	Wet heath
NVC habitat type:	MG10a	MG10a	M23b	M25a	M15	M15
Notes:	T5. Sward tight, heavily grazed	Alternative T5. Traversed by gravel track, heavily sheep grazed	Grazing pressure mod>high	Heavily sheep-grazed	Grazing pressure low>mod.	Grazing pressure low>mod
Grid ref:	312064 419478	311980 419567	311901 419574	311862 419693	311919 419813	312081 419876
Quadrat no:	Q29	Q30	Q31	Q32	Q33	Q34
Peat depth (cm):	10	5	60	35	40	50
Average sward height (cm):						
Average rush height (cm):	N/A	N/A	100	10	60	N/A
Max vegetation height:	3	3	100	30	60	30
Species	% cover	% cover	% cover	% cover	% cover	% cover
<i>Agrostis capillaris</i>					1	
<i>Agrostis stolonifera</i>	2	2				
<i>Calliergon cuspidatum</i>					<1	3
<i>Calluna vulgaris</i>					15	15
<i>Eriophorum angustifolium</i>				3		
<i>Eriophorum vaginatum</i>				10	5	8
<i>Euphrasia officinalis agg.</i>						
<i>Festuca ovina agg.</i>						
<i>Galium palustre</i>						
<i>Galium saxatile</i>			2	1	1	<1
<i>Holcus lanatus</i>	100	2	2	8		
<i>Hypnum jutlandicum</i>				5		2
<i>Hylocomium splendens</i>				8	3	10
<i>Juncus effusus</i>			15		5	
<i>Juncus squarrosus</i>			20	20	80	
<i>Luzula sylvatica</i>			2			2
<i>Molinia caerulea</i>				40	3	2
<i>Plagiothecium undulatum</i>				1		
<i>Polytrichum commune</i>			5	3	3	5
<i>Potentilla erecta</i>			1	3	1	

<i>Ranunculus repens</i>	1					
<i>Rhytidiadelphus loreus</i>				5	10	20
<i>Rhytidiadelphus squarrosus</i>	1		95	30	1	5
<i>Rumex acetosa</i>	5					
<i>Sphagnum capillifolium</i>				3	2	
<i>Sphagnum fallax</i>				10	15	20
<i>Sphagnum palustre</i>				5	1	
<i>Thuidium tamariscinum</i>					<1	5
<i>Vaccinium myrtillus</i>				8	1	1
<i>Viola palustris</i>						
Bare ground/litter/ water/rock/mud/dung		98				2

Site:	T6	T7	T7	T7	T7	T7	T7	T7	T7	T7	T7	T7	T7	T7
Date:	01.03.2022	01.03.2022	14.03.2022	01.03.2022	14.03.2022	01.03.2022	14.03.2022	14.03.2022	14.03.2022	14.03.2022	14.03.2022	14.03.2022	14.03.2022	14.03.2022
Recorder:	KH	KH	KH	KH	KH	KH	KH	KH	KH	KH	KH	KH	KH	KH
Habitat type:	Blanket mire	Rush pasture	Rush pasture	Rush pasture	Blanket mire	Rush pasture	Blanket mire	Blanket mire	Blanket mire	Blanket mire	Meso G/L rush pasture mosaic	Meso G/L rush pasture mosaic	Meso G/L rush pasture mosaic	Meso G/L Rush pasture mosaic
NVC habitat type:	M19	M23a	M23a	M23a	M20a	M23a	M19	M19	M20a	M20a	MG10a/M23a	MG10a/M23b	MG10a/M23b	MG10a/M23b
Notes:	T6. Grazing pressure low/absent	Grazing pressure mod>low	Grazing pressure mod	Grazing pressure mod	Grazing pressure low	Grazing pressure low>mod	T? Grazing pressure low.	T7. Grazing pressure low	Grazing pressure low	Grazing pressure low	Grazing pressure mod	Grazing pressure mod>high	Grazing pressure high	Grazing pressure mod
Grid ref:	312292 419969	312771 420488	312739 420556	312636 420563	312542 420566	312455 420558	312382 420548	312276 420554	312155 420575	312078 420590	311983 420602	311916 420649	311887 420712	311876 420766
Quadrat no:	Q35	Q36	Q37	Q38	Q39	Q40	Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48
Peat depth (cm):	>100	>100	>100	>100	>100	>100	>100	>100	65	25	20	10	15	10
Average sward height (cm):														
Average rush height (cm):	N/A	90	100	100	N/A	110	N/A	N/A	60	N/A	80	110	15	120
Max vegetation height:	95	90	100	100	90	110	90	70	100	100	80	110	15	120
Species	% cover	% cover	% cover	% cover	% cover	% cover	% cover	% cover	% cover	% cover	% cover	% cover	% cover	% cover
<i>Agrostis capillaris</i>														8
<i>Agrostis stolonifera</i>		35	25	25	10	20					20	75	80	
<i>Calliergon cuspidatum</i>		8	3		15									
<i>Calluna vulgaris</i>	85						25	80						
<i>Cardamine pratensis</i>			1			1						2		
<i>Carex binervis</i>											3	5		
<i>Cirsium palustre</i>													8	
<i>Cynosurus cristatus</i>													10	
<i>Deschampsia cespitosa</i>														5
<i>Deschampsia flexuosa</i>									3	8				
<i>Dicranum scoparium</i>	1													
<i>Dryopteris dilatata</i>	3						8							
<i>Empetrum nigrum</i>							2							
<i>Erica tetralix</i>							3							
<i>Eriophorum angustifolium</i>					5									
<i>Eriophorum vaginatum</i>	15				70		65	15	70	60				
<i>Euphrasia officinalis agg.</i>														
<i>Galium saxatile</i>								3		2		2		
<i>Holcus lanatus</i>		8		5									15	65
<i>Hypnum jutlandicum</i>	70						30							
<i>Hylocomium splendens</i>					8			5		3		5		
<i>Juncus acutiflorus</i>		60	60	85		85					35			
<i>Juncus effusus</i>		10	20	3	20				5			20	10	30
<i>Kindbergia praelonga</i>	5		10			5	15				5			
<i>Luzula sylvatica</i>									25					
<i>Molinia caerulea</i>	3		5		8	8	5	5	8	20	10			
<i>Pleurozium schreberi</i>	15													
<i>Polytrichum commune</i>	3						5	8	10	20	2			
<i>Potentilla erecta</i>					2			2			2		2	
<i>Potentilla palustris</i>														
<i>Pseudoscleropodium purum</i>									3			8		
<i>Ranunculus repens</i>												3		
<i>Rhytidiadelphus loreus</i>	20						15	15						
<i>Rhytidiadelphus squarrosus</i>		20				15		35	8		40	15		20
<i>Rumex acetosa</i>			2	2	3								5	3
<i>Sphagnum fallax</i>								8	15	25				

Site:	T8	T8	T8
Date:	01.03.2022	01.03.2022	01.03.2022
Recorder:	KH	KH	KH
Habitat type:	Blanket mire	Rush pasture	Rush pasture
NVC habitat type:	M19	M23a	M23a
Notes:	Grazing pressure low/absent	Grazing pressure low	T8. Grazing pressure mod
Grid ref:	312476 420117	312614 420239	312696 420370
Quadrat no:	Q49	Q50	Q51
Peat depth (cm):	>100	>100	90
Average sward height (cm):			
Average rush height (cm):	N/A	90	80
Max vegetation height:	100	90	80
Species	% cover	% cover	% cover
<i>Agrostis capillaris</i>			
<i>Agrostis stolonifera</i>		30	20
<i>Anthoxanthum odoratum</i>		1	
<i>Aulacomnium palustre</i>			
<i>Calliergon cuspidatum</i>			
<i>Calluna vulgaris</i>	75		
<i>Empetrum nigrum</i>	2		
<i>Epilobium palustre</i>			
<i>Equisetum palustre</i>			
<i>Erica tetralix</i>	1		
<i>Eriophorum angustifolium</i>		3	
<i>Eriophorum vaginatum</i>	15		
<i>Euphrasia officinalis agg.</i>			
<i>Festuca ovina agg.</i>			
<i>Galium palustre</i>			
<i>Galium saxatile</i>			
<i>Holcus lanatus</i>			10
<i>Hypnum jutlandicum</i>	25		
<i>Hylocomium splendens</i>			
<i>Juncus acutiflorus</i>		65	80
<i>Juncus articulatus</i>			
<i>Juncus bulbosus</i>			
<i>Juncus effusus</i>			5

<i>Juncus squarrosus</i>			
<i>Kindbergia praelonga</i>		10	3
<i>Leontodon autumnalis</i>			
<i>Lolium perenne</i>			
<i>Luzula multiflora</i>			
<i>Luzula sylvatica</i>			
<i>Molinia caerulea</i>	3		2
<i>Rhynchospora loreus</i>	70		
<i>Rhynchospora squarrosus</i>		30	
<i>Rumex acetosa</i>			3
<i>Vaccinium myrtillus</i>	3		

Site:	Carnbuck	Carnbuck	Carnbuck	Carnbuck
Area:	T9	T9	T10	T10
Date:	14/03/2022	14/03/2022	14/03/2022	14/03/2022
Recorder:	FS	FS	FS	FS
Habitat type:		Deschampsia grassla		Grassland
IVC habitat	GL1A	HE2B	GL4D	GL4A
NVC habitat type:	M23a	H12a	MG23	U4b
Notes:	Very wet with some surface water	On slope with NW aspect		
	D 12970 20789	D 12559 20799	D 12930 20581	D 12970 20631
Quadrat no:	Q52	Q53	Q54	Q55
Peat depth (cm):	>100	>100	20	0
Average sward height (cm):	20	35	30	7
Average rush height (cm):	30		45	
Max vegetation height:	60	55	60	10
Species	% cover	% cover	% cover	% cover
<i>Agrostis capillaris</i>	15			80
<i>Agrostis stolonifera</i>				
<i>Anthoxanthum odoratum</i>	15		5	5
<i>Aulacomnium palustre</i>				
<i>Calliergon cuspidatum</i>	5			
<i>Calluna vulgaris</i>		65		
<i>Cardamine pratensis</i>	1			
<i>Deschampsia cespitosa</i>			85	4
<i>Eriophorum vaginatum</i>		20		
<i>Festuca ovina agg.</i>	3		15	5
<i>Galium saxatile</i>		2	2	
<i>Holcus lanatus</i>	10			10
<i>Juncus acutiflorus</i>	70		10	2
<i>Molinia caerulea</i>		3		
<i>Pseudoscleropodium purum</i>			10	
<i>Rhytidiadelphus loreus</i>		4		
<i>Rhytidiadelphus squarrosus</i>		3	15	
<i>Rumex acetosella</i>				2
<i>Vaccinium myrtillus</i>		5		
<i>Viola palustris</i>				

<i>Bare ground/litter/water/rock/mud</i>	3			5
<i>Poa trivialis</i>				
<i>Hypnum jutlandicum</i>		25		
<i>Luzula sylvatica</i>				12
<i>Kindbergia praelonga</i>	7		5	
<i>Thudium tamariscinum</i>		10	5	
<i>Rumex acetosa</i>	3		3	
<i>Lophocolea bidentata</i>			3	
<i>Plagiothecium undulatum</i>		1		

<i>Ranunculus repens</i>								3	5		
<i>Rhytiadelphus loreus</i>											10
<i>Rhytiadelphus squarrosus</i>	45	60	15	25	40	20			60		8
<i>Rumex acetosa</i>		5			2	2	3			3	
<i>Rumex acetosella</i>											
<i>Sphagnum capillifolium</i>					5						
<i>Thuidium tamariscinum</i>		15	20				8	20	20		30
<i>Bare ground/litter/water/rock/mud/dung</i>						5			5		

Site:	Carnbuck	Carnbuck	Carnbuck	Carnbuck	Carnbuck	Carnbuck	Carnbuck	Carnbuck
Area:	T11	T11	T11	T11	T11	T11	T11	T11
Date:	01/03/2022	01/03/2022	01/03/2022	01/03/2022	01/03/2022	01/03/2022	01/03/2022	01/03/2022
Recorder:	FS	FS	FS	FS	FS	FS	FS	FS
Habitat type:	bog	bog	rush pasture	fen or grassland	bog	rush pasture	heath	Flush
IVC habitat	HE3F	HE2D	GL4D	GL4D	HE2D	GL1A	HE3F	FE2E
NVC habitat type:	M19a	M15c/M19	M25b	MG8c/M14	M15	M23a	M19a	M4
Notes:	Location of proposed T11; uneven ground near patch dominated by clumps of <i>E. vaginatum</i> tot the east	Uneveng spongy ground	very wet	Looks grazed	bog in mosaic with rush pastur	rush pasture in mosaic with heath	patch of heath in mosaic with rush pasture	Flushed area in dip near stream. Very wet, with rushes on slightly higher and drier edges
Grid ref:	D 12962 21175	D 13217 21391	D 13211 21428	D 13211 21506	D 13246 21587	D 13254 21600	D 13261 21627	D 13258 21664
Quadrat no:	Q56	Q57	Q58	Q59	Q60	Q61	Q62	Q63
Peat depth (cm):	>100	>100	110	70	90	50	45	patchy 50 to 70
Average sward height (cm):	45	30	35	20	50	30	45	30
Average rush height (cm):	na	na	50	35	na	30	na	45
Max vegetation height:	60	60	85	40	100	60	55	50
Species	% cover	% cover	% cover	% cover	% cover	% cover	% cover	% cover
<i>Agrostis capillaris</i>						35		
<i>Anthoxanthum odoratum</i>			10	15	2	4		3
<i>Calluna vulgaris</i>	20	50	51	10	75		85	
<i>Cardamine pratensis</i>						2		
<i>Carex binervis</i>				5				
<i>Carex nigra</i>				10				
<i>Erica tetralix</i>		1						
<i>Eriophorum vaginatum</i>	40	25			35		20	
<i>Festuca ovina agg.</i>				7		5	2	
<i>Galium saxatile</i>	<1		1	3			<1	<1
<i>Holcus lanatus</i>			10			30		
<i>Hylocomium splendens</i>		5	20	50	5		10	
<i>Juncus acutiflorus</i>			75			40		30
<i>Juncus articulatus</i>				2				
<i>Juncus effusus</i>			2					
<i>Molinia caerulea</i>	3	20			15			

<i>Pleurozium schreberi</i>	1			1	2		1	
<i>Polytrichum commune</i>	4				2			15
<i>Potentilla erecta</i>	1	1		1				
<i>Pseudoscleropodium purum</i>			1	2			4	
<i>Ranunculus flammula</i>			1					
<i>Rhytidiadelphus loreus</i>	4	5			4		5	
<i>Rhytidiadelphus squarrosus</i>	20		60	15	1	3	1	
<i>Sphagnum auriculatum</i>								
<i>Sphagnum capillifolium</i>		7					20	
<i>Sphagnum palustre</i>		5			3		2	
<i>Sphagnum subnitens</i>					1			86
<i>Sphagnum tenellum</i>								4
<i>Vaccinium myrtillus</i>	1						2	
<i>Poa trivialis</i>							1	
<i>Hypnum jutlandicum</i>		5		1	12		1	
<i>Sphagnum fallax</i>	15							
<i>Agrostis canina</i>			5	15		10		
<i>Narthecium ossifragum</i>					<1			
<i>Scapania undulata</i>							1	
<i>Tricglochin palustris</i>				<1				

Site:	Carnbuck	Carnbuck	Carnbuck	Carnbuck	Carnbuck
Area:	T12	T12	T12	T12	T11
Date:	14/03/2022	14/03/2022	14/03/2022	14/03/2022	01/03/2022
Recorder:	FS	FS	FS	FS	FS
Habitat type:	rush pasture	blanket bog	acid grassland	rush pasture	bog
IVC habitat	GL2B	HE3F	GL4A	GL1A	HE3A
NVC habitat type:	MG10a	M19a	U4b	M23a	M19
Notes:	Lower slope of hill with NW aspect, forming mosaics with acid grassland further down	Small patch of BB beside rush pasture	Tightly crapped grassland	Bottom of NW slope of hill, transitioning to blanket bog further NW. Very wet with standing water	
Grid ref:	D 13293 20946	D 13265 21010	D 13316 21075	D 13297 21123	D 13298 21194
Quadrat no:	Q64	Q65	Q66	Q67	Q68
Peat depth (cm):	40	>100	0	ca 80	>100
Average sward height (cm):	20	20	12	30	40
Average rush height (cm):	28		15	40	50
Max vegetation height:	50	40	30	50	55
Species	% cover	% cover	% cover	% cover	% cover
<i>Agrostis capillaris</i>			60	40	
<i>Agrostis stolonifera</i>	30				
<i>Anthoxanthum odoratum</i>	7		5	15	
<i>Calluna vulgaris</i>		65			45
<i>Cardamine pratensis</i>	1			1	
<i>Cerastium fontanum</i>	1				
<i>Deschampsia cespitosa</i>	7		7		
<i>Eriophorum vaginatum</i>		7			5
<i>Festuca ovina agg.</i>	15	4		7	
<i>Galium saxatile</i>		<1			1
<i>Holcus lanatus</i>	25		45	20	
<i>Hylocomium splendens</i>					7
<i>Juncus acutiflorus</i>	10		2	40	3
<i>Juncus effusus</i>	30				
<i>Molinia caerulea</i>		3			
<i>Pleurozium schreberi</i>		5			
<i>Poa pratensis sens.lat.</i>			2		

<i>Polytrichum commune</i>		2			
<i>Potentilla erecta</i>		1			
<i>Pseudoscleropodium purum</i>	10		3		
<i>Ranunculus acris</i>				3	
<i>Ranunculus flammula</i>				1	
<i>Ranunculus repens</i>					
<i>Rhytidiadelphus loreus</i>		5			4
<i>Rhytidiadelphus squarrosus</i>	10	1	2		7
<i>Sphagnum capillifolium</i>		10			
<i>Sphagnum palustre</i>		15			
<i>Vaccinium myrtillus</i>		2			
<i>Viola palustris</i>					
<i>Bare ground/litter/water/rock/mud</i>			4		1
<i>Poa trivialis</i>					
<i>Hypnum jutlandicum</i>		20			
<i>Agrostis canina</i>					2
<i>Narthecium ossifragum</i>					
<i>Luzula sylvatica</i>					55
<i>Kindbergia praelonga</i>	10			1	
<i>Thudium tamariscinum</i>	5	5			
<i>Rumex acetosa</i>	2				

Target Notes

Habitat types : DH – dry heath; WH – wet heath; DMB – dry modified bog; WMB – wet modified bog; BB – blanket bog; AG – acid grassland; MG – marshy grassland; SIG – semi-improved grassland; FW – flowing water; AF – acid flush.

TN	Location	Description	Habitat type	Active peat Y/N	Photo
1	D13077 21830	Modified bog dominated by <i>Calluna</i> , with <i>E. vaginatum</i> frequent throughout. Mosses abundant, dominated by <i>H.jutlandicum</i> , with occasional <i>R.loreus</i> . <i>Sphagnum</i> widespread but patchy, mainly <i>S.capillifolium</i> , occasional <i>S.papillosum</i> . Grades towards W. into <i>Calluna/Molinia</i> mosaic with occasional <i>E.vaginatum</i> . Wedge of <i>E.vaginatum</i> -dominated bog with widespread patchy <i>Sphagnum</i> .	WMB	N	1
2	D12984 21924	<i>Molinia</i> patchily dominant with occasional <i>Calluna</i> , <i>V.myrtillus</i> . <i>Sphagnum</i> sparse.	DMB	N	
3	D12961 21936	Reverts to extensive <i>Calluna/E.vaginatum</i> mosaic, with occasional <i>C.nigrum</i> . Occasional localised saturated area with much <i>S.denticulatum</i> . Restricted <i>Molinia</i> stands. <i>Sphagnum</i> sparse.	DMB	N	2
4	D12573 22067	<i>Molinia</i> becomes patchily co-dominant with <i>Calluna</i> and <i>E.vaginatum</i> . <i>Sphagnum</i> sparse.	WMB	N	
5	D12410 22040	Mosaic of <i>Molinia</i> and <i>Calluna</i> , with <i>E. vaginatum</i> widespread but sparse. <i>Molinia</i> becomes dominant upslope with only patchy <i>Calluna</i> . <i>Sphagnum</i> sparse.	WMB	N	
6	D12352 22003	Restricted area of shallow peat dominated by grasses including <i>Molinia</i> , <i>Agrostis spp</i> with occasional <i>E.angustifolium</i> , <i>C.flacca</i> .	AG	N	
7		N/A – outside Site			
8	D12226 21855	Dominated by <i>Calluna</i> ; <i>E.vaginatum</i> becoming frequent on gentle slopes. Occasional <i>Molinia</i> stands, localised <i>S.capillifolium</i> hummocks.	DMB	Y	3
9	D12142 21879	<i>Calluna/E.vaginatum/Molinia</i> mosaic, <i>S.capillifolium</i> more frequent but still patchy and well-dispersed	DMB	Y	
10	D12039 21919 D12018 21969	<i>E.vaginatum/E.angustifolium</i> dominant, with <i>Nartheicum</i> locally frequent. <i>C.impexa</i> occasional, <i>S.capillifolium</i> widespread, <i>S.fallax</i> occasional. An extensive area of cotton-grass blanket bog with <i>Sphagnum</i> frequent throughout.	BB	Y	4
11	D11942 21982	<i>Calluna</i> -dominated bog grades rapidly into <i>Calluna/Molinia</i> mosaic, with <i>Molinia</i> generally dominant, with <i>Sphagnum</i> infrequent	WMB	N	
12	D11815 21997	Hummocky area, reflecting past cutting. Now with boggy hollows and <i>Sphagnum</i> -rich. Locally frequent <i>E.angustifolium</i> , <i>R.lanuginosum</i> .	WMB	Y	

TN	Location	Description	Habitat type	Active peat Y/N	Photo
13	D12618 21168 D12642 21164	Boggy ground with <i>Calluna/E.vaginatum</i> mosaic, with <i>E.vaginatum</i> locally dominant, with widespread but scattered <i>S.subnitens</i> , <i>S.capillifolium</i> . Lower ground with abundant <i>J.effusus</i> , widespread and locally abundant <i>S.palustre</i> , <i>S.subnitens</i> , <i>S.capillifolium</i> , <i>S.papillosum</i> .	BB	Y	5
14	D12731 21111	Upslope <i>Molinia</i> becomes frequent, <i>Sphagnum</i> reduces, <i>E.vaginatum</i> becomes localised, <i>H.jutlandicum</i> the dominant moss	WMB	N	
15	D12910 21012	<i>Calluna</i> thins upslope in mosaic with <i>Molinia</i> and <i>E.vaginatum</i> . <i>Sphagnum</i> only present in small isolated pockets.	DMB	N	6
16	D13028 20944	Belt of <i>J.effusus/J.acutiflorus</i> extending uphill towards break of slope. <i>H.lanatus</i> occurs in more open areas and becomes more frequent upslope.	MG	N	
17	D13367 20805	Towards upslope limit of grassland belt, rushes decline and grades into acid grassland, with <i>E.angustifolium</i> , <i>N.stricta</i> , <i>Agrostis sp</i> , <i>C.binervis</i> , <i>H.lanatus</i> , <i>Calluna</i> . Mosses include <i>R.squarrosus</i> , <i>R.loreus</i> , <i>T.tamariscinum</i> .	AG	N	7
18	D13418 20779	<i>Calluna/Molinia</i> mosaic immediately below and interfingered with lower limit of summit cutover bog, with locally abundant <i>E.angustifolium</i>	WMB	N	
19	D13486 20743	Bog surface generally dominated by <i>Calluna</i> , but locally tongues of <i>Molinia</i> stretch upslope. <i>Calluna</i> in mosaic with <i>E.vaginatum</i> , <i>E.angustifolium</i> , <i>Molinia</i> , with frequent <i>S.capillifolium</i> .	WMB	Y	
20	D13583 20696	Lower cut surface, mosaic of <i>Calluna/E.vaginatum/E.angustifolium</i> with occasional <i>Molinia</i> . Wet surface.	WMB	Y	
21	D13644 20704	Upper cut surface. <i>Calluna/E.vaginatum</i> co-dominant. <i>Sphagnum</i> generally absent. Dry surface.	DMB	N	8
22	D13661 20945	Islands of uncut <i>Calluna/Molinia</i> . Cut surface dominated by <i>Molinia</i> with patchy <i>Calluna</i> . Locally abundant <i>E.vaginatum</i> . Dry surface.	DMB	N	
23	D13639 21167	Upper edge of rush-dominated belt, with <i>J.acutiflorus</i> and occasional <i>Molinia</i> , <i>Calluna</i> .	MG	N	
24	D13559 21375	Rush-dominated cutover, with occasional <i>L.sylvatica</i> . <i>Calluna</i> frequent along cut edges, <i>Sphagnum</i> absent. Incipient scrub encroachment.	MG	N	
25	D13574 21496	Rush-dominated marshy grassland with occasional self-seeded <i>P.sitchensis</i> .	MG	N	9
26	D13024 21557	<i>Calluna</i> -dominated blanket bog, with sparse but widespread restricted stands of <i>E.vaginatum</i> . Mosses widespread, with <i>S.capillifolium</i> frequent, <i>H.jutlandicum</i> abundant, <i>R.lanuginosum</i> , <i>C.impexa</i> occasional. Carpets of <i>S.denticulatum</i> in wetter parts, <i>S.cuspidatum</i> in hollows, with	BB	Y	10

TN	Location	Description	Habitat type	Active peat Y/N	Photo
		occasional <i>S.fallax</i> . <i>Molinia</i> scarce. Surface spongy.			
27	D12967 21314	Similar to TN26, but <i>Sphagnum</i> less frequent, <i>E.vaginatum</i> abundant, <i>Molinia</i> occasional. Surface spongy, although deep drains present – these with abundant <i>J.effusus</i> in lower stretches.	BB	Y	
28	D12647 21570	<i>Calluna</i> -dominated bog, with widespread but sparse <i>E.vaginatum</i> . Mosses dominated by <i>H.jutlandicum</i> . Occasional <i>L.perenne</i> , <i>D.glomerata</i> , <i>E.montanum</i> , <i>S.alsine</i> towards wind farm track.	DMB	N	
29	D12457 21845	<i>Calluna</i> -dominated heath, with widespread but sparse <i>E.vaginatum</i> , patchy, occasionally extensive, <i>Molinia</i> . <i>Sphagnum</i> scarce, limited to occasional hummocks of <i>S.capillifolium</i> , often desiccated. Carpet of <i>H.jutlandicum</i> throughout.	DH	N	
30	D12326 21972	<i>Calluna/Molinia</i> mosaic grading upslope into <i>Calluna/E.vaginatum</i> with occasional <i>Molinia</i> , <i>E.nigrum</i> . Mosses generally dominated by <i>H.jutlandicum</i> , often desiccated, with <i>R.squarrosus</i> locally dominant, and rare hummocks of <i>S.capillifolium</i> .	DH	N	
31	D12184 21881	<i>Calluna/Molinia</i> co-dominant, with occasional extensive areas of <i>Molinia</i> . Mosses limited to occasional restricted stands of <i>H.jutlandicum</i> .	WMB	N	
32	D12107 21876	<i>Calluna/E.vaginatum</i> co-dominant, with occasional <i>E.angustifolium</i> . <i>Sphagnum</i> widespread, locally abundant, mainly <i>S.capillifolium</i> . Spongy surface.	WMB	Y	11
33	D12012 21896	<i>Calluna</i> dominant, with widespread but sparse <i>E.vaginatum</i> , occasional <i>Molinia</i> . <i>Sphagnum</i> absent, mosses dominated by <i>H.jutlandicum</i> .	DMB	N	
34	D11882 21795	<i>Calluna/Molinia</i> , locally <i>E.vaginatum</i> co-dominant with <i>Calluna</i> mosaic in hummocky terrain. Occasional damp hollows, some of which have <i>S.capillifolium</i> hummocks along margins, although <i>Sphagnum</i> is generally absent.	DMB	N	
35	D11771 21766	<i>Calluna</i> co-dominant with <i>E.vaginatum</i> , or locally with <i>E.angustifolium</i> . <i>Sphagnum</i> scarce, but occasional hummocks of <i>S.capillifolium</i> , with locally <i>S.cuspidatum</i> in damp hollows.	WMB	Y	
36	D11649 21607	Extensive area of <i>E.angustifolium/E.vaginatum/Calluna</i> bog. Mosses rather sparse, mainly <i>H.jutlandicum</i> , but occasional hummocks of <i>S.capillifolium</i> , <i>R.lanuginosum</i> and occasional <i>C.impexa</i> . Spongy surface, but mosses often desiccated.	WMB	Y	
37	D11551 21396	<i>Calluna</i> , <i>E.vaginatum</i> co-dominant, with occasional patches of <i>E.angustifolium</i> . Mosses sparse, dominated by <i>H.jutlandicum</i> ,	DMB	Y	12

TN	Location	Description	Habitat type	Active peat Y/N	Photo
		with occasional restricted hummocks of <i>S.capillifolium</i> .			
38	D11523 21344	Slope dominated by <i>Molinia</i> , with frequent small stands and individuals of <i>Calluna</i> .	WMB	N	13
39	D11483 21473	To west of fence, <i>Calluna/E.vaginatum/E.angustifolium</i> bog, with widespread abundant <i>Sphagnum</i> , mainly <i>S.capillifolium</i> , <i>S.papillosum</i> .	BB	Y	
40	D11416 21435	Mainly <i>E.vaginatum/E.angustifolium</i> , with dispersed <i>Calluna</i> . <i>Sphagnum</i> widespread and abundant	BB	Y	14
41 41a	D11378 21392 D11268 21287	Highest part of slope dominated by <i>E.vaginatum</i> , with occasional <i>Molinia</i> , widespread <i>Sphagnum</i> . Tends to become drier downslope, with occasional lawns of <i>R.squarrosus</i> , <i>R.loreus</i> , but <i>Sphagnum</i> continues to be widespread, with dense stands along occasional flushes.	BB, AF	Y	
42 42a	D11136 21319 D11046 21226	Surface dries considerably downslope. Tussocks of <i>E.vaginatum</i> separated by lawns of <i>R.loreus</i> , with locally frequent restricted stands of <i>J.effusus</i> and widespread <i>J.squarrosus</i> . <i>R.squarrosus</i> , <i>P.schreberi</i> , <i>H.jutlandicum</i> all frequent. <i>Sphagnum</i> generally restricted to occasional isolated stands, but locally abundant in restricted topographic lows, minor flushes and along drains.	DMB	N	
43	D10998 21219	Closely grazed sward, mainly <i>L.perenne</i> , with frequent <i>H.lanatus</i> , <i>C.cristatus</i> , <i>Agrostis sp.</i> , occasional <i>N.stricta</i> . Occasional isolated stands of <i>J.effusus</i> , <i>E.vaginatum</i> . Ruderal herbs frequent – <i>Bellis perennis</i> , <i>Prunella vulgaris</i> , <i>Cirsium palustre</i> , <i>Ranunculus repens</i> . Ground dry.	SIG	N	
44	D10797 21082	Rushes become locally dominant, with intervening areas of grazed grassland.	MG	N	
45	D10661 20978	Generally rush-dominated on gentle slopes. Open areas between <i>J.effusus</i> tussocks are characterised by small tussocks of <i>E.vaginatum</i> and <i>Molinia</i> , with much of ground cover dominated by mosses – <i>R.squarrosus</i> , <i>H.jutlandicum</i> , <i>P.schreberi</i> , <i>Polytrichum commune</i> . <i>Sphagnum</i> are locally frequent over a restricted area, but many plants are desiccated.	MG	N	
46	D10525 20895	Area dominated by <i>Molinia</i> tussocks, with scattered stands of <i>J.effusus</i> . Mosses form carpets where tussocks more dispersed and elsewhere form frequent hummocks – <i>R.squarrosus</i> , <i>H.jutlandicum</i> , <i>T.tamariscinum</i> , rarely <i>Sphagnum</i> .	MG	N	
47	D10423 20817	Closely grazed semi-improved grassland with dispersed stands of <i>J.effusus</i>	SIG	N	15
48	D10470 20681	Broad swathe dominated by <i>Molinia</i> tussocks, with frequent <i>J.effusus</i> . <i>J.squarrosus</i> widespread and frequent. Ground cover	MG	N	

TN	Location	Description	Habitat type	Active peat Y/N	Photo
		dominated by mosses, including <i>R.squarrosus</i> , <i>H.jutlandicum</i> , <i>C.cuspidatum</i> . <i>Sphagnum</i> generally restricted to small-scale wet topographic depressions at foot of slope.			
49	D10467 20434	Broad mid-slope band with widespread <i>Sphagnum</i> on wet substrate. <i>Molinia</i> dominant vascular species, with abundant <i>E.vaginatum</i> and small <i>Calluna</i> stands.	WMB	Y	16
50	D10501 20339	<i>Calluna/E.vaginatum</i> mosaic with much open space between stands, dominated by pleurocarpous mosses, but with well-marked patches of close-grazed grassland.	DMB	N	
51	D10722 20360	<i>Calluna/Molinia/E.vaginatum</i> mosaic with occasional <i>Sphagnum</i> in wetter pockets.	DMB	N	
52	D10770 20506 D10697 20603	<i>Calluna/Molinia/E.vaginatum</i> hummocks/tussocks separated by mainly pleurocarpous mosses. <i>Sphagnum</i> locally frequent in restricted wet hollows or form isolated sparse hummocks of <i>S.capillifolium</i> . However there are areas of more extensive <i>Sphagnum</i> cover within this complex, where <i>Sphagnum</i> occupies much of the surface between hummocks and grades into communities with <i>Sphagnum</i> frequent along much of the mid valley slope.	WMB	Y	17
53	D10674 20715	Gentle slopes dominated by <i>Molinia</i> , with frequent <i>J.squarrosus</i> . <i>Sphagnum</i> widespread between tussocks and as hummocks, although pleurocarp lawns become frequent downslope. <i>J.effusus</i> forms large stands towards the bottom of the slope.	WMB	Y	
54	D10876 20756	Extensive stand of <i>J.effusus</i> abutting <i>Sphagnum</i> -rich area of TN53. <i>Sphagnum</i> absent.	MG	N	
55	D10978 20784	<i>Calluna/E.vaginatum</i> hummocks, with frequent <i>Molinia</i> . <i>Sphagnum</i> frequently dominates between hummocks and forms occasional hummocks.	WMB	Y	
56	D11189 20707	<i>Calluna/E.vaginatum</i> mosaic with frequent <i>Molinia</i> . This area heavily grazed and poached, but <i>Sphagnum</i> persists in frequent pockets, hummocks and small lawns, and dominates the surface to the west of the fence.	WMB	Y	18
57	D11084 20571	<i>Calluna/Molinia</i> mosaic, with isolated hummocks and depressions with <i>Sphagnum</i> .	WMB	N	
58	D11051 20452	<i>Calluna/Molinia</i> mosaic, mosses infrequent	WMB	N	
59	D11063 20380	Closely grazed grassland with much <i>Molinia</i> and frequent <i>J.effusus</i> , patchy <i>Calluna</i> , abundant pleurocarpous mosses.	MG	N	19
60	D10876 20324	Heavily grazed <i>Calluna/Molinia</i> mosaic, with frequent <i>E.vaginatum</i> , occasional <i>E.angustifolium</i> and occasional extensive pleurocarpous moss lawns. <i>Sphagnum</i> limited to occasional hollows, minor flushes. Locally heavily poached.	WMB	N	

TN	Location	Description	Habitat type	Active peat Y/N	Photo
61	D10904 20245	Extensive area dominated by <i>E.vaginatum</i> tussocks, separated by pleurocarpous moss lawns. Heavily poached and grazed.	DMB	N	
62	D10932 20154	Extensive area dominated by <i>J.effusus</i> , with stands separated by closely grazed <i>Molinia/H.lanatus</i> .	MG	N	
63	D10998 20120	Extensive area of in-bye heavily grazed and poached grassland, with much <i>R.squarrosus</i> .	SIG	N	
64	D11153 19990	Tussocks of <i>E.vaginatum</i> and <i>Molinia</i> , and hummocks of pleurocarpous mosses, separated by flushed <i>Sphagnum</i> lawns.	AF	N	
65	D11216 20134	As TN64, but <i>Sphagnum</i> peters out and replaced by pleurocarpous moss lawns	DMB	N	
66	D11259 20218	Rush-dominated, with much <i>Molinia</i> . <i>Sphagnum</i> occurs as carpets in frequent minor flushes, or as more isolated stands and hummocks.	MG/AF	N	
67	D1137420461	<i>E.vaginatum/Molinia</i> tussocks, with <i>Calluna</i> locally dominant. Generally pleurocarpous mosses between tussocks, but <i>Sphagnum</i> locally abundant. Grades into heavily grazed <i>Molinia</i> with frequent <i>J.effusus</i> .	WH/AF	N N	
68	D11617 19448	<i>J.effusus</i> -dominated marshy grassland, heavily grazed, with moss-dominated (e.g. <i>Caliergonella cuspidata</i>) ground layer. Very dry over much of field.	MG	N	
69	D11693 19346	Mainly semi-improved grassland dominated by <i>L.perenne</i> , with residual tussocks or stands of <i>J.effusus</i> . 3 fields separated by banks with mature <i>Fagus sylvatica</i> , <i>Crataegus monogyna</i> . Stream flowing through eastern field with much <i>V.beccabunga</i> .	SIG	N	20
70	D12001 19216	Mainly <i>J.effusus</i> -dominated marshy grassland, but with occasional drier areas of SIG, largely dominated by <i>R.squarrosus</i> .	MG	N	
71	D12179 19307	Extensive area of marshy grassland dominated by <i>J.effusus</i> , with ground flora dominated by mosses, including <i>R.squarrosus</i> , <i>P.purum</i> , <i>H.jutlandicum</i> . Grasses frequent, including <i>Molinia</i> , <i>N.stricta</i> . Rare stands of <i>Sphagnum</i> , mainly <i>S.papillosum</i> .	MG	N	
72	D12288 19385	Similar to TN71	MG	N	
73	D12300 19361	Restricted open area within marshy grassland, dominated by <i>Sphagnum</i> species, including <i>S.subnitens</i> , <i>S.recurvum</i> , <i>S.capillifolium</i> .	AF	Y	21
74	D12429 19352	Rush-dominated grassland grades into <i>E.vaginatum</i> -dominated modified bog, with patchy <i>Calluna</i> and <i>Sphagnum</i> and frequent <i>Molinia</i> tussocks.	WMB	N	
75	D12485 19303	Grades into <i>E.vaginatum</i> tussocks and <i>Calluna</i> stands, with abundant <i>Sphagnum</i> in inter-tussock hollows.	WMB	Y	

TN	Location	Description	Habitat type	Active peat Y/N	Photo
76	D12537 19271	<i>Calluna</i> -dominated bog, with frequent small stands of <i>Molinia</i> and <i>E.vaginatum</i> . <i>Sphagnum</i> generally present between <i>Calluna</i> stands.	WMB	Y	
77	D12642 19307	<i>Sphagnum</i> becomes less frequent, and pleurocarpous mosses – <i>H.jutlandicum</i> , <i>R.loreus</i> , <i>P.schreberi</i> – are dominant. <i>Calluna/E.vaginatum/Molinia</i> mosaic becoming somewhat drier.	DMB	N	
78	D12726 19367	<i>Calluna/E.vaginatum</i> mosaic, with <i>Sphagnum</i> restricted to occasional dispersed hummocks of <i>S.capillifolium</i> . Mosses dominated by <i>H.jutlandicum</i>	DMB	N	
79	D12702 19427	Cutover bog with <i>Calluna/E.vaginatum</i> co-dominant, with occasional stands of <i>J.effusus</i> , <i>Molinia</i> . <i>Sphagnum</i> locally frequent, mainly along bottom of cut face, elsewhere <i>H.jutlandicum</i> , <i>R.loreus</i> are dominant mosses.	DMB	N	
80 80a	D12690 19518 D12683 19545	<i>Calluna/E.vaginatum</i> co-dominant, with frequent stands of <i>Molinia</i> . <i>Sphagnum</i> patchy, mainly isolated small patches. Pleurocarpous mosses dominant. Occasional flushes where <i>Sphagnum</i> is dominant, but highly localised.	MDB	N	
81	D12670 19572	<i>E.vaginatum</i> dominant, with frequent <i>Calluna</i> . Occasional <i>Sphagnum</i> hummocks and small stands, but <i>R.squarrosus</i> forms frequent hummocks. Generally dry surface.	DMB	N	
82	D12598 19710	<i>Calluna/E.vaginatum</i> mosaic, occasional restricted stands of <i>J.effusus</i> . Occasional <i>Sphagnum</i> patches, but mosses dominated by pleurocarpous species.	DMB	N	22
83	D12598 19715	Major drain, choked with <i>S.denticulatum</i> .	FW	N	
84	D12554 19732	Downslope and west of drain – broad swathe of <i>J.effusus</i> -dominated marshy grassland, sharply demarcated from <i>Calluna/E.vaginatum</i> mosaic.	MG	N	23
85	D12701 19691	<i>Calluna/E.vaginatum/Molinia</i> mosaic. <i>Sphagnum</i> generally absent or highly localised in restricted stands. Pleurocarpous mosses form ground layer and densely distributed hummocks,	DMB	N	
86	D12804 19611	<i>Calluna/E.vaginatum</i> with occasional small stands of <i>Molina</i> . <i>Sphagnum</i> generally absent, frequent hummocks of <i>R.squarrosus</i> .	DMB	N	
87	D12829 19611	Broad flushed strip on cutover between cut banks, dominated by <i>Sphagnum</i> , with frequent <i>E.vaginatum</i> , occasional <i>Molinia</i> , <i>J.effusus</i> .	AF	N	24
88	D12930 19575	Mainly <i>Calluna</i> -dominated bog, generally with frequent small stands of <i>E.vaginatum</i> , although with restricted areas of <i>Calluna/E.vaginatum</i> mosaic, or more extensive areas of <i>E.vaginatum</i> . <i>Sphagnum</i> scarce, mosses dominated by pleurocarpous species.	DMB	N	

TN	Location	Description	Habitat type	Active peat Y/N	Photo
89	D12978 19705	Cutover basin with <i>Calluna/E.vaginatum</i> mosaic, locally abundant <i>Molinia</i> , occasional <i>V.myrtillus</i> . <i>Sphagnum</i> generally absent, frequent hummocks of <i>R.loreus</i> , <i>P.commune</i> , <i>T.tamariscinum</i> .	DMB	N	
90	D13057 19766	Cutover bog with <i>Calluna/E.vaginatum</i> mosaic, occasional stands of <i>J.effusus</i> . <i>Sphagnum</i> scarce, dispersed, although locally abundant along bottom of cut face, Mosses generally dominated by <i>P.commune</i> .	DMB	N	
91	D13143 19828	Cutover bog dominated by <i>Calluna</i> , with occasional small stands of <i>E.vaginatum</i> . Mosses scarce, but include occasional hummocks of <i>S.capillifolium</i> .	DMB	N	
92	D13218 19875	Cutover bog, generally dominated by <i>Molinia</i> , with frequent stands of <i>Calluna</i> , occasional <i>J.effusus</i> . Locally frequent <i>E.vaginatum</i> , <i>Sphagnum</i> generally absent	WMB	N	
93	D13233 19934	<i>Calluna</i> -dominated cutover bog, with frequent <i>E.vaginatum</i> , and locally frequent <i>E.angustifolium</i> . Mosses rather sparse but include <i>R.lanuginosum</i> , and occasional small hummocks and stands of <i>S.capillifolium</i> , <i>S.papillosum</i> . Rare stands of <i>Huperzia selago</i> .	DMB	N	
94	D13333 19921	<i>Calluna/E.vaginatum/E.angustifolium</i> mosaic interspersed with <i>Molinia/E.vaginatum/E.angustifolium</i> mosaic, where <i>Calluna</i> restricted to small stands. Mosses generally dispersed, but include occasional patches of <i>S.cuspidatum</i> in wet hollows and small hummocks of <i>S.capillifolium</i> elsewhere	DMB	Y	
95	D13274 20060	Cutover, generally dominated by <i>Molinia/E.vaginatum/E.angustifolium</i> mosaic, with dispersed plants and small stands of <i>Calluna</i> . At larger scale, some areas dominated by <i>Calluna</i> , <i>E.angustifolium</i> or <i>E.vaginatum</i> . Mosses dominated by <i>H.jutlandicum</i> , but with occasional hummocks of <i>S.capillifolium</i> .	DMB	N	25
96	D13183 20130	<i>Calluna/E.vaginatum/Molinia</i> mosaic, with locally frequent <i>E.nigrum</i> . <i>Sphagnum</i> generally scarce but locally abundant along drains.	DMB	N	-
97	D13177 20158	Broad swathe between cut faces along dry drain, dominated by <i>E.vaginatum</i> , locally frequent <i>Calluna</i> , occasional <i>J.effusus</i> , <i>Molinia</i> , <i>E.angustifolium</i> .	DMB	N	
98	D13131 20180	<i>Molinia/Calluna</i> mosaic, although in large part dominated by <i>Molinia</i> . Frequent <i>E.vaginatum</i> , which is dominant in cut basins, where <i>E.angustifolium</i> is locally abundant, <i>J.effusus</i> occasional. Mosses scarce.	WMB	N	
99	D12998 20158	Swathe of <i>Molinia</i> -dominated grassland with occasional small stands of <i>Calluna</i> , <i>E.vaginatum</i> between areas of <i>Calluna/E.vaginatum</i> mosaic. Mosses scarce, dispersed.	WMB/ DMB	N	

TN	Location	Description	Habitat type	Active peat Y/N	Photo
100	D12937 20113	<i>Calluna/Molinia</i> mosaic, with occasional <i>E.vaginatum</i> . <i>Sphagnum</i> is locally occasional, mainly hummocks of <i>S.capillifolium</i> .	WMB	N	
101	D12871 20131	<i>Calluna</i> -dominated bog with frequent <i>E.vaginatum</i> . Mosses dominated by <i>H.jutlandicum</i> , but with occasional hummocks or groups of hummocks of <i>S.capillifolium</i> .	DMB	N	
102	D12686 20053	Similar to TN101, but <i>E.vaginatum</i> locally co-dominant.	DMB	N	
103	D12517 19995	Similar to TN101	DMB	N	
104	D12383 19934	<i>Calluna</i> -dominated bog grading into marshy grassland, where <i>J.effusus</i> frequent to abundant with hummocks of <i>Calluna</i> throughout and frequent <i>E.vaginatum</i> tussocks. Ground flora dominated by mosses, mainly <i>R.loreus</i> , <i>P.commune</i> , but <i>Sphagnum</i> widespread and frequent throughout.	WMB/ MG	Y	26
105	D12280 19919	Marshy grassland with dense <i>J.effusus</i> . Rather dry with grassy gaps.	MG	N	
106	D12330 20071	<i>Calluna</i> -dominated bog, with frequent patchy <i>Molinia</i> . Mosses generally abundant, mainly <i>H.jutlandicum</i> , but <i>Sphagnum</i> widespread and frequent on these shallow slopes.	WMB	Y	
107	D12436 20197	<i>Calluna/Molinia</i> mosaic, with occasional <i>E.vaginatum</i> , along edges of drain. Mosses sparse, generally pleurocarpous species, but <i>Sphagnum</i> locally abundant.	WMB	N	
108	D12476 20243	Marshy grassland dominated by rushes – <i>J.effusus</i> , <i>J.acutiflorus</i> , with occasional stands of <i>Luzula sylvatica</i> . Mosses generally absent, but occasional small stands of <i>Sphagnum</i> species.	MG	N	
109	D12548 20295	Similar to TN108, but occasional more open areas with stands of pleurocarpous mosses. Grades northwards into <i>Juncus/Molinia/E.vaginatum</i> mosaic.	MG	N	
110	D12618 20378	Alternating bands of marshy grassland along drains, generally dominated by rush species and supporting locally frequent <i>Sphagnum</i> species, and ridges dominated by <i>Calluna/E.vaginatum</i> mosaic with widespread and frequent <i>Sphagnum</i> .	MG/ DMB	Y	27
111	D12732 20412	Marshy grassland dominated by almost complete rush cover, but with widespread <i>Molinia</i> tussocks.	MG	N	
112	D12695 20525	Grades into more diverse marshy grassland, with patchy rushes, an increase in <i>Molinia</i> , widespread <i>E.vaginatum</i> , occasional <i>E.angustifolium</i> , with dispersed plants and stands of <i>Calluna</i> . Mosses increase, with <i>Sphagnum</i> locally frequent, particularly in association with <i>Calluna</i> . Rushes again become dominant downslope, with occasional dispersed <i>Sphagnum</i> .	MG	N	

TN	Location	Description	Habitat type	Active peat Y/N	Photo
113	D12604 20672	<i>Calluna/E.vaginatum</i> bog interspersed with rush-dominated marshy grassland, with occasional <i>Molinia</i> , abundant <i>Sphagnum</i> .	WMB	Y	
114	D12546 20744	<i>Calluna/Molinia</i> mosaic with occasional <i>E.vaginatum</i> . Mosses scarce. <i>Sphagnum</i> restricted to isolated <i>S.capillifolium</i> hummocks, but occasional flushes support abundant <i>Sphagnum</i> .	DMB	N	
115	D12414 20694	<i>Calluna/E.vaginatum</i> mosaic with locally frequent <i>Molinia</i> . <i>Sphagnum</i> widespread between hummocks.	WMB	Y	28
116	D12318 20725	Marshy grassland dominated by rushes, Mosses generally absent, but <i>Sphagnum</i> frequent in more open spaces.	MG	N	
117	D12301 20678	<i>Calluna</i> -dominated bog with frequent <i>E.vaginatum</i> , occasional <i>Molinia</i> . <i>Sphagnum</i> widespread and abundant.	WMB	Y	
118	D12201 20567	Rush-dominated marshy grassland interspersed with <i>E.vaginatum</i> -dominated bog. <i>L.sylvatica</i> frequent, occasional <i>Calluna</i> hummocks. <i>Sphagnum</i> widespread and frequent. Rushes decrease towards north.	WMB	Y	
119	D12060 20583	Bog with <i>J.effusus/E.vaginatum</i> mosaic. <i>Sphagnum</i> abundant throughout.	WMB	Y	
120	D12001 20467	<i>Calluna</i> -dominated heath with occasional to abundant <i>Molinia</i> , frequent <i>E.vaginatum</i> . <i>Sphagnum</i> widespread but patchy, mosses dominated by <i>H.jutlandicum</i> , with frequent <i>R.loreus</i> .	WH	N	
121	D12017 20387	<i>Calluna/Molinia</i> mosaic. Mosses dominated by <i>H.jutlandicum</i> .	WH	N	
122	D11993 20293	Rush-dominated grassland along minor stream, with <i>Calluna</i> locally abundant. Mosses sparse.	MG	N	29
123	D11955 20248	<i>Calluna</i> -dominated, in places in mosaic with <i>Molinia</i> elsewhere occasional <i>Molinia</i> , <i>E.vaginatum</i> . <i>Sphagnum</i> widespread but patchy	WMB	N	
124	D11915 20183	Cut basin with continuous <i>Sphagnum</i> carpet. <i>J.effusus</i> dispersed, <i>E.vaginatum</i> occasional	WMB	Y	
125 125a	D11858 20120 D11816 20040	Bog with <i>Calluna/E.vaginatum</i> mosaic, with widespread <i>Sphagnum</i> forming carpets in wetter parts. Becomes more open downslope but <i>Sphagnum</i> remains abundant.	WMB	Y Y	30
126	D11909 19951	Grassland dominated by rushes, but grasses frequent, mainly <i>Molinia</i> , <i>H.lanatus</i> . Pleurocarpous mosses abundant, mainly <i>R.squarrosus</i> , <i>P.schreberi</i> .	MG	N	
127 127a	D11820 19909	Bog dominated by <i>Calluna</i> , with <i>E.vaginatum</i> tussocks frequent throughout. <i>Sphagnum</i> abundant throughout. Becomes more open downslope, but <i>Sphagnum</i> forms extensive carpets in places, and rushes become frequent.	WMB	Y	31

TN	Location	Description	Habitat type	Active peat Y/N	Photo
128	D11641 19740	Moss carpet, with generally abundant <i>Sphagnum</i> , occasional patchy <i>J. effusus</i> .	MG	Y	
129	D11642 19694	Semi-improved grassland with residual stands and more extensive areas of <i>J. effusus</i> .	SIG	N	
130	D11577 19691	Marshy grassland dominated by <i>J. effusus</i> . Mosses dominated by sparse pleurocarpous species.	MG	N	
131	D11908 19301	Series of fields/management units occupied by dense <i>J. effusus</i> or semi-improved grassland	MG/SIG	N	32
132	D11596 19854	Wet heath, flushed in places and generally saturated, dominated by <i>Calluna</i> , with widespread but sparse <i>E. vaginatum</i> . <i>Sphagnum</i> widespread, often abundant, while <i>R. loreus</i> forms frequent carpets and is often dominant. <i>J. squarrosus</i> frequent.	WH	Y	
133	D11444 20020	Slopes along minor tributary stream appear to have been improved in places, with much <i>L. perenne</i> , but <i>F. ovina</i> locally frequent. <i>J. effusus</i> widespread as isolated stands or more continuous areas. Mosses sparse to abundant, mainly <i>R. squarrosus</i> .	MG	N	
134	D11443 20125	<i>Calluna</i> -dominated heath, with widespread abundant <i>Sphagnum</i> , <i>H. jutlandicum</i> , frequent <i>R. loreus</i> , occasional <i>H. splendens</i> .	WH	Y	
135	D11440 20170	To W. of fence, dry heath dominated by <i>Calluna</i> , with frequent <i>E. vaginatum</i> . <i>Sphagnum</i> scarce, concentrated around flushes. Mosses include <i>T. tamariscinum</i> , <i>H. jutlandicum</i> .	DH	N	
136	D11438 20274	Marshy grassland along valley floor, dominated by <i>Molinia</i> , with abundant rushes, mainly <i>J. acutiflorus</i> , with restricted stands of <i>J. effusus</i> . <i>H. lanatus</i> occasional, <i>C. binervis</i> locally frequent, <i>P. erecta</i> present. Mosses sparse, dominated by <i>R. squarrosus</i> .	MG	N	
137	D11415 20334	Patchy dry heath across slope in mosaic with acid grassland. Heath dominated by <i>Calluna</i> , with occasional <i>S. caespitosa</i> , frequent <i>E. vaginatum</i> , <i>Molinia</i> , locally frequent <i>J. squarrosus</i> . Mosses mainly <i>R. squarrosus</i> , <i>R. loreus</i> , <i>H. splendens</i> , <i>Sphagnum</i> present as isolated small stands. Grassland with much <i>Nardus</i> , <i>Molinia</i> , occasional patches of <i>J. effusus</i> .	DH/AG	N	
138	D11593 20613	Flushed slope characterised by densely packed desiccated mossy hummocks (<i>P. purum</i> , <i>R. squarrosus</i>), with frequent <i>Molinia</i> . Wet channels between hummocks dominated by <i>Sphagnum</i> , with much <i>P. commune</i> towards higher parts.	MG	N	
139	D11745 20646	Semi-improved acid grassland, with much <i>L. perenne</i> , but <i>Nardus</i> frequent and <i>J. effusus</i> stands occasional, becoming abundant upslope. Mosses dominated by <i>R. squarrosus</i> , occasional <i>C. cuspidata</i> .	SIG/MG	N	

TN	Location	Description	Habitat type	Active peat Y/N	Photo
140	D11794 20612	Marshy grassland along valley bottom dominated by rush species, with occasional <i>E.vaginatum</i> . Mosses dominated by <i>R.squarrosus</i> , occasional <i>C.cuspidata</i> .	MG	N	
141	D11540 21230	Dry heath/acid grassland mosaic. Patchy and locally dominant <i>Calluna</i> , <i>V. myrtillus</i> , occasional <i>E. tetralix</i> , with abundant <i>Molinia</i> throughout. <i>Sphagnum</i> sparse but locally frequent between <i>Calluna</i> hummocks.	DH/AG	N	33
142	D12369 20342	Deep peat with a shallow slope, dominated by <i>Calluna</i> , with occasional to locally frequent <i>E.vaginatum</i> . <i>Sphagnum</i> , <i>H.jutlandicum</i> frequent. Grades downslope into wet heath.	DMB	Y	34
143	D12218 19895	Extensive flushed slope, with abundant <i>Sphagnum</i> , with frequent hummocks of pleurocarpous mosses that often support stands of <i>E.vaginatum</i> , <i>Calluna</i> . <i>Luzula sylvatica</i> abundant across slope.	F	N	
144	D12177 19923	Marshy grassland, generally dominated by lawns of <i>R.squarrosus</i> , with <i>J.effusus</i> frequent along closely-spaced drains.	MG	N	
145	D11999 19852	Flush grades into wet heathy type, with <i>Calluna</i> becoming dominant on lower slopes. Frequent tussocks of <i>E.vaginatum</i> . <i>Sphagnum</i> generally abundant, with much <i>H.splendens</i> , <i>R. loreus</i> . Area generally flushed, with occasional stands of <i>L.sylvatica</i> .	WH	N	35

Plant Species List

Scientific Name	English Name	Scientific Name	English Name
<i>Agrostis capillaris</i>	Common bent	<i>Juncus squarrosus</i>	Heath rush
<i>Agrostis stolonifera</i>	Creeping bent	<i>Leontodon autumnalis</i>	Autumnal hawkbit
<i>Aulacomnium palustre</i>	Bog groove-moss	<i>Lolium perenne</i>	Perennial rye-grass
<i>Bellis perennis</i>	Daisy	<i>Luzula multiflora</i>	Heath wood-rush
<i>Blechnum spicant</i>	Hard fern	<i>Luzula sylvatica</i>	Great wood-rush
<i>Calliergonella cuspidata</i>	Pointed spear-moss	<i>Molinia caerulea</i>	Purple moor-grass
<i>Calluna vulgaris</i>	Heather	<i>Montia fontana</i>	Blinks
<i>Campylopus introflexus</i>	Heath star-moss	<i>Nardus stricta</i>	Mat-grass
<i>Cardamine pratensis</i>	Cuckooflower	<i>Narthecium ossifragum</i>	Bog asphodel
<i>Carex binervis</i>	Green-ribbed sedge	<i>Pedicularis sylvatica</i>	Common lousewort
<i>Carex curta</i>	White sedge	<i>Picea sitchensis</i>	Sitka spruce
<i>Carex echinata</i>	Star sedge	<i>Pilosella officinarum</i>	Mouse-ear hawkweed
<i>Carex flacca</i>	Glaucous sedge	<i>Pleurozium schreberi</i>	Red-stemmed feather-moss
<i>Carex nigra</i>	Common sedge	<i>Polygala serpyllifolia</i>	Heath milkwort
<i>Carex panicea</i>	Glaucous sedge	<i>Polytrichum commune</i>	Common haircap
<i>Carex pulicaris</i>	Flea sedge	<i>Poa annua</i>	Annual meadow-grass
<i>Carex rostrata</i>	Bottle-sedge	<i>Poa pratensis</i>	Smooth meadow-grass
<i>Cerastium fontanum</i>	Mouse-ear chickweed	<i>Potentilla erecta</i>	Tormentil
<i>Cirsium palustre</i>	Marsh thistle	<i>Potentilla palustris</i>	Marsh cinquefoil
<i>Cirsium vulgare</i>	Spear thistle	<i>Prunella vulgaris</i>	Selfheal
<i>Cladonia impexa</i>	Reindeer lichen	<i>Pseudoscleropodium purum</i>	Neat feather-moss
<i>Crataegus monogyna</i>	Hawthorn	<i>Rhacomitrium lanuginosum</i>	Woolly fringe-moss
<i>Cynosurus cristatus</i>	Crested dog's-tail	<i>Ranunculus acris</i>	Meadow buttercup
<i>Dactylis glomerata</i>	Cock's-foot	<i>Ranunculus flammula</i>	Lesser spearwort
<i>Deschampsia cespitosa</i>	Tufted hair-grass	<i>Ranunculus repens</i>	Creeping buttercup
<i>Deschampsia flexuosa</i>	Wavy hair-grass	<i>Rhytidiadelphus loreus</i>	Little shaggy-moss
<i>Digitalis purpureum</i>	Foxglove	<i>Rhytidiadelphus squarrosus</i>	Springy turf-moss
<i>Diplopyllum albicans</i>	White earwort	<i>Rumex acetosa</i>	Common sorrel
<i>Dryopteris dilatata</i>	Broad buckler-fern	<i>Rumex acetosella</i>	Sheep's-sorrel
<i>Empetrum nigrum</i>	Crowberry	<i>Rumex obtusifolius</i>	Broad-leaved dock
<i>Epilobium montanum</i>	Broad-leaved willowherb	<i>Scirpus caespitosus</i>	Deer-grass
<i>Epilobium palustre</i>	Marsh willowherb	<i>Senecio jacobaea</i>	Ragwort
<i>Equisetum palustre</i>	Marsh horsetail	<i>Sphagnum capillifolium</i>	Red bog-moss
<i>Erica tetralix</i>	Cross-leaved heath	<i>Sphagnum cuspidatum</i>	Feathery bog-moss
<i>Eriophorum angustifolium</i>	Common cotton-grass	<i>Sphagnum denticulatum</i>	Cow-horn bog-moss
<i>Eriophorum vaginatum</i>	Hare's-tail cotton-grass	<i>Sphagnum palustre</i>	Blunt-leaved bog-moss
<i>Euphrasia agg</i>	Eye-bright agg	<i>Sphagnum papillosum</i>	Papillose bog-moss
<i>Fagus sylvatica</i>	Beech	<i>Sphagnum recurvum</i>	Flat-topped bog-moss
<i>Festuca ovina</i>	Sheep's-fescue	<i>Sphagnum subnitens</i>	Lustrous bog-moss
<i>Festuca rubra</i>	Red fescue	<i>Sphagnum tenellum</i>	Soft bog-moss

<i>Galium saxatile</i>	Heath bedstraw	<i>Stellaria alsine</i>	Common bog-stitchwort
<i>Hieracium</i> sp	Hawkweed sp	<i>Stellaria media</i>	Common chickweed
<i>Holcus lanatus</i>	Yorkshire fog	<i>Succisa pratensis</i>	Devil's-bit scabious
<i>Huperzia selago</i>	Fir club-moss	<i>Taraxacum officinale</i>	Dandelion
<i>Hypnum jutlandicum</i>	Heath plait-moss	<i>Thuidium tamariscinum</i>	Common tamarisk-moss
<i>Hylocomium splendens</i>	Glittering wood-moss	<i>Trichophorum germanicum</i>	Deer-grass
<i>Juncus acutiflorus</i>	Sharp-flowered rush	<i>Trifolium repens</i>	White clover
<i>Juncus articulatus</i>	Jointed rush	<i>Veronica beccabunga</i>	Brooklime
<i>Juncus bulbosus</i>	Bulbous rush	<i>Viola palustris</i>	Marsh violet

Technical Appendix 6.2:
Outline Habitat Management Plan

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1. Introduction

The HMP has been designed to ensure substantial overall net benefits for biodiversity in the form of an increase in the overall area of NI Priority Habitats on the site (i.e., blanket bog and wet/dry heathland).

This will be in the form of the restoration of a substantial area of former blanket bog within the land under applicant control (LUAC). An area of semi-improved/marshy grassland will also be managed for the benefit of nature conservation, including active management for snipe and other breeding waders.

2. Background/Aims

This HMP aims to fulfil the requirement for an overall 'net gain' of biodiversity by outlining recommendations for compensatory habitat restoration and management to offset the loss of NI Priority Habitats that will result from the construction of the proposed Carnbuck windfarm.

The HMP also aims to provide habitat to compensate for the potential displacement of up to two pairs of snipe.

Statement of Authority

This report was prepared by Mr Cormac Loughran (CEnv MCIEEM MSc). Cormac is a Chartered Environmentalist (CEnv), and a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM). He holds an MSc (Distinction) in Environmental Management from the University of Ulster. Cormac has worked as a consultant ecologist for over 18 years, and in the wider nature conservation sector for a further 9 years. He has extensive experience in ecological impact assessment and HMPs in particular; having undertaken and coordinated full EcIA's (including HMPs) and associated impact assessments for 25 major wind farm developments.

Habitat Management Area – 80.25 ha

Description

This area consists of an extensive mosaic of wet heath, degraded blanket bog & rush pasture with drier pockets of acid/semi-improved grassland and a number of streams and rivers.

Before enclosure this area would have been part of an extensive upland mosaic consisting primarily of upland blanket bog and wet heath. Since then, much of the area has been exploited for peat and extensively drained for agricultural purposes (with both cattle and sheep grazing evident). This has resulted in much of the area becoming marshy/acid grassland with significant patches of rush pasture. However, due to its topography, much of the land remains wet and is therefore considered highly suitable for restoration.

3. Prescriptions

- There will be no application of fertiliser (including farmyard manure or slurry), on areas of wet grassland, degraded blanket bog, wet heath or PMGRP (Purple Moor-grass and Rush Pasture). This exclusion will not apply to the areas of

semi-improved/improved grassland.

- No supplementary feeding at any time;
- Drain-blocking will be implemented. Water levels will be maintained high seasonally for snipe.
- Soft rush will be manged so as not to constitute more that 30% of the block.

Grazing

Grazing with cattle at a moderate intensity is recommended (however sheep are acceptable as the more important aspect is adherence to the stocking density (and the final outcome); as this creates a mosaic of tussocks and short turf. This produces germinating pockets for native plants and also creates the necessary structure preferred by a range of nesting wader species. It also augments the invertebrate population through dunging.

To avoid poaching and allow for the restoration of a more biodiverse habitat (and to prevent trampling of nests), light grazing will be maintained between 1st March and 31st October. Although stocking rates generally in the region of 0.75 livestock units per hectare are recommended, it is considered better to use habitat/species (i.e. blanket bog/curlew) objectives rather than set too many ridged prescriptions.

Seasonal water-control levels

Water control structures, such as sluices, enable the ability to control the inflow or outflow of water and thus the water level in the Block. These will be used in order to allow the water levels to be seasonally controlled and in particular to allow the water to drain freely during the winter months.

This will also allow close control of water levels to prevent the grassland drying out too soon in early dry weather, while a wet spring may result in levels remaining too high.

Surface water will be re-directed from ditches or streams to desired locations in order to rewet as much of the Block as possible.

The most cost-effective sluice is likely to be constructed with a length of plastic piping, either rigid pipe with a swivel end or flexipipe, laid through an earth dam in the outflow ditch. Each end extends beyond the dam, and the upstream end is held at the desired level. Flexipipe will normally need weighting to keep the lip submerged and require a length of rope to hold the upstream end at the desired level. Adjusting the upstream end (by swivelling the pipe or raising or lowering the rope) will set the desired water levels.

A high-water table will be maintained from 15 March to 15 July; with splashy conditions over the whole field and/or shallow flooding from one to 30cm over up to 30 per cent of the field (for waders where possible).

Water levels will be allowed to naturally fluctuate to avoid stagnation.

From 15 March to 15 July a high water (but reduced, water table) level will be retained over 30 per cent of the field and/or shallow flooding on five to 10 per cent of the field.

Scrapes (x5)

In order to create scrapes for waders, the landowner/wind farm owner will:

- locate them at least 100m away from hedges or tall trees;
- carry out the work between July and November;
- make sure the scrape has an irregular shape, to maximise the length of its edge;
- grade the sides of the scrape so that there a gentle slope from the shallow margins (3cm to 5cm deep) to a maximum depth of 40cm to 50cm at the centre;
- leave the surface of the scrape rough;
- keep the scrape wet by using gravity feed or pumping between mid-November and June if groundwater or rainfall is low.

Gutters x10

In order to create gutters for waders, the landowner/wind farm owner will:

- create them in the places (as agreed with the ECoW);
- carry out the work between July and November;
- make sure the gutters are at least 30cm deep and 1.5m wide, with gently sloping edges and shallow margins that are 3cm to 5cm deep;
- connect the gutters to ditches with high water levels;
- periodically isolate gutters from ditches where ditch water levels cannot be held high;
- keep the gutters wet using gravity feed, water control structures or pumps.

The landowners will not be allowed to:

- use spoil to fill hollows or low areas within the field or to form a bund or bank around the scrape or gutter
- place spoil on areas with high soil erosion or runoff potential
- create islands within scrapes
- carry out works when ground-nesting birds are present
- fence the scrapes and gutters

Outcomes/targets

An overall increase in area of blanket bog, wet heath and wet grassland over semi-improved areas. Increase in quality/species diversity of the habitats should be evident over time with a concurrent increase in percentage cover of sphagnum.

Land Management

Overview of Key Points

- The grazing regime is important and would aim to provide a mosaic of taller tussocks and short sward with a small amount of bare ground
- The timing of grass cutting and other related machinery operations is critical
- Areas of damp / wet ground or small, shallow pools should be provided

Detailed Specific Measures

- The application of lime and / or any organic or chemical fertilizer is not permitted.

- Cattle are the preferred livestock however the grazing density of livestock has a bigger influence on the vegetation than the type of livestock
- Cattle should not be put onto land immediately after winter housing (this can increase nest damage)
- Rushes should be cut if they become dense and tall over more than 30% of the field.
- If the fields are used for silage or hay (or if rushes need cut) then cutting should not be before mid-July; fields should if possible be cut from the centre outwards

4. Monitoring

To confirm that habitat management and enhancement has been successful, all areas will be monitored post-construction, monitoring results reported and any criteria failures identified and corrective actions implemented as part of the annual monitoring report.

Botanical/vegetation monitoring will be carried out in years 1, 2, 3, 5 and 10 after restoration (with reports submitted to the Department within 6 months of the end of each monitoring year).

Monitoring will involve the following:

Vegetation sampling

- 90 fixed quadrat locations (i.e., permanent quadrats) will be set up in areas where active management is proposed (i.e. Blocks A, B & C. Baseline data will be recorded prior to the commencement of the habitat management activities set out in this outline plan. The character of each quadrat will be recorded (e.g. species proportions present, vegetation structure and height) and photographs will be taken of each quadrat from a fixed point. These quadrats will then be re-examined during years 1, 2, 3, 5 and 10 following management/restoration in order to establish the extent of habitat improvement resulting from management practices.

Hydrological monitoring

- Water levels within areas where drains are blocked will be recorded bi-annually for three years. A number of phreatic stand pipes will be installed (prior to restoration) to allow monitoring of water levels within both the restoration and enhancement areas. In this way, any positive impacts on the local hydrology can be verified and quantified.

The efficacy of the habitat rehabilitation and enhancement measures employed will be reviewed in years 1, 2, 3, 5 and 10 following commencement of the plan on the basis of the results of vegetation sampling and water level readings from the managed areas. Analysis of the data collected will be the basis for a review of the measures and techniques employed.

5. Criteria for success

Correspondence, photographic & mapping evidence will be provided as part of the year 1 monitoring report as follows;

- Confirmation email/letter that the grazing prescription has been adhered to.
- Installation of dams, scraps and gutters.
- 50 Fixed point quadrats should show the following changes over time;
 - Increase in species diversity;
 - 5% per annum for first five years.
 - Increase in sward height;
 - 5% per annum (from baseline).
 - Decrease in evidence of poaching/grazing (i.e. dunging);
 - 5% per annum for 3-years.
 - Increase in sphagnum cover;
 - 5% per annum (from baseline) for first 10 years;
 - Increase in pools/water cover.
 - Not specified.

6. Reporting

Reports detailing the monitoring works carried out, the results obtained and a review of their success, along with any suggestions for amendments to the plan will be prepared in years 1, 3, 5 and 10; following commencement of the plan's implementation. Reports will be submitted within 6 months of each monitoring year.