

DEER MANAGEMENT PLAN FOR THE NORTHERN DEER MANAGEMENT GROUP AREA 2016-2020

NOV 2018 UPDATE



Prepared on behalf of the NORTHERN DEER MANAGEMENT GROUP

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NORTHERN DEER MANAGEMENT GROUP: GROUP DEER PLAN 2016 – 2020

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Appendices

1. Constitution of the Northern Deer Management Group
2. Individual Estates: Current Deer Management Figures and Future Management Recommendations
[Confidential]

Maps

Maps are appended to this Plan as listed below.

- 1a. Northern DMG Deer Management Area and Property boundaries - West
- 1b. Northern DMG Deer Management Area and Property boundaries - East
2. Overall Vegetation Cover of the Management Area as denoted by Land Cover Scotland
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8. Deer Vehicle Collisions reported in the Management Area between 2013 and 2017

The structure of this document:

Given the size of the NDMG Management Area and the number of separate properties involved, this Plan is inevitably rather long. However, the main management actions to be taken over the next five years for the Group are presented in Section C towards the end of the document. This final part of the document thus forms the actual Management Plan.

However, since management decisions must be taken (and reviewed) in the context of a proper understanding of the deer populations of the area, their movements, impacts upon their habitat, and in the light of any specific problems perceived in the future management of this resource, the Plan begins [Sections A and B] with some initial description of the 'resource': a description of habitats and deer populations on individual estates as well as a brief account of past management practices. Information on deer counts and culls for individual estates, along with future management recommendations for each estate, is contained in the confidential Appendix 2, for the use of group members only.

November 2018 Update

This Plan is currently being restructured, with sensitive estate information having been moved to a separate confidential section (Appendix 2). Aggregated figures for counts, culls and population models will shortly be added to the Plan, arranged by sub-group.

A Working Plan is being written and should be available by Spring 2019.

A

INTRODUCTION:

A1.1 The area of the Northern Deer Management Group (NDMG) includes in effect all that land north and east of a line defined by Strathnaver (and the B873) and the B871 between Syre and Kinbrace, and all land to east of the A897 through the Strath of Kildonan to Helmsdale.

To the south east it is bounded by the coastline between Helmsdale and Latheron and to the east is bounded by the road from Isauld towards Halkirk along the side of Loch Calder and thereafter the B870 to Mybster and the A9 between Mybster and Latheron; much of the land to the east of Sandside Estate and to the north of Shurrery, however, is commercial forestry which is securely fenced and the open range management area covered by the NDMG is thus in effect bounded to the north and east by these two latter Estates (Maps 1a & 1b).

A1.2 The total area within the NDMG Management Area (excluding towns and villages) is assessed by Scottish Natural Heritage (SNH) as 150,678 ha. The area includes land in some 20 main ownerships as well as a similar number of smaller ownerships. Deer Management and associated activities of major landholdings are coordinated through discussion within the NDMG, which meets formally twice a year (although other meetings may be called as required and much business is transacted via email). The majority of member estates attempt to have a representative present at all meetings (and in future, all will be expected to have a representative present); meetings are also attended by representatives from the Forestry Commission, SNH regional and wildlife staff and local community interest groups by invitation. The Group's constitution is appended to this Plan.

A1.3 In response to significant changes in patterns of land use in the area, with increasing concerns from SNH and others about recorded impacts on designated sites and with concerns within the group about changing numbers and distributions of deer within the area and about longer term sustainability of sporting harvests overall, the Deer Management Plan adopted by NDMG in 2001 in 2002 was updated in 2013 in an attempt to accommodate and respond to these changing pressures. At that time however, only certain estates/land owners were included in the exercise, as Achentoul, Bighouse, Dunbeath, Glutt, No1 Forsinard, Langwell and Braemore, Navidale Farm, Shurrery, Skelpick & Rhifail, Suisgill, Syre, Torrish and the various properties owned and managed by the Royal Society for the Protection of Birds (RSPB).

A1.4 Following a more recent assessment of the group's management activities, in collaboration with SNH (RAG assessment) the NDMG determined to update and revise this former partial Plan, extending coverage to include all member Estates, and at the same time bring it into line with the new ADMG Benchmark for Deer Plans. NDMG accepts the Government's Code of Practice on Deer Management and the ADMG's Principles of Collaboration in relation to Deer Management.

A1.5 In development of the actual Management Plan which follows, the Group employed Professor R.J. Putman to collate relevant information on deer populations and habitat condition, to assist in establishing clear definition of objectives for individual estates or for the Group as a whole, as well as help focus discussion on future possible management options within individual estates or the wider Management Group Area. Information was sought from all estates and the Chairman and Secretary of the Management Group on deer counts for the different estates or other land-holdings over the past 10 years, recorded calf-hind ratios and cull data.

A1.6 Detailed consultations were undertaken with individual landowners, or their managing agents, as well as all stalkers to establish i) current deer numbers and distribution on their own estates; movement patterns within estates and between adjacent properties; past and present management policy and procedures; ii) current patterns of land use, plans and expectations for the future, as well as exploring aims and objectives of management for their deer for the future.

A1.7 Additional consultation was carried out with other interest groups such as SNH Regional staff and Forestry Commission for Scotland as well as local community groups to establish their interests and aspirations for future management of the area. Finally, independent assessments were also undertaken of the condition of the deer herds and the condition of the habitat during a series of visits to all the estates by RP at intervals between January 2012 and December 2016.

A1.8 After extensive consultation this Plan is presented as an agreed Deer Management Plan for a five-year period from 2016-2020. The Plan has been prepared to integrate individual Estate Management Plans, and Long-Term Forest Plans with Group-level commitments and to ensure delivery of both private and public interest.

A1.9 In any Management Area it is impossible to find a period of absolute stasis with all future factors influencing management decisions fully resolved. Indeed, in the period of the previous Plan there have been a number of changes of land-ownership and/or objective. This Plan therefore is inevitably prepared against a background context with some remaining 'unknowns' and should not be seen as set in stone. Rather the Plan is seen as indicative and must allow room for flexibility as circumstances may change.

A1.10 In any event, management for the future is not a precise science. Active management must be accompanied by close monitoring of the condition of deer populations and habitats in order to assess whether management decisions taken are indeed delivering objectives sought. Where such monitoring suggests that objectives are not being delivered as expected, some minor adjustments to proposed policies and action plans may be necessary to meet desired targets.

A1.11 Much of this can be resolved by ongoing discussions between member estates at sub-group level. However, annual review of progress and approval of any minor changes in policy in the light of altered circumstances, or in response to results of ongoing monitoring programmes will be made at each Annual General meeting of the Management Group. After this time, the Plan will undergo full review with an update for the following 5-year period.

A1.12 While, south of Mybster, the eastern boundary of the NDMG Management Area is technically formed by the A9, deer populations are expanding to the east of the road at the Causewaymire within Munsary Peatlands Nature Reserve and the Forse Estate (Ballachly and Badryrie), with increasing impacts on designated sites in this area and an increase in frequency of deer-vehicle collisions. In response to this, the collective of estates involved, in association with FCS, who have management of the adjacent forest blocks, are in the process of preparing a separate plan for collaborative deer management in the area. While these properties are thus not formally part of the current NDMG, the separate plan for this area east of the Causewaymire will be integrated with the wider NDMG's Plan in an effort to ensure that management is fully integrated across the wider deer range.

A1.13 Discussions are currently ongoing between the main parties and SNH to agree a level of cull for this area east of the **A9 with the intention that a plan shall be finalised in time to inform the cull season 2016/17**. The Plan will include ongoing Habitat Impact Assessments to monitor the effectiveness of management proposals in reducing impacts on the mire habitats within the Shielton Peatlands SSSI. Because discussions remain at an early stage however, details are not available at this time for inclusion within the NDMG Plan. Once it is finalised, a copy of that area plan will be appended to the main NDMG Plan.

A2. The Northern Deer Group Management Area:

A2.1 The area covered by the current exercise falls within the wider North Deer Management Area, which includes some 150680 ha of land broadly north and east of a line defined by Strathnaver (and the B873); the B871 between Syre and Kinbrace and thence all land to east of the A897 through the Strath of Kildonan to Helmsdale. To the south east it is bounded by the coastline between Helmsdale and Latheron and to the east is bounded by the road from Isauld towards Halkirk along the east side of Loch Calder and thereafter the B870 to Mybster and the A9 between Mybster and Latheron [Maps 1a & 1b].

As noted at paragraph A1.1, however, much of the land to the east of Sandside Estate and to the north of Shurrery, however, is commercial forestry which is securely fenced and the open range management area covered by the NDMG is thus in effect bounded to the north and east by these two latter estates.

Geology and Ecology

A2.2 Sedimentary Old Red Sandstone forms the base for much of the north-eastern expanse of low moorland and coastal plain covering much of Caithness. To the west, the boulder clay is more sandy and free from lime. This, combined with low elevation produces the only good quality agricultural land of the region, a coastal strip of fertile land interrupted only by an outcrop of granite at Helmsdale. This granite intrusion marks the border between Caithness and Sutherland which is then largely underlain by acidic Moine Schists but with a number of sizeable granite or sandstone intrusions in the east.

A2.3 Apart from the northeast of the area between Reay, Thurso and Spittal and the east coast between Helmsdale and Latheron which is largely under agricultural management of arable land and permanent pasture, the bulk of the remainder of the ground is moorland covered with blanket bog, humid heath and moist Atlantic heather moor, although large areas were in the past planted over for commercial forestry (paragraph A2.10). An overview of the vegetational fabric within the NDMG area is provided by Map 2 (Land Cover Scotland), although this offers only limited resolution.

A2.4 Caithness and East Sutherland are well-known for their ‘flows’: wide low-lying peatlands, characterised by expanses of deer grass, *Scirpus caespitosus*, together with bell heathers (mostly cross-leaved heath *Erica tetralix*), often deeply hagged and with a strong inclusion of cotton grass (*Eriophorum vaginatum*) and *Cladonia* lichens. Much of the *Scirpus* -*Eriophorum* blanket mire has a high cover of the hummock-forming mosses *Sphagnum capillifolium* and *S. papillosum* though in other areas traditional practices of burning appear to have reduced *Sphagnum* cover.

A2.5 On areas which are slightly raised (flatter tops of ridges or lower hills), a hummocky wet heath may develop, with greater inclusion of *Erica* and *Cladonia*, still significant inclusion of *Scirpus*, but often interspersed with extensive patches or hummocks of purple moor grass, *Molinia caerulea*. Much of this wet heath occurs on deep peat and is probably derived from *Scirpus*-*Eriophorum* and *Calluna*-*Eriophorum* blanket mire after fire. The total area of carbon- rich peatland [blanket bogs and peatlands] is assessed by Land Cover Scotland [Map 2] as 96151 ha.

A2.6 Drier heaths (with greater inclusion of ling *Calluna vulgaris* amongst *Erica* heathers), or grass heaths (heathers with moor grass, *Molinia caerulea* or hair grass *Deschampsia*) develop on shallow slopes, or on emergent knolls within the peatland, where due to the steeper gradient, there is less opportunity for peat to accumulate and soils tend to be less waterlogged.

A2.7 On steeper faces still, better drainage and shallow, more mineralised soils support classic high altitude grasslands (*Agrostis-Festuca* “greens”) or an alternating mosaic of patches of heather (*Calluna*) and *Agrostis-Festuca* grassland, while on bare shoulders and stonier summits where the acidic schists are exposed, there are extensive areas of montane heath (windclipped mats of *Calluna*, with *Racomitrium* moss, *Cladonia* lichens and clubmoss (*Lycopodium*) or *Vaccinium myrtillus*-*Racomitrium lanuginosum* heath). The total area of heathland is assessed by Land Cover Scotland at

48236 ha, while the area of montane vegetation is assessed at 272 ha.

A2.8 On better soils of the area, and notably on lower ground there are also several areas of native woodland: notably areas of broadleaved woodland dominated by birch, or birch and rowan. In the past, these fragments were largely restricted to ravines and stream gorges or other very steep slopes which are less accessible to grazing animals, but there are more extensive areas in places which when protected from grazing/browsing, have shown significant consolidation [Map 2 and Map 3 from the National Forest Index]. Recent plantings of both commercial forestry and native woodlands, funded under various past grant schemes are represented in Map 4.

A2.9 A number of commercial coniferous plantations were also established in the 1960s and 1970s but with varying success. It has subsequently been recognised that a number of these plantings were, in hindsight, perhaps inappropriate and in consequence, although commercial plantations remain on the more productive sites, in other areas there has been a deliberate programme of tree removal and active restoration of the former heathland cover.

Mammals and Birds

A2.10 Notable species of birds recorded as resident and/or breeding within the Management Area include both black-throated diver (*Gavia arctica*) and red-throated diver (*Gavia stellata*); both species protected under Schedule 1 of the Wildlife and Countryside Act and listed in Annex 1 of the EC Birds Directive); golden eagle (*Aquila chrysaetos*), and increasingly white-tailed eagle (*Haliaeetus albicilla*), hen harrier, (*Circus cyaneus*), buzzard (*Buteo buteo*), peregrine (*Falco peregrinus*), merlin (*Falco columbarius*), greenshank (*Tringa nebularia*) and golden plover (*Charadrius apricarius*; *syn. Pluvialis apricaria*) as well as dotterel (*Charadrius morinellus*). Red grouse (*Lagopus scoticus*) and ptarmigan (*L. mutus*) as well as black grouse (*Lyrurus tetrix*) also breed within the area,

A2.11 Pine martens (*Martes martes*) and European otters (*Lutra lutra*) are present throughout the Management Area. There are also several populations of badgers (*Meles meles*) and also water voles (*Arvicola amphibius*) and mountain hare (*Lepus timidus*).

A2.12 There are significant populations of red deer (*Cervus elaphus*) throughout the area, which provide the main grazing impact over much of the hill ground and also the major sporting interest. Roe deer (*Capreolus capreolus*) also occur but at lower density and with a discrete, patchy distribution. Sika deer (*Cervus nippon*) have been increasingly reported over recent years.

Designations:

A2.13 In recognition of both its geological diversity and the diversity of plant and animal species present, a high proportion of the Management Area has been designated as of high scientific or conservation significance with large areas designated as Sites of Special Scientific Interest (SSSI; a UK-level designation) or as Special Areas of Conservation (SAC; a designation signifying importance at a European level). [Map 5]

A 2.14 Affecting the Estates of the current exercise, these include Armadale Gorge SSSI, Beinn Freiceadan and Ben Dorrery SSSI, Ben Griams SSSI, Berriedale Cliffs SSSI; Berriedale Water and Langwell Water SSSIs, Blar nam Faileag SSSI, Coire na Beinne Mires SSSI, Dirlot Gorge SSSI, Dunbeath Peatlands SSSI, Dunbeath Water SSSI, East Halladale and West Halladale SSSIs, Forsinard Bogs, Knockfin Heights SSSI, Knockinnon Heath SSSI, Lambsdale Leans SSSI, Loch Caluim Flows SSSI, Lochan Buidhe Mires, Lon a' Chuil SSSI, Morven and Scaraben SSSI, Ousdale Burn SSSI, Rumsdale Peatlands SSSI Sandside Bay SSSI, Skelpick Peatlands SSSI, Slethill Peatlands SSSI, Strathmore Peatlands and Strathy Bog SSSIs. Fuller details of these and a summary of current status of designated features are included in the Tables of pages 13 and 14. Many of these individual SSSIs form constituent parts of wider SACs.

A2.15 Many of the peatland sites are also separately included within the Caithness and Sutherland Peatlands SAC as are parts of the Ben Griams site (specifically the upland areas of Ben Griam Mor and Ben Griam Beag) and both the River Naver and the catchment of the River Thurso. Other areas are separately designated Special Protection Areas (SPA) in relation to populations of breeding birds.

A2.16 Details of designations affecting individual Estates and possible influences on their management will be presented in each Estate 'entry'. Full details of all these sites, the reasons for designation, and site management statements are available on the SNH website at www.snh.gov.org/snhi/sitelink and are not duplicated here [The current condition of these different sites and the features for which each is designated, is reviewed separately from paragraph A4.5 – A4.34]

A3. Group Membership and Deer Populations:

A3.1 The current ownership and management of the major Estates is as below:

Achentoul Estate extends to a reported total area of some of some 8,850 hectares

Achkeepster: 1130 ha

Armadale Estate, Melvich & Portskerra: Open hill ground of approximately 5600 ha [c 4,000 ha of Armadale Estate owned by SGRPID]

Armadale Farm: 2290 ha or thereabouts

Badanloch [part]: Badanloch Estate extends to a total area of approximately 11000 ha. The land area within the Northern Deer Group extends to 4198 ha (excluding areas of open water).

Bighouse c.14754 hectares

Braehour and Backlass (Ulster Estates) Braehour and Backlass (4786 ha) form part of the Ulster estates

Dorrery Farm

Dunbeath Estate, Glutt. The area of the open hill ground of Dunbeath and Glutt Estates is reported as 10792.5 ha and 2960.5 ha respectively.

Langwell and Braemore extend to a reported total area of some 18,675 ha, of which an estimated 17,500 ha comprise unfenced open range available to deer

Latheronwheel: 4124 ha

Rumsdale and Dalnawillan (Ulster Estates) 7631 ha

Sandside: 3924 ha

Shurrery Estate extends to a reported total area of some 5655 hectares or thereabouts, west of Halkirk.

Skelpick and Rhifail c13968 ha

Strathmore: 2100 ha or thereabouts

Strathy North and Strathy South 22ha; both Strathy North and Strathy South have a mosaic of different ownerships but both are effectively managed by Scottish and Southern Electricity

Suisgill Estate [c 7130 hectares]

Syre [Rosal] has a registered total area of 3,576 ha of which some 1,394.5 ha of land to the east of the river at Rosal falls within the Northern Deer Management Group area.

Torrish [part] Torrish Estate extends to an area of some 4338 hectares straddling the River Helmsdale within the lower part of the Strath of Kildonan, with 1142 ha of hill ground lying to the south of the River Helmsdale (technically within the East Sutherland Deer Management Group Area) and the remaining 3196 ha falling within the area of the Northern DMG.

Number One Holding is an area of owner-occupied croftland extending to a total area of approximately 1000 ha.

Land owned by the Royal Society for the Protection of Birds [RSPB] The Royal Society for the Protection of Birds owns the majority of the former Forsinard Estate in Sutherland, Dorrery west of the Lambsdale Leans and the Blar nam Faoileag section of Strathmore Estate in Caithness. RSPB has a management agreement with the owner over the rest of Strathmore. It is thus a complex landholding which ranges over a total area of 20,884ha.

Land owned by Forest Enterprise Scotland. Forestry Enterprise Scotland currently own and manage a number of forest blocks towards the east of the Management Area at Braehour (1550ha) and Dale/Spittal (150ha).

A3.2 Smaller properties within the area submitting cull returns to SNH include:

Caen 845 ha

Navidale Farm; hill land extends to 260 ha

Rangag Farm

Tacher Farm

In addition some 5530 ha of commercial forestry are managed on behalf of private owners by **Fountains Forestry.**

Deer Populations:

A3.3 Within the overall area covered by the Deer Management Group we may identify a number of clear subpopulations of open hill red deer. While stags may be more mobile, especially during the rut for most of the Management Area we may broadly define subclusters of Estates sharing the same biological population of animals, or at least for whom there is more regular exchange of both stags and hinds on a daily or seasonal basis. These subpopulations are often defined by features of the landscape which act as partial or significant barriers to movement. Unfortunately, Estate boundaries do not neatly coincide with the boundaries of these subpopulations and a number of Estates have discrete hefts of beasts which form part of different biological populations.

A3.4 Thus: populations of Skelpick and Rhifail are effectively continuous in the north with those on Armadale Farm on that area known as the Yellow Bog (RSPB) and with the RSPB holding at Forsinard West. To the south populations of Skelpick and Rhifail are effectively continuous with populations on Rosal [Syre], Rimsdale, Badanloch and to a lesser extent with Achentoul West.

In turn, populations of Badanloch, Achentoul West shown considerable interchange with populations on RSPB ground to the west of the A897, while to the north, a separate subcluster embraces the northern parts of Forsinard West, the west part of Bighouse and Armadale Estate [Bowside].

A3.5 There appears comparatively little movement between the West and Eastern parts of Bighouse and most movement here is between Bighouse West and properties to its south [Forsinain and Forsinard East]. While deer populations of the northeast part of Sandside estate appear relatively self-contained, populations of the main hill ground of Sandside are broadly continuous with those of the north part of Shurrery, while a separate heft to the south of Shurrery is continuous with populations of Dorrery Forest and Dorrery Farm.

A3.6 South of the Railway populations of Strathmore are continuous with those of Blar nam Faoileag Backlass and Latheronwheel, while those to the north of Backlass exchange extensively with Braehour to the north and Dalnawillan to the west. The separate population of Rumsdale (to the west of Dalnawillan) shows greater exchange with that of Glutt and perhaps those of Dunbeath. There is also some exchange between Dunbeath and Langwell/Braemore, but this movement is largely confined to stags in the rut, and more generally, Langwell and Braemore form a distinct population subcluster with Torrish, Suisgill and Achentoul East

A3.7 Clearly, descriptions above represent something of an oversimplification, but members of the Group are well aware of these separate populations of deer and their movements, and these are largely reflected in sub-group areas historically recognised within the NDMG (paragraph A5.4), although some redefinition of these is proposed for the future (paragraph D1.9). Members are committed to coordinating management in each area to ensure no conflict of interest and to deliver effective and integrated management across the entire population in each case.

A4. Summary of Issues affecting Management within the Group Area:

A4.1 The Management Area as a whole includes a wide variety of land ownership and objective. A significant number of the Estates are in private ownership. Of these, in the majority of cases, deer are managed as a commercial sporting asset, though in most instances alongside farming/livestock enterprises. Many of these private estates show in addition a significant commitment to programmes of habitat restoration and woodland creation; in some instances, sporting interests have become secondary to management for conservation or habitat enhancement. A very significant part of the total Management Area is owned by the Royal Society for the Protection of Birds, with additional areas managed under management agreement with private owners. There are significant areas of commercial forestry in private or public ownership. In contrast however to many other parts of the country, where commercial forest cover is increasing, here, much of this commercial forest cover is being actively removed in various initiatives aimed at restoring the former peatland habitat of the wider flow country.

A4.2 Within such a diverse pattern of land ownership and objective, the Deer Management Group as a whole has been concerned for some time about changing numbers and distributions of deer within the area and about longer term sustainability of harvests overall, with concerns in particular about falling numbers of stags. At the same time the Group is aware that numbers of hinds are increasing across many parts of the Management Area (or indeed may have been underestimated in the past) with the potential that impacts on the habitat may become excessive or may start to conflict with other land-use objectives [whether conservation objectives or, for example maintenance of optimal habitat conditions for grouse].

A4.3 The harvesting of non-native conifer plantations across the area for commercial reasons or their removal where plantations may have been established inappropriately on areas of deep peat adjacent to conservation sites (A4.1) also has an impact on distribution of resources available to

deer, while sale of a number of former Forestry Commission plantations to the private sector also introduces changes of management objective which may impact upon neighbouring properties. There have also been a number of renewable energy initiatives in recent years, with the development within the Management Area of a number of extensive windfarms.

A4.4 Finally, it is notable that a very significant part of the total land area is designated as of especial conservation value (paragraph A2.14, A2.15) with significant areas recognised as SSSI or SPA and with recognition of a number of extensive Special Areas of Conservation such as the Caithness and Sutherland Peatlands SAC, The River Naver SAC, River Thurso SAC and others. These designations clearly have significant implications in terms of restrictions on potentially-damaging management activities [Operations Requiring Consent], and on management of deer and livestock populations where these may be considered to be having damaging impacts on designated features of the site.

Condition of designated sites:

A4.5 The Statutory Agencies (SNH) have recently expressed concerns about the condition of the conservation features of a number of these designated sites within the area [Map 6], and where the unfavourable condition of these features is deemed to be due to grazing or trampling impacts from deer or other large herbivores, are seeking a commitment from those Estates with land within the designated areas to instigate appropriate changes in management to restore these sites towards favourable condition.

A4.6 The Table below, on pages 13 and 14, offers a summary of the various SSSIs across the Management Area highlighting, the features for which the site has been designated as SSSI (and including additional SAC features) and the assessed condition of each of those features when last assessed (in routine Site Condition Monitoring or subsequent independent Herbivore Impact Assessments). Inevitably this is an oversimplification but offers a convenient summary of current issues.

A4.7 Clearly not all features are likely to be affected by deer management (herbivore impacts are most likely to be significant in contributing to unfavourable condition of primarily vegetational features); more specific attention is paid to possible implications of herbivore impacts and changes suggested for future management within the descriptions offered below of current status and future management proposals for individual landholdings [Section B and Section C]. However, by way of summary, the tables below present for each site the designated features listed in either SSSI or SAC citations, and their most recent status. For completeness all features are included to provide a full overview of features which may be influenced by ongoing land management activities. However only those in bold type are considered likely to be directly influenced by deer populations and their management.

Site	Designated Features [SSSI or SAC]	Summary Status	Date
Armadale Gorge	Scrub woodland Dry Heath	Unfavourable Unfavourable	2009 2013
Badanloch Bogs	Blanket Bog Golden plover Greenshank	Unfavourable Favourable Favourable	2008 2009 2009
Beinn Freiceadain and Ben Dorrery	Subalpine dry heath Tall herbs	Favourable Favourable	2012 2012
Ben Griams SSSI	Blanket bog Alpine heath Subalpine calcareous grassland	Unfavourable Unfavourable Unfav, recovering	2008, 2010 2008, 2010 2016

	Vascular plant assemblage Breeding bird assemblage Golden plover Greenshank	Unfavourable Favourable Unfavourable Favourable	2009 2015 2009 2009
Blar nam Faoleag	Blanket bog	Unfavourable Recovering	2007 2013
Berriedale Water	Upland Birch woodland Atlantic salmon	Unfavourable Favourable	2000 2011
Berriedale Cliffs	Maritime cliff vegetation Breeding seabirds (various)	Favourable Favourable	2004 1999
Coire na Beinne Mires	Blanket bog	Favourable	2014
Dirlot Gorge	Quaternary geological features Scrub woodland.	Favourable Unfavourable Recovering	2006 2002 2012
Dunbeath to Sgaps Geo SSSI	Maritime cliff	Favourable	2009
Dunbeath Peatlands	Blanket bog Breeding bird assemblage Dunlin Golden plover Greenshank	Unfavourable Recovering Favourable Unfavourable Favourable Favourable	2005 2012 2005 2009 2009 2009
Dunbeath Water	Quaternary geological features Upland birch woodland	Favourable Unfavourable ¹	2003 2005
Forsinard Bogs	Blanket bog Breeding bird assemblage Common scoter Golden plover Greenshank	Favourable Favourable Unfavourable Unfavourable Unfavourable	2007 2007 2007 2009 2009
East Halladale	Blanket bog Breeding bird assemblage Dunlin Golden plover	Favourable Favourable Unfavourable Favourable	2007 2003 2009 2009
West Halladale	Blanket bog Breeding bird assemblage Common scoter Black-throated diver	Favourable Favourable Favourable Favourable	2002 2003 2007 2003

¹ Status likely to change in response to recent strategic fencing

Site	Designated Features [SSSI or SAC]	Summary Status	Date
Knockfin Heights	Blanket bog	Favourable	2005
Lambsdale Leans SSSI	Transition Fen	Favourable	2002
	Breeding bird assemblage	Favourable	2005
Langwell Water	Upland birch woodland	Recovering	2009
	Atlantic salmon	Favourable	2011
Lochan Buidhe Mires	Blanket bog	Favourable	2006
	Breeding bird assemblage	Favourable	2014
Loch Caluim Flows	Blanket bog	Unfav. recovering	2016
	Breeding bird assemblage	Favourable	2007
	Dunlin	Unfavourable	2009
	Golden plover	Unfavourable	2009
	Greenshank	Unfavourable	2009
Lon a' Chuil SSSI	Blanket bog	Favourable	2006
	Breeding bird assemblage	Favourable	2004
	Greenshank	Unfavourable	2009
Morven and Scaraben	Alpine heath	Favourable	2006
	Subalpine heath	Favourable	2011
Ousdale Burn	Upland birch woodland	Favourable	2002
River Naver	Atlantic salmon	Favourable	2011
	Freshwater pearl mussel	Unfavourable	2003
Rumsdale Peatlands	Blanket bog	Favourable	2007
	Oligotrophic lochs	Favourable	2004
	Breeding bird assemblage	Favourable	2012
	Dunlin	Favourable	2009
	Golden plover	Unfavourable	2009
	Greenshank	Favourable	2009
Skelpick Peatlands	Blanket bog	Favourable	2006
	Breeding bird assemblage	Favourable	2004
Sletill Peatlands	Blanket bog	Favourable	1999
	Breeding bird assemblage	Favourable	2015
	Common scoter	Favourable	2007
	Dunlin	Favourable	2009
	Golden plover	Unfavourable	2009
	Greenshank	Unfavourable	2009
Strathmore Peatlands	Blanket bog	Favourable	2002
	Breeding bird assemblage	Favourable	2007
	Common scoter	Favourable	2007
	Dunlin	Favourable	2009
	Golden plover	Unfavourable	2009
	Greenshank	Unfavourable	2009
	Widgeon	Favourable	2007
Strathy Bogs SSSI	Blanket bog	Favourable	2007
Strathy Coast	Geological features	Favourable	2002
	Maritime cliff	Favourable	2010
	Machair	Favourable	2010
	Sand dunes	Favourable	2010
	Vascular plant assemblage	Favourable	2010
	Saltmarsh	Favourable	2012

Open hill vegetation:

A4.8 **Badanloch Bogs SSSI** : SNH have expressed concerns about herbivore impacts and especially trampling impacts on the blanket bog feature of the SSSI. No concern has been voiced over the northerly section (between Loch na Clar, Allt na Cailbhe Mor and Feith a' Chreagain), but concerns have been noted about trampling and especially tracking across the area south of Loch Badanloch, as animals move across it to access the river grasslands. However a recent Management Agreement has been reached with SNH (2016; paragraph C6.2, C6.3) which provides for some reductions in deer populations within the SSSI and surrounding area to address these issues.

A4.9 The **Ben Griams SSSI** is designated in relation to a number of key features many of which failed to reach targets established for 'favourable condition', when surveyed by SNH as part of their own routine Site Condition Monitoring.

A4.10 The condition of the **blanket bog habitat** was monitored by SNH in November 2008; SNH suggested that the results of their surveys indicated that the bog was being subjected to levels of deer trampling pressure which are causing loss of Sphagnum moss, areas of bare peat and erosion.

A4.11 SNH subsequently commissioned an independent survey of land management impacts on the three main habitats of SSSI [Headley, 2011].² In Headley's survey of September/ October 2010 a total of 91 sample plots (4m²) were assessed within the blanket bog habitat across the entire site and the results were as follows:

- grazing levels were Moderate or Moderate/Low or Low in 94% of the sample plots;
- levels of dunging were Low in 96% of the sample plots;
- levels of trampling were generally mostly Moderate or Low, but the High (12%) levels of trampling were found to be concentrated within the valleys with burns that run north to south through the SSSI;
- muirburn was found to be very rare and all but one small area appears to have been affected by a historical wildfire that occurred several decades or more ago.

[Generally, as with the original SNH survey, Headley's results tend to be presented across the entire site and it is sometimes difficult to dissect out which conclusions apply to all, only some (and which) of the individual component land-holdings]

A4.12 **Alpine heath:** The alpine heath feature was also monitored by SNH in November 2008 as part of routine Site Condition Monitoring. Ground disturbance was noted at most of the points sampled. This was considered to be caused by sheep and/or deer trampling. In Headley's subsequent survey of alpine heath, impacts recorded were heaviest on Ben Griam Beg. Grazing impacts were predominantly moderate-low or low, but moderate or high trampling impacts were recorded in 24 out of 28 survey squares (high 14; moderate 10). Trampling impacts were also high on Ben Griam Mor where 11 out of 28 points were recorded as having high impacts, and 4 moderate.

A4.13 Vascular plant assemblage (nationally scarce or rare flowering plants)

The rock outcrops on both Ben Griam Mór and Ben Griam Beg are relatively rich in nutrients and support a number of nationally scarce plants. These plants include mountain bearberry, whortle-leaved willow, northern rock-cress, alpine cinquefoil, alpine mouse-ear and mountain avens. Large populations of dwarf birch also grow on the lower peatland habitat. Reasonably large populations of all the nationally scarce plant species that are known to be found on Ben Griams SSSI were located during monitoring in 2004 and the vascular plant assemblage was assessed as being in favourable condition. This feature was not re-assessed in the 2010 survey.

² [Dr Alistair Headley (2011). An assessment of land management impacts on notified features within the Ben Griams Site of Special Scientific Interest (SSSI). *Scottish Natural Heritage*].

A4.14 The ‘tall herb ledge’ community, originally a notified interest of the site, has been reclassified as ‘**subalpine calcareous grassland**’ and was assessed by SNH in November 2008. This feature comprises two different alpine vegetation types: sheep’s fescue/alpine lady’s-mantle grass-heath (CG11 of the NVC) and the mountain avens/moss campion ledge community (CG14).

A4.15 The results of the mountain avens/moss campion vegetation assessment in 2008 showed that this vegetation was at that time being adversely disturbed by deer, with some locations showing minimal vegetation remaining on suitable ledges. Results suggested a decline in area due to ground disturbance pressure from sheep and/or deer. In contrast, the sheep’s fescue/alpine lady’s mantle grassland was not affected by grazing/trampling animals, possibly because these species are less sensitive to damage from animals.

A4.16 This feature was also re-surveyed by Headley in 2010 although the feature was recorded only on the western side of Ben Griam Mòr. Most of it was of the sheep’s fescue – common bent – alpine lady’s mantle grass-heath type below the cliffs on the north side of Ben Griam Mòr. The mountain avens – moss campion ledge community is in a very small area at the top of the same cliffs. Headley assessed that the areas of subalpine calcareous grassland have Low to Moderate levels of grazing.

Further to a Management Agreement subsequently negotiated with Badanloch Estate in 2016, the calcareous alpine grassland feature is now assessed as Unfavourable Recovering.

A4.17 The blanket bog feature of the **Blar nam Faioleag SSSI** was considered Unfavourable when assessed in 2007 because the site exceeded thresholds for disturbed bare peat and sphagnum. This is likely to relate to the movement of deer across the SSSI including movements to the riverside and inbye land at night. However, in response to recent attempts by Strathmore Estate and the RSPB to effect a reduction of deer numbers across the site, the feature has been reassessed in 2013 as recovering.

A4.18 The **Loch Caluim Flows SSSI** area (also part of the wider Caithness and Sutherland Peatlands SAC) is also designated largely in relation to its blanket bog feature, breeding bird assemblage, as well as specific recognition of dunlin and golden plover, and breeding populations of greenshank. Monitored in May – July across 2005, 2006, 2007, the breeding bird assemblage was assessed as Favourable, maintained as (earlier -May/June 2004) was the status specifically of Golden plover and greenshank. The status of dunlin was assessed in 2004 as Unfavourable, declining, but as above it is recognised that this may be as much to do with conditions experienced on the wintering areas as conditions on site.

A4.19 However, when surveyed in 2007 the blanket bog on Loch Caluim Flows was assessed as being in unfavourable condition. Over the majority of the site, the blanket bog contained plant species typical of this habitat, such as *Sphagnum* mosses, heather and cotton grass, and the ground was not disturbed or broken. However, an area of approximately 200ha in the northeast of the site now appeared to be dominated by purple moor grass. Surveys also recorded evidence of heavy deer trampling and tracking in this same northern part of the site that had resulted in frequent and extensive patches of bare ground and disturbed vegetation.

A4.20 The site was resurveyed over two days in July 2011. Following a period of sustained good weather the site was dry in some areas resulting in cracking of bare peat, bleaching of *Sphagnum* moss, and a general ‘crispness’ under foot. The blanket bog feature was assessed as being “unfavourable no change”. This is due to the extent of ground damaged by red deer trampling across the site but particularly in the north of the site. Although the site is still considered in unfavourable condition, the deterioration does not appear to be getting any worse and so the condition was shifted to as unfavourable no change.

A4.21 Subsequently SNH has agreed a Management Agreement with Shurrery Estate over the affected parts of the Site. In response to this (and the Estate's intention to seek support for a Moorland Management Plan under SRDP), the site has been reclassified as Unfavourable, recovering.

A4.22 Condition of blanket bog and other vegetation within the **West Halladale SSSI**; **Forsinard Bogs**; the **Slethill Peatlands**, **Skelpick Peatlands**, **Lon a' Chuil** and **Lochan Buidhe Mires SSSIs** Like the site have all been assessed as Favourable in the last SCM assessments undertaken. The **Knockfin Heights SSSI** is designated primarily for the blanket bog feature which dominates the site. In the most recent Condition Assessment reported (July 2005) the condition of this feature was Favourable, maintained; however more recently concerns have been expressed about localised tracking. SNH accept that the bulk of erosion observed on the Knockfin Heights SSSI is due to wind and weather on this exposed site. They do have some concerns about localised trampling in some areas, and while these are not such that they feel a need for action at this time, they certainly would not want to see any increase in deer densities here.

A4.23 Monitoring of the open water transition fen habitat of the **Lambsdale Leans SSSI** was last undertaken in May 2002. The feature was found to be in favourable condition (maintained).

Woodland sites:

A4.24 **Armada Gorge SSSI** : This 80 ha site was notified as an SSSI for the scrub woodland and the dry heath vegetation. The gorge carries a characteristic northern woodland fauna and supports notable plants such as pyramidal bugle (a nationally scarce species). Dry heath vegetation is well developed on the open, unstable scree slopes and the species-rich grassland that grows throughout the site is of local importance. The site also hosts breeding birds of prey and a range of woodland bird species.

A4.25 While the woodland and dry heath features of the Gorge were also assessed as being in favourable condition during Site Condition Monitoring in 2004, more recent assessments (2009, 2013) have changed the recorded condition of both features to Unfavourable, due to encroachment of non-native species and due to grazing and trampling impacts from large herbivores. It is also noted that gorse is expanding at the expense of the woodland or heath communities.

A4.26 Armadale Gorge SSSI is used as rough grazing for sheep and much of the impact recorded is associated with this sheep-grazing rather than related to deer (although it is noted that red deer may contribute to some tracking as they move through the woodland since the steep nature of the terrain limits the number of possible routes through the woodland). There is some fencing in the lower part of the gorge for stock control, but in general it is this same steepness of slope that restricts access and dictates the pattern of grazing. The sheep tend to graze the more accessible lower slopes and while certain areas are now reported to be suffering heavier impacts, other parts of the gorge are only lightly grazed due to the precipitous nature of the terrain and the dense vegetation growth.

A4.27 The **Langwell Water SSSI** (285.27 ha), together with the **Berriedale Water SSSI** (215.54 ha) are both designated in relation to the upland birch woodland feature present in patches along the sides of the valleys and also for their populations of Atlantic Salmon (an SAC feature). Although not a designated feature of either SSSI, small pearl-bordered fritillary butterflies (species which has shown rapid decline across the UK more generally) have been recorded in the Ousdale Burn and on the north side of the Berriedale Water SSSIs. Together the Langdale and Berriedale Water SSSIs comprise the **Langwell and Berriedale Water SAC**.

A4.28 Both sites were monitored in September 2000 when the woodland was assessed as being in unfavourable condition due to the level of deer grazing. Red deer overwinter within the woodlands

and the grazing pressure has prevented tree regeneration outwith enclosures. More recent monitoring carried out in 2008 found that “within the two deer fenced woodland enclosures in Berriedale, the ground flora and understorey had flourished and natural tree regeneration was greatly improved, with large numbers of birch seedlings and saplings. However dense bracken was growing in some parts of the enclosures and may limit the successful establishment of seedlings in these areas.”

A4.29 Similar comments were made of the Langwell Water woodlands where a woodland profile survey was undertaken in 2008. “The four oldest enclosures erected in 1983 had a varied woodland structure, contained the highest tree density and had large numbers of birch and rowan saplings and seedlings. Enclosures erected in 1994 also had seedlings and saplings that were establishing well. In some areas, however, bracken growth was thought likely to prevent seedling establishment and was beginning to affect the growth of seedlings and saplings.

A4.30 For both Langwell and Berriedale, SNH concluded: “Outwith the enclosures the trees were of an advanced age, with no saplings or young reproductive trees. Grazing, browsing and trampling by herbivores appeared to be limiting tree regeneration outwith the enclosures. If this grazing pressure continues at the current level, the unfenced woodlands will not survive.” We should note however that since this last survey, a number of additional enclosures have been erected (2013) within the Langwell strath (paragraph B9.13) and more are planned for Berriedale.

A4.31 The **Dunbeath Water SSSI** embraces all the woodland of the lower strath of the Dunbeath Water. Dunbeath Water is designated as an SSSI in relation to two nationally important features: the woodland habitat and the sediments that were deposited by glaciers during the Ice Age. Native woodland has a very limited distribution in Caithness and this species-rich birch woodland is one of the larger areas of woodland in the county. The most common trees are birch and hazel with smaller numbers of aspen, rowan, bird cherry and willow. The understorey is well developed with blackthorn, ivy, dog rose, honeysuckle and the nationally scarce downy currant. The rich ground flora is dominated by fine stands of tall flowering plants and ferns including male fern, great wood-rush and wood sage. Other species found on the ground beneath the woodland include opposite-leaved golden saxifrage, burnet rose, wood millet and Grass-of-Parnassus.

A4.32 The condition of the upland birch woodland feature was assessed in June 2005 (and again in 2008) and was assessed as being in unfavourable condition, mainly because grazing by sheep and deer was preventing young trees from establishing. Tree and shrub species diversity had been maintained, and a wide range of characteristic species were recorded among the ground flora. However, intensive grazing in the unfenced parts of the woodland meant that although seedlings had germinated they were not able to grow into young trees because they were being browsed by sheep/deer when they reached the height of the surrounding vegetation.

A4.33 It is noted however that a major new deer fence was erected in 2013 to prevent deer from causing damage on croftlands and also to reduce the risk of deer-vehicle collisions on the A9 roadway. Replacing the line of a former deer fence as far as the gorge, this fence crosses the Dunbeath Water just south-east of Balcraggie Lodge. This prevents any deer access onto the SSSI east of this point and it is to be anticipated this will contribute substantially to improving condition within the SSSI below this point.

A4.34 Finally, in this brief overview: **Dirilot Gorge SSSI** is notified for its geological features and for species rich scrub woodland. The scrub woodland feature was assessed in 2002 as unfavourable because of a lack of regeneration (itself presumed due to excessive grazing and browsing pressures). The woodland area was subsequently fenced, including water gates to exclude deer, and is now reported to be recovering well; it was formally assessed in 2012 as Unfavourable, recovering.

Woodlands and Commercial Forestry

A4.35 An independent assessment of the condition of all native woodlands in Scotland was carried out between 2006 and 2013 (Native Woodland Survey of Scotland). The full data were published in February 2014 and are summarised in [Map 7](#). The majority of these areas fall within the designated sites listed above however; the Group is not aware of any additional areas of native woodland under threat.

A4.36 Alongside such areas of native woodland there are within the Management Area significant blocks of commercial forestry both in private and in public ownership. Forest Enterprise Scotland owns and manages areas of plantation at Braehour and Spittal as well as at Rumster and Strathalladale and there are also significant commercial forest blocks in active management at Broubster, Strathmore/Lochdhu, Hope, Rimsdale and Strathy. Many of these are managed on behalf of private owners by Fountains Forestry or Tilhill. [Map 3](#) shows the main woodland areas recorded by the National Forest Inventory. However, as noted above, as well as those blocks continuing in active management a number of former plantations have been removed in a series of peatland restoration schemes (paragraph A2.10) while other have also been felled in conversion of land use to wind farms.

Sustainability of Deer Populations

A4.37 Some concern has been expressed within the Group that overall (combined) quotas on Estates which have primarily sporting objectives, have shown a significant increase over recent years (partly due to an increase of quotas on individual Estates; partly also to change in management objective of some Estates, after recent change of ownership); such changes carry some risk that at least in some parts of the Management Area the combined stag quota might now be somewhat high in relation to the actual capacity of the resident deer herd to sustain it in the longer term. This was a major feature of discussions in development of the previous Group Plan.

A4.38 In more formal assessment of the sustainability of current stag harvests and how well-adjusted are current populations in relation to harvests sought, the Group undertook an analysis of reported populations and average annual culls in each of the main subGroup Areas traditionally recognised within the NDMG. In summary, these analyses suggested that stag populations were in general rather low across most parts of the Management Area and recent past quotas might not be sustainable.

A4.39 In fairness we must also record that over the most recent years Bighouse and Skelpick/ Rhifail, as well as some other Estates, recognising that there is indeed a shortage of stags on the ground, have undertaken a significant voluntary reduction in stag harvests taken. Despite this it is clear that within a number of sub-group areas, combined harvests have in the past been more than is currently sustainable.

A4.40 Over-harvesting in the past has also led to attempts by some Estates to boost recruitment by maintaining higher numbers of hinds on the ground; taken together with a decline in the number of stags, this has in some cases led to a further imbalance in population structure and hind populations at least in the West and South subGroups have grown to levels considerably higher than required to sustain historic average harvests of stags. The Group as a whole recognises that hind populations in general can be reduced from current levels in all subGroups, without compromising the Group's ability to deliver a sufficient recruitment of (stag) calves to sustain harvest quotas sought by individual estates, if this is required to address concerns above about impacts on conservation features of designated sites or other conflicts of land-use objective,.

A4.41 Details of these earlier analyses are reported in Discussion Papers circulated in development of this final Plan and an assessment of sustainability of harvests proposed in the *current* Plan, assessed against reported population numbers in the different subGroup areas, is presented at section D.

Deer-Vehicle Collisions:

A4.42 There are a number of traffic accidents involving deer within the area each year [Map 8]. While the bulk of these occur along the length of the A9, there are also occasional accidents reported in Strath Naver along the B871 and the A836 and a notable problem on the A897 around Reay (see below, Sandside, paragraph B11.33). Deer-vehicle collisions clearly present a serious issue within the Management Area and must be taken into account in planning future management. It is noted however that recent reinstatement of fencing behind roadside plantations on Langwell and, continuous with that, construction of a hill fence across Dunbeath, now largely protects the A9 from Navidale/Ousdale to Latheronwheel. NDMG will continue to monitor the problem and will collate formal records of DVCs noted by members in the area. If DVCs are perceived as an issue in the future, NDMG will act as a forum to identify and assist in the delivery of appropriate actions and SNH/Transport Scotland/ Local Authority will be involved as required (see also below, at paragraph D2.18, D2.19).

Roe deer

A4.43 Although the main focus of deer management within the area is for populations of red deer (and primarily on the open hill range) roe deer also occur at low densities and are shot on some Estates. See further at paragraph D2.1 and D2.2.

Non-native Species:

A4.44 Sika are regularly observed in the area and shot on a number of the Estates. Sika may cause significant damage to unfenced -or fenced - woodlands, if they break into restoration enclosures. Further, hybridisation between sika and red deer and the potential threat posed to the integrity of native red deer populations, is now a matter of widespread concern. While it is probably not practical to eliminate sika from parts of Scotland where they have become well-established, the Group has an established policy of trying to contain populations and reduce spread.

Muntjac are not currently present in the Management Area.

The structure of this document:

A5.1 Since management decisions must be taken (and reviewed) in the context of a proper understanding of the deer populations of the area, their movements, impacts upon their habitat, and in the light of any specific problems perceived in the future management of this resource, this Plan begins with a brief overview description of the 'resource': a description of habitats and deer populations and their condition on individual Estates as well as a brief account of past management practices, as necessary background to formulation of future management, [Section B].

It seeks clear definition of individual and collective management objectives, and explores possible issues arising from past management practices or future management aspirations, as well as necessary constraints on future management decisions.

A5.2 Against that background, actual management decisions for the next five years have been prepared for individual land-holdings with explanation of how these proposals seek to address any issues identified while seeking to deliver private objectives and public benefits (Appendix 2 – confidential).

Section C of this Plan considers collective activities within the Group as a whole and how combined Group activities deliver against needs and public benefit interests.

Section D includes tables to facilitate annual audit of performance against targets set within the Plan of both individual Estates and of the North Deer Management Group.

A5.3 The Management Area covered by members of the NDMG comprises a very significant area. In practice, the area covered may itself be subdivided into a number of sub-areas (within which there is greater interchange of animals and which individually form relatively cohesive units; paragraphs A3.5 – A3.7; C1.9).

A5.4 In presentation of this Plan therefore individual estates are not treated in alphabetical order, but in geographical ‘clusters’, as:

[\[from the West sub-group\]](#)

Skelpick and Rhifail, Armadale Farm, Armadale Estate including Melvich and Portskerra, Strathy North and South, Syre [Rosal]; Badanloch, Achentoul (here both West and East), RSPB main holdings [Forsinard, Forsinain], No1 Forsinard

[\[from the North sub-group\]](#)

Bighouse, Sandside, Shurrery, Dorrery Farm and Estate

[\[from the South sub-group\]](#)

Langwell and Braemore, Navidale Farm, Suisgill, Torrish North, Caen, Dunbeath and Glutt, Latheronwheel, Rumsdale and Dalnawillan, Braehour and Backlass, Strathmore/ Blar nam Faoileag, Achkeepster

Considered separately are those properties under commercial Forest Management [FCS and others]

A5.5 Inevitably such groupings are not exclusive and there is movement between adjacent properties outwith the clusters as defined here. In addition, in some cases, distinct hefts of deer within a given estate show greater continuity with different subpopulations in the wider area; such cross-links between clusters will be further explained as appropriate in individual estate entries.

A5.6 It should be noted that indications of estate boundaries in both text and illustrative maps are included only for descriptive purposes; they are not to be considered definitive statements of legal boundaries.

B. INDIVIDUAL ESTATES: DESCRIPTION

B1 Skelpick and Rhifail

B1.1 Skelpick and Rhifail Estates in Sutherland extend to a reported total area of some 34,500 acres (13967.6 ha), of which perhaps 10324 ha fall on Skelpick itself. Rhifail extended in the past further towards the east towards Strathy; while this land was subsequently sold to the RSPB, the Estate retains stalking rights for the next 25 years.

B1.2 The property is bounded to the west by the River Naver and extends from the coast (between Torrisdale Bay and Kitomy Point) south to the B871 road between Syre and Kinbrace, where it marches to the west with Syre, to the east with Badanloch and to the south with the former Forestry Commission blocks of Rosal (now in private ownership) [Map 1a]. A deer fence erected in 1962 and linked to Forestry Commission fencing at the southern boundary, extends north to Dun Viden and is maintained by the estate. Apart from a small gap opposite Carnachy, this in effect controls deer movements from the estate west onto Achnabourin and Borgie.

B1.3 Deer populations are largely focused to the south of the estate. Skelpick itself is virtually wholly crofted, with land to the north of the A836 entirely managed as apportionments and with crofter's inbye land extending south between the Skelpick road and the river. Common Grazings extend over the bulk of the rest of the estate.

B1.4 Rhifail is also partly crofted, with the same pattern of improved parks and inbye land between the track and the river and common grazings to the east. The Estate itself owns one of the crofts and thus one share of the grazings is managed in hand; the Estate is also a member of the Rhifail Sheep Stock Club which has the grazing rights over the adjacent unplanted land on FCS Rosal. Land south and east of a line running between the Allt Lon a' Chuil (on the march with Syre) over Cnoc Bothan Uisge-beathan, Creagan Dubha, Meall Ceann Loch Strachy, Meall Bad na Cuaiche and to the north end of Loch Strathy, is however uncrofted and supports no livestock.

B1.5 While cattle are maintained on improved parks along the strath, none are run on the hill; most of the sheep stocks are North Country Cheviots which again are largely hefted along the strath and do not draw far out onto the hill ground. The deer fence of Rhifail (paragraph B1.2) runs around the back of all improved and inbye farm land, largely separating livestock from the hill grazings.

B1.6 A significant part of both Skelpick and Rhifail is considered of high conservational value. The River Naver itself is designated as an SAC in relation to both its salmon populations and presence of freshwater pearly mussel (*Margaritifera margaritifera*) and the Estate ground also includes all or part of the Lochan Buidhe mires SSSI, the Skelpick Peatlands SSSI, the Lon a' Chuil SSSI and a very small corner of the West Halladale SSSI. Further details of all these sites and the designated features are included at paragraphs B1.11 – B1.16.

Vegetation:

B1.7 Detailed descriptions of vegetation within the various areas designated for their conservation significance are included in the initial citation statements and subsequent site management statements [accessible via <http://gateway.snh.gov.uk/sitelink/index.jsp>].

B1.8 More generally, we may summarise that the strath of the River Naver itself comprises mostly managed grasslands (grazing parks and silage/hay fields along the alluvial terraces with some scattered patches of broadleaved woodland on the slopes rising from the strath to the higher ground. where not wooded these rising slopes are covered with heather and grass, largely managed by past or continuing muirburn into a mosaic structure. particularly towards the north (on Skelpick) there is

significant encroachment of bracken, as also on some of the parks immediately around Rhifail Lodge. This same pattern of managed heather on the rising slopes is repeated on the rising ground to the south of the A836. Towards the top of the slopes in the middle ground, there is a greater exposure of bare rock, and the core of the Estate presents largely areas of blanket bog or mire interspersed with drier heath on emergent hummocks or knolls or on larger ridges.

B1.9 SNH's Site Management Statement for Lochan Buidhe notes: The relatively complex topography and geology of this area produce a great variety of peatland types. The valley side and terrace bogs which dominate the area are generally connected by way of other peatland types or areas of thinner peat. The vegetation of these areas is dominated by heather, deer sedge, cross-leaved heath and cotton grass species. Purple moor grass is more local and tends to occur on slightly richer ground such as that found along the small burns. *Sphagnum* or bog moss forms extensive carpets in many of the wettest areas" and this broad description would also largely apply to the bulk of the Estate's hill ground. The whole area is in addition punctuated with many lochans and hill lochs.

B1.10 As noted there are a number of patches of native broadleaved woodland along the strath of the River Naver. In particular we should note three large enclosures erected for regeneration at the southern end of Rhifail – above and below the road within that part of FCS owned ground tenanted by the Rhifail Sheep Stock Club (erected respectively five and three years ago), and an additional more recent enclosure erected across the march within Rhifail itself. There is a further extensive area of native woodland within the ravine of the Skelpick Burn (grid reference NC 750530; centre) which was also enclosed in the past to try and encourage some regeneration.

Designated areas:

B1.11 As noted already, a significant part of both Skelpick and Rhifail is considered of high conservational value with the Estate ground including all or part of 4 SSSIs and the River Naver SAC.

B1.12 **Lochan Buidhe Mires SSSI** within Skelpick is designated primarily for the blanket bog feature which dominates the site. This site is also designated under RAMSAR and forms part of the wider Caithness and Sutherland Peatlands SAC. The breeding bird assemblage is also a notified feature of the site. Red and black-throated divers are among the waterfowl dependent on the lochs and greylag geese breed among some of the bog pools. Greenshank, dunlin, golden plover and curlew are among the breeding waders found on site while raptors including merlins, peregrines and golden eagles use the area for hunting.

B1.13 That ground immediately to the south of the Lochan Buidhe site falls within the separately designated **Skelpick Peatlands SSSI** which covers most of the rest of the higher ground of Skelpick away from the strath. Like the Lochan Buidhe site, this forms part of the wider Caithness and Sutherland peatlands SAC and is designated both for the blanket bog feature and the assemblage of breeding birds.

B1.14 Again, immediately adjoining the Skelpick Peatlands site, the **Lon a' Chuil SSSI** covers the bulk of Rhifail and stretches south to the march on the B871. Once again this forms a part of the larger Caithness and Sutherland Peatlands SAC; it is designated in recognition of its blanket bog and, as the other sites, for its assemblage of breeding birds. However, in this case, as well as their inclusion within the wider "Breeding Birds Assemblage" above (Ramsar) the established importance of the site for breeding populations of greenshank has led to the site being additionally designated as Special Protection Areas (SPA) specifically in relation to their breeding populations of this species.

B1.15 Finally a small portion of the **West Halladale SSSI** also falls onto Rhifail, although the bulk is contained on the RSPB-owned ground to the east.

West Halladale is designated as an SSSI in relation to its blanket bogs (also SAC; RAMSAR) its breeding bird assemblage (RAMSAR) and as an SPA in recognition of breeding populations specifically of black-throated diver and common scoter.

B1.16 As noted, the sites all form part of the wider Caithness and Sutherland Peatlands; the River Naver SAC is designated in recognition of populations of Atlantic salmon and freshwater pearl mussel. All designations inevitably place some constraints on management which are the subject of the ORCs (Operations Requiring Consent) published on the SNH website in relation to each site: <http://gateway.snh.gov.uk/sitelink/index.jsp>.

B1.17 Further constraints on the Estate's ability to manage however arise from the extensive crofting tenure across the Estate, such that livestock grazing pressures and vegetation management associated with livestock husbandry are not directly within the estate's control.

Management Objectives

B1.18 The Objectives for Skelpick and Rhifail are to continue to manage the two properties as a mixed sporting Estate primarily for red deer and salmon. Overall, management of both deer and domestic livestock makes every effort to be sensitive to environmental impacts and to ensure continuing favourable condition of designated areas within the Estate.

Deer and Livestock Populations

B1.19 While the Estate has formal ownership of one croft on Rhifail and thus one share within the associated common grazings, and is a member of the Rhifail Sheep Stock Club, livestock grazing, as above, is largely controlled by crofting tenants.

B1.20 Open hill deer populations are counted on Skelpick and Rhifail annually at the end of winter.

B1.21 In general deer are relatively widely scattered across the available hill ground; over winter some tend to concentrate around Rimsdale where some supplementary feeding is provided, while others move north along, or parallel to the strath. The deer fence of Rhifail prevents movement further to the west. Animals from Achnabourin however do cross the river to feed on some of the agricultural parks on the east of the River Naver. These do not, however, travel far from the parks immediately beside the river and return across the river when disturbed. They are in any case prevented from coming onto the Rhifail Hill ground by the deer fence.

Current and recent past Management

B1.22 Stalking is largely for the benefit of family and friends.

B1.23 As noted above (paragraph B1.1) the estate also the estate retains stalking rights for the next 25 years over the RSPB ground of Uair and Strathy Lochs and in addition has a management agreement to undertake the deer management on Armadale Farm. Separate cull figures are returned for these properties.

B1.24 There is a regular pattern of muirburn within the Common Grazings undertaken by crofters (as time and conditions permit); this is outwith the estate's control but is subject to management agreements with SNH where it occurs within designated sites. Some small patches of muirburn are undertaken however in the uncrofted southern part of Rhifail by the estate. There is active management of inbye parks and grazings and the Estate has in the past continued to lime the improved grassland areas around Rimsdale Cottage, to improve the quality of grazing for the deer. Some winter feeding is also offered in this area in the form of mineralised feedblocks.

Factors which influence current and Future Management

B1.25 SNH undertakes routine monitoring of the qualifying features of all designated sites on a regular basis. Results of most of these are summarised in individual Site Management Statements.

B1.26 The status of the **River Naver SAC** and options for possible changes in future management remain under debate with SNH and other interested parties but are unlikely to have any impact on future policies for deer management across the area.

B1.27 **The Lochan Buidhe Mires SSSI** is designated primarily for the blanket bog feature which dominates the site. The breeding bird assemblage however is also a notified feature of the site. Condition of the feature was assessed in June 2006 as Unfavourable, recovering. The extent and species composition of the blanket bog had been maintained since previous monitoring visits. No non-native or invasive plant species were recorded from the site. Grazing levels were appropriate and, though drainage ditches were present, their effects on the adjacent bog appeared to be very localised. The blanket bog was found to be in unfavourable condition however, because of the damage done by an uncontrolled fire that spread through 690 ha of the site in May 2005. Peatland habitats can take a long time to recover from such fires and hummock forming species of *Sphagnum* moss are particularly badly affected. The most recent summary status offered by SNH Sitelink is however Favourable.

B1.28 Monitoring of the breeding bird assemblage also took place in June 2006. The diversity and rarity of the bird species present was within the expected range for this habitat and overall the breeding bird assemblage feature was found to be in favourable condition. This favourable status was maintained and confirmed by monitoring in June 2014.

B1.29 **Skelpick Peatlands SSSI** Like the Lochan Buidhe site, this forms part of the wider Caithness and Sutherland peatlands SAC and is designated both for the blanket bog feature and the assemblage of breeding birds. Monitoring of the blanket bog took place in July 2006. The extent of the blanket bog had been maintained since previous monitoring visits and plant species typical of this habitat including heather, cottongrass and *Sphagnum* mosses were found on the site. Across the site, the amount of bare disturbed ground was within acceptable levels. However, an extensive area of damaged ground was present around Loch an Eilein and Lochan Bràighe. It is thought this damage was caused by intense burning of the area in the past and thus some care must be noted in this regard. Some damage from vehicle tracking was also noted, but this only affected a small proportion of the site. Overall the blanket bog was found to be in favourable condition.

B1.30 Monitoring of the breeding bird assemblage on the Skelpick peatland site took place in June 2004. The state of the breeding bird assemblage is assessed by awarding points to each species, based on their rarity, then calculating a score for the site by summing the points for each species recorded during monitoring visits. Species seen included red-throated and blackthroated divers, greylag goose, merlin, peregrine falcon, golden plover, dunlin and greenshank. The overall score for the site exceeded the target for peatland SSSIs. There was no change in the extent of available breeding habitat for these birds since previous surveys. Overall the bird assemblage was found to be in favourable condition.

B1.31 **Lon a' Chuil:** Monitoring of the blanket bog took place in July 2006. The extent of the blanket bog had been maintained since previous monitoring visits and the plant species typical of this habitat including *Sphagnum* bog mosses, dwarf birch and bog myrtle were recorded from the site. Grazing pressure was assessed as being moderately high but at present the damage to vegetation is within acceptable levels. Drainage ditches were still active on the site, but their impact on the vegetation appeared to be limited to a few metres either side of the drain.

B1.32 Monitoring of the breeding bird assemblage and greenshank population on Lon a' Chuil SSSI was last carried out in June 2004. Red-throated diver, greylag goose, teal, peregrine falcon, red grouse, golden plover, dunlin, snipe, greenshank, common sandpiper and raven were among the species recorded on the site. The score calculated for Loch a' Chuil SSSI reached the target for peatland sites and the breeding bird assemblage was found to be in favourable condition, although the status of greenshank as an individual single species was considered in 2009 to be declining.

B1.33 **West Halladale:** Only a small part of this site falls on Rhifail. All notified features of the site have been found in the most recent surveys available in each case, to be in favourable condition, maintained. The blanket bog was last monitored in March 2002 when it was assessed as being in favourable condition. The water table was high enough to make the ground soft and wet, characteristic peatland plants were present and there was a good range and cover of bog moss (*Sphagnum*) species. This may be attributed to the application of appropriate burning practices and a lack of damage from trampling and grazing by both deer and domestic herbivores.

B1.34 Monitoring of the bird features on this site during 2003 found that all those monitored were in favourable condition. This may be attributed to both the suitability of habitat and the absence of disturbance although it was noted that the impacts of muirburn may result in a reduction of suitable habitat for some of the species by removing the habitats in which they nest or forage. When monitored in 2007, the common scoter population was considered to be in favourable condition.

B1.35 The former FCS coniferous plantation at Rosal/Rimsdale has now been sold into private ownership. The sporting lease has been let to a third party and there is inevitably concern about potential issues where his activities may extend onto open ground of Rimsdale, outwith the forest fence, where culling may impact upon populations drifting across from Rhifail.

B2 Armadale Farm

B2.1 Armadale Farm in Sutherland is a hill farm lying to the east of Bettyhill. It is bounded in the west for the most part by Skelpick although towards the northwest it marches with a small section of Government-owned ground [Armadale Crofts] which intrudes between Skelpick and Armadale Farm in this particular corner. To the east it is bounded by the various forest blocks of Strathy; in a small section to the north of those forest blocks it marches with the open ground of another Government-owned property of Bowside. The farm, which is technically registered as an owner-occupied croft, extends to a reported total area of some 2290 hectares or thereabouts.

B2.2 The western march against the Armadale Crofts and Skelpick runs south opposite the public road to Armadale village and skirts the Allt Beag to the western flank of Beinn Chuldail before running southwest to Cnoc a' Chuilbh. Skirting the eastern end of Loch Gainimh it crosses to the Caol-loch below Creag Meadie and then runs south past the eastern end of Loch na Glaic to Ben Meadie, before running south past Creag nam Laogh to approximate grid reference NC 768559. The southern march then runs directly across Cnoc Meala to the southern tip of Loch Meala [Map 1a]. The eastern march runs south from the A836, to the east of, and parallel to the Armadale Burn to approximate grid reference NC802625 before striking north east to the northwestern tip of Strathy Forest; from here the march follows the forest fence south to Loch Meala.

B2.3 Immediately south of the road, the land is improved or semi-improved towards agricultural use, with a series of improved grassland areas maintained as inbye parks and further out towards the hill fence a number of larger, semi-improved hill parks. Beyond the hill-fence (which is a stock-fence only) the ground is shallow-sloping rising from approximately 140m across Beinn Chuldail to the summit of Beinn nam Bo (229m). It is mostly wet heath or *Scirpus* mire, interspersed with numerous

lochans, but it is interspersed throughout with knollier ground and low ridges and on these emergent knolls and ridges, there is a stronger inclusion of *Calluna*.

B2.4 The ground rises again towards the western march with Armadale Crofts and Skelpick, where the ridge forms a low scarp. Here too, with steeper and stonier slopes, there is a greater evidence of *Calluna* amongst the exposed rocky faces. All this land falls within the Lochan Buidhe Mires SSSI/SAC or (in a small section to the southeast) within the Strathy Bogs SSSI /SAC (see below).

B2.5 Running north to south towards the eastern march is a deep wooded gorge associated with the Armadale Burn. The gorge is the longest gorge in North Sutherland, stretching nearly 5km. Birch and hazel dominate the scrub woodland, but willow, aspen and juniper are also present and there are more open areas where gorse scrub has developed. Unstable scree slopes, vegetated cliffs, riverside gravels and heathy slopes add diversity to the site. The site has also been notified as an SSSI in relation to its scrub woodland and the dry heath vegetation.

Designations:

B2.6 In effect, all land south of the hill fence falls under one or another designation. The bulk of the hill ground falls within the Lochan Buidhe Mires SSSI/SAC and what does not (in the south east) falls within the immediately contiguous Strathy Bogs SSSI. In both cases the sites are designated primarily in relation to blanket bog vegetation, although the Lochan Buidhe site is also notified in relation to the breeding bird assemblage.

B2.7 In addition, as noted above the majority of the northern section of the Armadale Burn falls within the Armadale Gorge SSSI. This site (79.79 ha) was notified as an SSSI for the scrub woodland and the dry heath vegetation. The gorge carries a characteristic northern woodland fauna and supports notable plants such as pyramidal bugle (a nationally scarce species). Dry heath vegetation is well developed on the open, unstable scree slopes and the species-rich grassland that grows throughout the site is of local importance. The site also hosts breeding birds of prey and a range of woodland bird species. Finally, to the north, a very small section of the Strathy Coast SSSI also falls onto Armadale Farm.

B2.8 All sites except the Armadale Gorge area have been assessed as being in favourable condition. While the woodland and dry heath features of the Gorge were also assessed as being in favourable condition during Site Condition Monitoring in 2004, more recent assessments (2009, 2013) have changed the recorded condition of both features to Unfavourable, due to encroachment of non-native species and due to grazing and trampling impacts from large herbivores. It is also noted that gorse is expanding at the expense of the woodland or heath communities.

B2.9 Armadale Gorge SSSI is used as rough grazing for sheep and much of the impact recorded is associated with this sheep-grazing rather than related to deer (although it is noted that red deer may contribute to some tracking as they move through the woodland since the steep nature of the terrain limits the number of possible routes through the woodland). There is some fencing in the lower part of the gorge for stock control, but in general it is this same steepness of slope that restricts access and dictates the pattern of grazing. The sheep tend to graze the more accessible lower slopes and while certain areas are now reported to be suffering heavier impacts, other parts of the gorge are only lightly grazed due to the precipitous nature of the terrain and the dense vegetation growth [A4.26].

Management Objectives

B2.10 Armadale Farm is managed primarily for livestock. Deer management is undertaken within this overall package but is leased to neighbouring Skelpick and managed in association with their own management of adjoining ground.

Deer and Livestock Populations

B2.11 As above, Armadale Farm is managed primarily for livestock.

B2.12 Armadale is considered primarily hind ground with small numbers of hinds plus a few resident stags reported for most of the year but with an influx of both stags and hinds during the rut. It is suggested however that numbers of hinds have in any case been steadily increasing in recent years.

B2.13 Formal counts of open hill red deer have not been undertaken on a regular basis in the past.

Current and recent past Management

B2.14 Once again few records are available until recently for culls of red deer on the hill ground. The ground is stalked for only perhaps a couple of weeks in the year.

B2.15 Beyond the hill fence (and thus on the open hill ground beyond the inbye land) there is little active management of vegetation. Winter feeding is not provided for deer, but they have free access to any feed provided over the winter period for the sheep.

Assessments and issues influencing decisions about future management

B2.16 SNH undertakes routine monitoring of the qualifying features of all designated sites on a regular basis. Results of most of these are summarised in individual Site Management Statements. As far as is understood [Table, pages 13, 14], the designated features recorded within the Strathy Coast, Strathy Bogs and Lochan Buidhe Mires SSSIs are assessed as being in favourable condition

B2.17 However, as noted, the condition of both the dry heath and scrub woodland, while considered favourable in surveys of 2004 have more recently been assessed as unfavourable. While it is recognised that woodland regeneration, indicated by the presence of saplings and young trees, is notable in more inaccessible parts of the site, excessive levels of browsing and more particularly tracking are affecting both the woodland and the heathland feature in some sections. It seems probable that issues relate more to use of the area by sheep than by the relatively low densities of red deer reported.

B2.18 The owner is already in discussions with SNH about possible management actions appropriate to try to address the impacts reported and a site meeting is planned early in 2016 to reassess the situation and discuss any further management action which may be required.

B3. Armadale Estate; Melvich and Portskerra Common Grazings

B3.1 Armadale Estate (sometimes recorded as Bowside and Strathy) extends to an area approximately 10,000 acres (3937 ha) in the north of the Management Area and belongs to the Rural Inspectorate and Payments division of Scottish Government [Formerly the Department of Agriculture]. Deer stalking is leased to AHG Group Ltd, who also own outright an additional 4000 acres (1600 ha) of adjacent ground (the Melvich and Portskerra Common Grazings to the north of Bighouse Estate). This combined area is thus under common management.

B3.2 Armadale Estate itself extends both north and south of the A836, running north to the coast at Strathy Point between Armadale Bay in the west and Rubha na Cloiche in the east [Map 1a]. The property marches to the west with Armadale Common Grazings and to the south of the road shares a short march with Armadale Farm, before skirting the coniferous blocks of Achrugan and Strathy North. The remainder of the western march follows the forest fences of these and the other commercial plantations of Strathy North Forest.

B3.3 From Rubha na Cloiche, the eastern march runs south (against Melvich and Portskerra Grazings to the north of the road and against Bighouse West to the south of the A836. South of the road the march runs to Cnoc Eipteil, skirts below Loch Baligill and follows the ridge to the top of Beinn Ruadh before running due south to Loch nam Bo Uidhre and then west to rejoin the forest fences of Strathy North. A significant part of the ground to the east thus lies within the West Halladale SSSI.

B3.4 Armadale Estate thus presents a patchwork of blanket bog, wet heath and open water in a landscape of rocky ridges. There are narrow strips of alluvial grasslands in proximity to the burn-sides and wider alluvial flats along the Strathy River. Towards Bowside there is some better growth of *Calluna* on better-drained knolls emerging above the wider area of wet heath and there are also patches of *Calluna* on the steeper western slopes of Beinn Ruadh, interspersed with lenses of coarse grass and some green flushes. There is little woodland, but a few scattered birches are associated with some of the gullies of the deeper burns (as for example the Uidh nan Con-Luatha to the east of Bowside Cottage).

B3.5 West Halladale SSSI (part of the wider Caithness and Sutherland Peatlands SAC and SPA) is notified in relation to its blanket bog vegetation and the populations of upland breeding birds, including black-throated diver and common scoter. Ten species of wader have been recorded breeding on the site, including dunlin, golden plover and greenshank. Seven breeding species of wildfowl are recorded including greylag goose, red-throated diver and as above both black-throated diver and common scoter. Other birds recorded on the site include golden eagle, hen harrier, and merlin. The last Site Condition Monitoring undertaken for each of the designated features found all to be in favourable condition.

Deer populations and their current/recent past management:

B3.6 Regular population census is not undertaken on Armadale, although population densities would appear to be very low. Deer tend to be concentrated more to the west of the site and may drift in and out of the adjacent forestry blocks where fences are porous, using these blocks for cover and grazing out into the surrounding open ground. A few roe deer are also observed from time to time.

B3.7 Reflecting these low densities, culls are also modest. Cull targets are now set by SGRPID in each renewal of the lease.

B4. Strathy North and Strathy South [multiple ownerships]

B4.1 Strathy North and South consist of a number of largely-contiguous forest blocks but with a diversity of ownership. In each case some blocks are owned by Scottish and Southern Electricity and other blocks belong to a series of individual private owners. However, SSE has actual (Strathy North) or potential leases (Strathy South) over these various disparate properties in relation to actual or proposed wind farm developments. The farm at Strathy North is completed and is now operational; proposals for a second farm at Strathy South have been to public enquiry; the report for this was submitted to Ministers on 24th Feb, 2016 with a decision expected shortly. If the development is approved then arrangements will be the same as for Strathy North, to wit that the development, its operation and associated habitat management/deer management over the entire project area will become the responsibility of SSE.

B4.2 Both areas are very similar and consist primarily of coniferous forest blocks at different stages of maturity. All blocks are deer fenced although the condition of fences are “such that a small level of

deer movement occurs between the forest blocks and surrounding land".³ In both instances the fundamental management model proposed is to secure the perimeter fencing to isolate populations from surrounding hill ground and then undertake culls within that secure perimeter to deliver resident populations appropriate for delivery of main habitat objectives. Securing the perimeter fences ensures that disturbance during development or operation of the wind farm, or subsequent culling operations, do not cause movements of deer outwith the project area, resulting in increased impacts on surrounding areas (especially on designated sites) and also ensures that culling operations within the fenced area do not impact on open hill populations of neighbouring properties or risk damaging their legitimate sporting interests.

B4.3 Such is the stage of Planning applications for Strathy South, that plans here can be definitive only in respect of Strathy North; however, it is to be anticipated that a similar model will apply in due course to Strathy South. It is noted that a full Deer Management Plan and Habitat Management Plan are required in support of any such development. Such Plans already exist in relation to Strathy North and similar Plans will doubtless be developed for Strathy South if Planning is granted; such Plan can therefore be appended in due course to this NDMG Group Plan.

Strathy North

B4.4 Strathy North consisted initially of approximately 1022 ha of plantation forest in 4 ownerships. 350 ha or thereby of this area has now been felled, with extraction of timber where economically feasible and mulching of brash and such timber as it was not practical to remove. A boundary, screening, strip remains, to the north (adjoining Achrugan Forest and outside the area under management agreement to SSE) and, within the site, primarily down the eastern and southern margins. The longterm plan however provides for removal of this boundary strip from 2020 and replacement with native broadleaved woodland.

Objectives of Management

B4.5 The **Habitat Management Plan** developed in relation to the site aims

- Within and adjacent to the wind farm, minimise collision risk to breeding and foraging raptors (in particular hen harrier, merlin, golden eagle, short-eared owl) and waders associated with the Caithness and Sutherland Peatlands SPA, by ensuring there is no suitable nesting habitat for raptors or waders within 250m of the wind farm turbines.
- Away from the immediate vicinity of turbines, create areas of enhanced habitat to benefit breeding and foraging raptors, notably hen harriers, by provide enhanced nesting and foraging habitat at least 250 m away from the wind turbines.

B4.6 In effect the intention here is to enhance areas outwith the turbine area for hen harriers and make the vegetation within the turbine envelope unattractive by ensuring a short sward <25cm which thus provides a less suitable habitat for prey species [little food, little cover] and non-preferred nesting habitat for the raptors themselves. Some grazing impact from deer is thus seen as desirable in helping to maintain comparatively short sward heights within the turbine array.

B4.7 In addition the Habitat Management Plan aims

- To encourage at appropriate locations active peat-forming vegetation to contribute to the restoration and enhancement of blanket bog. To establish native broadleaved riparian woodland at an appropriate distance from the turbines.
- To increase the extent of native woodland in the area in order to improve biodiversity and landscape visual and amenity values.

³ Strathy North Deer Management Plan; June 2012; RPS Group

Current deer populations and deer management

B4.8 In Strathy North at least fences largely appear to be secure to the west (against Armadale Farm and Skelpick) but those to the south and east (against Bowside/ Armadale Sporting) remain more porous such that animals may still at present move comparatively freely in and out of the woodland shelter. Thus animals within the woodland may move out into Bowside to feed, before returning to the shelter of the woodland; in the same way animals largely hefted within Bowside may nonetheless use the edges of the forest blocks for shelter in appropriate wind and weather conditions.

B4.9 It is a priority for future management identified in the monitoring report of 2014 (paragraph 5.1.2)⁴ that all fencing shall be reinstated and maintained at least until 2020.

Factors affecting current and future deer management:

B4.10 A primary concern in granting planning was that timber removal operations and the disturbance contingent on the construction phase of any wind farm might displace animals from Strathy North into the surrounding area potentially increasing impacts on sensitive habitats within adjacent areas within the Caithness and Sutherland Peatlands SAC, including the Lochan Buidhe Mires SSSI, Strathy Bogs SSSI and West Halladale SSSI, although initial assessments of deer utilisation of these areas in 2010 did not record any evidence of current utilisation of any of the areas surveyed.

B4.11 Future management must indeed ensure that there is no increase of deer impacts within these areas. At the same time, managers would wish to ensure that any culling operations to be undertaken within the Strathy North Area will not have a negative impact on open hill populations of surrounding properties to the extent that this might cause conflict with *their* management objectives or impair their ability to meet their own sporting targets.

B4.12 Finally, managers wish to deliver and maintain within Strathy North a deer population which is appropriate for delivery of Habitat Management targets, including contributing to the maintenance of short sward areas within the turbine envelope itself.

B4.13 The Deer Management Plan for Strathy North notes for the future (paragraph 3.2.1): “Deer control operations will be undertaken within Strathy North Forest for the duration of the phased forest removal in order to reduce numbers of deer dispersing outwith Strathy North. Any deer control will be undertaken following consultation with (neighbouring) landowners (and) NDMG”

Strathy South

B4.14 Strathy South likewise embraces a number of continuous forest blocks in seven different ownerships, although management is currently coordinated by Fountains Forestry. The reported area extends to 1,897 ha including perhaps 1,600 ha of forestry; like Strathy North it is immediately adjacent to various areas of conservation significance: in this instance within the Skelpick Peatlands SSSI, Strathy Bogs SSSI and West Halladale SSSI.

B4.15 Fences once again appear to be reasonably secure both to the east and the west of the combined block, although that to the north is known to be porous.

B4.16 As noted Strathy South is subject to an application for development of a windfarm within the site to be associated with and integrated with the existing development at Strathy North. In such case, management of the area would be undertaken by SSE.

⁴ RPS (2014) Strathy North Wind Farm Deer Management Report; Wind Farm Baseline Monitoring Winter 2013/14

As at Strathy North, proposals would include removal of a great deal of the current coniferous forestry to accommodate the proposed windfarm development and habitat enhancement to restore much of the area to open peatland habitat.

Deer populations and their current management:

B4.17 Although the seven separate forest blocks are in disparate ownership there are no internal fences and current management is integrated across the entire area. None of the timber is at a vulnerable stage of growth so relatively modest culls are taken in what is effectively sporting management (with clients).

B4.18 If Planning is not granted for a future windfarm, management is likely to continue much as at present until the blocks are felled in due course for timber (in perhaps 10 years' time). If the proposed windfarm development should go ahead, an initial Outline Habitat Management Plan has been developed, but as yet lacks detail; however, SSE note that if planning is approved and the development proceeds, proposals for deer management are very similar to those at Strathy North, such that it is likely that perimeter fences would be maintained/reinstated before construction and maintained during the construction phase to avoid any risk of disturbance during construction resulting in increasing impacts on the surrounding SSSIs (particularly the area of the Yellow Bog). Numbers of red and roe deer would be reduced within the site by targeted culling. A decision would be taken post-construction as to whether or not to remove fences at that stage – such decision to be undertaken in consultation with SNH and neighbouring landowners.

B5. Syre Estate [Rosal block]

B5.1 Syre Estate has a total area of 3,576 ha, as registered with SGRPID; the bulk of this land, extending west from the River Naver and continuous with North Loch Naver Estate, falls within the North West Sutherland Deer Management Group. The Estate also includes some 1,394.5 ha of land to the east of the river at Rosal; this area falls within the Northern Deer Management Group area.

B5.2 The river and forestry fences within the strath form a largely effective barrier to movement between Rosal and the rest of the Estate and it is felt that there is little exchange of deer. In consequence only current and future management of that area at Rosal is included here within the Northern DMG Plan.

B5.3 Syre Estate's ownership at Rosal straddles the B871 Syre-Kinbrace road, with the bulk of the ground lying to the south of that road and a small segment to the north extending to Rhifail Loch (and east to the Allt Lon a'Chuill). Syre's land is bounded to the west and south by the Forestry Commission block of FCS Rosal; south of the road the ground extends to the Rimsdale Burn and Loch Rimsdale (then marching with Rimsdale) - and includes 11.2 ha within the Truderscaig Peatland SSSI. North of the road, the land marches with [Skelpick and] Rhifail, to the east of the Allt Lon a'Chuill and north of the Rhifail Loch.

B5.4 The ground is low-lying and is essentially blanket bog, dominated by deer grass (*Scirpus cespitosus*) with some Erica and common cottongrass.

Current management:

B5.5 Sporting management of North Lochnaver Estate and Syre (west of the river) is integrated and run as one unit with sporting interests including fishing, some walked up grouse-shooting and deer-stalking.

B5.6 The nature of Rosal is such that animals may drift onto the property from neighbouring hill land (especially from Rhifail) or equally move across the march depending on prevailing wind and weather.

B5.7 No vegetation management is undertaken at Rosal and no winter feed is provided here.

Factors affecting Future Management

B5.8 At the last assessments (blanket bog: 2000; breeding bird assemblage: 2004), all designated features of the Truderscaig SSSI were recorded as in favourable condition.

B5.9 Syre's land holding at Rosal is comparatively small and thus is inevitably heavily influenced by management on adjacent ground - thus, to the north of the B871, management of Skelpick and Rhifail and within the regeneration enclosures within the FCS land around Dalvina Lodge.

B5.10 For that ground south of the B871 the western, southern and eastern boundaries are formed by forestry blocks. It is noted that the Forestry Commission holding at Rimsdale has recently been sold. Our understanding is that this is to continue to be managed for commercial timber production and that over time fences are to be reinstated to protect restock. There remains a strip of open ground however east of the Rimsdale Burn, before the tree-line; stalking is currently leased to a third party. The Forestry Commission block of Rosal is also currently on the market. There is little Syre can do to mitigate against the effects of management on neighbouring ground since the size and homogeneity of the holding are such that it is not practical to make it in any way independent of neighbours or establish a fully-hefted population of deer entirely resident on Syre's landholding.

B6 Badanloch

B6.1 Badanloch Estate lies in the western part of the Management Area and effectively (and biologically) falls into two Deer Management Groups, with those parts east of the Loch nan Clar/ Loch Badanloch, and thereafter east of the river, road falling into the Northern DMG and those parts to the west falling within the East Sutherland DMG. The precise boundary between the two sections is shown on Map 1a. There is reported to be comparatively little exchange of deer between the two areas apart from towards the eastern end of Loch Achnamoine (across the Blar Uilleim) and the two parts of the Estate may therefore be considered largely independent entities (apart from seasonal movements of stags in the rut).

B6.2 The Estate extends to approximately 27000 acres overall [c 11000 ha], of which perhaps 3000 acres [1215 ha] consists of open water. The land area within the Northern Deer Group extends to something over 4200 ha (excluding areas of open water).

B6.3 Badanloch is managed primarily as a sporting estate with deer stalking, fishing and some walked up grouse shooting. However, there are also farming interests with a number of sheep run (primarily to the north). Between November and mid-April there are no livestock on the hill.

B6.4 Within that part of the estate within the Northern DMG area, sheep are largely restricted within parks or themselves tend to concentrate along the roadside, although they do wander to the east up the burnsidings of the upper waters of Feith a' Chreagain and up the Eileag Burn and may even pull out to the slopes of Ben Giam Mor.

B6.5 The ground immediately to the north of the road between Kinbrace and Badanloch Lodge is largely improved grassland within fenced sheep parks. Further back into the ground, both here and to the north of the Lodge itself, the land is generally low-lying, with extensive flats or shallow hills and is largely characterised by blanket bogs – dominated by *Scirpus* and *Eriophorum*.

Only where the ground rises more steeply to Ben Griam Mor is this replaced with dry *Calluna* heath and high altitude *Agrostis/Festuca* grasslands on the steeper faces of the main massif and the eastern side of the long spur to the south.

B6.6 Sub-montane and montane *Calluna* heaths predominate on the steep slopes, ridges and summits of Ben Griam itself. The main type of sub-montane heath is *Calluna vulgaris-Vaccinium myrtillus* heath (NVC H12) with *Calluna* dominant mixed with *Vaccinium myrtillus* and *V. vitis-idaea*. On the summits this shifts towards a montane (wind-clipped) *Calluna vulgaris-Arctostaphylos alpina* heath with alpine bearberry (*Arctostaphylos alpina*) frequent. This is one of the rarer prostrate *Calluna* heaths confined to the north-west and northern Highlands and the Ben Griams site is of national importance for the extent of this community.

A small stand of montane *Vaccinium myrtillus-Cladonia arbuscula* heath occurs on the summit of Ben Griam Mór. This has a high lichen content of mainly *Cladonia arbuscula* and *C. rangiferina* and is significant as forming one of the most northerly examples of the community.

B6.7 There are three blocks of established coniferous plantation (largely Lodgepole pine) established on the north side of the B871, two around the Lodge itself and one back towards Kinbrace (Torr na Craoibhe); this last has suffered recently from extensive wind-blow. All are quite mature and fences are now porous, allowing free access to deer on this side of the estate, although it is noted that there has been little management within the blocks since planting and thus the blocks are quite dense and offer comparatively little by way of cover or forage.

Designated Areas:

B6.8 Various parts of Badanloch have been designated as of especial conservation significance. Two areas of blanket bog (one to the north east of Loch Badanloch – between Loch nan Clar and Loch Badanloch and the road; the other at the eastern end of Loch Badanloch) are together designated as the **Badanloch Bogs SSSI**. Part of the **Truderscaig Peatland SSSI** to the west also falls on Badanloch (although the bulk of the SSSI falls on neighbouring Loch Choire) as does a small area of the north of the **Skinsdale Peatlands SSSI**. Both these latter areas however, fall entirely within that part of the Estate within the East Sutherland Deer Management Area.

B6.9 In the east a significant area of the ground above the 250m contour is included within the **Ben Griams SSSI** (effectively that area north of the coniferous plantation at (centre) NC812335, between the 250m contour in the west and the Allt Airigh-dhamh in the east); the bulk of the SSSI ground around Ben Griam Mor and Ben Griam Beg (on neighbouring Achentoul) is included within the Caithness and Sutherland Peatlands SAC although this does not include the summits of Ben Griam Mor and Ben Griam Beg.

B6.10 **Badanloch Bogs** has been designated for its nationally important peatland habitat and breeding golden plover and greenshank. It is also a Ramsar site and, in relation to the breeding birds an SPA. The site measures 390.83 ha and is in two parts with the northern part lying between the B871 and Loch Badanloch and the southern section 5km to the south-east, on the south side of the Helmsdale River.

B6.11 That part of the site within the NDMG Management Area lies on a gently sloping spur and demonstrates a variety of surface pool and ridge patterns over a comparatively small area. Throughout, dubh loch systems and extensive carpets of bog mosses (*Sphagnum*) are widespread and this contrasts with the generally drier, more steeply sloping surrounding ground which rises towards the nearby hills. The vegetation is characteristic of blanket bogs in this area and includes abundant deer-grass, heather, cotton-grass species and bog myrtle. There is also an extensive inclusion of nationally scarce dwarf birch throughout the site.

B6.12 The **Ben Griams SSSI** (of which approximately 32% falls on to Badanloch Estate) is designated in relation to a number of key features: including blanket bog, the vascular plant assemblage, alpine heath and subalpine calcareous grassland (see also at section A4). The rock outcrops on both Ben Griam Mór and Ben Griam Beg are relatively rich in nutrients and support a number of nationally scarce plants. These plants include mountain bearberry, whortle-leaved willow, northern rock-cress, alpine cinquefoil, alpine mouse-ear and mountain avens. Large populations of dwarf birch also grow on the lower peatland habitat.

B6.13 The ‘**subalpine calcareous grassland**’ feature (originally classified as ‘tall herb ledge’ community) comprises two different alpine vegetation types: sheep’s fescue/alpine lady’s-mantle grass-heath (CG11 of the NVC) and the mountain avens/moss campion ledge community (CG14) [paragraph A4.14]. Other features of the site include the breeding bird assemblage and specifically breeding populations of golden plover and greenshank.

Deer populations and their recent past management

B6.14 Historically, Badanloch was always considered primarily a hind forest, with stalking largely restricted to the period of the rut in October. But an ongoing programme of winter feeding over the years would appear to have resulted in more stags becoming hefted to the ground and the Estate now maintains a number of stags all year – with the result that they can now stalk throughout the season.

B6.15 As noted earlier, it is reported that there is comparatively little movement of deer between the two parts of the estate (except for stags after the breakout). Although hinds and stags from both sides do come down to graze beside the road and between the road and the river, they tend to draw quickly back up on their own side.

B6.16 Winter feeding is provided (now primarily for stags) in a number of locations beside the roadside north of the Lodge (NC792343-790360) - selecting areas of harder ground less likely to suffer from localised poaching of the ground. Mineral blocks, beet pulp pellets and some potatoes are provided. Feeding is separately provided at various points within the ESDMG area, along the access road to Loch Choire, and specifically at Gearnsary and at the march bridge (NC718312).

B6.17 When conditions permit, muirburn is carried out where appropriate, within areas choked by coarse grasses on the flatter ground and on the steeper heather/grass mosaics of Cnoc a’ crom-uillt, Creag Liath, Creag an Lochain, both sides of the Creag and Alltan Fearna and on Meall an t-Socach.

Factors affecting current and future management

B6.18 In general, through the estate, grazing pressures are assessed as light or light-moderate, although (inevitably) pressures were higher (moderate or locally moderate-heavy) in areas associated with provision of supplementary feed overwinter (by the sides of the B871 and along the access track to Loch Choire) and along the banks of the river or along roadside verges, where grazing of sheep and deer combined contributes a heavier impact.

B6.19 Within that part of the Estate which falls within the Northern Deer Group Area, SNH have separately expressed concerns about the condition of the Badanloch Bogs SSSI and condition of a number of features within the Ben Griams SSSI/SAC.

B6.20 The blanket bog feature of the Badanloch Bogs was monitored in routine Site Condition Monitoring by SNH in 2004 and 2008. On both occasions it was noted that the overall extent of the bog, the characteristic peatland vegetation and the surface pattern of pools and hummocks has been maintained over much of the site and the northern section of the site was being managed in a way that maintains the blanket bog. However, an extensive area of blanket bog vegetation in the southern section had lost most of its *Sphagnum* cover in 2004 and the vegetation had not recovered in 2008.

B6.21 Overall the site was assessed as in unfavourable condition, although as noted, at that time the section within the NDMG Management Area was independently assessed as under favourable management. However, a recent site check on Badanloch Bogs showed some new trampling impacts within that northern block (near the Garvault), which had not previously been recorded.

B6.22 In Habitat Condition Monitoring of the Ben Griams site carried out by Brendan O’Hanrahan in 2008, the condition was assessed of Blanket bog, Alpine Heath, Tall herbs (on ledges) and Calcareous Grassland. Based on survey of random quadrats through the site, blanket bog was found to be in unfavourable condition (when assessed against standard condition indicators), as were all but one of 10 quadrats surveyed for alpine heath. Calcareous Grassland (a grassland type dominated by Alpine Lady’s mantle, *Alchemilla alpina*) was assessed as generally in good condition. Classical tall herb communities were ultimately found only in one location on the west side of Ben Griam Beg and this appeared to be in good condition; however it was noted that there was extensive trampling and browsing damage on mountain avens, *Dryas octopetalla* which is more widespread on ledges throughout the site (O’Hanrahan 2009). Full details of this and subsequent surveys are included in paragraphs A4.9- A4.16.

B6.23 As noted at paragraph A4.16 [see also paragraph C6.2], a Management Agreement has recently been negotiated between SNH and Badanloch Estate [March 2016] and the calcareous alpine grassland feature is now assessed as Unfavourable Recovering.

B7. Achentoul

B7.1 Achentoul Estate in Sutherland extends to a reported total area of some of some 8,850 hectares (if we include areas of open water) of which 3,770 ha lie to the west of the A897 and 5,080 ha to the east. It is noted that SNH records report Achentoul East as 4576 ha, perhaps taking simply planar area. Overall it is estimated that the total area of open-hill deer range on Achentoul [excluding inbye ground and forestry] is 8,136 ha, with 4,101 ha of open hill on Achentoul East, 3,770 ha on Achentoul West and a further 265 ha at Tor-dhu.

B7.2 To the west of the road, the property marches to the west with Badanloch and to the north is bounded by the various properties of Forsinard [The Dyke and the ground belonging to the Royal Society for the Protection of Birds]; there is a small section of the ground south of the B871 at Kinbrace at Tor-dhu, marching with Borrobol. Achentoul east once again marches to the north with Forsinard and to the east with Glutt, Braemore and Suisgill.

B7.3 The Estate has significant livestock interests (sheep and cattle contribute significantly to the economy of the whole) and some commercial forestry. It has a one-sixth share of the fishing on the River Helmsdale and from a sporting perspective is now managed primarily for red deer and salmon.

B7.4 A significant part of the ground is considered of high conservational value. Thus a significant proportion of the Ben Griams SSSI falls onto the northern part of Achentoul West (largely that area to the north of the Greamachary track and the Greamachary Burn), while a small part of the Knockfin Heights SSSI falls onto Achentoul East (in effect all that land above the scarp to the eastern boundary). Further details of these sites and the designated features are included at paragraphs B7.12- B7.14.

Vegetation:

B7.5 To the east of the A897 there is a series of improved grazing parks for sheep and cattle along the roadside. These are securely deer-fenced and largely protected by fringing conifer plantations established as windbreak shelter-belts. While excluded from the parks themselves, deer do have full

access to these mature conifer blocks from the eastern (rear) side. It is noted that the most southerly block [NC868331 to NC880324 approx.] is shortly to be felled and replanted.

B7.6 There is a more significant conifer plantation established around the curve of Meall a' Bhealaich to the north of the estate; ownership of this block is shared between the Estate and a third party and fences are securely maintained to prevent any deer access. There is also a more significant block of forestry to the south at Burnfoot, flanking Kinbrace Hill and towards the march with Suisgill; this area is under active management at the present time in removal of mature Lodgepole and restructuring. Much of that part towards the west has been felled, with some replanting undertaken across a smaller area; the remainder of the area cleared contains a number of sites of archaeological importance and it has been agreed that these should remain as open ground. The remaining mature blocks (south of Kinbrace Hill) are retained for now but will be felled during a later stage of the restructuring plan.

B7.7 There some considerable areas of native woodland at Bannockburn on the east side of the A897; on the burnside at the Lower Farm; and adjacent to the cattle grid at Tully Bra. The Estate is also considering plans for possible creation in the future of some small areas of broadleaved woodland in some of the parks around Greamachary.

B7.8 Lower-lying ground east and west of the A897 which remains unplanted or unimproved [e.g. north of the track to Greamachary on Achentoul West, and the Blar Mor south of Loch an Ruathair; north of the Lochan Dubh and west of the Allt na Muic] is for the most part deep peat covered with classic blanket bog vegetation of deer-grass (*Scirpus caespitosus*) and cottongrass (*Eriophorum vaginatum*) with some wispy *Erica* and numerous bog pools as well as the larger lochs Ruathair and Arichlinie. This same cover of blanket bog vegetation dotted with numerous dubh-lochs also characterises the higher flats to the east within the Knockfin Heights SSSI.

B7.9 Further back from the road (as the ground rises to Creag Sail a' Bhathaich, Meall a' Bhuirich and Ben Griam Beg on Achentoul West, or to Achentoul Hill in the east and the steeper faces rising to the upper flats of Knockfin Heights), the better drainage and more mineralised soils support a classic dry heath mosaic of patches of *Calluna* interspersed with areas of acid grassland and green 'runners' associated with the many drainage channels and small burns. None of this ground is particularly 'productive' (thus the heather is generally rather sparse, rather than presenting as a rich and extensive callunetum); the best of the heather is in fact on Achentoul Hill and the Creag na Caorach to the south, although here the sward is heavily grazed by sheep.

B7.10 There are more extensive areas of grass associated with the numerous burns and streams, notably around the lower reaches of the Bannock Burn (south of approximately Northing NC375 to the east of the road, and also on both sides of the same watercourse to the west of the road as it runs through Strathbeg). Richer grazings between the river and the road encourage deer from the east to cross the railways to graze these areas, resulting in regular mortality on the railway line itself. To the east, below the Knockfin ridge, the strath is quite broad, and has clearly been actively managed in the past both by burning and liming; it is currently heavily grazed by sheep and now presents in effect classic grazed 'sheep walk'.

B7.11 There are also a number of other areas of semi-improved grassland, of natural origin or the result of former improvements. Thus there is a series of better greens in the "mouths" of the Gable Burn, Knockfin Burn and the upper tributary of the main Bannock Burn, at NC 901374; 896366; 890358; these are associated with former settlements in these same area. Likewise, there are a number of improved grazing areas around the cottage at Greamachary; These have however now reverted to a large extent and are somewhat encroached with rushes. As on the east, there are some

natural greens on the steeper faces of Ben Griam Beag and the Meall a' Bhuirich/Creag Sail a' Bhataich ridge.

Designated areas:

B7.12 Parts of two SSSIs fall on Achentoul:

The Ben Griams SSSI includes the hills of both Ben Griam Mor and Ben Griam Beg and falls across Badanloch, Forsinard and Achentoul, with a portion of Ben Griam Beg and its foothills to the south falling upon Achentoul East. The site as a whole is designated as a Special Area of Conservation and also as a Ramsar site in relation to its Blanket bog feature; it is declared a Special Protected Area (SPA) and also a Ramsar site in relation to the breeding bird assemblage, and more particularly, an SPA specifically in relation to breeding populations of golden plover and greenshank. Other designated features of the SSSI include: Alpine heath, Subalpine calcareous grassland and the more general Vascular plant assemblage. The site was assessed by SNH for the condition of its vegetational features in November 2008 and considered to be in unfavourable status. It was subject to a more detailed Herbivore Impact Assessment in 2010 [see paragraphs A4.9- A4.16]. While the overall breeding bird assemblage was considered to be in favourable condition in June 2009, breeding populations of golden plover had previously been assessed as unfavourable, declining in June 2004.

B7.13 Only a relatively small part of the **Knockfin Heights SSSI** falls onto Achentoul. This site is designated solely in relation to Blanket bog. The blanket bog on this site is internationally important and has one of the most extensive areas of pool development on this habitat type in Scotland. It also represents one of the highest points at which blanket bog forms in Caithness and Sutherland. Condition of the feature was assessed in July 2005 as Favourable, maintained.

B7.14 These sites all form part of the wider Caithness and Sutherland Peatlands. Whatever the condition of the sites themselves, all designations inevitably place some constraints on management which are the subject of the ORCs (Operations Requiring Consent) published on the SNH website in relation to each site: <http://gateway.snh.gov.uk/sitelink/index.jsp>.

Management Objectives

B7.15 Achentoul is managed as a mixed estate with significant livestock interests as well as some commercial forestry and as a mixed sporting estate. Overall, management of both deer and domestic livestock makes every effort to be sensitive to environmental impacts and to ensure continuing favourable condition of designated areas within the estate.

Deer and Livestock Populations and recent past management

B7.16 Cattle are maintained within improved parks at Lochside and Achentoul and removed to the Farm's other property at Edderton over the winter period. All cattle parks are securely deer-fenced. The estate also runs a flock of North Country Cheviots. While these are also maintained in inbye parks for tugging and lambing, the gimmers are turned to the hill in June and the ewes go to the hill at the end of August after the lambs have been removed. They are brought in for tugging in November and for lambing in April.

B7.17 Open hill deer populations are counted annually at the end of winter.

B7.18 Hinds are approximately evenly divided between East and West parts of the Estate, but it is clear that there are generally fewer stags resident on the western side.

It is understood that there is comparatively little movement of animals between the two halves of the estate, except of course in relation to movements of stags for the rut.

B7.19 Hinds are fairly widely distributed across the ground. To the West, the old greens around Greamachary and the lower slopes of Meall a'Bhuirich seem especially attractive areas, as well as the area of Tor-dhu. Hinds move regularly from here to exploit the alluvial grasslands beside the Bannock Burn, and frequently cross the railway line to the greens on the eastern side (between the railway and the road), which results in significant mortality.

B7.20 On Achentoul East, again hinds are well-distributed all along the Knockfin face; numbers are reportedly fewer to the southern end of the ground, possibly due to the higher density of sheep. This area (Achentoul Hill, Cnoc na Fliuch-airigh and Creag nan Caorach) is however good for stags.

B7.21 Stalking of both stags and hinds is largely let.

B7.22 There is a regular pattern of muirburn within the estate as resources and weather permit, with efforts particularly targeted on areas of recent heather beetle attack. Due to heavy grazing of sheep towards the southern part of Achentoul East however, areas recently burnt are showing little sign of recovery and any future burning planned here and elsewhere should be considered with caution, lest recovery is suppressed and burn-sites become encroached with grasses and moss. No burning of course can be undertaken within designated sites without prior agreement with SNH.

B7.23 Winter feeding is provided in 9 sites within the overall Estate, with sites deliberately selected to be distributed over a wide area in order to provide feeding for as many groups as possible and also maintain their distribution of animals across the ground and prevent aggregations forming within limited areas. This wider dispersion of feed sites is also calculated to provide access to feed across a broad 'front' and thus reduce the risk of tracking. Hay and/or silage are provided in those sites accessible by tractor; otherwise KNV feedblocks are provided together with mineral licks which last are also distributed quite widely within woodland areas outwith the nine main feed sites.

Factors affecting current and future management

B7.24 In field visits of 27th August and 9th October 2012, Professor Rory Putman assessed impacts from deer alone (Achentoul West; deer-only areas of Achentoul East) were in general light to light moderate. Clearly within that there are certain areas (focused in the main around greens, or better areas of ling heather), which are particularly attractive and here impacts might be assessed as 'moderate'. In areas around the Bannock Burn and further south (Achentoul Hill, Cnoc na Fliuch-airaigh, Creag nan Caorach), impacts were recorded as heavy but are largely due to sheep rather than deer.

B7.25 SNH undertakes routine monitoring of the qualifying features of all designated sites on a regular basis. Results of most of these are summarised in individual Site Management Statements **The Knockfin Heights SSSI** is designated primarily for the blanket bog feature which dominates the site. In the most recent Condition Assessment reported (July 2005) the condition of this feature was Favourable, maintained; SNH did note some concerns about localised trampling in some areas, including Achentoul, although these were not such that they felt a need for action at this time.

B7.26 **Ben Griams SSSI** As noted at paragraph B6.12 this site is designated in relation to a number of key features many of which failed to reach targets established for 'favourable condition' of that particular feature, when surveyed by SNH as part of their own routine Site Condition Monitoring for all designated sites/features [see also paragraphs A4.9-A4.16].

B7.27 The condition of the **blanket bog habitat** was monitored by SNH in November 2008; SNH suggested that the results of their surveys indicated that the bog is being subjected to levels of deer trampling pressure which are causing loss of Sphagnum moss, areas of bare peat and erosion. This feature was therefore assessed as being in unfavourable condition, but it was unclear at that time whether the areas of damage recorded were within Achentoul or on Badanloch/Forsinard.

B7.28 SNH subsequently commissioned an independent survey of land management impacts on the three main habitats of SSSI: [Dr Alistair Headley (2011). An assessment of land management impacts on notified features within the Ben Griams Site of Special Scientific Interest (SSSI) *Scottish Natural Heritage*]. Generally, as with the original SNH survey, Headley's results tend to be presented across the entire site and it is sometimes difficult to dissect out which conclusions apply to all, only some (and which) of the individual component land-holdings. However, Table 3 of Headley's report shows clearly that for blanket bog habitat, grazing and trampling impacts within Achentoul are mostly moderate (10 survey plots) or below (18). High trampling impacts were recorded in one single survey site.

B7.29 **Alpine heath:** The alpine heath feature was also monitored by SNH in November 2008 as part of routine Site Condition Monitoring. Ground disturbance was noted at most of the points sampled. This was considered to be caused by sheep and/or deer trampling.

B7.30 In Headley's subsequent survey of alpine heath, impacts recorded were heaviest on Ben Griam Beg. Grazing impacts were predominantly moderate-low or low, but moderate or high trampling impacts were recorded in 24 out of 28 survey squares (high 14; moderate 10). Unfortunately, the report combines results for Achentoul and RSPB Forsinard in this analysis and it is impossible to separate out the actual impacts recorded within Achentoul.

B7.31 Vascular plant assemblage (nationally scarce or rare flowering plants)

The rock outcrops on both Ben Griam Mòr and Ben Griam Beg are relatively rich in nutrients and support a number of nationally scarce plants. These plants include mountain bearberry, whortle-leaved willow, northern rock-cress, alpine cinquefoil, alpine mouse-ear and mountain avens. Large populations of dwarf birch also grow on the lower peatland habitat. Reasonably large populations of all the nationally scarce plant species that are known to be found on Ben Griams SSSI were located during monitoring in 2004 and the vascular plant assemblage was assessed as being in favourable condition. SNH cautioned at that time, however, that "more recently, localised erosion has been noted in close proximity to some of the nationally scarce plants. Scarce plants sometimes benefit from harsh conditions in which other plants are unable to survive, but even for these plants there is a limit to their tolerance of erosion and unstable ground. This feature was not re-assessed in 2010.

B7.32 The 'tall herb ledge' community, originally a notified interest of the site, has been reclassified as '**subalpine calcareous grassland**'. This feature comprises two different alpine vegetation types: mountain avens/moss campion ledge community and sheep's fescue/alpine lady's-mantle grass-heath. While this feature was assessed as being in unfavourable condition in November 2008, it would appear that the sheep's fescue/ alpine lady's mantle variant on Ben Griam Beg (thus that part within Achentoul Estate) was not adversely affected and that main concerns were on neighbouring Badanloch. This feature was also re-surveyed by Headley in 2010. However, in his survey subalpine calcareous grassland was reported only on the western side of Ben Griam Mòr and thus, as above, impacts reported specifically within this habitat do not apply to Achentoul.

B7.33 For results of surveys of bird populations we are reliant solely on the SNH surveys of 2004 and 2009. Within the **breeding bird assemblage**, notable species recorded include common scoter which, despite its name, is a very rare breeding species in the United Kingdom.

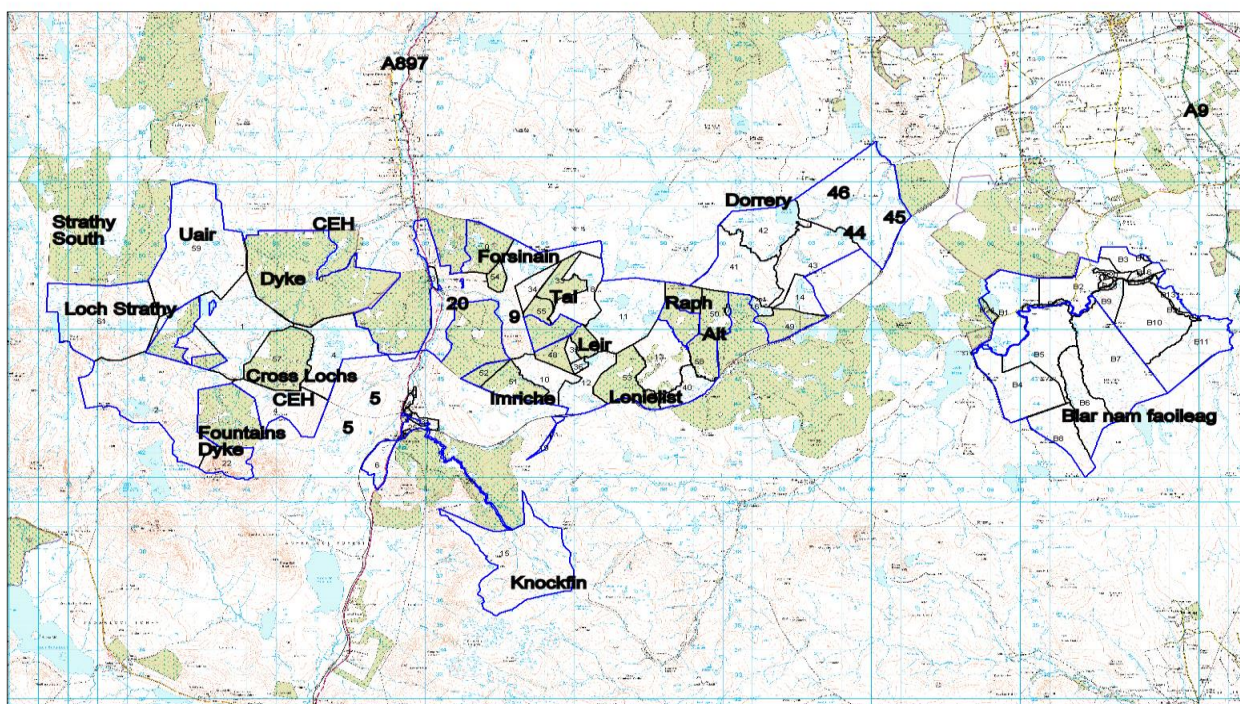
Other species recorded either breeding on the site or seen foraging over the site during the breeding season, include both red and black-throated divers, golden eagle, greylag goose, merlin, red grouse and widgeon. The diversity of breeding bird species present on Ben Griams SSSI and the lack of any significant disturbance meant that the breeding bird assemblage was assessed as being in favourable condition when monitoring was carried out in June 2009.

B7.34 The area is separately designated in relation to breeding populations of **greenshank and golden plover**. These populations were counted in a survey in June 2004. Although the population of greenshank had been maintained and was in favourable condition, the population of golden plover had declined and was assessed as being in unfavourable condition. The cause of the decline in breeding density of golden plover at Ben Griams SSSI is not clear. Surveys of golden plover at similar sites to Ben Griams SSSI found that the population was also declining and thus this is perhaps something we cannot ourselves address in future management.

B8. Land owned by the Royal Society for the Protection of Birds: Forsinard and Knockfin

B8.1 The Royal Society for the Protection of Birds (RSPB) owns a very significant amount of land within the Northern Deer Group Management Area and also has Management Agreements in place with landowners across other land within the area. It is thus a complex landholding which ranges over a total area of 20,884ha.

B8.2 The RSPB owns the majority of the former Forsinard Estate in Sutherland, Dorrery west of the Lambsdale Leans and the Blar nam Faoleag section of Strathmore Estate in Caithness.



These latter two areas, (Dorrery and Blar nam Faoleag) being geographically distinct from the core Forsinard block are treated separately in this report (at sections B13 and B24) within their more direct geographical context.

B8.3 Following acquisitions over recent years the Forsinard section now runs from Loch Strathly in the West to the Caol Loch, by Altnabreac in the east. It includes a number of former plantation areas that have since been felled and are being restored to open peatland habitats (Clach Geala, Bhaired,

Caol, Imriche and Casan, Alltan Dubh, Lonielist, Cross Lochs, Leir, Crubag, Sleach, North Raphan) with new acquisitions in former FC Dyke and Forsinain plantations. The RSPB also owns an area south of the railway at the north end of Knockfin. A fuller description of the landholding and its vegetational character is contained in the Forsinard Flows RSPB Nature Reserve Management Plan, 2012 - 2017.

B8.4 As might be anticipated from such a diverse holding the topography and vegetation are varied. The bulk of the ground is open moorland - dominated by blanket bog vegetation with many scattered bog pools and lochans which are the key habitats for which RSPB manage the reserve. This is interspersed with areas of wet heath, classic *Calluna* heath (dry heath), acid and marshy grassland on better drained and more mineralised slopes and knollier ground within the peat flats. Forsinard also includes 70ha of inbye fields on Forsinain Farm. Other riverside grasslands are present else on the reserve, along with scrubby woodland south of Forsinain Farm.

As noted above, the RSPB also owns a number of areas of exotic coniferous plantation within the area, with an ongoing policy of removing the trees and restoring these areas to their former bog/moorland status to protect adjacent Natura designated sites, biodiversity and carbon stores.

B8.5 Overall, the landownership embraces all or part of 13 SSSIs: within the main Forsinard/ Knockfin block this includes parts of both East and West Halladale SSSIs (and a very small corner of the adjacent Skelpick Peatlands SSSI); Forsinard Bogs; part of the Ben Griams SSSI; part of the Slethill Peatlands site; part of the Knockfin Heights SSSI and Rumsdale Peatlands SSSI. [The landholding at Dorrery includes parts of the Loch Caluim Flows and Lambsdale Leans SSSIs while Blar nam Faoileag/Carn nam Muc includes parts of the Strathmore Peatlands and the Blar nam Faoileag SSSIs.]

B8.6 While the majority of these are peatland sites, Ben Griams is also designated in relation to Alpine heath, Subalpine calcareous grassland (used to be called 'Tall herb ledge') and the more general Vascular plant assemblage (as well as for its breeding bird assemblage); and the Dirlot Gorge Woodland SSSI has been designated in relation to its scrub woodland - dominated by birch and hazel but also containing many other species including rowan, aspen and bird cherry and the nationally scarce downy currant. Full descriptions of all these sites and the site management statements are published at <http://gateway.snh.gov.uk/sitelink/index.jsp>.

Objectives

B8.7 Objectives of management across RSPB ground in general is towards ensuring or restoring condition of the various special habitats across the landownership and in support of populations of breeding birds and other wildlife. Deer are recognised as an important component of the wider biodiversity of the reserve as well as a key element of the management of the land and its component habitats. Grazing/light trampling is a natural part of a functioning peatland landscape and is important in maintain a reasonably short and open vegetation structure dominated by key plants such as sphagnum moss, which is selected for by moorland waders such as golden plover and dunlin. Deer browsing at an appropriate level also assists habitat management in that it can prevent establishment of seedlings and saplings of exotic conifer species, in bog areas adjacent to established plantations or in areas which have been felled in order to return them to moorland. On the other hand, deer can also cause negative impacts if grazing/trampling pressures are so heavy as to cause damage to sensitive habitats or cause a change in species composition or if trampling leads to exposure of bare peat.

B8.8 The RSPB also recognises that their own deer management has the potential adversely to affect the management objectives of managers on adjoining properties, whilst management on such neighbouring estates may also affect the RSPB's ability to regulate deer grazing and disturbance

levels on the reserve. In general a balance is sought and the RSPB seek to maintain appropriate numbers of deer and appropriate distribution of grazing impacts across their properties.

Deer Populations:

B8.9 Deer populations and distribution have in the past been assessed three times a year, with the main count at the end of winter (in synchrony with end-of-winter counts undertaken by other Estates within the NDMG). RSPB staff and volunteers have also undertaken counts across the ground in August and December, which provides additional information on seasonal changes in densities and distribution and how they interact with the habitats present.

Management:

B8.10 All culling on RSPB properties is leased to third parties.

B8.11 Cull targets for the number of stags and hinds which should be taken in each year are agreed with tenants, with the intention that culls delivered will maintain deer stocks at target densities across the year. In general, this has been predominantly focussed on hind culls as they are the major grazer for most of the reserve area. Stag cull levels were generally left to the lessee within the max/min stag cull figure agreed in their lease. Concerns in recent years within wider NDMG relating to numbers of mature stags declining has led to setting of stag culls as well, with decreased cull targets agreed with main Forsinard lessees since 2009.

B8.12 RSPB put considerable effort into deer management given that is one of the limited number of ways in which the important peatland habitats can be managed. Deer densities are important both in maintaining healthy habitats and the all-important vegetation structure of some key wader species. Three counts per year have been carried out for many years to improve understanding of deer densities, herd health, calf productivity and distribution. Extensive habitat condition monitoring across the reserve collect data on deer via droppings, browsing, hoof prints, trampling, vegetation structure and results are used to feed back into culling targets agreed with lessees⁵. Specific deer management has been implemented to contribute to resolution of problems with statutory site condition where the reserve formed part of the area of concern.

B8.13 Deer are managed to aid major forest to blanket bog restoration projects on the reserve with culls reduced on areas where raised densities are required to counteract unwanted conifer regeneration and aggressive grasses. Around 20km of deer fence have been removed to re-instate natural deer movements and grazing patterns and allow access to felled forest areas and 2.5km of new deer fence has been erected to protect open hill deer populations from loss into forestry. To date some 1843 ha of former coniferous forestry has been felled and returned to open ground.

Factors affecting current and future management on RSPB ground

B8.14 Deer management remains a challenge across the reserve. Deer impacts and changes in deer management practices on neighbouring estates and forest areas impact upon the RSPB's ability to regulate deer grazing and disturbance levels on the reserve. Deer can be a very effective tool in removing regeneration within the first few years following tree removal being undertaken as major blanket bog restoration projects. As above, the RSPB in effect seeks a balance with deer numbers at levels appropriate to deliver beneficial impacts but not so high as to cause damage through excessive trampling/tracking or grazing impact.

⁵ A baseline survey across all open moorland, excluding the felled areas, was completed for all areas owned at the time in the early 2000s. A full repeat took place in 2008 and in 2009 we did the baseline survey for a newly acquired area (Lochstrathy). This is a very detailed survey with transects every 500m apart (east to West) across the reserve and running the full length of the landholding North-South; There are currently two datapoints (baseline and repeat) for all areas on the reserve, and the intention is that this monitoring shall be repeated every 5 years.

B8.15 Losses into forest blocks have been the greatest issue for deer management at the Forsinard end of the reserve partly caused by the fragmented nature of the open peatland landscape by scattered forest blocks in the 1980's. Losses in some years have exceeded annual culls and explain declining populations in some parts of the reserve. A continued policy of working with neighbours to manage deer and integrating deer management across greater areas should be pursued.

B8.16 SNH undertakes routine monitoring of the qualifying features of all designated sites on a regular basis in a regular programme of Site Condition Monitoring (SCM). A summary of the most recent status of those falling within the main Forsinard block is offered.

B8.17 Condition of blanket bog and other vegetation within the West Halladale SSSI; Forsinard Bogs; the Slethill Peatlands site have all been assessed as Favourable in the last SCM assessments undertaken. The Knockfin Heights SSSI is designated primarily for the blanket bog feature which dominates the site. In the most recent Condition Assessment reported (July 2005) the condition of this feature was Favourable, maintained; however more recently concerns have been expressed about localised tracking. SNH accept that the bulk of erosion observed on the Knockfin Heights SSSI is due to wind and weather on this exposed site. They do have some concerns about localised trampling in some areas, including Achentoul, and while these are not such that they feel a need for action at this time, they certainly would not want to see any increase in deer densities here.

B8.18 In addition to designation for their vegetational features many of these SSSIs are also designated with respect to the assemblage of breeding birds and in many cases in addition are designated specifically for breeding populations of wading birds such as greenshank, golden plover and dunlin as well as common scoter. No common scoters were recorded on Forsinard Bogs during the last survey (June 2007) resulting in an assessment of unfavourable condition. When last surveyed in July 2009, golden plover and greenshank populations of the Slethill Peatlands were also recorded to be in decline. However, estimates of wader populations can show considerable variation in numbers between years as a result of variation in detectability caused by weather during surveys so runs of data are safer. Other factors such as the condition of the wintering habitat, may also influence size of breeding populations.

B8.19 **Ben Griams SSSI** As noted at paragraphs A4.9 –A4.16 this site is designated in relation to a number of key features, many of which failed to reach targets established for 'favourable condition' of that particular feature, when surveyed in 2008 as part of SNH's own routine Site Condition Monitoring for all designated sites/features. SNH subsequently commissioned an independent survey of land management impacts on the three main habitats of SSSI: [Dr Alistair Headley (2011)]. An assessment of land management impacts on notified features within the Ben Griams Site of Special Scientific Interest (SSSI). *Scottish Natural Heritage*].

B8.20 The condition of the ***blanket bog habitat*** was monitored by SNH in November 2008. SNH suggested that the results of their surveys indicated that the bog is being subjected to levels of deer trampling pressure which are causing loss of Sphagnum moss, areas of bare peat and erosion. This feature was therefore assessed as being in unfavourable condition, but the site covers three separate landownerships and it was unclear at that time whether the areas of damage recorded were within Achentoul, Badanloch or Forsinard.

B8.21 In Headley's subsequent survey of September/October 2010 a total of 91 sample plots (4m²) were assessed within the blanket bog habitat across the entire site and the results are as follows:

- grazing levels were Moderate or Moderate/Low or Low in 94% of the sample plots;
- levels of trampling were generally mostly Moderate or Low, but the High (12%) levels of trampling were found to be concentrated within the valleys with burns that run north to south through the SSSI;

B8.22 Generally, as with the original SNH survey, Headley's results tend to be presented across the entire site and it is sometimes difficult to dissect out which conclusions apply to all, only some (and which) of the individual component land-holdings. However, Table 3 of Headley's report shows clearly that for blanket bog habitat, while there were localised heavy trampling impacts recorded within Forsinard, aggregate scores for overall impact were moderate (2 survey plots) or below (32).

B8.23 **Alpine heath** The alpine heath feature was also monitored by SNH in November 2008 as part of routine Site Condition Monitoring. Ground disturbance was noted at most of the points sampled. This was considered to be caused by sheep and/or deer trampling. In Headley's subsequent survey of alpine heath, a total of 56 sample plots were assessed, divided equally between Ben Griam Mór and Ben Griam Beg and Headley suggests that the results showed:

- grazing impacts were found to be Low in 79% of the sample plots;
- trampling impacts and consequent erosion by red deer was High in 45% of the sample plots;
- erosion is concentrated in one particular area where the route up Ben Griam Mòr is restricted due to cliffs or along on what appear to be major routes taken by deer and to a much lesser extent by hill walkers through the SSSI.

Impacts recorded on alpine heath were heaviest on Ben Griam Beg. Grazing impacts were predominantly moderate-low or low, but moderate or high trampling impacts were recorded in 24 out of 28 survey squares (high 14; moderate 10). Unfortunately, the report combines results for Achantoul and RSPB Forsinard in this analysis and it is impossible to separate out the actual impacts recorded within Achantoul.

B8.24 **Vascular plant assemblage (nationally scarce or rare flowering plants)**

The rock outcrops on both Ben Griam Mór and Ben Griam Beg are relatively rich in nutrients and support a number of nationally scarce plants. These plants include mountain bearberry, whortle-leaved willow, northern rock-cress, alpine cinquefoil, alpine mouse-ear and mountain avens. Large populations of dwarf birch also grow on the lower peatland habitat. Reasonably large populations of all the nationally scarce plant species that are known to be found on Ben Griams SSSI were located during monitoring in 2004 and the vascular plant assemblage was assessed as being in favourable condition.

B8.25 The 'tall herb ledge' community, originally a notified interest of the site, has been reclassified as '*subalpine calcareous grassland*'. This SSSI feature was assessed by SNH in November 2008 and while it was assessed as being in unfavourable condition overall, it would appear that the sheep's fescue/alpine lady's mantle variant on Ben Griam Beg (thus that part within Forsinard) was not adversely affected. Subsequent to a Management Agreement between SNH and Badanloch Estate, this feature is now re-assessed [March 2016] as Unfavourable, Recovering.

B9 Number One Holding

B9.1 Number One Holding is an area of owner-occupied croftland lying on the east of the A897 and to the north of the railway line. Some of the land towards Imriche and Casan was sold to the Royal Society for the Protection of Birds (RSPB) in 2003, but the owners of Number One Holding retain a sporting lease over 640 acres [c 260 ha.] as well as over the remaining 1000 hectares of wholly-owned ground. In addition, a further 14 ha conifer block at the edge of the plantation of Forsinain North and abutting the (now clear-felled) areas of Imriche and Casan is owned outright.

B9.2 The croft has the railway line as its southern boundary, thereafter with the river as the boundary to the south and west. To the north there is a stock fence running from the river to Forsinain wood. The march is then the deer fence on the southern edge of Forsinain wood.

B9.3 The area is largely peaty ground dominated by blanket bog and areas of wet heath. There are alluvial grasslands bordering the property along the strath of the River Halladale, and also strips of grassland associated with the two burns which meander through the clearfell forest areas of Imriche and Casan. Much of the strath however is emparked and grazed by sheep. The 'face' of the terrace to the east of Strath Halladale is largely peaty in character, but with emergent knolls supporting heather and grass; further away from the road, the ground flattens and is largely dominated by deergrass [*Scirpus cespitosus*] and cottongrass with sparse Erica heath.

Deer Populations and recent past management:

B9.4 No management of vegetation is undertaken within the property, but mineral licks for stags and some feedblocks are provided at the edge of the conifer block at Forsinain, against the clearfelled area of Imriche and Casan.

Factors influencing current and future management:

B9.5 Numbers of hinds recorded over the years seem remarkably stable, and it would appear that populations recorded are largely resident, despite the comparatively small size of the property.

B10. Bighouse Estate

B10.1 Bighouse Estate in Sutherland extends to a reported total area of some 14754 hectares [according to DCS/SNH estimates] on either side of the Halladale Water (and with about half the land falling to the East [Bighouse East: 7188.2ha excluding open water] and half to the West: 7200.35 ha excluding open water]. The ground also extends north of the A836 to the coast.

B10.2 The Estate had over the years become fragmented into a number of separate lots, but between 1996 and 2003 has been reconstituted as a single property. Some 17 miles of the River Halladale were purchased in 1996 and are owned by a partnership of 4; the hill land was bought back by two of the partners in 2000 and the Lodge and surrounding area purchased in 2003. Bighouse marches to the east with Sandside and Shurrery, to the west with Armadale Estate and Strathy Forest. Landownership in the south is more fragmented, but the bulk of the properties are now owned and/or managed by the Royal Society for the Protection of Birds.

B10.3 The Estate is run primarily as a sporting Estate and the bulk of the fishing is let commercially. A number of pheasants and red-legged partridge are also put down each year for sport. The deer-stalking is split about 50:50 between the owners themselves and paying guests.

B10.4 Much of the Estate is under crofting tenure. The bulk of the inbye land runs down Strath Halladale to Trantlebeg and the River Dyke, and (with the exception of the tenant farm at Kirkton) has been ring-fenced with deer fencing to protect croft-land from losses to deer. While the bulk of crofting activity is thus within the area of the deer fence, common grazings extend over some 90% of the hill land and a number of crofters continue to exercise these rights, putting a fair number of sheep to the hill for much of the year on both sides of the strath, but primarily on the East side.

B10.5 A significant area within the estate also falls under designation for its conservation value, with the bulk of the land falling south of the A836 and beyond the fenced inbye land of the immediate strath, falling respectively into the West Halladale and East Halladale Sites of Special Scientific Interest (SSSI). Further details and description of the designated features are included at paragraphs B10.11 – B10.14.

Vegetation:

B10.6 That ground to the north of the A836 between the road and the coast offers a mixture of improved parks/farmland and open hill ground; the hill ground is has some topography and supports some quite good heather on the better-drained ridges, interspersed with areas of wet-heath and deer grass (*Scirpus cespitosus*).

B10.7 South of the road, the immediate area of Strath Halladale is largely of improved grassland, with the pastures of the farm at Kirkton and then the crofters' inbye along the river between Achimore and Trantlebeg - although as noted, this latter part is excluded from deer range by a ringfence. This fence starts in the north just to the south of a small conifer plantation at Druim an Laraidh and within the deer-fenced area there has also been recent establishment of significant areas of native broadleaved woodland, particularly to the east of the strath which is covered under Crofters' Woodland grant schemes.

B10.8 As the ground rises away from the alluvial flats of the strath itself at the north end, it forms a series of glacial terraces on the west side which are grassy on the flatter surfaces but quite heathery on the faces. This glacial legacy is also apparent from the area of grassy hummocks before Kirkton, at Achridigill, which are clearly remnants of a terminal moraine. Further down the strath, the same pattern repeats, both to the east and the west, with improved parks within the strath itself, giving way to closely-managed heather on the sides of the immediate river terraces and the lower slopes of the hills behind. This offers a real mosaic of closely-managed heathery faces, sections cleared to almost pure grass, but interspersed with some areas of quite mature, unmanaged heather (primarily on the eastern side of the strath).

B10.9 On the tops, the ground levels out again to flatter ground largely dominated by flowey peat interspersed with many lochans, although with some emergent ridges and hummocks and with a much more rolling topography to the south (towards the forestry blocks beyond the march). West Halladale is a patchwork of blanket bog, wet heath and open water in a landscape of rocky ridges. Well-developed pool systems including areas with large numbers of dubh lochans occur throughout the site and some contain areas of quaking mire which is nationally rare. To the east of the strath, East Halladale presents a more continuous blanket of peat, although here too, the blanket bog vegetation is interrupted only by many streams, lochs and occasional rocky outcrops. A central low ridge of hills runs north/south through the site. Most of the hills, which rise to 243m altitude at Cnoc an Fhuarain Bhain, have at least a thin covering of peat, although the greatest extent of blanket bog is within the range 120- 220m altitude. Deer sedge, heather and common cotton grass dominate the vegetation throughout.

Designated areas:

B10.10 As noted already, significant parts of Bighouse fall within the West Halladale and East Halladale SSSIs. Detailed description of the vegetation of the SSSIs is included in the initial citation statements and subsequent site management statements [accessible via <http://gateway.snh.gov.uk/sitelink/index.jsp>]. These sites both form part of the wider Caithness and Sutherland Peatlands Special Area of Conservation (SAC).

B10.11 **The West Halladale SSSI** is notified primarily in relation to the extensive blanket bog vegetation covering the site (paragraph B10.10 above), but in addition is recognised as a Ramsar site in relation to its assemblage of breeding birds. Ten species of wader, including dunlin, golden plover and greenshank, have been recorded breeding on the site. Seven breeding species of wildfowl are recorded including common scoter, greylag goose, red-throated diver and black-throated diver. Other birds recorded on the site include golden eagle, hen harrier, and merlin. In relation to its breeding populations of black-throated divers and common scoter, the site is also designated as a Special Protection Area (SPA).

B10.12 When last monitored by SNH as part of their routine assessment of designated sites, all features were considered to be in favourable condition [blanket bog last recorded 2002; breeding bird assemblage and black-throated diver 2003; common scoter 2007].

B10.13 The **East Halladale SSSI** is similarly designated primarily in relation to its blanket bog vegetation (as SSSI, SAC, Ramsar) and its breeding bird assemblage (Ramsar). Within the latter, special recognition is given in this case to breeding populations of dunlin (SPA, Ramsar) and golden plover (SPA). All features were reported to be in favourable condition when last surveyed [blanket bog 2007; breeding bird assemblage 2003; golden plover 2009) with the exception of dunlin (2009) which were considered to be declining in numbers. However, it is recognised that populations of both dunlin and golden plover do show considerable variation from year to year and that numbers are as much affected by conditions off site (in the wintering areas) as conditions on the breeding grounds. Forestry established along the edges of the SSSI is also understood to affect the breeding densities of some waders including dunlin. Removal or reduction of forest blocks and the cutting back of the edges as is currently being undertaken should reduce or remove this impact.

Management Objectives

B10.14 As above, Bighouse is managed as a commercial sporting estate, for salmon fishing, deer stalking and shooting of both pheasant and partridge.

Deer Populations

B10.15 Considerations here are largely focused on land wholly owned by Bighouse, thus within those areas known as Bighouse West and Bighouse East. Separate consideration will be offered elsewhere in these reports/the final plan to areas leased from RSPB.

B10.16 Open hill deer populations are counted annually at the end of winter.

B10.17 On Bighouse West, stags are primarily concentrated on the harder ground to the south, notably the ridge between Creag Mhor and Millburn, although in a westerly wind, they also drift west to Bowside & Strathy or the forestry blocks beyond. They seem to be resident for most of the year (apart from period of the rut). Hinds are more widely distributed. On Bighouse East, there are reported to be fewer stags and the main concentration of animals (therefore mostly hinds) is in the bowl around the headwaters and to the east of the Smigel Burn.

B10.18 It is felt that (excluding any movement of stags during the rut) there is comparatively little movement of animals between Bighouse West and Bighouse East, and indeed, with the fences along the strath the only through routes would be through the gap between the southern end of the 'ring-fence' and the northern limit of new fencing erected to protect a woodland plantation at Craggie Croft. There is perhaps a wider passage to the north between the cattle grid and the A836, but movement is inevitably restricted across the improved parks of Kirkton Farm.

Current and recent past Management

B10.19 While some muirburn may be undertaken within the area of common grazings by the crofters, no burning is currently undertaken by the estate. Some proprietary feed blocks and mineral blocks are put out over winter on the Estate ground and the stalker has more recently established five silage-feeding sites along the strath (although clearly siting is restricted because of the fence around the crofters' inbye and only one feed site is located on Bighouse West). Silage is provided on these sites when available from the farm.

Assessments and factors which should be taken into account in Future Management

B10.20 SNH undertakes routine monitoring of the qualifying features of all designated sites on a regular basis. Results of most of these are summarised in individual Site Management Statements and

as noted, vegetational features of both the West and East Halladale SSSIs are deemed to be in favourable condition, maintained.

B11 Sandside

B11.1 Sandside Estate lies to the east of Bighouse, to the north of the Management Area – and in effect towards the eastern boundary of the NDMG catchment, since most of Sandside’s own eastern boundary is securely fenced. The Estate extends to a reported total area of some 3924 hectares or thereabouts.

B11.2 The western march against Bighouse follows the watershed across Beinn Ruadh, Cnoc na Tobaireach, east below Loch Garbh and then south to Sean Airidh and the Loch nan Clach Geala [Map 1b] and continues south towards Lochana’ Chleirich on Shurrery. The eastern march extends from the east side of Sandside Bay, following the line of the boundary burn through Isauld towards the northern boundary of the Limekilns plantation [approximate grid reference NC987639]⁶. It then follows that fenceline west to Helshetter before turning southeast to the tip of the forest blocks at Lon Breac. As noted, all of this eastern march is deer-fenced and relatively secure.

B11.3 To the south, Sandside marches with the north edge of Shurrery Estate and it is to be noted that deer populations to the centre and southern part of the estate are largely continuous with those of the north part of Shurrery.

B11.4 The area may broadly be considered in three sections: land to the north of the A836; land to the northeast around Borlum (south and east of Reay village) which is separately fenced from the main hill ground; and the main hill ground stretching south between Bighouse and the Limekilns Plantation. Deer populations are largely (although not exclusively) concentrated south of the A836.

B11.5 To the north of the road, there is an area of mature policy woodlands surrounding the approach to Sandside House. Around and below the house itself are a series of improved parks for livestock, while further towards the eastern boundary, land is leased for a local golf course. To the west of the policy woodlands is an area formerly deer-fenced for woodland creation. Establishment was not successful however and there is no extensive woodland cover, although the fence is maintained and may be retained as a livestock park (albeit of rough grazing). West again of this enclosure, the ground is essentially ‘hill ground’ of blanket bog and wet heath.

B11.6 South of the road, the area to the east of the track between Reay and Helshetter is stock-fenced as a separate parcel (and as noted some individual parcels are under separate ownership; e.g. Borlum House). Much of this ground is former arable land or improved pasture, but it has largely reverted to semi-improved and rather rushy grassland, with extensive patches of established birch woodland in the central parts. There is a block of Lodgepole pine at Helshetter, adjacent to, but contiguous with, the Limekilns Plantation. This is separately fenced (and thus separated from Limekilns), but the perimeter fence onto the Borlum area itself is old and now porous so that deer from this area have access to that block belonging to Sandside.

B11.7 The main hill ground (largely of wet heath or blanket bog, extends to the south of the A836. This is partially fenced at the roadside and once again (as at paragraph B11.5) there is a former (failed) woodland enclosure immediately adjacent to the road. There is also fencing associated with two additional schemes to the west of the established Lodgepole pine plantation at Helshetter; these

⁶ Although it should be noted that there are a number of private houses/properties under separate ownership within this broader perimeter.

latter areas have been planted to conifers and fences appear largely secure (although as above, there may currently be leakage at the southwestern corner of the main Helshetter block).

B11.8 There was a (separate) but significant enclosure enclosing the bulk of the northern end of Beinn Ratha. All commitments associated with recent woodland schemes and any grant-aid received in relation to these have been cancelled as a condition of the purchase of the estate.

This area has in consequence recently been opened to deer. There are two areas of more mature woodland to the east and south of Beinn Ratha: a small triangle of mature conifer east of Beinn Ratha and the “Woodcock Wood” to the south. Both areas have also recently been opened to deer to provide additional cover in the core of the Estate.

B11.9 Beyond the woodlands, the bulk of the area supports a classic blanket bog vegetation grading towards wet heath where there is better drainage and with greater inclusion of heather on emergent knolls and low ridges.

B11.10 To the north, there is an area of artificially improved grazings (established primarily for sheep) in a strip on either side of the hill track leading out to Woodcock Wood and between that track and the enclosure fence at the foot of Beinn Ratha. The banks and flats of the Sandside Burn also provide better grazing on more natural alluvial grasslands together with (and particularly notable within the lower strath –towards the north) extensive areas of whin.

There are additional areas of good grazing higher up the burn, where the banks get much steeper and are thus more free-draining (e.g. around NC 971595) and on the faces of the western boundary ridge (thus on the west side south of Woodcock Wood).

B11.11 Some of the steeper faces of the gullies of the tributary burns feeding into the Sandside burn support areas of *Calluna* heather (dry heath) and there are more extensive areas of *Calluna* on the western face of Mid Hill. The best heather however, is indubitably that of the eastern faces of Beinn Ratha, within that area preciously fenced off for the former woodland creation scheme.

B11.12 As noted however, the bulk of the area is blanket bog, grading to wet heath on emergent knolls and ridges. Thus the area between the Sandside Burn and the Limekilns plantation presents an extensive area of bog, and almost all the ground away from the Burn and south of Beinn Ratha is this classic wet heath/bog mosaic.

Designations:

B11.13 It is to be noted that (south of the A836) the strip of ground between the Brackside Burn and the western march falls within the East Halladale SSSI as does all that area of Sandside south of Beinn Ratha and the Woodcock Wood [Map 5]. East Halladale SSSI forms part of the Caithness and Sutherland Peatlands SAC, part of the Caithness and Sutherland Peatlands SPA and part of the Caithness and Sutherland Peatlands Ramsar site. The designated features are listed as Blanket bog (SSSI, SAC), the assemblage of breeding birds (Ramsar) and specifically golden plover and dunlin (Ramsar, SPA). When last surveyed (2007) the blanket bog was assessed as in favourable condition as were the breeding birds assemblage (2003) and golden plover (2009). Dunlin populations were considered unfavourable, declining (2009), although it is recognised that this may be primarily due to conditions off site rather than management within the SSSI area. Full details and the agreed Site Management Statement may be found at <http://gateway.snh.gov.uk/sitelink/>

Management Objectives

B11.14 Sandside is managed as a farming and mixed sporting estate. Pheasant and duck are put down on the more intensively managed low ground to the north of the A838 but the hill ground is managed primarily to improve the moorland habitat both inside and outwith the designated area to enhance conservational values and also to improve the habitat for snipe, grouse and other moorland birds.

Deer management is undertaken within this overall package of management aimed at delivering good habitat condition and also as an alternative sporting resource. Sheep and cattle are also run on the estate as part of the overall management.

Deer and Livestock Populations

B11.15 Cow are largely maintained within parks on the low ground north of the A836 or within the stock-fenced areas around Borlum and are not put to the main hill. Sheep are kept in fenced parks at critical times of the year (for lambing, tupping etc) but are also put to the main hill ground south of the road. They tend in part to be concentrated on the semi-improved grazings on either side of the hill track (paragraph B11.10) but also draw well out into the ground following along the alluvial grasslands of the Sandside Burn itself. Some sheep will remain on the hill even through the winter and are fed hay and blocks, which are thus accessible to deer. In recent years, hay has been separately provided for the deer, especially on the hill ground back from Drumhollistan in a specific attempt to hold the deer back from the roadside in this area (B11.33)

B11.16 Sandside was historically, primarily seen as a hind forest. While there are now a few resident stags, stalking is still primarily dependent on an influx of beasts late in the summer and into the period of the rut.

B11.17 The bulk of the deer are concentrated to the east side of the property and there is reported to be comparatively little exchange (outside of the rut) with Bighouse to the west. There are a few stags now resident year-round in the area around Borlum – primarily associated with the forest block of Helshetter and now moving freely in and out of the more open ground through the porous fences of that block. They may also move round into the newer planting west of the more mature Helshetter block (paragraph B11.7) and draw further south along the hill track into the lea of Beinn Ratha.

B11.18 There appear to be two main groups of hinds. There seems to be a distinct group in a separate heft within the stock-fenced area around Borlum/The Knowes, and a larger number of hinds in the central and southern part of the ground east and south of Beinn Ratha. As noted, they tend to be concentrated on the eastern part of the estate (except when they may draw further to the west during the rut) and are primarily associated with the alluvial greens of the Sandside Burn and the green faces of the steeper faces further to the south.

As well as being concentrated on this eastern side of the property, this group of hinds is also quite mobile and – even from the heart of the ground - regularly moves to and fro across the march with Shurrery to the south depending on wind, weather and the level of disturbance. This group must be seen to a large extent therefore as a population shared fully with Shurrery.

B11.19 Open hill deer populations have been regularly counted at the end of winter.

B11.20 There is significant variation in numbers counted from year to year, emphasising the mobility of Sandside's hind population in particular which may be one side or the other of the march with Shurrery on the day of the count; the count of any one day offers an estimate only of what was seen on the ground on that particular day in those particular wind and weather conditions and in consequence, where populations may be freely mobile between adjacent properties, numbers may, as here, show significant variation from year to year.

Current and recent past Management

B11.21 Because so much of the ground is under designation, there is little potential for any extensive management of vegetation, although in the past some muirburn was undertaken (with approval under a Peatland Management Scheme which covered the area) and some additional muirburn is proposed in the future outwith the SSSI (C11).

B11.22 Winter feeding was not traditionally provided for deer, although as above, they have free access to hay and blocks provided over the winter period for the sheep. As noted however, some hay was presented specifically for the deer over the winter 2015/16 in large part as a diversionary measure to hold them back from the roadside in the light of recent concerns about collisions with vehicles and this practice may be continued.

Assessments and issues influencing decisions about future management

B11.23 SNH undertakes routine monitoring of the qualifying features of all designated sites on a regular basis. Results are summarised in individual Site Management Statements.

B11.24 As noted the East Halladale SSSI is designated primarily in relation to its blanket bog (and is part of the wider Caithness and Sutherland Peatlands Special Area of Conservation (SAC). Other notified features include the assemblage of breeding birds and specifically dunlin and golden plover.

B11.25 When last formally monitored during July 2007, the blanket bog was found to be in favourable condition. The extent of the blanket bog had been maintained since previous monitoring visits. There were no signs of recent damage due to overgrazing or burning, though deer trampling had disturbed the ground in some localised areas. The status of the breeding bird assemblage was also noted as favourable (maintained) when it was last assessed in June 2003. The site was more recently visited in 2013 for a 'site check'. This is a less intensive method to check the site, but it doesn't include any formal, scientific assessment of the condition of the site. Sandside Estate was not visited during this assessment.

B11.26 As noted at paragraph B11.13, the status of both the dunlin and golden plover populations were monitored in 2009. The density of breeding pairs of dunlin was found to have fallen from 1.57 pairs/km² to 0.93 pairs/km² and as this exceeds the 25% reduction limit the feature was considered to be in unfavourable and declining condition. It is noted however that dunlin populations are highly variable from year to year and it is recognised that the status of both dunlin and golden plover may be markedly affected by conditions on wintering grounds rather than necessarily conditions on site.

B11.27 It is apparent that a number of woodland areas are accessible to deer. The northern fences of the coniferous block at Helshetter are porous towards the ground at Borlum; this is not seen as an issue since it provides good shelter for deer resident in this area and it is securely fenced to the south against the adjacent Limekilns Plantation.

B11.28 One of the major issues affecting deer management on Sandside is the extreme mobility of deer from this central and southern area of the property and the regular movement to and fro across the march into Shurrery. It would be of considerable advantage to Sandside and to overall management of deer within the area if the Estate had more 'control' over management of a more predictable and fully-resident population of deer. One of the most effective ways of achieving greater residency and breaking this pattern of extensive movement within the wider area is providing features within the environment which can provide the focus for a more resident population. In this context it is noted that the Estate has already opened the area fenced for restocking around the northern end of Beinn Ratha, and the two adjacent mature conifer blocks (paragraph B11.8).

B11.29 Given the current mobility of deer within the area however: the regular exchange of hinds between Sandside and the north of Shurrery and the current dependence of Sandside (at least partially) on influx of stags from Bighouse, Shurrery and Dorrery for the rut, it is important that management of Sandside should be well-integrated with management on these adjacent properties. Sustainable management of this shared deer population will depend in the future on close collaboration and closer coordination of management objectives and management effort between

Bighouse, Sandside, Shurrery and Dorrery.

B11.30 Finally we should note that there have been a series of complaints from people in Reay village, and complaints from the managers of the Golf course of damage being sustained. In addition that the Police have specifically asked for reductions of deer populations in the area around Drumhollistan because of an increased incidence of road traffic accidents. The Estate propose to reduce deer populations in both these areas by a combination of targeted culling and diversionary feeding (above).

B12. Shurrery

B12.1 Shurrery Estate in Caithness extends to a reported total area of some 5655 hectares or thereabouts, west of Halkirk. Currently some 300 hectares are excluded from deer range by fencing (see paragraph B12.3).

B12.2 The western march follows the County boundary between Sutherland and Caithness. The ground marches to the south with Dorrery Farm and Dorrery, and to the west and northwest with the open hill ground of Bighouse and Sandside. The remainder of this northern boundary abuts an area of commercial plantation forestry which is deer-fenced. Landownership to the south and south west is also in part fenced forestry ground, together with the RSPB properties of Forsinard (East).

B12.3 To protect inbye land and common grazings to the north (and to reduce losses of animals shot on such lands as marauders), the previous owner of the Estate erected a deer-fence in 1999, linking to the commercial forestry plantation of Torigil and then running south along the Forss Water. This fence crosses the river at the dam at the north end of Loch Shurrery and then continues down the east side of the loch and across the Lambsdale Leans to link to the forestry plantation of Chracairnie to the South. As currently aligned, this fence effectively cuts off all land (approx 300 ha) to the east of Loch Shurrery [thus Beinn Freiceadain - and the adjoining Ben Dorrery on Dorrery Farm] - from the rest of the property.

B12.4 Shurrery, together with the separate Limekilns plantation to the northwest, is managed as a mixed sporting Estate. There is stalking for red deer on the open hill ground west of Loch Shurrery, salmon fishing in the river and fishing for trout in the various hill lochs. Ducks and geese flight on the larger lochs and the Estate puts down pheasants and a few partridge each season. There are natural populations of red grouse but as in other areas numbers are erratic and generally sparse so that these constitute a bonus rather than a fundamental part of the whole. Much of the sport is enjoyed by the owner and his family and friends, although a few stags are let. The Estate does not have significant livestock interests.

B12.5 Much of the ground falls under statutory designation. A small portion of the western part of the ground falls within the East Halladale SSSI, while another area to the south of Loch Shurrery forms part of the Lambsdale Leans SSSI. In addition, the larger part of the west side of the estate is designated within the separate Loch Caluim Flows SSSI. Finally, the summits of Beinn Freiceadain (and the adjacent Ben Dorrery) are also designated within the Beinn Freiceadain and Ben Dorrery SSSI. Further details and description of the designated features are included at paragraph B12.12-B12.15.

Vegetation:

B12.6 That ground to the west of the deer fence (thus west of the Forss Water and Loch Shurrery) is in essence composed of bog and wet heath interspersed by a number of small loch and lochans. The vegetation is dominated by deer grass (*Scirpus caespitosum*) and sphagnum mosses. The area is not

flat but undulates in a series of low ridges which results in a range of blanket bog types and plant communities across the site. Bog formed on watersheds dominates the area, but saddle, valleyside and terrace bogs also occur where the terrain is suitable. The valleyside and terrace bogs are of the 'eastern' type of blanket bog and contain an abundance of cotton grass.

B12.7 The area is dissected throughout, by numerous small burns and tributaries, which offer some streamside grazings, although these consist predominantly of a rather acid grassland sward rather than of finer grasses, and the deer have access to areas of rather rushy grassland on the east side of the Forss Water, within the deer-fence.

B12.8 South of Loch Shurrery (around its head) is an area classified as open water transition fen [the Lambsdale Leans]. This is an area of swamp vegetation dominated by tall sedges including bottle sedge and northern sedge, as well as floating carpets of moss. The swamp contains marsh cinquefoil, soft-rush and marsh-marigold. On the drier ground towards the edge of the site, there are areas of acid fen which contain abundant white sedge. Both the fen and swamp habitats and the transitions between them are part of the notified feature of the SSSI covering this area.

B12.9 Around the area of Shurrery Lodge is an area of established policy woodland and there are two areas fenced for native woodland regeneration, immediately to the north of (actually contiguous with the Lodge woodlands and linking to the same fences) and to the south.

B12.10 To the east of the Loch, the ground rises in the two hills of Beinn Freiceadain and Ben Dorrery. Here, better drainage and more mineralised soils (the rocks are of Old Red Sandstone) support a more classic heathland vegetation - or heath-grass mosaic. The summits present a series of low rocky calcareous cliffs and crags, with small areas of scree and support a subalpine dry heath dominated by ling heather and bell heather with a range of associated species including bearberry, crowberry, cowberry, primrose, harebell and dog violet. The rock forming the low crags is relatively calcareous, encouraging the development of a species-rich vegetation community. The dry heath vegetation of the lower slopes on Beinn Freiceadain, within Shurrery, is managed by strip burning of heather.

B12.11 North of this area, the ground reverts to peaty flows; that part of the ground north of the road towards Brawlbin is retained by the previous owner of Shurrery and is subject to Common Grazings, while the land between the Estate access road and the river is, as noted under crofting tenancy. The Estate has recently acquired from FCS the area of former forestry plantation on the eastern march at Sithean Dubh, which has been clear-felled.

Designated areas:

B12.12 As noted already, a small part of the **East Halladale SSSI** falls within Shurrery. This site is designated primarily in relation to its blanket bog (and is part of the wider Caithness and Sutherland Peatlands Special Area of Conservation (SAC)). Other notified features (for which it designated as a RAMSAR site as well as SSSI include the assemblage of breeding birds and specifically both dunlin and golden plover. East Halladale is also recognised as a Specially Protected Area (SPA) in relation to these two species.

B12.13 **The Loch Caluim Flows SSSI** also falls in large part onto Shurrery (although this continues also onto adjacent Forsinard). This area (also part of the wider Caithness and Sutherland Peatlands SAC) is also designated largely in relation to its blanket bog feature, breeding bird assemblage, as well as specific recognition of dunlin and golden plover, and breeding populations of greenshank. Like East Halladale it is also a Ramsar site and separately designated as SPA in relation to the populations of dunlin, plover and greenshank.

B12.14 The **Lambsdale Leans SSSI** is designated in relation to the feature: Open water transition fen and for its wider breeding bird assemblage. Lambsdale Leans contains numerous channels and backwaters providing undisturbed habitat for an impressive range of nesting wildfowl and waders, including greylag geese, teal, wigeon, tufted duck and greenshank. Heron also feed on this site and there are high densities of snipe.

B12.15 Finally, the **Beinn Freiceadain and Ben Dorrery SSSI** which comprises only the summits of these two hills, is designated in relation to the subalpine dry heath vegetation of those summits and the tall herbs associated with the ledges and crags. As noted, the rocks are of Old Red Sandstone, which has calcareous bands supporting plant species that do not grow on the surrounding mainly acidic soil types. The subalpine dry heath community is dominated by *Calluna* heather (ling) and bell heather with a range of associated species including bearberry, crowberry, cowberry, primrose, harebell and dog violet. Lesser twayblade is also found in the heath. The tall herb communities that cling to the cliff ledges are another notified feature of the site. They contain a number of ferns and herbs of limited distribution in Caithness, including hard shield-fern, brittle bladder fern, valerian, water avens and meadowsweet. The extent of the community, which is mainly confined to the cliffs on the east side of Beinn Freiceadain, is restricted by the availability of ledges.

B12.16 Fuller descriptions of all these sites and the site management statements are published on the SNH website at <http://gateway.snh.gov.uk/sitelink/index.jsp>.

Management Objectives

B12.17 Shurrery is managed as a mixed estate with a diversity of sporting interest. As noted at paragraph B12.2, there is stalking for red deer on the open hill ground west of Loch Shurrery, salmon fishing in the river and fishing for trout in the various hill lochs. Ducks and geese flight on the larger lochs and the Estate puts down pheasants and a few partridge each season. Stalking of red deer and occasional roe is carried out from high seats within the separate Limekilns Plantation, but records are kept distinct from those from the open hill range of Shurrery. The Limekilns area is fully and securely fenced.

Deer Populations and their recent management

B12.18 Individual red deer are occasionally observed on Beinn Freiceadain east of the deer fence, but these are few and not believed to be resident. The bulk of the red deer are restricted to the west part of the property.

B12.19 Shurrery is seen primarily as a hind forest and there are three separate hefts identified within the ground. One major group occupies the area between Shurrery Lodge, the Cnoc Luachair plantation and Loch Scye; these animals come down to graze on the rough grasslands on the east side of the Forss Water. A second group is hefted further to the west (west of a line between Lochan Dubh, Loch Tuim Ghlais, Loch Torr na Ceardaich and Lochan Ealach Beag, and thus technically within the separate East Halladale SSSI). These animals move freely between Shurrery and the southern part of Sandside. Finally, a third heft is located on the Blar Dearg, east of Loch Caluim and moves freely between Shurrery and Dorrery.

B12.20 What is notable is that, for the most part, these groups present as single aggregations, mobile across their entire wider range, rather than as separate small parcels of hinds and followers more widely scattered across the ground (although reportedly the subpopulation within East Halladale to the west is more fragmented). This tendency to aggregate into a few distinct groups is no doubt, in large part a result of the open nature of the terrain (and the relative homogeneity of the vegetation across wide areas) which will indeed promote aggregation of animals into larger groups. Inevitably however, this tendency towards the formation of individual, large groups which move as a unit across a wide area has implications for grazing and trampling impacts within designated sites (see below).

B12.21 Although the deer populations on Shurrery is dominated for the most part by hinds and their followers, the Estate does winter a number of stags, and in particularly hard weather may be subject to an influx of much larger numbers (of stags and hinds) from neighbouring properties; this is reflected in the rather counts for stags reported in end of winter census.

B12.22 Open hill deer populations are counted annually at the end of winter.

B12.23 Because so much of the ground is under designation, there is little potential for any extensive management of vegetation west of the deer fence, although in the past some muirburn was undertaken (with approval under a Peatland Management Scheme which covered the area). Most muirburn activity however is restricted to managed strips on the lower slopes of Beinn Freiceadain (outwith the SSSI area).

B12.24 Winter feeding is not routinely provided, but in really adverse weather hay and feedblocks are provided around the policies with feedblocks also provided along the hill track. While hay and blocks were thus provided during the bad winters of 2009/10, 2010/11 it was noted that animals did not really make use of this supplement (and many subsequently died anyway; it is understood that this is in fact common experience with such 'crisis feeding').

Factors affecting current and future management

B12.25 SNH undertakes routine monitoring of the qualifying features of all designated sites on a regular basis. Results of most of these are summarised in individual Site Management Statements.

B12.26 As noted, the **East Halladale SSSI** is designated primarily in relation to its blanket bog (and is part of the wider Caithness and Sutherland Peatlands Special Area of Conservation (SAC). Other notified features include the assemblage of breeding birds and specifically both dunlin and golden plover. When last monitored during July 2007, the blanket bog was found to be in favourable condition. The extent of the blanket bog had been maintained since previous monitoring visits. There were no signs of recent damage due to overgrazing or burning, though deer trampling had disturbed the ground in some localised areas. The status of the breeding bird assemblage was also noted as favourable (maintained) when it was last assessed in June 2003.

B12.27 The status of both the dunlin and golden plover populations were monitored in 2009. The density of breeding pairs of dunlin was found to have fallen from 1.57 pairs/km² to 0.93 pairs/km² and as this exceeds the 25% reduction limit the feature was considered to be in unfavourable and declining condition. Golden plover populations were however found to be in favourable condition. It is noted however that dunlin populations are highly variable from year to year and it is recognised that the status of both dunlin and golden plover may be markedly affected by conditions on the wintering grounds rather than necessarily conditions on site.

B12.28 Monitoring of the open water transition fen habitat within the **Lambsdale Leans SSSI** was last undertaken in May 2002. The feature was found to be in favourable condition (maintained). Monitoring of the breeding bird assemblage in May and June 2005 also found the site to be in favourable condition. A wide range of birds, including grey heron, greylag goose, teal, tufted duck, snipe, dunlin, curlew, greenshank, redshank and common sandpiper were recorded.

B12.29 The **Loch Caluim Flows SSSI** area (also part of the wider Caithness and Sutherland Peatlands SAC) is also designated largely in relation to its blanket bog feature, breeding bird assemblage, as well as specific recognition of dunlin and golden plover, and breeding populations of greenshank. Monitored in May – July across 2005, 2006, 2007, the breeding bird assemblage was assessed as Favourable, maintained as (earlier -May/June 2004) was the status specifically of Golden

plover and greenshank. The status of dunlin was assessed in 2004 as Unfavourable, declining, but as above this may be as much to do with conditions on the wintering areas as conditions on site.

B12.30 When surveyed in 2007 and 2011 the blanket bog on Loch Caluim Flows was assessed as being in unfavourable condition. Over the majority of the site, the blanket bog contained plant species typical of this habitat, such as *Sphagnum* mosses, heather and cotton grass, and the ground was not disturbed or broken. However, an area of approximately 200ha in the northeast of the site now appeared to be dominated by purple moor grass. Surveys also recorded evidence of heavy deer trampling and tracking in this same northern part of the site that had resulted in frequent and extensive patches of bare ground and disturbed vegetation.

B12.31 In 2016 the Estate entered into a Management Agreement with SNH which enabled the site to be classified as “unfavourable recovering”. The management outlined in this Deer Management Plan will allow the site to continue to be classified as recovering once the Management Agreement expires in December 2017.

B12.32 Large areas in the north of the site (to the north of the track that runs between Shurrery Lodge and Loch Scye) are still dominated by *Molinia* grass. This area was heavily burnt in the past, and as a result the vegetation of the area appears to consist of more *Molinia* and less heather. Despite the overall shift away from heather in this area, all the required indicator species were found at the survey points in this area in 2011. Since the last survey the *Molinia* does not appear to have increased in extent, and in some areas bog species seem to be returning.

B12.33 Finally, to the east of the deer fence, the **Beinn Freiceadain and Ben Dorrery SSSI**, notified for its Subalpine dry heath (vegetation) and the tall herb ledges, was monitored in June 2005 and most recently in July 2012 and both features assessed as Favourable, maintained.

B13. Dorrery Farm/Dorrery Estate

B13.1 The Royal Society for the Protection of Birds (RSPB) owns a very significant amount of land within the North Deer Group Management Area and also has Management Agreements in place with landowners across other land within the area. It is thus a complex landholding which ranges over a total area of 20,884ha. A description of the landholding within the former Forsinard Estate, Forsinain and Knockfin is presented in section B8.

B13.2 To the east of this main Forsinard block, the RSPB also owns Dorrery Forest and parts of Dorrery Farm west of the Torran Water. The landholding is bounded to the south by the railway line and marches with Shurrery to the northwest [Map 1b]. Dorrery is itself largely contiguous with the eastern edge of the Forsinard block, but continuity is to an extent broken by interpolation of a number of privately-owned commercial forest blocks. RSPB also owns a number of former forest blocks on this same march [e.g Raphan and Caol]; these have been felled and returned to open ground but this does not restore full continuity with Dorrery, whose deer populations relate more to those on the southern part of Shurrery.

B13.3 The bulk of the ground overlies deep peat and is characterised by blanket bog vegetation interspersed with lochans and larger expanses of water. The landholding at Dorrery includes parts of the Loch Caluim Flows and Lambsdale Leans SSSIs.

Objectives

B13.4 As noted in section B8, objectives of management across RSPB ground in general is towards ensuring or restoring condition of the various special habitats across the landownership and in

support of populations of breeding birds and other wildlife. On Dorrery, deer management is directed towards minimising impacts on the peatland vegetation across the site. Deer are recognised as an important component of the wider biodiversity of the reserves as well as a key element of the management of the land and its component habitats.

Deer Populations and their past management:

B13.5 As on other RSPB properties in the area, deer populations and distribution are assessed three times a year, with the main count at the end of winter (in synchrony with end-of-winter counts undertaken by other Estates within the NDMG). RSPB staff and volunteers also undertake counts across the ground in August and December which provides additional information on seasonal changes in densities and distribution and how they interact with the habitats present.

B13.6 Numbers are highly variable year to year and emphasise that the deer population is highly mobile and largely continuous with the population occupying the southern part of neighbouring Shurrery (paragraph B12.19).

B13.7 All culling on RSPB properties is leased to third parties, with discussions currently ongoing in relation to future management on Dorrery. Cull targets for the number of stags and hinds which should be taken in each year are agreed with tenant, with the intention that culls delivered will maintain deer stocks at target densities across the year.

B13.8 The RSPB undertakes regular counts of deer on its properties and also maintains a programme of habitat condition monitoring across the reserve [see details at paragraph B8.17 and footnote 6]. Results are used to feed back into culling targets agreed with lessees.

Factors affecting current and future management on RSPB ground

B13.9 As at paragraph B8.19 deer management remains a challenge across the reserve. Deer impacts and changes in deer management practices on neighbouring estates and forest areas impact upon the RSPB's ability to regulate deer grazing and disturbance levels on the reserve. The RSPB in effect seeks a balance with deer numbers at levels appropriate to deliver beneficial impacts but not so high as to cause damage through excessive trampling/tracking or grazing impact.

B13.10 SNH undertakes routine monitoring of the qualifying features of all designated sites on a regular basis in a regular programme of Site Condition Monitoring (SCM). A summary of the most recent status of those falling within Dorrery is offered below.

B13.11 The Loch Caluim Flows SSSI was last surveyed in respect of its Blanket Bog feature in 2007 and was assessed as Unfavourable, but not on the section overlapping with the RSPB land.

B13.12 Monitoring of the open water transition fen habitat of the Lambsdale Leans SSSI was last undertaken in May 2002. The feature was found to be in favourable condition (maintained).

B13.13 In addition to designation for their vegetational features many of these SSSIs are also designated with respect to the assemblage of breeding birds and in many cases in addition are designated specifically for breeding populations of wading birds such as greenshank, golden plover and dunlin. When last surveyed in June 2004, dunlin populations on Loch Caluim Flows were considered to have declined. However, estimates of wader populations can show considerable variation in numbers between years as a result of variation in detectability cause by weather during surveys so runs of data are safer. Other factors such as the condition of the wintering habitat, may also influence the size of breeding populations of dunlin and golden plover.

B14. Langwell and Braemore [Welbeck Estates]

B14.1 Langwell and Braemore Estates in Caithness extend to a reported total area of some 18,675 ha, of which an estimated 17,500 ha comprise unfenced open range available to deer. The combined Estates are managed as separate sporting beats, each with its own keeper and trainee/underkeeper. The individual areas of the open hill ground of the separate beats (thus excluding inbye ground and enclosed forestry) are assessed as 7,935 ha (Braemore) and 9294 ha (Langwell).

On Langwell, deer currently also have access to some 86 hectares of commercial woodland, but all of this scheduled for removal to be substituted by native woodland regeneration and planting areas.

B14.2 The southeastern boundary of the property is marked by the coast between Ord Point and Scredan, while the western march effectively follows the county boundary between Sutherland and Caithness, where Langwell and Braemore march respectively with Torrish, Suisgill and Achentoul. To the north and east, Braemore marches with the Estates of Glutt and Dunbeath, with marches once again defined essentially by the watershed [Map 1b]. As noted, Braemore and Langwell, while run as part of a combined whole are managed as separate beats; the boundary between the beats runs east from Cnoc an Eirannaich across to the summit of the Small Mount and then across the summits of Morven, Sal-vaich, Scaraben and East Scaraben to cross the Berriedale Water at the Falls and on to the top of Cnoc na Feadaige.

B14.3 Both Langwell and Braemore are managed for mixed sporting, primarily for red deer, grouse and salmon, and occasional roe and sika are shot to control numbers. A small pheasant shoot is organised by and on behalf of the keepers.

B14.4 Livestock, both sheep and cows, are also run on the Estate (mostly managed in-hand). An extensive hill fence protects established coniferous plantings and separates the hill ground of Langwell from the Policies of Langwell House and the inbye agricultural lands and grazing parks. [For more details see paragraph B14.30].

B14.5 A section of the ground is dedicated as common grazings – comprising that area to the east of the Berriedale Water within both Langwell and Braemore and within Braemore extending across the water to the west (with boundaries approximately along the watershed of Meall Dhonuill and the top of East Scaraben to Scaraben, thence north to the policies at Braemore Lodge). It is understood that rights of common grazing are currently exercised only by a single crofter and that there is currently no formal Grazings Committee.

B14.6 A significant part of both Langwell and Braemore is considered of high conservational value, with the Estate ground including all or part of 7 SSSIs, 1 SPA and 3 SACs.

B14.7 Thus a substantial part of the **Knockfin Heights SSSI** falls within the northern part of Braemore as does a part of the separate **Dunbeath Peatlands SSSI**. While SSSIs in their own right, these two areas (Knockfin Heights SSSI and Dunbeath Peatlands SSSI) also fall within the wider **Caithness and Sutherland Peatlands SAC**. The **Morven and Scaraben SSSI** straddles the march between Braemore and Langwell encompassing all the high ground of Morven, Carn Mhor, The Maiden Pap, Smean, Sal-vaich and the Scarbens, while Langwell separately includes the **Langwell Water SSSI**, the **Berriedale Water SSSI** (which together comprise the **Langwell and Berriedale Water SAC**), the **Ousdale Burn SSSI**, **Berriedale Cliffs SSSI** and **Berriedale Cliffs SPA**, which form part of the wider **East Caithness Cliffs SAC**. Further details of all sites and the designated features are included at paragraphs B14.16 – B14.27.

Vegetation:

B14.8 Detailed descriptions of vegetation within the various areas designated for their conservation significance are included in the initial citation statements and subsequent site management statements [accessible via <http://gateway.snh.gov.uk/sitelink/index.jsp>].

B14.9 More generally, we may summarise that the northern part of Braemore extends as peaty flows, dominated by classic blanket bog vegetation interspersed with watercourses and thus alluvial greens threading through the wider mire. To the south of the Berriedale Water the ground rises in ridges and terraces which present wet heath or grass moor on the better drained faces, but further broken peat on the backslopes. To the south of the beat, the higher ground of the Maiden Pap, Morven, Carn Mhor, Sal-vaich and the Scarabens presents steep faces which, where not simply exposures of bare rock or scree, are covered by managed dry *Calluna* heath, grading at altitude into what is technically a subalpine dry heath and true alpine heath on the various summits.

B14.10 The southern faces of these same hills comprise the northern boundary of Langwell: once again the vegetation grades from alpine through subalpine heath on these steeper slopes, but on Langwell, the lower slopes support a more mature, dense callunetum. The hill ground of Langwell (i.e. that part above the deer fence) is dominated by the straths of the Langwell Water, the Berriedale Water and the Ousdale Burn, which for their lower parts are characterised by patches of native birch woodland interspersed with more open areas; the bed of the strath in each case supports good alluvial greens utilised by deer as well as domestic livestock. Tree cover decreases higher up each strath (towards the headwaters) where the strath is shallower and the surrounding vegetation presents an open grass moor.

B14.11 To the west of the Langwell Water in particular, the ground is very green; heather (whether *Calluna* or *Erica*) is sparse and sub-dominant and the ground is essentially an acid-grassland dominated grass-moorland. Between the Langwell Water and the Berriedale, a low ridge runs north west towards the Scarabens; this is better drained and perhaps more mineralised soil and supports an area of good managed heather moor which has been well burnt into an intimate mosaic of patches of differing age-structure.

B14.12 There are a number of fenced enclosures within both the Berriedale and Langwell areas as well as around the Ousdale Burn to promote regeneration and woodland recovery. Fences have recently been removed from four of the oldest enclosures (established in 1983 in woodland along the Langwell Water) with these areas now opened to deer, but a number of additional enclosures have been created (2013) so that currently some 50 ha of woodland within the SSSI is enclosed by fences and an additional 30 ha of open ground have been planted with native broadleaves to extend the overall woodland area.

B14.13 In addition, there are a number of coniferous woodland plantations on either side of the two straths; some of these have now been opened to deer to offer alternative shelter in place of areas now enclosed for woodland regeneration (see map following page).

Designated areas:

B14.16 As noted already, a significant part of both Langwell and Braemore is considered of high conservational value recognised by no fewer than 11 statutory designations, with the Estate ground including all or part of 7 SSSIs, 1 SPA and 3 SACs.

B14.17 Of the **Knockfin Heights SSSI**, 2810.89 ha fall within Braemore (encompassing all that land north and Feith Fhuaran and the Meur a'Chearacaill, bounded on the east by the Allt Sguabach Cadha). The SSSI is designated primarily for the blanket bog feature which dominates the site. This was assessed by SNH's routine programme of site condition monitoring in 2005 as in favourable condition although localised deer tracking damage was noted and vehicle tracking was recorded in another, leading to damage which destroyed some surface vegetation.

The habitats at Knockfin Heights also support a range of moorland birds. Wading birds such as golden plover, dunlin and greenshank use the area as breeding grounds and are found in high numbers on the summit plateau in the northern part of Knockfin Heights SSSI.

B14.18 That ground immediately beyond the Allt Sguabach Cadha to the east falls within the separately designated **Dunbeath Peatlands SSSI** which includes all land to the north of these upper reaches of the Berriedale Water to Sithean nam Meann and thence to Conachreag (1140.09 ha in total). In addition to the blanket bog feature, Dunbeath Peatlands are also recognised [RAMSAR] in relation to the assemblage of **breeding birds** including arctic skua, golden eagle, hen harrier, merlin, raven; water birds such as red-throated diver black-throated diver, greylag goose common scoter, teal and wigeon and moorland waders such as common sandpiper, curlew, snipe, dunlin, golden plover and greenshank.

B14.19 As well as their inclusion within the wider "Breeding Birds Assemblage" above (Ramsar) the established importance of the site for breeding populations of dunlin, golden plover and greenshank has led to the sites being additionally designated as Special Protection Areas (SPA) specifically in relation to their breeding populations of these three waders; while these species are not explicitly designated features of the Knockfin Heights SSSIs, they are noted as of additional interest. Otters, wildcats and adders also occur on the areas.

B14.20 Both these sites (Knockfin Heights, Dunbeath Peatlands) are however designated primarily in relation to the Blanket Bog feature [and together form part of the wider Caithness and Sutherlands Peatlands Special Area of Conservation (SAC)].

The Morven and Scaraben SSSI

B14.21 The site (3382.08 ha) falls entirely within the Estate, although it straddles the march between Braemore and Langwell. This SSSI has been notified primarily for the nationally important alpine and subalpine heath habitats. The site is also important as it forms part of the headwaters of the Berriedale and Langwell Waters which have internationally important populations of Atlantic salmon (below). A variety of other habitats are found on this site. The most extensive of these are the blanket bog and wet heath on the flat ground at lower altitudes. There are also extensive areas of upland grassland, mainly along the sides of burns.

B14.22 SNH's Site Management Statement for the Morven and Scaraben SSSI notes that "Subalpine dry heaths dominated by heather, bilberry and bell heather can be found on the lower slopes throughout the site. Damper areas are dominated by heather, bilberry, the bog-moss *Sphagnum capillifolium* and cloudberry. Stiff sedge and mosses such as *Rhytidiadelphus loreus*, *Plagiothecium undulatum*, *Pleurozium schreberi* and *Sphagnum capillifolium* are also found."

B14.23 At higher elevations and on the summits, the subalpine heath grades to an open alpine heath on the exposed rounded summits of both Morven and Scaraben. interspersed with extensive areas of bare rock and scree. There are two distinct types of alpine heath on this site. The Site Management Statement notes: “One type of alpine heath is dominated by low mats of heather and the nationally scarce mountain bearberry. The lichens *Cladonia arbuscula* and *Ochrolechia frigida* and crowberry are also abundant in this habitat. Other plants found in this habitat include low-growing bearberry, trailing azalea, dwarf willow, alpine clubmoss, fir clubmoss and alpine lady’s mantle. Morven and Scaraben has the second largest area of this type of heather - mountain bearberry heath on any SSSI. The second main kind of alpine heath is dominated by bilberry and woolly hair moss. This habitat is particularly well-developed in a small part of the site on the summit ridge of Scaraben. This habitat has an abundance of other mosses such as *Rhytidiadelphus loreus*, *Pleurozium schreberi* and *Hylocomium splendens*, as well as a scattering of lichens such as *Cetraria islandica* and *Cladonia arbuscula* [reindeer moss].”

B14.24 The better areas of subalpine heath, not unexpectedly, have developed on the steeper slopes of the hills and especially on the southern and western exposures. On the eastern slopes of the Pap, Carn Mhor or Morven shallower slopes support peatier soils and we find a reversion to tmore acid grass-heath habitats; in some parts there are also areas of broken peat dominated by deer grass (*Scirpus caespitosum*) and bog cotton (*Eriophorum*) as for example on the backslopes on the north-eastern side of Morven itself.

B14.25 The site has three nationally scarce plant species. Rock whitlowgrass and Alpine saxifrage are found on base-rich outcrops, while mountain bearberry occurs in the alpine heath near the exposed summits. A wide range of upland birds use this site for breeding and feeding, including wader species such as golden plover, greenshank and dunlin. Ptarmigan have also been recorded on the site.

B14.26 The **Langwell Water SSSI** (285.27 ha), together with the **Berriedale Water SSSI** (215.54 ha) are both designated in relation to the upland birch woodland feature present in patches along the sides of the valleys (as also the 39.04 ha. of the separate **Ousdale Burn SSSI**) and also for their populations of Atlantic Salmon (Langwell and Berriedale). Although not a designated feature of either SSSI, small pearl-bordered fritillary butterflies (species which has shown rapid decline across the UK more generally) have been recorded in the Ousdale Burn and on the north side of the Berriedale Water SSSIs. In relation to populations of Atlantic Salmon, the Langdale and Berriedale Water SSSIs together comprise the **Langwell and Berriedale Water SAC**.

B14.27 For completeness we should note that although not included in the area to be covered by this Plan, 134.0 ha of the coastal strip of the Estate is also designated within the **Berriedale Cliffs SSSI**. The same area is separately notified as the **Berriedale Cliffs SPA**, which form part of the wider **East Caithness Cliffs SAC**. These areas are notified in the main in recognition of their cliff top vegetation, and in relation to breeding seabird populations including fulmar, kittiwake, guillemot, razorbills and shag. However, these areas lie below the hill fence and are largely unaffected by impacts from red or sika (although roe deer may have a small impact).

Management Objectives

B14.28 Objectives for Langwell and Braemore are to continue to manage these as a mixed estate, with domestic livestock, some deer stalking and some walked up grouse shooting, but with the primary objectives of maintaining the component habitats of the estate in good condition. Thus there is an emphasis on reducing impacts where these are observed in order to try and promote recovery, particularly of heather and moorland habitats. Livestock are maintained on the estate but as much towards management of the hill vegetation and reducing tick burdens as for their economic production. Overall, management of both deer and domestic livestock makes every effort to be

sensitive to environmental impacts and to ensure continuing favourable condition of habitats within and outwith designated areas within the Estate.

Deer and Livestock Populations and their recent past management

B14.29 The balance of herbivore impacts on Braemore and Langwell has changed significantly over the recent past. Some 30 years ago, all sheep and cattle were put off the ground (except in those areas under management for Common Grazing)– and in response deer numbers increased substantially. Numbers were reduced in a series of heavy culls in the early 1990s and the vegetation, in consequence somewhat undergrazed, became rather long and rank. It was noted that this was accompanied by a significant increase in tick numbers.

B14.30 In response to this sheep and cattle were returned to the estate and on the hill grazings (paragraphs B14.4, B14.5). Although the sheep are regularly dosed with insecticide/acaricides, their role as that of the cattle is considered primarily as grazers to reduce the lank vegetation rather than as ‘tick mops’.

B14.31 Open hill deer populations are counted on Braemore and Langwell (simultaneously) in November and March. While end of winter counts are often considered more accurate for estimated hind population numbers and actual recruitment rates within the population (number of calves surviving at the end of winter per 100 counted hinds), they can overestimate sporting stag populations (since animals may be drawn to low ground from other, surrounding properties, while November counts (completed after animals have returned home after the rut) may give a better estimate of resident stag populations.

B14.32 Counts are undertaken on foot.

B14.33 Any count is only a snapshot of what is seen on the ground on the day of that count, and, if animals may have moved in across marches from neighbouring Estates, it is possible that figures recorded in any year may be unrepresentative of what might normally be seen on the ground. However, (given presumed recruitment rates and actual known culls taken) independent modelling of population trajectories suggest that the helicopter count of 2006 was likely to have been reasonably accurate, and correctly predicts numbers of hinds and calves counted in 2013. This seems to confirm that foot counts in intervening years may have significantly underestimated populations present and figures presented in the table should be interpreted with caution. The estate proposes to review count methodologies/procedures.

B14.34 Across Braemore, hinds are in general closely associated with the alluvial greens of the various burns and watercourses, especially in the flatter flowey ground north of the Berriedale, although they also exploit the grassier ridges and knolls more prominent towards the west of the ground and the higher slopes and faces of Morven, Carn Mhor, Smean and the Scarabens. It is felt that as a result of the particularly heavy culls of the early 1990s, some areas of the ground no longer have their own resident heft of hinds, as for example the area of “The Tenants” (that area west of the Berriedale Water between Meall Dhonuill and the Lodge, within the Common Grazings). Stags are quite widely distributed across the beat but congregate in winter around the inbye parks of Braemore Lodge, where some feed is provided.

B14.35 There is regular exchange of animals between Braemore and Langwell, through the ‘corridors’ between Morven and Car Mhor and further to the east between Smean/Toll Beag and between Sal-vaich and Sron Garbh Scaraben.

B14.36 On Langwell, it is reported that hinds are more generally distributed in small parcels across the entire ground, although once again certain areas would appear to have a somewhat lower density (as for example the central ridge between the Langwell and Berriedale waters). It is noted that there are also have two or three large groups of hinds in the area around the area of Morven / Smean / the Irishman (Cnoc an Eireannaich). These groups are quite mobile and can be on Braemore one day, Langwell the next, Suisgill the next and so on.

B14.37 Both sexes draw more towards the straths over the winter. While stags used to draw right down onto the cliffs at Berriedale before the hill fence was erected (and a small number still do so) the bulk draw down into the straths of the Langwell and Berriedale Waters, utilising the greens in the bottom of the strath by night and drawing up onto the adjacent higher ground by day (thus resting on Braigh na h-Eaglaise, Cnoc Bad Agaraidh, Cnoc Allt na Beithe etc.)

B14.38 Some sika are present on the estate (largely associated with woodland plantations) and small numbers of roe deer, especially in areas below the hill fence.

B14.39 As already noted (paragraph B14.31, B14.32) that there have been significant changes of management on the estate over the years. Some 30 years ago, all sheep and cattle were put off the ground (except in those areas under management for Common Grazing)– and in response deer numbers increased substantially. Following reductions in the early 1990s the vegetation, now somewhat undergrazed, became rather long and rank and in response to this sheep and cattle were returned to the estate and on the hill grazings in an effort to reduce the lank vegetation.

B14.40 The estate's aim is to manage deer populations at comparatively low levels to reduce environmental impacts and in addition in an attempt to reduce environmental tick burdens, in the hopes that this may help to increase productivity of the estate's grouse populations. The deer are however still managed as a sporting resource. Occasional sika and roe are also taken.

B14.41 There is a regular pattern of muirburn undertaken (as time and conditions permit) to manage the heather for both grouse and deer. As noted above, both beats present closely managed heather on those parts of the ground supporting strong heather growth. Burning is permitted within the Morven and Scaraben SSSI within the subalpine zone by longstanding agreement with SNH (although burning is prohibited for the alpine summit heaths), but has not been undertaken on the southern face of the Scaraben ridge. The Estate has undertaken an extensive programme of bracken spraying over recent years (extending to approximately 150 ha per year for a 3 year period). This has mostly been focused in the straths of the Langwell and Berriedale Waters.

B14.42 Winter feeding is provided for stags on both Braemore and Langwell. At Braemore, both numbers of animals fed and amounts of food provided are modest with a total of perhaps 20-25 bales of hay provided at the back of the Lodge and 1 tonne of calcium-enriched feedblocks (Welbeck blocks). At Langwell a larger quantity of blocks are provided (some 10 tonnes) but these are widely distributed across the area used by wintering stags and are distributed in such a way as consciously to move animals into area not otherwise heavily utilised and draw them progressively off areas where impacts may be higher. The estate is considering ultimately phasing out of all winter feeding.

B14.43 Langwell also has a small deer park, which was used in the past to contain deer brought up from Welbeck Park in an attempt to introduce new blood into the resident deer stocks. Stags maintained in this enclosure were released to the hill during the rut – although the likely impact on the local genetics is somewhat dubious. Some deer are still maintained within the Park and these are provided with additional pelleted feed.

Factors affecting current and future management

B14.44 We may note that the counts carried out by the DCS in March 2006 and again in 2013 suggested a considerably larger population of deer on Braemore and Langwell than did the keepers' own counts in that same year. As noted above (paragraph B14.37) numbers counted by helicopter in 2013 are entirely consistent with the results of the helicopter count in 2006 (if we project forward from those earlier figures in terms of expected recruitment and known culls) giving some credibility to these higher figures and suggesting that footcounts in those and intervening years may have consistently underestimated true population numbers. The Estate is thus committed to a policy of reducing hind populations and has embarked on a series of reduction culls over the period 2013/14 – 2017/18.

B14.45 SNH undertakes routine monitoring of the qualifying features of all designated sites on a regular basis. Results of these are summarised in individual Site Management Statements.

B14.46 **Knockfin Heights SSSI** is designated in relation to Blanket bog. The blanket bog on this site is internationally important and has one of the most extensive areas of pool development on this habitat type in Scotland. It also represents one of the highest points at which blanket bog forms in Caithness and Sutherland. Condition of the feature was assessed in July 2005 as Favourable, maintained. A more informal Site check in July 2013 reported no increase of damage to the site.

B14.47 **Dunbeath Peatlands SSSI**: Here, the 'Breeding bird Assemblage' feature was last assessed in June 2005 and considered to be in Favourable condition, maintained. The condition of the three breeding waders was subsequently assessed in July 2009. Condition of greenshank and golden plover was assessed as Favourable, maintained, but that for dunlin was reported to be Unfavourable – declining. SNH recognise that numbers of dunlin have also declined in some other parts of the peatlands in Caithness and Sutherland and that many factors may be involved (e.g., climate and/or weather patterns; conditions off site, such as the condition of the wintering habitat, may also influence the populations of dunlin and golden plover.

B14.48 Survey of the Blanket bog feature of the Dunbeath Peatlands site was also reported in June 2005 as being Unfavourable, declining. In this case the Site Management Statement reports that: "There were no significant concerns with the levels of browsing or presence of species that are not typical of blanket bog. However, the vegetation and physical structure of the blanket bog feature had been damaged by muirburn. It is not clear that any of the affected areas were actually within Braemore; however, re-assessment of the site in 2012 confirms that the site as a whole is now regarded as Recovering.

B14.49 In summary we may note that for the most part all designated features of these open hill/peatland sites are recorded as in favourable condition in regard to impacts from deer through grazing and or trampling. Past concerns address only effects of unauthorised muirburn on the Dunbeath Peatlands site.

B14.50 **Morven and Scaraben SSSI** is notified primarily in relation to its alpine and subalpine heaths. The alpine heath feature was surveyed in July 2006 and recorded as Favourable, maintained. Surveyors noted that: "The extent of the habitat has been maintained and the typical plant species for this habitat were recorded. No non-native or invasive plant species were found growing on the heath. There was some localised damage from tracking caused by sheep and deer. There was a high cover of undesirable grasses in some areas. High grass cover can be caused by high grazing pressure, however, it can also be the result of natural causes and the current level of grazing does not appear to be a problem in this habitat." The larger area of subalpine dry heath was not assessed at that time, but a letter from SNH to the Estate Office on 8th December 2011 reported that a survey had been carried out in June 2011 and reported the feature as in favourable condition.

B14.51 Ousdale Burn SSSI The Upland birch woodland feature was assessed in February 2002 as Favourable, maintained. SNH note: “The two deer fenced exclosures established in 1994 had successfully reduced grazing and browsing over the majority of the woodland. Comparison with aerial photographs from 1995 confirmed that the woodland extent had increased due to regeneration at the woodland edges. The woodland contained an appropriate mix of native tree species, dominated by birch with scattered rowan and hazel. The ground flora contained a variety of characteristic woodland plants such as wood sorrel, sweet woodruff and opposite-leaved golden saxifrage. Seedlings, saplings and mature trees were all recorded.”

B14.52 “There was good tree regeneration in parts of the upper exclosure, and there were no concerns regarding grazing or trampling by animals. However, deer had got into the lower exclosure due to damage to the fence, and the woodland here had suffered localised heavy trampling and browsing, including some damage to young trees. The fence was subsequently repaired.

There was also concern that the dense growth of bracken could be suppressing tree regeneration in parts of the exclosures. This situation needs to be monitored to establish whether bracken control may be necessary in future. Although the woodland was assessed as being in favourable condition overall, the trees in the small unfenced area between the two exclosures had suffered from heavy grazing and trampling.”

B14.53 Langwell Water and Berriedale Water. By contrast, the birch woodland feature of both Langwell and Berriedale Waters were assessed in the most recent survey (respectively September 2009 and 2010) as in unfavourable condition (maintained) due to lack of regeneration. The other notified feature of each site (Atlantic salmon) was assessed in September 2004 as ‘Unfavourable, recovering’; recent fishing records and electro-fishing survey confirm that salmon populations in both rivers are currently extremely healthy.

B14.54 Both sites were monitored in September 2000 when the woodland was assessed as being in unfavourable condition due to the level of deer grazing. Red deer overwinter within the woodlands and the grazing pressure has prevented tree regeneration outwith exclosures.

B14.55 More recent monitoring carried out in 2008 found that “within the two deer fenced woodland exclosures in Berriedale, the ground flora and understorey had flourished and natural tree regeneration was greatly improved, with large numbers of birch seedlings and saplings. However dense bracken was growing in some parts of the exclosures and may limit the successful establishment of seedlings in these areas.” Similar comments were made of the Langwell Water woodlands where a woodland profile survey was undertaken in 2008. “The four oldest exclosures erected in 1983 had a varied woodland structure, contained the highest tree density and had large numbers of birch and rowan saplings and seedlings. Exclosures erected in 1994 also had seedlings and saplings that were establishing well. In some areas, however, bracken growth was thought likely to prevent seedling establishment and was beginning to affect the growth of seedlings and saplings.

B14.56 For both Langwell and Berriedale, SNH conclude: “Outwith the exclosures the trees were of an advanced age, with no saplings or young reproductive trees. Grazing, browsing and trampling by herbivores appeared to be limiting tree regeneration outwith the exclosures. If this grazing pressure continues at the current level, the unfenced woodlands will not survive.” We should note however that since this last survey, a number of additional exclosures have been erected (2013) within the Langwell strath (paragraph B14.13) and more are planned for Berriedale. An extensive programme of bracken spraying has also been focused within the Langwell and Berriedale areas. It is anticipated that these measures will contribute to restoring condition of existing woodland areas and also extend the overall area of native woodland within the site.

B15. Navidale Farm

B15.1 The deer range on Navidale Farm extends to a total estimated area of 260 ha of hill ground fenced out from inbye parks. No livestock are turned out to the hill with all livestock restricted to inbye land. The property changed hands recently and has been acquired by 3-D Renewables who are believed to be considering development of at least part of the site for a windfarm. In the meantime, little seems to have changed in deer management terms from the time of the previous owner.

B15.2 Annual foot counts are undertaken.

B15.3 Small numbers of deer are culled. No other management is undertaken in relation to deer.

B16. Suisgill Estate

B16.1 Suisgill Estate in Sutherland extends to a reported total area of some 7127 hectares, straddling the A897 through the Strath of Kildonan, but with the bulk of the hill ground to the east of the road. The land to the west of the road, between the road and the river, is largely fenced to managed sheep parks; see below. Suisgill marches to the north with Achentoul and to the south with Torrish, and the western march is shared primarily with Langwell and Braemore.

B16.2 The estate has significant livestock interests with a hirsell of some 900 North Country Cheviot ewes and their followers. It has a one-sixth share of the fishing on the River Helmsdale. Current management from a sporting perspective is directed towards grouse and red deer. While grouse numbers have oscillated somewhat over the years (as in other areas), current and recent grouse populations are comparatively sparse at present, the owners are determined still to include management towards grouse as part of the overall objectives for the estate, feeling that the style of management in is any event beneficial for other wildlife and particularly in enhancing the number and diversity of other moorland birds⁷.

B16.3 A small portion of the eastern part of the ground falls within the Knockfin Heights SSSI.

Vegetation:

B16.4 That ground to the west of the A897 between the road and the river is largely devoted to improved grasslands maintained as parks for sheep grazing. These are for the most part deer-fenced to the road side. There is also a discrete area of mature plantation to the south of Kildonan Lodge.

B16.5 On the east side of the road, vegetation closer to the roadside also reflects a history of long-term management for livestock. Thus, a strip above the road, running south from Upper Suisgill Lodge is largely of close-cropped grassland (running back up the lower waters of the Suisgill burn and along parallel to the road) interspersed with patches of healthy but well-grazed heather; south of Kildonan Lodge, this same pattern of closely-grazed heather and cropped grassland is repeated all the way to the southern march. At the march with Torrish, there is a stock-fenced area of grassland which has at one time been reseeded. There is more extensive heather apparent on the low slopes of Cnoc nam Finn and areas of very strong *Calluna* heath on west-facing slopes around Carn nam Buth and Baile an Or.

⁷ We note however that the Estate is currently for sale and thus management objectives may be subject to change in the future.

B16.6 Around the site of the old Suisgill Lodge is an area of established policy woodland and there are two additional areas fenced for woodland regeneration, immediately to the north of (actually contiguous with the Lodge woodlands and linking to the same fences) and to the south. A further scheme, less well-established lies west of the road near to Kildonan Farmhouse (NC914206 or thereabouts). Suisgill also owns a part (400 ha. or thereby) of the mature Kinbrace Farm Plantation (adjoining Achentoul), specifically all that area to the south of the Kinbrace Burn; 28 ha of this have been recently felled and also replanted to native woodland.

B16.7 Further back from the road, the land is of somewhat varied character. To the north [that ground effectively north and west of the Kildonan Burn], the ground is largely quite peaty in nature, with extensive areas of blanket bog on either side of the main access track (towards Spy Point), dominated by deer-grass *Scirpus caespitosus*, sphagnum and cottongrass.

While these flatter areas are interrupted by low ridges, these are themselves peaty and poorly-drained and largely covered by deergrass and mosses, although on the ridges themselves there is a scattering of clumps of *Erica* heathers and small patches here and there of ling (*Calluna* heath). These are however few, and even the inclusion of bell heathers (*Ericas*) is patchy with the main impression as of peaty flow ground even on the emergent ridges. This basic vegetational structure is repeated even to the roadside in the north (north of Upper Suisgill Lodge) and around the Bad Raffins (that area skirting the southern boundary of the Kinbrace Farm forestry block).

B16.8 The area is dissected throughout, however, by numerous small burns and tributaries, which offer some streamside grazings, and although these consist predominantly of a rather acid grassland sward rather than of finer grasses, there are more extensive areas of better grazing around the Upper Suisgill Burn, which also has in places some small areas of remnant native woodland (e.g. NC910270) although there is little evidence of any recent regeneration.

B16.9 The ground rises towards the north-eastern and eastern marches - towards Creag Dhearg, Cnoc Coire na Fearna, the Irishman (Cnoc an Eireannaich) and Torrbrach - but these slopes are themselves not particularly well-drained and heather cover is not especially strong (particularly in comparison to the south of the estate); thus the vegetation is still effectively one of wet heath, with some green flushes apparent on the faces of Cnoc Coire na Fearna and west face of the Irishman.

B16.10 The central parts of the ground have been extensively burnt in the last two years (e.g. the ridge to the north of the Suisgill Burn and around Torr nan Gabhar), with fires including areas of wet heath and blanket bog, as well as more extensive dry heath. This wider burning was undertaken for the most part in response to extensive damage from heather beetle.

B16.11 At its north eastern corner, Suisgill falls within the Knockfin Heights SSSI - which itself is characterised as an extensive area of Blanket bog. [Detailed description of the vegetation of the SSSI are included in the initial citation statements and subsequent site management statements for the SSSIs [accessible via <http://gateway.snh.gov.uk/sitelink/index.jsp>]

B16.12 To the south, the character of the ground changes significantly. The estate offers somewhat higher ground and better drained so that while the lower, flatter ground still supports a classic blanket bog vegetation, there is much better inclusion of heather (and notably *Calluna*) on the slopes of Beinn Dubhain (managed by a traditional strip-burning pattern on the west side, but with lower slopes more heavily burnt on the eastern face). The slopes of Creag na Meigheach and Cnoc Salislade, as well as the Child's Seat (Suidh an Fhir-bhig) show an even greater inclusion of *Calluna*, and while still set on deeper peat, offer an appearance almost of a dry heathland community (although in reality it results simply from greater inclusion of *Calluna* amongst the *Erica* heath).

B16.13 On these same slopes there are also some much better ‘greens’ apparent, as well as more extensive alluvial greens throughout the area and some actual patches of grassland in lenses within some of the hill basins [e.g. the locally-called Cosley Greens].

B16.14 The comparatively low summits of most of these southern hills are dominated by wind-clipped summit heaths of prostrate *Calluna*, *Cladonia* lichens and *Lycopodium* club mosses.

B16.15 As already noted, the estate owns an extensive area of mature commercial plantation on the northern boundary with Achentoul (that part of the plantation south of the Kinbrace burn), and there are policy woodlands associated with the old Lodge. There is a fragment of native broadleaved woodland within the upper part of the Suisgill Burn and more recent plantings or regeneration coupes enclosed on either side of the main road. As noted, some 28 hectares within the Kinbrace plantation have been felled and restocked with native woodland (which is now well-established; birch, rowan, some pine). The most recent enclosures remain deer-proof, but deer have access to the Lodge woodlands and the main Kinbrace plantation. This however has suffered some considerable windblow over recent years and parts may be cleared from spring of 2016.

Designated areas:

B16.16 As noted already, a small part of the **Knockfin Heights SSSI** falls within Suisgill. This site is designated solely in relation to Blanket bog. Condition of the feature was assessed in July 2005 as Favourable, maintained. Some trampling and tracking damage are reported but it would not appear that this currently relates to management on Suisgill.

B16.17 These sites all form part of the wider Caithness and Sutherland Peatlands. Whatever the condition of the sites themselves, all designations inevitably place some constraints on management which are the subject of the ORCs (Operations Requiring Consent) published on the SNH website.

Management Objectives

B16.18 Suisgill is currently managed as a mixed estate with significant livestock interests as well as some commercial forestry and as a mixed sporting estate. Overall, management of both deer and domestic livestock makes every effort to be sensitive to environmental impacts and to ensure continuing favourable condition of designated areas within the Estate. Management of hill land is partly undertaken as if towards support of grouse populations but with the explicit recognition that this form of management is also beneficial to other wildlife, especially other moorland birds.

Deer and Livestock Populations and recent past management

B16.19 Open hill deer populations are counted annually at the end of winter.

B16.20 Suisgill was historically always considered a stag forest, but at a time of expanding hind numbers on neighbouring Langwell, a group of hinds established a strong heft in the area around Beinn Dubhain. While this general area remains the focus for the main concentrations of hinds (and indeed the nature of the ground supports this) hinds are now spreading more widely.

While the main concentration remains in the south, smaller pockets of hinds are now establishing themselves in the north of the ground, associated with the better grazings of Cnoc Coire na Fearna, the Irishman (Cnoc an Eireannaich) or along burn-sides in the peatier, flowier ground. Thus there are distinct hefts associated with the Cnoc na Beiste ridge and eastward, towards Borrobol Bridge and the Bad Raffins (that area of ground skirting the southern perimeter of the Kinbrace plantation from Cnoc Bad na h-Eirig towards Cnoc na Beiste) and so on.

B16.21 Stags mostly winter on the lower ground to the west of the property but draw up over the summer to the higher ground towards the ridges which form the march [Cnoc an Eireannaich, Torr-

brach, the Child's Seat, Cnoc Salislade and Creag nam Maigheach]. Stags also draw up to these same ridges from Achentoul, Braemore and Langwell, and there is doubtless some movement to and fro across the march, but it is felt that the bulk of the Suisgill animals remain for the most part well within the Suisgill ground. One additional group spends almost all year around the Cnoc a' Mheadhoin.

B16.22 There is reported to be much less movement to and fro across the River than formerly, although indubitably some movement still occurs, especially during the rut. During the rut, stags come onto Suisgill from Achentoul and Langwell as well as from other properties, but being traditionally a stag forest rather than hind ground, Suisgill also exports a number of stags.

B16.23 In the past a regular pattern on muirburn was undertaken within some parts of the Estate (notably on the drier hill slopes to the south, thus on the west side of Beinn Dubhain and on the slopes of Creag na Meigheach and Cnoc Salislade) but this was restricted largely to these drier slopes and burning within much of the core of the ground and the wetter areas more to the north had deliberately been more limited. In response to damage from heather beetle and in an attempt to break up the even age structure of overmature stands, the current stalker has more recently undertaken some very extensive burns (B16.10).

B16.24 Winter feeding is provided, primarily for stags, at a number of sites within the overall Estate. Haylage (approx 100 bales per year) is provided at four fixed sites adjacent to hard tracks (the Estate is well-roaded) at approximately NC 877283, 880270, 886261,905234.

Some 3 tonnes of feedblocks are also presented. These are more widely distributed across the ground to try to bring the blocks to the deer rather than the deer to the blocks, but choice of location (and flexibility in changing locations) is somewhat restricted by trying to select areas where the blocks are less likely to be used by sheep. KZN mineral blocks are provided on posts throughout the year and again are distributed widely throughout the estate.

Factors affecting current and future management

B16.25 The estate was visited by Professor R.J.Putman on 15th and 16th November 2012. Falling towards the end of the growing season, this is not in practice the ideal time to assess grazing pressures and impacts, it appeared that in general, impacts from deer were light to light moderate. Clearly within that there are certain areas (focused in the main around greens, or better areas of ling heather), which are particularly attractive and here impacts might be assessed as 'moderate'. Such assessments are in keeping with an average deer density assessed over the period 2005-2013 [excluding anomalous counts of 2011, 2012] of around 12.1 deer per 100 ha. The only areas showing higher levels of grazing were those where sheep tended to be more concentrated.

B16.26 SNH undertakes routine monitoring of the qualifying features of all designated sites on a regular basis. Results of most of these are summarised in individual Site Management Statements.

While no formal concerns have been expressed over the condition of the Knockfin Heights SSSI (the site is reported as in favourable condition following Site Condition Monitoring in 2005), it is understood that SNH do have some concerns about trampling impacts, although it is not clear whether or not the issues fall upon Suisgill. The Estate would hold the view that, given the restrictions caused by the series of small lochs that are present in this area there are bound to be more clearly defined deer paths in this area. However, removal of some of the fencing around the Kinbrace plantation (or reduction to stock height) should improve this situation by offering a greater number of routes of access to available shelter over a wider frontage.

B16.27 In an attempt to bring back into hand more regular management of the wider estate the previous stalker undertook some very extensive muirburn, with large areas burnt along the east side

of Beinn Dubhain, along the roadside at the Bad Raffins (the western “slopes” of Cnoc Bad na h-Eirig and various locations in the centre of the ground towards the north end). In the event, the heather is recovering well on the majority of areas burnt. That said, it is strongly recommended (in terms of management of the moorland for deer, for grouse or for wider wildlife interest) that only small burns are attempted in future and where practicable consideration should be given to mechanical swiping rather than burning (as has been undertaken in suitable areas the past). In general, extensive burns on blanket bog or within wet heath habitats should be avoided altogether. In such habitats, burning should be targeted very locally on individual patches of better heather on emergent knolls.

B17. Torrish [North]

B17.1 Torrish Estate in Sutherland extends to an area of some 4338 hectares straddling the River Helmsdale within the lower part of the Strath of Kildonan, with perhaps 1142 ha of hill ground lying to the south of the River Helmsdale (technically within the East Sutherland Deer Management Group Area) and the remaining 3196 to the north.

B17.2 To the north of the river, the property marches with Suisgill to the west and north and with Braemore and Langwell to the north and east; the southern march is with the holding of Caen. South of the river, the ground marches with Crakaig, Gartymore and Culgower/West Garty and with an extensive area of privately-owned forestry to the west.

B17.3 The estate has significant livestock interests which contribute significantly to the economy of the whole and some commercial forestry. It has a one-sixth share of the fishing on the River Helmsdale and from a sporting perspective is now managed primarily for red deer and salmon. In the past, the Estate also maintained good numbers of grouse, with walked-up shooting over dogs continuing until around 1980. Populations subsequently fell away, although current management remains in part directed towards trying to restore grouse numbers.

B17.4 Sheep are managed on the estate, but are largely maintained within improved parks along the strath itself and some hill re-seeds. While some may be turned to the hill for part of the year they do not range especially far and tend to be associated with burn-sides and greens. The estate retains a full-time shepherd. There are no designated sites within or overlapping Torrish.

Vegetation:

B17.5 Much of the land along the strath consists of improved grassland/pasture, and again, much (although not all) of this is enclosed within fenced parks. There are some areas of native woodland (birch and oak) which are largely unfenced and freely grazed by sheep, although there are also a number of enclosures now fenced for regeneration. Finally, there is a small area of policy woodland associated with the lodge at Kilphedir.

B17.6 On both sides of the river the hill land is relatively steep and well drained, supporting good heather, with green ‘runners’ associated with the various burns and tributaries. Detailed description is restricted here to the area north of the river which falls within the North Deer Management Group. Here, the vegetation grades from closely-grazed sheep walk of the immediate road-side into *Scirpus*-dominated wet heath on gently rising (but less well-drained) drained ground. The heather component is primarily of *Erica* heaths [bell heathers] but with some sparse inclusion of ling [*Calluna vulgaris*].

B17.7 As the ground rises towards the hills which define the march in the north and west, this wet heath vegetation gives way to a mosaic of dry heath and acid grassland. Indeed the lower slopes of these hills [Creag nam Maigheach, Creag na Gearr and Creag Scalabsdale (locally called The

Creagan)] are surprisingly grassy - albeit primarily of *Molinia* and other acid grasses, rather than finer bents and fescues - so that the greens are not restricted simply to drainage runners or burn-sides but present quite extensive patches of acid grass in and amongst clearly-localised patches of heather. On these lower slopes the heather is in fact quite restricted to defined patches (as lenses on the tops of grassier knolls, or along the steeper faces of the burn-sides), only becoming more dominant and extensive on the steeper slopes.

B17.8 This heather matrix is closely managed by regular burning so that it now presents a clear mosaic of strips and patches of different age-structure; the white-grass areas are also burnt on a regular basis as weather and resources permit.

B17.9 On the flatter tops (terraces or flat tops of e.g. Cnoc Meadhonach), the ground has accumulated a greater depth of peat and becomes more 'flowey', presenting once again a wet heath/bog community of bell heather and deer grass (*Scirpus caespitosum*), while the highest tops are more exposed and support a wind-clipped *Racomitrium* heath, with abundant inclusion of reindeer 'moss' (*Cladonia*).

B17.10 This pattern is more or less repeated throughout the north side of Torrish, except towards the east (in effect immediately south and east of Cnoc na Maoile) where the ground (again flat-topped) is rather more 'sour', presenting much deeper peat and dominated by tussock *Molinia*. Even here however, the vegetation reverts to a more productive grass-heather patchwork as the contours steepen back towards the Caen Burn.

B17.11 There are some steeper gorges/gullies north of Kilphedir (c NC 991193) with remnant patches of woodland, but in practice there is little woodland across the site except for the main birchwood areas of the strath itself.

Management Objectives

B17.12 Torrish is managed as a family estate with a combination of livestock and sporting interests. As noted, current sporting interests are with salmon (and the 1/6th share of the Helmsdale) and stalking of red deer. However, management of the hill is also targeted in efforts to try and restore sporting populations of red grouse.

Deer and Livestock Populations and current management

B17.13 Open hill deer populations are counted annually at the end of winter.

B17.14 Torrish maintains resident populations of both stags and hinds. On the north side stags tend to concentrate over winter in the area west of Cnoc Meadhonach and Skelabosdale around the tributary burns of the Torrish Burn. From this core area they draw out over the late spring to the higher ground towards the marches. Hinds also tend to be concentrated towards the higher ground of the marches, only drawing lower down in the worst of weathers, thus with distinct hefts associated with Cnoc na Maoile, the Blar a' Ghille Dhomhnaich, the ridge between Creag na Gearr and Creag Scalabsdale, Creag nam Maigheach and the Allt Breac towards Suisgill. Those on the Creag na Gearr and Creag Scalabsdale ridge regularly draw to and from onto Langwell, while those centred around Creag nam Maigheach likewise move regularly to and fro across the border with Suisgill.

B17.15 Some stalking and hind shooting is let. The odd day's hind shooting is let, the bulk being done by the keeper.

B17.16 There is a regular annual programme of muirburn within the Estate as time and resources permit and as noted heather is closely managed by strip-burning to try and improve the habitat to encourage a resurgence in grouse numbers; non-medicated grit is also provided for grouse and there

is also a strict legal programme of predator control. Deer have access to any feeding provided for sheep outside of fenced parks; in addition, they are provided with Rumevite blocks on the hill and also silage during periods of particularly severe weather.

Factors affecting current and future management:

B17.17 In its position at the far southeastern corner of the Management Group area, management on the north part of Torrish has comparatively little impact on other members of the Group beyond, potentially, the immediate neighbours of Suisgill, Braemore and Langwell. Stag harvests, while comparatively high, would seem to be sustained without obvious impact on these neighbouring properties

B17.18 There clearly have been losses in the past where animals from Torrish have been shot across the march on the neighbouring property of Caen (north Torrish) or, historically, on Crakaig or Gartymore (south Torrish). Problems have decreased more recently, although the estate continues to suffer some losses of animals through porous fences into the forestry blocks on the west march.

B18 Caen

B18.1 Lying to the south of Torrish and in the extreme southwestern corner of the Management Area, Caen is a relatively small property. It extends to an estimated area of 845 ha and is managed primarily as a farm. A small number of deer are shot on inbye ground.

B18.2 Annual foot counts are not undertaken, but the area was counted during the 2013 SNH helicopter count.

B19 Dunbeath

B19.1 Dunbeath Estate lies to the east of the NDMG management area to the northwest of Braemore and Langwell. It marches to the west with Glutt (in the same ownership) to the east with Latheronwheel and to the north with Backlass and Dalnawillan [Map 1b]. The southern boundary is formed by the coast.

B19.2 Dunbeath is managed as a mixed estate with some livestock husbandry on the lower ground to the east (sheep and cattle).

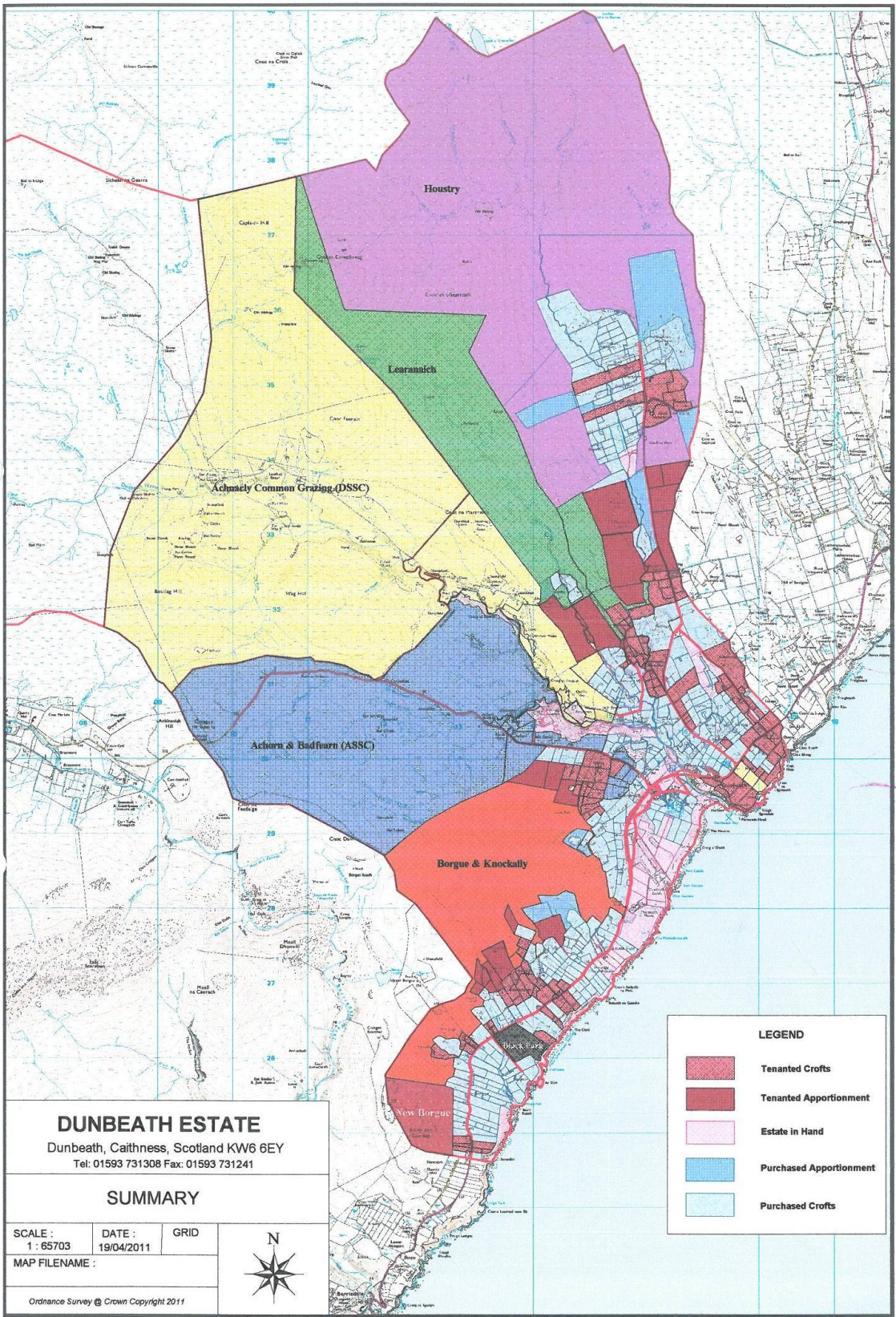
B19.3 In addition a significant portion of land to the east is under crofting tenure and is broken into fenced apportionments or is under agreements for Common Grazing. Thus the Dunbeath Sheep Stock Club has rights of grazing on the area of land immediately to the east of the Dunbeath Deer Forest (the Achnacly Common Grazings); Houstry and Learnaich are grazed by the Houstry Sheep Stock Club, while Achorn and Badfearn together with Borgue and Knockally are tenanted by the Achorn Sheep Stock Club. Other smaller areas (largely fenced) are crofted by individual crofting tenants.

B19.4 The total area of hill ground (as Dunbeath Deer Forest and the common grazings noted above) is estimated at 10792.51 ha. Dunbeath Estate retains all sporting interests over all this hill ground and while there is a certain amount of fishing in the rivers and hill lochs and a small number of roe may be shot, primary sporting interests across the Estate are grouse and red deer. Pheasants and red-legged partridge are released on the low ground.

B19.5 Across the hill ground, grouse shooting and deer stalking are mostly let.

Vegetation :

B19.6 Because this Management Plan will be focused primarily on the hill ground, vegetational descriptions will largely be limited to the area of the Dunbeath Deer Forest, together with the Common Grazings areas of Achnacy, Houstry and Learnaich, Achorn and Badfean, and Borgue and Knockally.



Dunbeath Deer Forest:

B19.7 This area of hill ground has no livestock grazing entitlements over it and is reserved for deer, grouse and other wildlife. The greater proportion falls within the Dunbeath Peatland SSSI (although there is a small area outwith the designated site to the southeast, in the bend of the Dunbeath Water as it curls around Pollroy and Bad Mairi (see B19.18). The area is largely dominated by blanket bog and mire.

B19.8 The Site Management Statement for the SSSI notes “The gentle gradients and geology in this area mean that the associated blanket bog exhibits a generally uniform structure and species composition. This site also has erosion features of particular interest. The slope of Cnoc na Stoirm Mor to the north west of Loch Mhadadh shows evidence of ‘bog bursts’, where a large peat mass has slid downhill and subsequently revegetated. Plant species typical of this habitat are *Sphagnum* mosses, heather, deergrass, bog asphodel, and common and hare’s tail cotton grasses.”

B19.9 While the Deer Forest offers largely flat, flowey ground towards the southwest, towards the centre of the ground and to the east there are more emergent knolls whose better drainage supports some sparse heather cover. There are many bog pools and lochans and two more significant lochs to the north: Loch Breac and Loch Dubh.

B19.10 There is somewhat higher ground on the march with Glutt at Cnoc na Saobhaidhe and Cnoc Liath (both around 290 metres) and towards the northern march around Beinn Glas-Choire and the lower slopes of Ben Alisky. Beinn Breac (at 288 metres) lies between Loch Breac and Loch Dubh; all these steeper slopes support better growth of heather.

Achnacl, Achorn and Badfearn:

B19.11 The ground here is split by the, now significant, water of the Dunbeath Water. This offers a relatively shallow strath of alluvial grasslands, open to common grazing of sheep. To the north is the familiar vegetation of blanket bog, but here, as in much of Glutt, the landscape is more rolling and undulating and there is a series of shallow ridges where drainage is improved and thus heather cover is increased.

B19.12 South of the Dunbeath Water, the ground actually rises more significantly with Bouilag and Wag Hills (at around 260 metres) within the Achnacl Common Grazings and Bad nan Glac and Cnoc na Feadaige (283 m) within Achorn. These steeper faces support quite extensive areas of *Calluna* interspersed with green runners or green corries (as for example just to the northeast of the fenced enclosure at Culvert Wood).

B19.13 On either side of the track through Achnacl (now well outside any designated area) however, there are areas which have been heavily managed for sheep and especially to the north of the access track, increasingly present as semi-improved grassland.

B19.14 There is a small area of native woodland remnant within the gully of the Wag Burn and a more extensive area of rather open, birch-dominated broadleaved woodland above the Dunbeath Water at Culvert Wood. This is part of the Dunbeath Water SSSI and has been enclosed for some time to encourage regeneration. The most common trees are birch and hazel with smaller numbers of aspen, rowan, bird cherry and willow. Under current proposals, this fence may shortly be removed.

Houstry and Learanaich:

B19.15 The broadleaved woodland of the Dunbeath Water SSSI continuous southeast along the both sides of the river towards Dunbeath, both within and beyond the SSSI.

Where unprotected by fencing there is little sign of active regeneration, with grazing primarily from deer on the southern side and from deer and sheep along the northern bank. However, a new fence which crosses the Dunbeath Water just east of Balcraggie Lodge now protects all ground to the east from deer.

B19.16 On the north bank the woodland within the SSSI lies only between the river and the access track, while to the north of the track, the ground has been extensively managed for sheep. Between the Allt an Learanaich and the Houstry road, the bulk of the ground is fenced as apporionments and managed as inbye croft land (although one of these apporionments and one on the opposite side of the road, has been deer fenced and planted up within the Crofters Forestry Scheme).

B19.17 North of the northern limit of these apporionments (in the middle part of this section of the ground) the vegetation reverts to its more natural character and presents a undulating landscape of low ridges interspersed with flatter areas of bog similar to that of the northern sector of Achnacly to which it adjoins. It is however more heavily grazed by livestock. Finally, north and west of Mullbuie, ground flattens out again to present the blanket bog vegetation of the Coire na Beinne SSSI.

Designated Areas:

B19.18 The **Dunbeath Peatlands SSSI** covers the eastern sector of Glutt (as also a part of Braemore) and continues to the east over the bulk of the Dunbeath Deer Forest, with two small areas overlapping the Achnacly Common Grazings (a small area in the north and another area in the fork of the river around Achnacly). It is significant to note that the area in the bend of the Dunbeath Water as it curls around Pollroy and Bad Mairi is NOT designated [thus to the east of (approximately) Easting 055 and south of Northing 335, but as defined more precisely by the line of the river].

B19.19 A small part of the Houstry area also falls within the **Coire na Beinne Mires SSSI**, with its southern boundary following the west-east tributaries of the Houstry Burn, north of Cnocan Conachreag and Cnoc an t-Searraich and then across to the north of Mullbuie.

B19.20 These sites are designated primarily in relation to the Blanket Bog feature [and together form part of the wider Caithness and Sutherlands Peatlands Special Area of Conservation (SAC) and also a RAMSAR site]. Dunbeath Peatlands and Rumsdale are also recognised [RAMSAR] in relation to the assemblage of **breeding birds** including arctic skua, golden eagle, hen harrier, merlin, raven; water birds such as red-throated diver black-throated diver, greylag goose common scoter, teal and wigeon and moorland waders such as common sandpiper, curlew, snipe, dunlin, golden plover and greenshank.

B19.21 As well as their inclusion within the wider “Breeding Birds Assemblage” above (Ramsar) the established importance of the sites for breeding populations of dunlin, golden plover and greenshank has led to the sites being additionally designated as Special Protection Areas (SPA) specifically in relation to their breeding populations of these three waders; while these species are not explicitly designated features of the Coire na Beinne Mires SSSI, they are noted as of additional interest . Otters, wildcats and adders also occur on the areas.

B19.22 The **Dunbeath Water SSSI** embraces all the woodland of the lower strath of the Dunbeath Water, from the tip of Culvert Wood (ND115331) to Dunbeath itself (excluding a small area of exotic planting around Balintrath). Dunbeath Water is designated as an SSSI in relation to two nationally important features: the woodland habitat and the sediments that were deposited by glaciers during the Ice Age. Native woodland has a very limited distribution in Caithness and this species-rich birch woodland is one of the larger areas of woodland in the county. The most common trees are birch and hazel with smaller numbers of aspen, rowan, bird cherry and willow.

The understorey is well developed with blackthorn, ivy, dog rose, honeysuckle and the nationally scarce downy currant. The rich ground flora is dominated by fine stands of tall flowering plants and ferns including male fern, great wood-rush and wood sage. Other species found on the ground beneath the woodland include opposite-leaved golden saxifrage, burnet rose, wood millet and Grass-of-Parnassus.

B19.23 For completeness we should note that, although not included within the area covered directly by this Plan, the coastal strip of the Estate is also designated within both the **Dunbeath to Sgaps Geo SSSI** and the **Berriedale Cliffs SSSI**. The Dunbeath to Sgaps Geo SSSI is recognised for its cliff top vegetation, as also is the adjoining Berriedale Cliffs SSSI although this latter is also designated in relation to breeding seabird populations including fulmar, kittiwake, guillemot, razorbills and shag.

Management Objectives:

B19.24 As noted above (paragraphs B19.4) Dunbeath Estate retains all sporting interests across the hill ground on the estate and manages this primarily for sporting interests: grouse and red deer. Grouse shooting and deer stalking are mostly let, as a significant part of the economic balance within the Estate.

Deer and Livestock Populations:

B19.25 Red deer range unrestricted across all the hill land. Like neighbouring Glutt (section B20), Dunbeath is predominantly a hind forest. The few resident stags tend to winter to the northeast of the Achorn and Badfearn area, immediately to the west of Balcraggie. Over the summer they pull out west with particular groups associated with Bad Mairi, around Caplaich Hill in the northern part of Achnacly and the higher ground of the Deer Forest around Ben Alisky and Beinn Glas-choire. On the whole however, the estate is largely dependent for its stalking on animals drawn onto the area for the rut, with additional stags drawing in to Dunbeath from Langwell and Braemore and from Dalnawillan to the north.

B19.26 Hinds are more widely distributed across the estate. While some are more closely hefted (those more towards the centre of the ground) others are much more mobile in habit, moving across marches with neighbouring properties on a regular basis depending on wind and weather. Thus there are a number of groups of hinds which are relatively well-hefted to comparatively small ranges within the core of the Dunbeath Deer Forest, although those to the south and southwest may show significant movement across to Glutt (B20) or onto Braemore (B14) depending on wind and weather. A similar pattern is seen within the Houstry area, where towards the north (and again, the flatter more homogeneous ground towards the Coire na Beinne SSSI) movements are more extensive and large groups of hinds may move on and off the Estate from day to day dependent on wind direction, weather conditions and disturbance.

B19.27 This mix of well-hefted animals and others which are much more mobile and may move off or onto the estate from day to day depending on conditions, means that numbers recorded in formal counts may show significant variation from year to year – not in reflection of any real change in population number, but rather simply reflecting changes in the number of deer present on the ground in the particular conditions of the day on which each year's count has been carried out.

B19.28 Counts are carried out across the property every year at the end of winter/early spring. Dunbeath also supports a small population of roe deer and some sika, largely on lower ground.

B19.29 Count figures show significant inter-annual variation in numbers counted on Dunbeath, emphasising the extent of movement on and off the estate by animals whose ranges cross established marches, depending on wind and weather conditions. Taking account of that variation, numbers of hinds counted on Dunbeath appear to have remained relatively constant over the period.

Past Management:

B19.30 As noted above, stalking of stags is mostly let on both Glutt and Dunbeath, with increasing numbers of let days as the season progresses. A few weeks of hinds are also let – generally sufficient to complete the management cull, although the stalkers may take a few additional animals as skinners for the house or on welfare grounds. In addition, some sika and roe are culled on Dunbeath.

B19.31 No supplementary winter feeding is provided for deer. However, some muirburn is undertaken across the estate. It is noted that such muirburn is restricted to emergent knolls and ridges and is targeted specifically on heather for grouse and deer. In addition, the estate deploys state-of-the-art fire-extinguishing equipment and thus burning is tightly controlled; areas burnt are small and burns are not undertaken on areas of deep peat or within blanket bog vegetation.

B19.32 Much of this is inevitably carried out within SSSIs (Dunbeath Peatlands SSSI and to a lesser extent the Coire na Beinne Mires SSSI). The Estate has agreed a formal muirburn plan under an SRDP Moorland Management Agreement which identifies areas to be burnt each year over a 5-year period and identifies clearly areas where fires are not permitted.

Assessments:

B19.33 All designated areas (and all features for which that site is designated) are subject to routine condition monitoring by SNH on a regular periodic basis to determine their conservation status. Details are provided in the Site Management Statements prepared for each site and available at <http://gateway.snh.gov.uk/sitelink/>. Main features are summarised below for Dunbeath Peatlands and Coire na Beinne for convenience of discussion, as well as for the Dunbeath Water (woodland) SSSI. Condition of the maritime cliff-top vegetation and nesting seabirds of the Dunbeath to Sgaps or Berriedale Cliffs SSSI are considered outwith the remit of the current exercise.

B19.34 Dunbeath Peatlands SSSI:

The ‘Breeding bird Assemblage’ feature was last assessed in June 2005 and considered to be in Favourable condition, maintained. The condition of the three breeding waders was subsequently assessed in July 2009. Condition of greenshank and golden plover was assessed as Favourable, maintained, but that for dunlin was reported to be Unfavourable – declining. Dunlin breeding densities had declined by more than 25% between 2005 and 2009, resulting in dunlin being assessed to be in unfavourable condition. It is not clear what has caused this decline, however, particularly as the numbers of golden plover and greenshank have not declined at the same time. SNH recognise that conditions off site, such as the condition of the wintering habitat, may also influence the populations of dunlin and golden plover.

B19.35 Survey of the Blanket bog feature of the Dunbeath Peatlands site was also reported in June 2005 as being Unfavourable, declining. In this case the Site Management Statement reports that: “There were no significant concerns with the levels of browsing or presence of species that are not typical of blanket bog. However, the vegetation and physical structure of the blanket bog feature had been damaged by muirburn. The burnt ground included areas that were rich in *Sphagnum* moss that recovers very slowly from burning. Drainage works had been carried out within the last few years which could lead to the drying out and increased erosion of the blanket bog. The planting of a small conifer plantation and its associated drainage was recorded on an area of deep peat within the site. This has damaged the blanket bog in that area. The conclusion was that the blanket bog was in unfavourable condition. It is hoped that the site will return to favourable condition in the medium to longer term, as long as no further damaging activities occur and the plantation area is restored.”

B19.36 It is noted that the plantation woodland has been removed (and there was very little evidence of it in a site visit on 5th January 2012) and the latest entry on SNH Sitelink reports the Peatlands as Recovering.

B19.37 **Coire na Beinne Mires SSSI:** The site again is designated primarily for the Blanket bog habitat, although additional mention is given to the assemblage of breeding birds and otters. It is noted that only a small proportion of the entire site falls upon Dunbeath with the remainder of the SSSI on Backlass and Latheronwheel.

B19.38 Monitoring of the blanket bog was most recently undertaken in May 2006. The survey report notes “There were no significant concerns with the levels of grazing, erosion or spread of species that are not typical of blanket bogs (such as bracken). Some parts of the site showed signs of deer trampling, but not to an extent that would cause concern at present. However, an uncontrolled fire that had occurred 12 days before the survey in 2006 had damaged the site. Results of monitoring concluded that the blanket bog was in unfavourable condition due to the recent damage from the fire and that the site should return to favourable condition in the medium to longer term.” It is noted that the fire described was not on Dunbeath.

B19.39 In summary we may note that for the most part all designated features of these open hill/peatland sites are recorded as in favourable condition in regards to impacts from deer through grazing and or trampling. Concerns address only effects of unauthorised muirburn on the Dunbeath Peatlands and Coire na Beinne sites.

B19.40 **Dunbeath Water SSSI:** the condition of this upland birch woodland was assessed in June 2005 (and again in 2008) and was assessed as being in unfavourable condition, mainly because grazing by sheep and deer was preventing young trees from establishing. Tree and shrub species diversity had been maintained, and a wide range of characteristic species were recorded among the ground flora. However, intensive grazing in the unfenced parts of the woodland meant that although seedlings had germinated they were not able to grow into young trees because they were being browsed by sheep/deer when they reached the height of the surrounding vegetation.

B19.41 SNH report that within enclosures, there was establishment of birch, rowan, willow and hazel seedlings and saplings. However, despite the initial success of the enclosures in allowing young trees to develop, even in 2005, SNH surveyors reported that dense bracken and long grass inside some parts of the enclosures are hindering further tree regeneration. They also suggested in 2008 that the enclosures were no longer stock or deer proof.

B19.42 Survey within Culvert Wood by RP in January 2012 would confirm that the density of undergrowth is now such that it is likely to inhibit any further establishment of new seedlings (the thick litter layer will prevent penetration of any seeds to the soil layer below while the dense canopy will quickly shade out any seedlings which do germinate). It was suggested (and reiterated following survey in 2014 by Victor Clements [Native Woods Cooperative (Scotland)]) that this woodland would not be damaged and might be enhanced by being reopened to deer. This has already been agreed in principle with the SNH wildlife officer concerned.

B19.43 It is noted that a major new deer fence was erected in 2013 to prevent deer from causing damage on croftlands and also to reduce the risk of deer-vehicle collisions on the A9 roadway. Replacing the line of a former deer fence as far as the gorge, this fence crosses the Dunbeath Water just south-east of Balcraggie Lodge. This prevents any deer access onto the SSSI east of this point and it is to be anticipated this will contribute substantially to improving condition within the SSSI below this point. A series of further (smaller) enclosures is also being proposed, between this fence and Culvert Wood to the west to protect existing woodland fragments and to encourage extension

beyond the existing canopy in each case to link more isolated fragments.

Factors likely to affect future Management:

B19.44 In reviewing the effectiveness of current or recent past management in delivering objectives, one may identify a number of specific issues which need to be considered. We may note from the outset, for example, that a very significant proportion of all hill ground is designated as SSSI – the vast majority of the area of the Dunbeath Deer Forest. Two small portions of the Dunbeath Peatlands SSSI extend onto Achnacly, and the northern section of Houstry Common Grazings falls into the Coire na Beinne SSSI. Finally, the woodland of the Dunbeath Water is separately designated.

B19.45 At least insofar as those parts of the sites falling upon Dunbeath, these sites are generally regarded as being in acceptable condition except for the impacts of unauthorised muirburn and no concerns have so far been raised in relation to impacts from grazing or trampling by deer (paragraph B19.39).

B19.46 It is noted that the woodland areas of the Dunbeath Water SSSI are currently not in favourable condition due to lack of adequate regeneration. It is clearly in the Estate's interests to maintain these woodlands in favourable condition - not simply in relation to their protected status and thus in response to pressure from SNH, but also purely from a landscape point of view and in terms of providing future shelter for deer. To this end the Estate has already made significant efforts in fencing across the Dunbeath Water at Balcraggie Lodge and proposes a series of further enclosures to the west of this fence up towards Culvert Wood.

B19.47 As a separate issue we might identify the dependency of (both Glutt, below B20, and) Dunbeath for their stalking on an influx of stags from adjacent properties for the rut. While it is accepted that some Estates are by their nature hind forests, it is always preferable where possible to reduce one's reliance/dependence on neighbours by establishing a larger population of stags which are resident year-round and thus present also through the early part of the summer.

B19.48 While it is recognised that stag stalking is at present dependent on influx of mature males during the rut, sustainability of this harvest requires that the net recruitment from Dunbeath and all surrounding estates 'puts back' into the wider stag population of the surrounding area, numbers equivalent to those harvested by all Estates combined. Thus management on Dunbeath should seek to sustain hind populations whose production of stag calves is approximately equivalent to numbers taken.

B20 Glutt

B20.1 Glutt Estate, in the same ownership as Dunbeath Estate lies to the west of that property and to the north of Braemore [Map 1b]. It marches to the north with Rumsdale and Dalnawillan and to the northeast with Achentoul and Knockfin. With a total area of 2960.52 ha,⁸ the estate is managed for low intensity livestock grazing and its sporting interest of grouse and red deer.

B20.2 Glutt is dominated in large part by blanket bog or wet heath vegetation, dissected through the middle by the Glutt Water. To the east of the Glutt Water (and on either side of the access track from Dunbeath) the ground is generally quite flat and 'flowey', really continuous with flatter mires of this part of Dunbeath Deer Forest to the east. The vegetation here is dominated by *Scirpus caespitosum* (deer grass) and *Sphagnum* mosses, with *Eriphorum* (cotton grass) and *Cladonia* lichens. Further towards the south (towards the march with Braemore and Langwell) there is somewhat higher

⁸ Note a discrepancy here : SNH record it as 4506 ?

ground, presenting as a series of low ridges; here, where the drainage is improved the vegetation grades more towards wet heath with greater domination by *Scirpus* and greater inclusion of *Erica* heaths.

B20.3 Around many of the lower altitude pool systems, bog moss is widespread and abundant. In addition to the more common species of bog moss, the site has *Sphagnum fuscum* and the nationally scarce *S. austinii* both of which form large hummocks, as well as *S. magellanicum*. Where the Sphagnum cover has been lost, either through burning, trampling or erosion, particularly on the summit plateau, the lichens *Cladonia portentosa* and *C. uncialis* can be found.

B20.4 To the west of the Glutt Water, there is also this intermixture of flatter areas of deeper peat dominated by blanket bogs and mires, interspersed with low ridges presenting wet heath vegetation; further west still (with the transition identified by the boundary with the **Knockfin Heights SSSI**), flatter ground supports largely blanket bog with wet heath restricted only to small emergent knolls rather than more extensive ridges.

B20.5 The whole is dissected by the Glutt Water and its tributary burns. At its upper end (towards Knockfin), the strath is quite shallow with a narrow area of alluvial grassland; the strath broadens and flattens again towards Dalnawillan, where (to the north of the Glutt settlement) it offers another fairly extensive area of alluvial grassland. In the middle section however the valley deepens, so that the river is flowing through a significantly narrower and steeper glen (although still only comparatively steeper and certainly not steep). On these steeper faces of the banks, there are some areas which support a strong growth of ling heather (*Calluna vulgaris*).
More detailed descriptions will be found in Site Management Statements for designated areas.

B20.6 Glutt supports little in the way of natural woodland beyond scattered occasional rowans or birch associated with some of the tributary burns. There is however one significant planting established to the north of the Lodge and associated buildings (established in 1998), and there are a number of enclosures of formerly improved ground (parks) in the immediate vicinity and to the south of the home buildings.

Designated Areas:

B20.7 The entire area of Glutt falls within the compass of three adjoining SSSIs: from west to east: the **Knockfin Heights SSSI**, the **Rumsdale SSSI** and the **Dunbeath Peatlands SSSI**. [These three SSSIs are not wholly embraced within Glutt but extend beyond the boundaries to include, in addition, land in other ownerships.] Within Glutt, the boundary between the Knockfin Heights SSSI and Rumsdale SSSI follows the line of the upper tributaries of the Glutt Water (alongside the western hill track); the boundary between Rumsdale and the Dunbeath Peatlands SSSI is marked by the lower course of the Glutt Water from Leathad Leanain to the boundary with Rumsdale and Dalnawillan.

B20.8 All these sites (Knockfin Heights, Rumsdale, Dunbeath Peatlands) are designated primarily in relation to the Blanket Bog feature [and together form part of the wider Caithness and Sutherlands Peatlands Special Area of Conservation (SAC)]. In addition to the blanket bog feature, Dunbeath Peatlands and Rumsdale are also recognised [RAMSAR] in relation to the assemblage of **breeding birds** including arctic skua, golden eagle, hen harrier, merlin, raven; water birds such as red-throated diver black-throated diver, greylag goose common scoter, teal and wigeon and moorland waders such as common sandpiper, curlew, snipe, dunlin, golden plover and greenshank.

B20.9 As well as their inclusion within the wider “Breeding Birds Assemblage” above (Ramsar) the established importance of the sites for breeding populations of dunlin, golden plover and greenshank has led to the sites being additionally designated as Special Protection Areas (SPA) specifically in relation to their breeding populations of these three waders; while these species are not explicitly

designated features of the Knockfin Heights SSSIs, they are noted as of additional interest. Otters, wildcats and adders also occur on the areas.

B20.10 A final designated feature of (specifically) the Rumsdale SSSI/SAC are the oligotrophic lochs: several small low-nutrient lochs, most notably Loch a' Mhuilinn and Loch Glutt.

Management Objectives:

B20.11 As noted above, primary sporting interests on Glutt are for grouse and red deer stalking. Grouse on Glutt are largely reserved for family and friends, a few are let together with red deer stalking of stags and hinds.

Deer and Livestock Populations:

B20.12 The estate grazes the low ground with its flock of ewes in conjunction with its other land holdings. Red deer range unrestricted across all the hill land. Glutt is largely a hind forest, with no resident stags. On the whole therefore the estate is largely dependent for its stalking on animals drawn onto Glutt for the period of the rut from Braemore and Langwell to the south and from Achentoul to the West.

B20.13 Hinds are more widely distributed across the Estate. While some are more closely hefted (those more towards the centre of the ground) others are much more mobile in habit, moving across marches with neighbouring properties on a regular basis depending on wind and weather. Thus there are a number of groups of hinds associated with the Glutt Water and its tributary burns; for the most part these remain hefted to predictable home ranges, simply drawing further and further down the Water as snow deepens.

B20.14 Those towards Knockfin however are more mobile and move freely across the march to neighbouring ground, as do those towards the south which may move on a regular basis to and fro across the march to Braemore. There is also quite extensive movement of animals between Glutt and Dunbeath Deer Forest to the east in certain wind conditions, especially in the flatter ground of the south of Glutt, where the peaty flats are more or less continuous with those of Dunbeath. Perhaps because of the more homogeneous nature of the ground in these areas, home ranges tend to be larger (necessary to accommodate the diversity of ground required to offer adequate forage and shelter in all conditions) and thus animals are much more likely to move greater distances between properties, especially as wind and weather conditions change.

B20.15 This mix of well-hefted animals and others which are much more mobile and may move off or onto the Estate from day to day depending on conditions, means that, particularly for Dunbeath numbers recorded in formal counts may show significant variation from year to year – not in reflection of any real change in population number, but rather simply reflecting changes in the number of deer present on the ground in the particular conditions of the day on which each year's count may have been carried out.

B20.16 Counts are carried out on the property every year at the end of winter/early spring.

B20.17 Count figures re-emphasise that Glutt is primarily a hind forest and also make clear the significant inter-annual variation in numbers counted, emphasising the extent of movement on and off the estate by animals whose ranges cross established marches, depending on wind and weather conditions.

Recent Past Management:

B20.18 As noted above, stalking of stags is mostly let on both Glutt and Dunbeath. A few weeks of hinds are also let on both properties – generally sufficient to complete the management cull, although the stalkers may take a few additional animals as skinners for the house or on welfare grounds.

B20.19 Some muirburn is undertaken in maintenance of heather. It is noted that such muirburn is restricted to emergent knolls and ridges and is targeted specifically on heather for grouse and deer. Much of this is inevitably carried out within SSSIs. The estate has agreed a formal muirburn plan under an SRDP Moorland Management Agreement which identifies areas to be burnt each year over a 5-year period and identifies clearly areas where fires are not permitted. In addition, the estate deploys state-of-the-art fire-extinguishing equipment and thus burning is tightly controlled; areas burnt are small and burns are not undertaken on areas of deep peat or within blanket bog vegetation. No supplementary winter feeding is provided for deer.

Assessments and factors likely to affect future management:

B20.20 All designated areas (and all features for which that site is designated) are subject to routine condition monitoring by SNH on a regular periodic basis to determine their conservation status. Details are provided in the Site Management Statements prepared for each site and available at <http://gateway.snh.gov.uk/sitelink/>. Main features are summarised below for Rumsdale, Dunbeath Peatlands and Knockfin Heights.

B20.21 **Knockfin Heights SSSI:** Knockfin Heights SSSI is designated in relation to Blanket bog. The blanket bog on this site is internationally important and has one of the most extensive areas of pool development on this habitat type in Scotland. It also represents one of the highest points at which blanket bog forms in Caithness and Sutherland. Condition of the feature was assessed in July 2005 as Favourable, maintained.

B20.22 **Rumsdale SSSI:** All features of the Rumsdale site were recorded as in favourable condition, maintained when last assessed [blanket bog, 2007; oligotrophic lochs, 2004; breeding bird assemblage, 2012; dunlin, greenshank, 2009] with the exception of breeding populations of golden plover which was recorded in 2009 as unfavourable, declining. It should be noted however that population status of these birds is often affected by factors outwith the breeding ground, in overwintering areas and declining status does not necessarily reflect any change in condition or management of the breeding site.

B20.23 **Dunbeath Peatlands SSSI:** Here, the ‘Breeding bird Assemblage’ feature was last assessed in June 2005 and considered to be in Favourable condition, maintained. The condition of the three breeding waders was subsequently assessed in July 2009. Condition of greenshank and golden plover was assessed as Favourable, maintained, but that for dunlin was reported to be Unfavourable – declining. Dunlin breeding densities had declined by more than 25% between 2005 and 2009, resulting in dunlin being assessed to be in unfavourable condition. It is not clear what has caused this decline, however. SNH recognise that numbers of dunlin have also declined in some other parts of the peatlands in Caithness and Sutherland and that many factors may be involved (e.g., climate and/or weather patterns; conditions off site, such as the condition of the wintering habitat).

B20.24 As noted, survey of the Blanket bog feature of the Dunbeath Peatlands site was also reported in June 2005 as being Unfavourable, declining. In this case the Site Management Statement reports that: There were no significant concerns with the levels of browsing or presence of species that are not typical of blanket bog. However, the vegetation and physical structure of the blanket bog feature had been damaged by muirburn. The burnt ground included areas that were rich in *Sphagnum* moss that recovers very slowly from burning.

B20.25 In summary we may note that for the most part all designated features of these open hill/peatland sites are recorded as in favourable condition in regard to impacts from deer through grazing and/or trampling. Past concerns address only effects of unauthorised muirburn on the Dunbeath Peatlands site.

B21 Latheronwheel

B21.1 Latheronwheel Estate in the southeastern Corner of the NDMG Management Area lies to the west of the A9 and extends north from Latheronwheel towards Tacher [Map 1b]. The estate comprises farms and crofts, with arable land and moorland grazing. The total area is estimated by SNH at 4958 ha. The estate's figures report 11,300 acres (4,573 ha) over which it has the right to take deer and game, of which 9,500 acres (3,845 ha) are counted as 'moorland'.

B21.2 The eastern march is formed primarily by the A9 "Causewaymire" trunk road, although from the Red Rock southwards the march cuts more directly south to Latheronwheel. From Loch Rangag northwards the eastern march is formed by the Loop burn (which flows into the Tacher burn), running about 1 km west of and roughly parallel to the A9. The northern march then runs southwest from Tacher Farm, skirting the northern edge of Loch Ruard and then doglegs to follow the watershed to Cnoc na h-Imriche. From here the boundary runs south to the Cnocan Ruar, skirts the southern tip of Loch a Cheracher and Lochan Coire na Beinne, before striking south-southeast to Achnagoul and Achavrole. Much of this southern part (south of Riskamain and Braehungie) is croft land which has been purchased by crofters; it is intensively managed. The Estate retains shooting rights over the crofted land, even where sold.

B21.3 Latheronwheel marches to the west with Dunbeath and Backlass and to the northwest with Strathmore and Blar nam Faoileag. Towards the northeast, the land marches with Tacher Farm, and a section of ground around Rangag Farm.

B21.4 While, as above, much of the ground south of Riskamain and Braehungie, is intensively managed and crofted, the bulk of the remainder of the ground offers classic flowey peatland. Indeed (below) much of the ground falls within the Coire na Beinne Mires SSSI and the estate also has considerable land area within Blar nam Faoileag SSSI which immediately abuts the Coire na Beinne site. Both SSSIs fall within the wider Caithness and Sutherland Peatlands SAC.

The bulk of the ground is covered by deep peat and characterised by a blanket bog vegetation, although towards the west and on the gentle slopes of the emergent ridge of Coire na Beinne itself, there are some lenses of acid grassland/*Molinia* heath. Between the eastern march of the estate and the farm buildings at Acharaskill some areas have been carved out and fenced to form sheep parks associated with the Estate Farm. There are also fenced sheep parks around the Governor's farm, close to the former Combination Poor House on the Causewaymire, and around Riskamain Farm on the south eastern edge of the Coire na Beinne Mires SSSI.

B21.5 Sheep can be grazed over parts of the estate which lie within both Blar nam Faoileag SSSI and the northern part of the Coire na Beinne Mires SSSI from the Estate Farm at Acharaskill, but only over the summer months (June-August). The total area of 'in hand' land of this character is amounts to about 1900 hectares. There is a separate grazing heft of sheep on the ground in the south of Coire na Beinne itself (around Riskamain) on tenanted/ crofted ground, although it is understood that the crofter on Riskamain does not regularly graze sheep on the southern end of the estate any more.

B21.6 Over the estate as a whole, the primary sporting interest is in deer stalking and grouse; sporting is enjoyed by the family with no more than a few days of commercial lets of stalking.

Trout fishing on Lochs Ruard and Rangag, from bank and boat is plentiful and is available as a public resource on purchase of a day ticket.

Designated sites:

B21.7 As noted, much of the estate area falls within either the Coire na Beinne Mires SSSI (c. 2,245 hectares out of a total SSSI area of 3,512 ha) or the Blar nam Faoileag SSSI (680 hectares of a total SSSI area of 2,879 ha) both part of the wider Caithness and Sutherland Peatlands SAC.

B21.8 The **Coire na Beinne Mires SSSI** is designated primarily for the blanket bog feature. Almost the entire altitudinal range of the site is covered by blanket bog, from 110m at the Loop Burn to near the summit of Coire na Beinne at 226m. Much of the site is covered by typical blanket bog species such as *Sphagnum* (bog) moss, *Racomitrium* (woolly fringe) moss, deergrass, heather, bearberry and cotton grass. Two nationally scarce peatland plants are found on the site: small cranberry and mountain bearberry.

B21.9 The Blar nam Faoileag SSSI is again designated primarily for the blanket bog feature (although the designation statement notes that the many pools and wet bog surface provide the habitat for a range of animal life including otter and several species of dragonfly and damselfly and that the area is also important for breeding moorland birds such as red- and black-throated diver, common scoter greylag goose, teal, red grouse, greenshank, golden plover, dunlin, short-eared owl and hen harrier). The site also contains a few pairs of breeding arctic skua. As far as the Estate is concerned, these species are in fact spread over the areas of both SSSIs and form the heart of the Estate's wildlife conservation interest

Deer Populations and Current Management:

B21.10 As noted the Estate has agricultural interests and sheep are grazed over the hill ground for parts of the year. While the Estate supports a few stags year-round it is traditionally seen as hind ground. Red deer are counted in end of winter counts.

Occasional roe deer are also shot.

B21.11 Vegetational management is limited in that so much of the Estate falls within the Coire na Beinne Mires or Blar nam Faoileag SSSIs. However, Peatland Management Scheme Agreements [PMS] existed in the past over both sites which defined permitted muirburn areas on both Coire na Beinne and Blar nam Faoileag; both these PMS have however now lapsed (Coire na Beinne Mires: December 2009; Blar nam Faoileag 2010)

Factors affecting current and future Management

B21.12 The blanket bog features of these sites were monitored in 2007. At that time the Coire na Beinne Mires SSSI (the bulk of which does fall on Latheronwheel), and was assessed as being in an unfavourable, declining condition because of trampling by red deer. It is clear that some previous muirburn (permitted under PMS) escaped from areas designated for permitted burning and spread considerably further into the site (2006); there has also been subsequent burning which it is believed may have been outside permitted/agreed areas.

B21.13 However, in response to some reduction in deer population numbers, subsequent monitoring of the site in 2014 reports it as in Favourable Condition. SNH concluded that 'impacts were considered to be below a level which would lead to an unfavourable condition assessment' but suggested that 'If these impacts increase, they could affect the condition of the SSSI'. It is therefore apparent that this favourable condition will be put at risk if deer populations are allowed to increase significantly.

B21.14 The blanket bog feature of the Blar nam Faoileag SSSI was considered Unfavourable in the 2007 survey because the site exceeded thresholds for disturbed bare peat and sphagnum. More recently (2013) its status has been revised to that of Recovering. In the same way however, it would not be appropriate to allow deer populations to increase unchecked because of the risk of increasing negative impacts on the site.

B22 Rumsdale and Dalnawillan

B22.1 The Estate of Rumsdale and Dalnawillan lies to the south of the railway line and in the core of the Northern Deer Management Area. It is bounded to the north by the railway and the plantation forestry block of Loch Dhu [in separate ownership], to the west by the RSPB's ownership within Knockfin and to the south by the estates of Glutt and Dunbeath. The estate marches to the east with Braehour and Backlass. Marches are quite complex and are best seen in Map 1b.

B22.2 The estate extends to a total area assessed by SNH as 7631 ha. That area referred to as Rumsdale lies to the west (against Knockfin and Glutt) and is in effect defined within the estate by the boundary of that area falling within Rumsdale Peatlands SSSI. The area referred to as Dalnawillan encompasses that ground to the east [largely east of Dalnawillan Lodge to the boundary with Braehour and Backlass].

B22.3 The bulk of the area comprises wet heath and blanket bog, although it is generally rolling terrain and heather cover increases on emergent knolls and low ridges and with patches of much better heather on banks and steeper slopes. There are areas of alluvial grasslands in the strath of the River Thurso, on either side of the Rumsdale Water and up the sides of a number of the tributary burns. These tend to be of more acid-grassland nature at the Rumsdale end, often with much inclusion of *Erica*, but are much better quality/greener towards the east [notably between Eastings 045-060]. There is a more extensive area of semi-improved grassland around the disused summer grazing bothy at NC 978410 – 989413 [the Rumsdale Greens].

B22.4 Like the better drained slopes and ridges, the deeper scarps of the river embankments also support stronger heather cover (although once again, chiefly of *Erica* spp.) and heather cover also increases on the rising ground towards the western march with Knockfin [around Cnoc nan Gall, Channain Hill and Cnoc Crom-uillt]. Finally, there are extensive areas of dry heath [*Calluna*] interspersed with high-altitude *Agrostis-Festuca* greens, on the steeper slopes of Ben Alisky and Beinn Glas-choire towards the southeastern corner of Dalnawillan, which forms the highest part of the ground on the march with Backlass and Dunbeath.

Designations:

B22.5 As above: the Rumsdale area falls entirely within the **Rumsdale Peatlands SSSI** which extends east as far as Loch nam Fear and whose boundary then skirts the eastern end of Lochan a Mhuilinn and the west side of Sron Dubh and runs down to Dalganachan, before following the line of the burn beside the hill track down towards Glutt [Map 5]. East of Dalnawillan Lodge, that ground south of the River Thurso also falls (largely) within the separate **Strathmore Peatlands SSSI** (with the exclusion of that far southeastern corner embracing Ben Alisky and Beinn Glas-choire). [The northern march of the SSSI follows the line of the River, east from Dalnawillan Lodge, while the western march of the SSSI follows the hill track running south-east from the Lodge to the march; again see Map 5]. Both the Rumsdale Peatlands SSSI and the Strathmore Peatlands area form part of the wider Caithness and Sutherland Peatlands SAC, part of the Caithness and Sutherland Peatlands SPA and part of the Caithness and Sutherland Peatlands Ramsar site.

B22.6 The **Rumsdale Peatlands** area is designated in relation to the blanket bog feature, and the associated oligotrophic loch systems [SAC features], the assemblage of breeding birds, and specifically dunlin [SPA and RAMSAR], golden plover and greenshank [SPA features]. When last assessed all features were considered in favourable condition, maintained.

The **Strathmore Peatland SSSI** is designated in relation to the blanket bog [again an SAC and RAMSAR feature], breeding bird assemblage [Ramsar], dunlin, golden plover, greenshank, widgeon and common scoter [SPA] as well as the beetle *Oreodytes alpinus* (recorded from Loch More and Loch Gaineimh on neighbouring Braehour).

B22.7 All features of the Rumsdale site were recorded as in favourable condition, maintained when last assessed with the exception of breeding populations of golden plover which was recorded in 2009 as unfavourable, declining. Similarly, all features of the Strathmore Peatlands were reported to be in favourable condition, maintained when last assessed with the exception of breeding populations of golden plover and greenshank which were also recorded as unfavourable and declining (2009). It should be noted however that population status of these birds is often affected by factors outwith the breeding ground, in overwintering areas and declining status does not necessarily reflect any change in condition or management of the breeding site. Full details and the Site Management Statements may be found at <http://gateway.snh.gov.uk/sitelink/>

Management Objectives

B22.8 Overall objectives on Rumsdale/Dalnawillan are for sustainable management of the blanket bog habitat. While the primary aim is to safeguard the condition of the protected habitat, the intention is to integrate within that some sustainable use of the area by the owner and other stakeholders (e.g. farming tenants) - thus to permit low intensity livestock agriculture together with some sporting use for walked-up grouse, deer-stalking, accessible trout fishing and low impact tourism, as long as this is not at levels where it might conflict with conservational priorities.

Deer and Livestock Populations

B22.9 A tenant farmer at Rumsdale [Dalnagachan] grazes sheep across the western part of the estate. These are primarily associated with the grasslands of the Rumsdale Water and River Thurso, although they may draw out further onto the hill ground.

B22.10 There are two distinct subpopulations of deer on the estate, in effect respecting the split between Rumsdale and Dalnawillan. The Rumsdale hinds present a relatively self-contained group within that western part of the estate; there is some marginal exchange on a day to day basis (depending on wind and weather) between Rumsdale and Glutt of those animals hefted close to the march, but the remainder are largely resident and are scattered across that western part of the ground in small groups associated with different greens and burnside.

The Dalnawillan hinds, while also relatively well scattered across the ground, are much less tightly hefted and regularly move to and fro across the march with Backlass, such that in many ways they need to be regarded as a shared population with that latter property.

B22.11 There is a group of stags which is well hefted to the west of the Loch Dhu plantation around Loch Eun but moving to and fro below the forest fence. A separate group is largely resident towards the march with Dunbeath, west of Beinn Glas-choire and moves to and fro across that march, as they move around the hillside, depending on wind and weather conditions.

In the past, there were also a reasonable number of stags to be found year-round by Channain Hill, but although some remain, numbers in this area have declined in recent years.

B22.12 Open hill deer populations have been regularly counted at the end of winter.

Current and recent past Management:

B22.13 Because so much of the ground is under designation, there is little potential for any extensive management of vegetation. In practice little muirburn is probably required anyway in that the bulk of the hill ground is blanket bog on deep peat and areas of heather on emergent knolls and hummocks seems vigorous and not overmature. Winter feeding is not provided for deer, but they have free access to any hay and blocks which may be provided over the winter period for the sheep.

Assessments and issues influencing decisions about future management

B22.14 SNH undertakes routine monitoring of the qualifying features of all designated sites on a regular basis. Results of most of these are summarised in individual Site Management Statements.

B22.15 As noted, at paragraph B22.7, all features of the Rumsdale site were recorded as in favourable condition, maintained when last assessed [blanket bog, 2007; oligotrophic lochs, 2004; breeding bird assemblage, 2012; dunlin, greenshank, 2009] with the exception of breeding populations of golden plover which was recorded in 2009 as unfavourable, declining. Similarly all features of the Strathmore Peatlands were reported to be in favourable condition, maintained when last assessed [blanket bog, 2002; the beetle *Oreodytes alpinus*, 2010; breeding bird assemblage, widgeon, common scoter, 2007; dunlin, 2009] with the exception of breeding populations of golden plover and greenshank which were also recorded as unfavourable and declining (2009).

It should be noted however that population status of these birds is often affected by factors outwith the breeding ground, in overwintering areas and declining status does not necessarily reflect any change in condition or management of the breeding site.

B22.16 Management in general seems well adjusted towards sustainable use of the area and deer populations appear relatively self-contained (albeit with some occasional movement across western and southern marches to Knockfin and Glutt). Movements are more significant between Dalnawillan and Backlass, but that property is in the same ownership and management of the two properties can be effectively integrated to ensure appropriate sustainability of combined harvests.

B23. Braehour and Backlass

B23.1 The Estates of Braehour and Backlass lie to the south of the railway line opposite Dorrery. There is a small section of Braehour extending to approximately 450 hectares to the north and slightly west of the railway line [Map 1b]. The two properties are themselves separated effectively north and south of Loch More and the access track from Strathmore Lodge to Dalnawillan.

B23.2 Braehour marches to the southwest with the ring-fenced Lochdhu Lodge Plantation and to the south with Dalnawillan; to the east the property marches with (again fenced) Forestry Commission ground around Blar Geal/ Achlibster Hill and Strathmore [again see Map 1b]. South of Loch More, Backlass marches to the west with Dalnawillan, to the south with Dunbeath and to the east with the RSPB properties of Blar nam Faoileag and Carn nam Muc; there is a short march to the southeast with Latheronwheel.

B23.3 It should be noted that two sizeable areas within Braehour have been planted to coniferous forestry and are separately owned. Both blocks have been clearfelled but represent 'islands' within Braehour in separate ownership.

B23.4 The estate extends to a total area assessed by SNH as 4786 ha and, with the exception of the two forest blocks noted above (paragraph B23.3) lies entirely within the Strathmore Peatlands SSSI.

The site is mostly underlain by Old Red Sandstone. This forms gentle gradients with several large lochs at the northern end of the site (110 - 140m altitude), but rises more steeply to the south to form a line of low hills above 200m altitude.

B23.5 Braehour itself is largely covered by extensive areas of blanket bog, interspersed with pools and more sizeable lochs. Unlike those sites with a more complex geology and topography, here the combination of landscape, vegetation and bog hydrology produces relatively few variations in bog formation. Backlass, to the south, also presents essentially a peatland mosaic and again largely of blanket bog, but in this case with quite extensive areas of *Molinia* grassland intermixed, so that it comprises a mosaic of large areas of poor grassland and mire. There is better grazing along the sides of the many burns within the site and also two notable areas of former improved grasslands around the abandoned settlement of Achscoriclate (to the south east of Loch More) and around the former farm of Backlass itself.

Designations:

B23.6 As above: Braehour and Backlass fall entirely within the **Strathmore Peatlands SSSI** which is itself part of the wider Caithness and Sutherland SAC, part of the Caithness and Sutherland Peatlands SPA and part of the Caithness and Sutherland Peatlands Ramsar site.

The site is designated in relation to the blanket bog [again an SAC and RAMSAR feature], breeding bird assemblage [Ramsar], dunlin, golden plover, greenshank, widgeon and common scoter [SPA] as well as the nationally rare water beetle *Oreodytes alpinus* (recorded from Loch More and Loch Gaineimh).

B23.7 All features of the Strathmore Peatlands were reported to be in favourable condition, maintained when last assessed with the exception of breeding populations of golden plover and greenshank which were also recorded as unfavourable and declining (2009). It should be noted however that population status of these birds is often affected by factors outwith the breeding ground, in overwintering areas and declining status does not necessarily reflect any change in condition or management of the breeding site. Full details and the agreed Site Management Statement may be found at <http://gateway.snh.gov.uk/sitelink/>

Management Objectives

B23.8 As on Rumsdale and Dalnawillan [Section B22], overall objectives on Braehour and Backlass are for sustainable management of the blanket bog habitat. While the primary aim is to safeguard the condition of the protected habitat, the intention is to integrate within that some sustainable use of the area by the owner and other stakeholders - thus to permit some sporting use [walked-up grouse, deer-stalking] as long as this is not at levels where it might conflict with conservational priorities.

Deer and Livestock Populations

B23.9 Braehour and Backlass are primarily considered hind ground, although there is a parcel of stags resident in the area to the southeast around Cnocan Ruar close to the short march with Latheronwheel. The hinds tend to be rather mobile rather than occupying distinct hefts across the ground and there is much movement, especially to the west between Backlass and Dalnawillan, so that to a large extent this must be considered a shared population (see Dalnawillan, para 4.2).

B23.10 Open hill deer populations have not consistently been counted every year in the past.

Current and recent past Management

B23.11 Because so much of the ground is under designation, there is little potential for any extensive management of vegetation. Winter feeding is not provided for the deer.

Assessments and issues influencing decisions about future management

B23.12 SNH undertakes routine monitoring of the qualifying features of all designated sites on a regular basis. Results of most of these are summarised in individual Site Management Statements. As noted, at paragraph B23.7, all features of the Strathmore Peatlands were reported to be in favourable condition, maintained when last assessed [blanket bog, 2002; the beetle *Oreodytes alpinus*, 2010; breeding bird assemblage, widgeon, common scoter, 2007; dunlin, 2009] with the exception of breeding populations of golden plover and greenshank which were recorded as unfavourable and declining (2009).

B23.13 The greatest issue likely to affect management in the future is the uncertain status of the two separately-owned former forest blocks entirely contained within Braehour. At present stalking is leased by the owner to a third party; it is understood that no limit has been placed on numbers of stags or hinds to be shot and thus this could have a significant impact on deer populations on surrounding properties if fences are breached. There is increased uncertainty in that it is understood these forest blocks and the adjacent Lochdhu plantation have now been sold, with future management currently uncertain. It is noted that one of the conditions placed on the ground, when originally sold, was that fences should be properly maintained around all blocks sold; however there remains concern if the integrity of fences is not maintained.

B24 Strathmore and Blar nam Faoileag

B24.1 Strathmore Estate lies to the east of the Northern Deer Group Management area. One section to the southwest [Carn Nam Muc and Blar nam Faoileag] was sold to the Royal Society for the Protection of Birds [RSPB] who also have a management agreement over the remaining parts of the estate. Strathmore marches to the northeast (along the line of the Little River and the River Thurso) with Achkeepster, and to the northwest with the Forestry Commission ground around Blar Geal/Achlibster Hill. To the west of Loch Meadie, Strathmore proper marches with Braehour, but much of this boundary north of the access track is fenced within the separately owned plantation shown on maps as Altnabreac.

B24.2 From Loch More south, Carn nam Muc and Blar nam Faoileag march directly to the west with Backlass, with the combined boundaries of Blar nam Faoileag and Strathmore proper marching to the south with Latheronwheel [Map 1b]. The complex internal boundary between Strathmore and the RSPB ground follows the line of the River Thurso from Loch More toward the old Dirlot Castle, before striking southeast across Beinn Chaiteag and Cnoc Thormaid.

B24.3 Strathmore itself [2100 ha or thereabouts] is privately owned but is under a management agreement with the RSPB who wholly own the 1854 ha of Carn nam Muc and Blar nam Faoileag.

B24.4 West of Strathmore Lodge (and with the exception of a small coniferous plantation towards Loch More) the estate falls within the Strathmore Peatlands SSSI, while to the east, that land south of the River Thurso and the Little River falls within the Blar nam Faoileag SSSI. In effect the bulk of the property falls within areas designated for their conservation value.

B24.5 The ground is largely flat or shallow sloping, and covered by blanket bog, grading towards wet heath (with increasing inclusion of bell heathers: *Erica* spp) on emergent knolls and low ridges. There are however areas of alluvial grassland alongside burns and especially alongside the Little River and within the strath of the River Thurso. While for the most part the strath is quite shallow with gently sloping banks down to the alluvial plain, in places (notably to the east of Strathmore Lodge towards Dirlot) it becomes quite wide with relatively steep grassy scarps on the embankments.

This thus provides good shelter as well as focal areas of good grazing. A part of this deeper section towards Dirlot is separately designated as the Dirlot Gorge SSSI.

B24.6 A small coniferous plantation in the northwest corner of the Estate (towards Loch More, paragraph B24.4) was felled in 2016.

Designations:

B24.7 As above: parts of Strathmore fall within the Strathmore Peatlands SSSI and the Blar nam Faoileag SSSI which are themselves part of the wider Caithness and Sutherland SAC, part of the Caithness and Sutherland Peatlands SPA and part of the Caithness and Sutherland Peatlands Ramsar site. Under separate designation is the Dirlot Gorge SSSI, (which in part overlaps with the Blar nam Faoileag site). The basin of the River Thurso, while outwith the formal River Thurso SSSI, falls within the wider River Thurso SAC.

B24.8 The **Strathmore Peatlands** are designated in relation to the blanket bog [again an SAC and RAMSAR feature], breeding bird assemblage [Ramsar], dunlin, golden plover, greenshank, widgeon and common scoter [SPA] as well as the nationally rare water beetle *Oreodytes alpinus* (recorded from Loch More and Loch Gaineimh on neighbouring Braehour). The **Blar nam Faoileag SSSI** is designated primarily for the blanket bog feature (although the designation statement notes that the many pools and wet bog surface provide the habitat for a range of animal life including otter and several species of dragonfly and damselfly and that the area is also important for breeding moorland birds such as red- and black-throated diver, common scoter greylag goose, teal, red grouse, greenshank, golden plover, dunlin, short-eared owl and hen harrier). The site also contains a few pairs of breeding arctic skua.

B24.9 A small part of Blar nam Faoileag SSSI overlaps part of **Dirlot Gorge SSSI** which is notified for its geological features and for species rich scrub woodland.

B24.10 All features of the Strathmore Peatlands were reported to be in favourable condition, maintained when last assessed with the exception of breeding populations of golden plover and greenshank which were also recorded as unfavourable and declining (2009).

The blanket bog of Blar nam Faoileag SSSI was last assessed in 2007 as being in an unfavourable, declining condition because of trampling by red deer, but is since reported to be recovering. The latest assessments of Dirlot Gorge show the geological features of the site to be in favourable condition; the scrub woodland feature was assessed in 2002 as unfavourable because of a lack of regeneration (itself presumed due to excessive grazing and browsing pressures). The woodland area was subsequently fenced, including water gates to exclude deer, and is now reported to be recovering well; it was formally assessed in 2012 as Unfavourable, recovering [summary status: Favourable]. Full details and Site Management Statements may be found at <http://gateway.snh.gov.uk/sitelink/>

Management Objectives

B24.11 As on Rumsdale and Dalnawillan, overall objectives on Strathmore are for sustainable management of the blanket bog habitat. While the primary aim is to safeguard the condition of the protected habitat, the intention is to integrate within that some sustainable use of the area by the owner and other stakeholders (e.g. farming tenants) - thus to permit low intensity livestock agriculture together with some sporting use [walked-up grouse, deer-stalking] as long as this is not at levels where it might conflict with conservational priorities.

B24.12 Objectives of management across RSPB ground in general is towards ensuring or restoring condition of the various habitats across the landownership and in support of populations of breeding birds and other wildlife. Deer are recognised as an important component of the wider biodiversity of

the reserves as well as a key element of the management of the land and its component habitats. Deer browsing at an appropriate level assists habitat management in that it can prevent establishment of seedlings and saplings of exotic conifer species, in bog areas adjacent to established plantations or in areas which have been felled in order to return them to moorland. On the other hand, deer can also cause negative impacts if grazing/trampling pressures are so heavy as to cause damage to sensitive habitats or cause a change in species composition; or if trampling leads to erosion or exposure of bare peat.

Deer and Livestock Populations

B24.13 There are two farms within the Estate at Dalemore and Dirlot, which are let, respectively, on a secure tenancy and a shared partnership lease. Both sheep and cattle are run across the Strathmore part of the ground, but (as at Rumsdale and Dalnawillan) this is at low density.

B24.14 Strathmore would appear to be primarily hind ground. As elsewhere on flatter, flowey areas, outside of the period of the rut, they tend to amalgamate into sizeable groups and are quite mobile across the estate and indeed across a wider area. There is a small number of resident stags towards the north (up against the Forestry Commission fence) which again move quite widely to and fro between Strathmore and Braehour and it is believed also onto Achkeepster. These are reported to be primarily somewhat younger beasts.

B24.15 Annual foot counts of the combined Strathmore and Blar nam Faoileag are carried out.

Current and recent past Management

B24.16 Because so much of the ground is under designation, there is little potential for any extensive management of vegetation. Winter feeding is not provided for the deer.

B24.17 RSPB undertakes routine habitat condition monitoring across the area (see also at paragraph B8.17). A baseline survey across all open moorland areas, was completed for all areas owned in the early 2000s. A full repeat took place in 2008 and the habitat condition monitoring was repeated for most of Blar nam Faoileag in 2014. This is a very detailed survey with transects every 500m apart (east to West) across the reserve and running the full length of the landholding North to South, recording data on vegetation structure and deer impacts from browsing and trampling.

Assessments and issues influencing decisions about future management

B24.18 SNH undertakes routine monitoring of the qualifying features of all designated sites on a regular basis. Results of most of these are summarised in individual Site Management Statements. As noted, at paragraph B24.8, all features of the Strathmore Peatlands were reported to be in favourable condition, maintained when last assessed [with the exception of breeding populations of golden plover and greenshank which were recorded as unfavourable and declining (2009)]. It should be noted however that population status of these birds is often affected by factors outwith the breeding ground, in overwintering areas and declining status does not necessarily reflect any change in condition or management of the breeding site.

B24.19 The blanket bog feature of the Blar nam Faoileag SSSI was considered Unfavourable because the site exceeded thresholds for disturbed bare peat and sphagnum. More detailed investigation of the spatial distribution and scale of damage involved in the SCM fail on Blar nam Faoileag is required to direct deer management changes required to achieve Favourable Status.

B24.20 The greatest issue likely to affect management on Strathmore in the future is the uncertain status of the two separately-owned former forest blocks entirely contained within Braehour. It is understood that these have recently been sold and future management remains uncertain. It is noted that one of the conditions placed on the ground, when originally sold, was that fences should be

properly maintained around all blocks sold; however there remains concern if the integrity of fences is not maintained.

B25 Achkeepster

B25.1 Achkeepster lies west of the A9 road south of Mybster. It is bounded to the east by the A9, the north by the B870 to Westerdale and to the south and west by the River Thurso and the Little River. The entire area extends to approximately 1130 ha.

B25.2 The bulk of the ground overlies deep peat and supports a classic blanket bog vegetation. There are a series of alluvial grasslands along the strath of the River Thurso on the western boundary and a fenced area of approximately 24 ha of improved, former arable land at the north-eastern corner (around the ruined shepherd's cottage at Achkeepster itself). At the corner of this there is a small triangle of mature sitka spruce and towards Westerdale there is a larger plantation of lodgepole pine (established in the past for production of Christmas trees, but proving unsatisfactory and thus left to grow on).

B25.3 The bulk of the area falls within a formal Habitat Monitoring area defined in association with the 48 megawatt wind farm [Causewaymire Wind Farm] situated in the middle of the ground. Initial habitat survey by Dr Tom Dargie reports the area as a whole as

Habitat	Extent [ha]	Notes
Intact mire M17-M18-M19	515.7	Blanket bog comprising a mix of M17 <i>Trichophorum cespitosum</i> – <i>Eriophorum vaginatum</i> , M18 <i>Erica tetralix</i> – <i>Sphagnum papillosum</i> and M19 <i>Calluna vulgaris</i> – <i>Eriophorum vaginatum</i> . Represents ground with active blanket bog, normally peat-forming.
<i>Molinia</i> mire M25	247.4	M25 <i>Molinia caerulea</i> – <i>Potentilla erecta</i> mire Usually represents ground with a marked seasonal fluctuation in watertable, sufficient to prevent major peat formation. Small areas have been re-seeded in the north-east to produce improved grassland.
Commercial peat extraction	188.7	Old extraction area present in north, with slow succession to heath and very dry blanket bog. Active extraction area in south. Both areas have an extensive drain network installed, lowering the local watertable.
Wet neutral Grassland	19.5	Usually dominated by tussocky wet grassland belonging to NVC MG9 <i>Holcus lanatus</i> – <i>Deschampsia cespitosa</i> community. Marks ground with a mineral soil, where either peat has been removed or alluvium deposited adjacent to largest watercourses. It is mainly located beside the River Thurso.
Plantation Conifer	54.5	Mainly Lodgepole Pine established on deep ploughed peat, used as a Christmas tree enterprise in the main central part of the area. A small triangular plantation in the north-east has Sitka Spruce and is mainly used as a shelter for deer.
Natural watercourses	55.4	Drainage corridors, mainly containing NVC M25 and M6 <i>Carex echinata</i> – <i>Sphagnum fallax/denticulatum/inundatum</i> flushed peatland, creating narrow dry edges to adjacent peatland due to local lowering of bog water-table.
Pool systems	47.6	Wettest area of intact blanket bog, with major concentrations of bog pools containing NVC M1 <i>Sphagnum denticulatum/inundatum</i> , M2 <i>Sphagnum cuspidatum/ fallax</i> and M3 <i>Eriophorum angustifolium</i> bog pool communities.

B25.4 The windfarm itself was established in 2003 and 2004 and consists of 21 turbines and associated road structure, covering an area of 4.5 ha. Consent for the development included a requirement to improve surrounding habitats for wildlife, particularly short-eared owls and hen harriers, across a Management Area of 361 ha. around the Causewaymire wind turbine array largely through reductions of grazing pressures and with some significant blockage of existing drains towards improving the quality of the blanket bog and other wetland habitats (Dargie, 2004).⁹ 1350 metres of moorland grips (drains) were blocked using peat-plug dams in 2004.

B25.5 The main means for achieving habitat improvement has been via changed grazing. Sheep have now been completely removed from the site, although cattle are still grazed on the area. It is noted however that deer numbers have shown a corresponding increase in use of the ground (below).

B25.6 Habitat condition monitoring across the ground has shown an increase in heather cover on drier areas and a very significant increase in cover of *Sphagnum* on wetter ground, particularly blanket bog representing the NVC M17, M18 and M19. In addition to high *Sphagnum* cover in areas of types M17, M18 and M19, there have been smaller but notable increases for the M25 type (areas formerly dominated by *Molinia caerulea*). It is reported that *Sphagnum* cover appears to have increased across more than 20% of the Habitat Monitoring Study Area which covers 1129 ha. This is a trebling of *Sphagnum* area in five years, adding 262 ha of new cover to that recorded in 2004 (Dargie 2012)¹⁰.

B25.7 Preliminary survey of the site in preparation for application for the windfarm development included a detailed and very informative review of archaeological features (Hooper, 2001).¹¹

Management Objectives

B25.8 Clearly land-use on Achkeepster is dominated by the presence of the windfarm and associated infra-structure. However, cattle are also run on the land, within the improved fields around the old shepherd's house and also on the wider hill ground using electric fencing to control some of the grazing areas around the River Thurso and the wider hill). Deer stalking is undertaken by a local stalker.

Deer and Livestock Populations

B25.9 Cattle are grazed on the estate throughout the year. These are grazed within the 24 ha enclosed (deer-fenced) park at Achkeepster but are also turned out to the ground. Here they tend to be concentrated on the alluvial grasslands around the strath of the River Thurso but are also managed by electric fencing onto the wider hill ground.

B25.10 Cattle grazing has been permitted under the Habitat Management Agreements reached, because they should avoid the poor feeding on open bog and move between feeding stances and rough grassland dominated by purple moorgrass *Molinia caerulea*. Use of cattle should therefore ensure better habitat conditions for the open bog than sheep grazing which has now ceased. Stock feeding is undertaken on a small number of crane hard standings.

B25.11 Red deer numbers have increased within the Estate. In the past this was not deer range and it would only be in the very hardest of winter that any deer would come onto the land. However, perhaps because of the reduction in sheep grazing and access to the now established conifer

⁹ Dargie, T. (2004) Causeymire Wind Farm Section 75 Management Agreement. Methods Statements covering Habitat Enhancement and Monitoring. Report prepared on behalf of National Wind Power Ltd [NWE]

¹⁰ Dargie, T. (2012) Causeymire Wind Farm, Caithness. Habitat Enhancement and Monitoring 2004-2009. A report to RWE Npower Renewables Ltd.

¹¹ Hooper, J. (2001) Achkeepster, Caithness; Location of Proposed Windfarm : An Archaeological Assessment. Report on behalf of Innes Miller Mediations, Edinburgh.

plantation to the northwest, deer have increasingly come onto the ground and it is believed there are now established resident populations as well as intermittent usage by transients coming in from neighbouring properties to the north and west.

B25.12 Deer are primarily concentrated

- i) within and around the edge of the former Christmas tree plantation and a strip of ground along the northern edge of the estates, where numbers may be supplemented by animals drawing south in season from the forestry Estates to the north and
- ii) on the alluvial grasslands of the River Thurso, where numbers may again increase at certain times with an influx of animals from Strathmore to the west.

B25.13 Because deer populations have established only relatively recently they have not in the past been counted on a regular basis.

Current and recent past Management

B25.14 Winter feeding is not provided for deer, but they presumably have free access to hay and blocks provided over the winter period for the cattle on the hill ground.

B25.15 Regular habitat monitoring is carried out across the site on behalf of NWE in relation to the Habitat Enhancement Area. In effect Habitat Monitoring is carried out across a much wider area than the HEA itself and in effect covers the entire estate.

Within this wider Habitat Management Study Area (HMSA), north-south belt transects are located. The primary lines are separated at 500 metre intervals and follow the 250 and 750 metre eastings of the UK National Grid. A more intense 50 metre grid is used within the area defined for specific enhancement, to produce sufficient samples to describe the habitat condition. Habitat assessments are undertaken along 100 metre lines, with additional features recorded at points spaced at 100 metre intervals. There are 226 sampling positions in the points dataset and 238 positions in the line information. Full details of recording are presented in Appendix 1 of Dargie (2012)¹²

B26 Land owned and Managed by Forest Enterprise Scotland

B26.1 Within the Northern DMG Management Area, Forest Enterprise Scotland currently have 2 forest blocks towards the east of the Management Area at Braehour (1550ha) and Dale/Spittal (150ha).

B26.2 The **Dale/Spittal** block (to the east of the Causewaymire Wind Farm on Achkeepster) is planted with commercial broadleaves and is completely deer fenced. The fence is only 3 years old and is in very good condition, being completely deer proof apart from the odd roe deer.

B26.3 The **Braehour** block lies to the north of Strathmore and to the east of Braehour Estate. This is primarily a commercial forest planted in the early eighties. The forest block is deer fenced, but the fence is now porous and some deer move between the block and the open hill area. In the northwest of the block there are 2 areas within a Peatland Restoration project.

B26.4 Due to *Dothistroma* Needle Blight [Red Band Needle Blight] felling of the commercial timber has been brought forward by a few years and restocking will take place in approximately 3

¹² Dargie, T. (2012) Causeymire Wind Farm, Caithness. Habitat Enhancement and Monitoring 2004-2009. A report to RWE Npower Renewables Ltd.

years time. It is likely the restock areas will be made up of commercial planting with native broadleaf planting in riparian areas.

Deer Populations and their management

B26.5 There are resident populations of red deer (and some roe) within the Braehour Forest block and as already noted, there may be some exchange of animals with neighbouring ground where fences are more porous.

B26.6 Forestry Commission policy for the area is to integrate commercial timber production with wider recreational and conservation objectives. Timber crops are protected where possible by culling and fencing. In general, the policy is to secure perimeter fences and then manage deer populations within the enclosed area by culling; additional internal (enclosure) fencing is employed only around restock areas considered likely to be especially vulnerable (because of crop type and location) or where ongoing monitoring suggests that browsing impacts are above a tolerable threshold and culling pressures cannot be increased.

B26.7 Management within the Dale/Spittal block is undertaken by Tilhill under a national framework contract. [Tilhill will hand Dale/Spittal back to FES in 2018.] Culling in the Braehour block is undertaken by a contractor.

B27 Rimsdale, Navidale Forest, Lochdhu Woodlands, Braehour forest blocks

B27.1 A privately-owned company formerly owned three major forestry properties within the DMG area at Rimsdale in the west (bordered by Rosal, Rhifail and Badanloch Map 1a), Navidale Forest, and the Lochdhu woodlands (south of the railway between Dalnawillan and Braehour). As noted elsewhere (paragraphs B23.3, B23.13) two smaller, additional, blocks are wholly enclosed within Braehour, but these have been clearfelled and not restocked. More recently, the Lochdhu woodlands and these additional felled coupes have been sold and will be managed by Tilhill. It is understood that the Navidale Forest block has also been sold to neighbouring Navidale Farm. The Rimsdale block remains in the private ownership of the company but it is actively seeking to sell this also.

B27.2 The declared intention has been to manage these blocks for commercial forestry – felling and extracting such timber as is already mature, and restocking. The sporting lease has however been let to a third party.

B27.3 All forest blocks are ring-fenced and that at Rimsdale has recently been repaired and maintained by owners of neighbouring properties; however there have in the past been concerns where stalking activities have extended onto unfenced open ground, outwith the forest fence, where culling may impact upon populations drifting across from Rhifail. There is also expressed concern that the perimeter fences around Lochdhu are not adequately maintained and once again that culling within these blocks may be impacting on the open hill populations shared by Braehour and Backlass and nearby Strathmore.

B27.4 Regular counts are not undertaken.

B28 Land managed on behalf of private owners by Fountain Forestry

B28.1 Fountain Forestry manage deer on a number of individual Forest blocks within the Management Area to a total area estimated at some 5530 ha. Notably they undertake management

across the forest blocks of North Strathy on behalf of the current lessee: Scottish and Southern Electricity, and in the seven separately owned compartments of Strathy South [see section B4].

B28.2 In addition to this they also manage deer within the remaining forest blocks at Altnabreac, Slethill, Achlachan and Balbeg (these last north of the B870 Mybster to Westerdale road), within some part of Broubster, within the forest blocks at Forsinain, and a number of smaller forest blocks remaining within the wider area of RSPB ownership at Forsinard (thus Woodcock Hill, Dryburn and the remaining standing forestry at the Dyke). Fountains also manage deer within the Chracairnie Plantation to the east of Dorrery Farm. In the past, they also managed the forest block at Strathmore, although this has now been felled.

B28.3 Of these it is noted that the forest blocks at Altnabreac, Forsinain and Chracairnie are securely fenced and only the small blocks of the Dyke, Dryburn and Woodcock Hill offer continuity with open hill deer populations, as well as those of Achlachan and Balbeg. Thus for the most part management within the main blocks will be expected to have little effect on wider deer populations within the area.

C. FUTURE MANAGEMENT: GROUP-WIDE CONSIDERATIONS.

Summary of main actions proposed and issues addressed

C1.1 Two of the major factors impinging on future management decisions within the different Estates of the NDMG are reported impacts of grazing and trampling by deer (and livestock) on designated sites (SSSI or SAC) and the recognition that in the past total combined stag harvests (whether official or unofficial) have been unsustainable and had led to serious declines in populations of stags overall and especially a shortage of mature stags.

C1.2 Target populations should be set for individual estates and across wider sub-group areas with consideration of overall densities and impacts on designated sites reported by Site Condition Monitoring. In many areas some reduction of hind numbers is proposed (see also paragraph D1.3) and targeted culling will preferentially target hind populations hefted within vulnerable areas within or adjacent to designated sites deemed by SNH to be in unfavourable condition. Reduction culls of hinds are already planned/in process on several estates.

C1.3 Past count and cull figures show that stag populations have become somewhat low in relation to harvest quotas sought in some areas, while hind populations at least in the West and South sub-groups are higher than is required to sustain historic average harvests of stags. It is clear that

- i) hind populations in general can be reduced somewhat across the Management Area if this is required in addressing impacts on habitats within and outwith designated sites; and also
- ii) current recruitment levels will sustain historic levels of stag harvest some 7 years or so down the line when current calf crops grow through to maturity; but that
- iii) current numbers of mature stags might be somewhat marginal in sustaining historic quotas in the meantime.

C1.4 In response to this, a number of owners and managers have voluntarily reduced their annual stag harvests in the immediate short term in response to the shortage of mature stags on the ground and try to allow some recovery of stag populations in the wider area. Separate calculations presented to the NDMG suggest that total culls proposed within these pages are indeed calculated to be sustainable at current population levels and might indeed permit some modest increase in stag numbers and a restoration of a more sustainable age-structure.¹³

C1.5 Since this voluntary 'tightening of the belt' is undertaken in response to a perceived current crisis, it should be recognised as a short-term strategy only, with recognition that such reduced quotas relate purely to the immediate short-term future, and the five-year period covered by the present Plan. It is anticipated that many of those estates who have taken a voluntary reduction in quota will seek to increase stag harvests once again in the medium to long term (beyond the 5-year period of the current Plan) when results of ongoing monitoring suggest that higher levels are once more sustainable.

C1.6 It is stressed therefore that the current Group Plan is designed to run only for a five year period from 2016-2020. The entire Plan itself should be reviewed after a period of five years, with target populations and cull levels adjusted to take account of successes and failures of the initial Plan, and the anticipated recovery of stag stocks.

¹³ Figures in some sub-group areas remain marginal and calculations in the population models presented cannot take full account of additional unrecorded losses on farmland or croftland, so that it is imperative that Estates in all areas continue to monitor stag populations carefully and further adjust proposed harvests if appropriate.

General stocking rates and ongoing monitoring:

C1.7 Most members of the North Deer Management Group have undertaken regular ground counts of open hill red deer for a number of years. Counts have not routinely been undertaken however on all properties formerly owned by Forestry Commission Scotland and it is the Group's intention that more formal counts shall be coordinated throughout the Management Area in future years with tighter coordination of counting and count dates within specified sub-group areas (as at D1.9). Counts will continue to be undertaken on foot, but the Group will consider undertaking a helicopter count of the main management area every 3 years if funding permits.

C1.8 As noted at paragraphs A3.3 – A3.6 we can identify a number of clear sub-populations of open hill red deer within the overall area covered by the Deer Management Group. While stags may be more mobile, especially during the rut, for most of the Management Area we can broadly define subclusters of estates sharing the same biological population of animals, or at least for whom there is more regular exchange of both stags and hinds on a daily or seasonal basis. These are recognised in the structure of this document and within the sub-groups historically recognised within the overall Management Area.

C1.9 However, the Group now proposes to further subdivide some of the larger sub-groups (and their membership) to reflect improved understanding of population movements and the limits of particular sub-populations. Notably, both South and West sub-groups are further subdivided to conform to relatively independent sub-populations within each sub-group area. Thus:

North sub-group [Bighouse, Sandside, Shurrery, Dorrery Farm and Estate]

West sub-group 1 [Skelpick & Rhifail, Armadale Farm, Armadale Estate (Bowside), Syre (Rosal)]

West sub-group 2 [Achentoul West, Badanloch, and RSPB Forsinard ; No1 Forsinard]

South sub-group 1 [Achentoul East, Suisgill, Torrish, Caen, Langwell & Braemore]

South sub-group 2 [Dunbeath, Glutt, Rumsdale & Dalnawillan, Braehour and Backlass, Strathmore (and Blar nam Faioileag), Achkeepster and Latheronwheel.]

The Northern Deer Management Group as a whole will consider whether or not occasional meetings of these different sub-groups in the future may be helpful in delivering collaborative management.

C1.10 Target populations currently proposed within these sub-population areas are summarised in the table below, alongside proposed annual culls to be taken from this population at stability. The left-hand side of the table shows the target populations of stags and hinds proposed at the end of the five-year period in each sub-group area. Where no specific target is set (e.g RSPB properties) it is presumed that populations will remain much as at present levels. Figures are approximations only.

Population	Target Numbers			Target long-term Harvest of stags
	Stags	Hinds	Calves [@0.34]	Stags
North subGroup	390- 400	650	215-220	50
West subGroup1	150	400- 450	140-150	35
West subGroup2	520	640	215-220	45
South subGroup1	1480	1350	450	185
South subGroup2	450	1080	360	145
Total	c.3000	c.4150	c.1390	460

C1.11 Such calculations relate to populations sought at the end of the five-year period of the Plan. In the meantime, some reductions are sought in certain areas in both the number of stags and hinds.

Culls proposed over the next five years are shown in the table below.

Population	Proposed annual culls (average)	
	Stags	Hinds
North subGroup	42	135
West subGroup1	20-25	40-45
West subGroup2	45-50	145
South subGroup1	200	500
South subGroup2	150	185-190
Total	455- 465	1010

[Culls for calves are not illustrated: it is presumed that calves will be culled alongside their mothers when milk hinds are taken, and that any orphan calves identified during the winter will also be shot.]

C1.12 Using existing data, population models have been developed on a number of individual estates where reductions are proposed¹⁴, to assess reduction culls required, and to generate estimates of population trajectories expected towards the final target levels.

C1.13 Population models have also been developed to project future population trajectories within each sub-group area and assess sustainability of culls proposed. Given uncertainties implicit in ground counts, the helicopter count of 2013 is taken as the start point.¹⁵ On the basis of average recruitment rates calculated for each sub-group area and known culls taken, models predict what might have been expected to be present on the ground in each sub-group area in end of winter counts in 2014, 2015, 2016. Figures are compared with actual numbers reported from foot counts in 2016.

C1.14 Projections then continue on the same basis (average recruitment rates and proposed culls) to 2019 to offer indications of likely populations to be expected in spring counts of 2017, 2018, 2019 under future cull programmes proposed by individual estates. For most of the estates proposing actual reduction culls, these are being spread over the next three years (before culls return to maintenance for those reduced populations). In consequence, projections have been made only for the next three years. Models and accompanying notes are lodged with the Group Secretary.

C1.15 While models suggest that for the **North sub-group** the 2016 count may be a significant underestimate of true numbers present, models suggest that numbers over the next three years will show a rising stag population (as is indeed aspired to in terms of underpinning restoration of historic stag quotas) but stability of hinds and calves in relation to the 2013 count. Collective targets suggested for hind numbers in paragraph D1.11 are significantly below projected figures. Members of this sub-group have been cautious in relation to culls proposed of both stags and hinds, in awareness that this area does suffer additional uncontrolled losses on croftland or tenanted farmland as well as through poaching. In consequence models based purely on culls proposed by member estates may be over-optimistic, but members should monitor populations carefully and may wish to consider increasing hind culls to effect some actual reduction.

C1.16 In **West sub-group 1**, hind and calf numbers counted in 2016 are close to what was projected from 2013 helicopter count, so quite credible; however numbers of stags counted were far lower than predicted if culls are restricted to those taken on the open hill. Interestingly, if we insert into the model known culls within the Rimsdale Forest block, this seems to work and with these increased cull levels numbers counted in 2016 are not far off what would be expected from 2013

¹⁴ Shurrery, Achentoul West, Achentoul East, Langwell, Braemore, Suisgill, Torrish etc

¹⁵ While it is recognised that this 2013 count is considered by some members as not being fully representative of numbers typically present on their individual properties, at the wider level of subGroups it is likely to have been reasonably representative of populations present.

baseline. If the future likely Rimsdale culls are maintained in forward projection, we may expect populations in late-winter 2019 at around 254 stags, 590 hinds and 188 calves.

C1.17 West sub-group 2: Actual counts in 2016 are close to what would be predicted from the 2013 helicopter count. Although actual counts show fewer hinds and more calves than expected this is accounted for by the fact that a number of estates still do not fully classify counts, returning figures for stags and ‘others’. These have previously been split between knobbers, hinds and calves using the standard DCS formula; but that formula assumes a recruitment rate of approximately 0.35, which is higher than the actual recruitment rate for this sub-group. If instead we use the actual recruitment rate reported and reclassify unclassified animals, this results in an increase in the estimated number of hinds in ground counts and a decrease in the number of calves estimated, bringing the actual count pretty close to that predicted. Using predicted future culls, we can expect a population in spring 2019 of 630 stags, 705 hinds and 226 calves. These numbers are perhaps somewhat higher than targets sought in paragraph D1.11; members should therefore monitor progress carefully and increase culls, especially of hinds, if this seems appropriate, particularly where populations may build up high densities in local areas.

C1.18 South sub-group 1: Actual counts returned in 2016 are very close to what would be predicted from 2013 counts for hinds and calves. Models based on proposed culls from 2016/17 predict that numbers in spring 2019 will be of the order of 1257 stags, 915 hinds and 311 calves: thus more or less stable numbers of stags, and a decline in the number of hinds as intended for this sub-group. Hind numbers are projected to fall below levels expected to sustain current sporting harvests (paragraph D1.11) and member estates may have to face a reduction in stag harvests further down the line (when recruitment rates may fall)¹⁶, unless harvests may be subsidised by inputs from adjacent sub-groups.

C1.19 South sub-group 2: It is probable that there is additional cull mortality imposed on this sub-population by culls in Strathmore Woods [Lochdhu] and FCS Braehour, since fences are known to be somewhat porous. However, there would also be higher reported population numbers also if numbers within these significant woodland blocks could be assessed. Using open hill counts and culls only, actual counts in 2016 were again pretty close to what would be predicted from 2013 counts for hinds and calves. Models predict that by 2019 stag populations will remain close to 2013 levels (with slight increase) at around 422, while 2019 counts of hinds and calves will show some modest decline from current levels (1000 hinds and 350-370 calves). This decrease however is not substantial, and after some consolidation and further monitoring, some properties may wish further to increase hind culls, especially on designated sites.

C1.20 Overall, models suggest that on cull levels proposed, stag populations will remain stable or show modest increase in all sub-groups, suggesting harvests proposed remain sustainable in the short to medium-term.

Note however, as at footnote 13 [C1.4], that models are based on known culls only proposed by NDMG members and make no allowance for any additional losses where animals may be shot on croftland, tenanted farms or within forest blocks where fences are relatively porous, so that it is imperative that estates in all areas continue to monitor stag populations carefully and further adjust proposed harvests if appropriate.

C1.21 The group will assess annual counts in each sub-group area against model projections each spring and adjust future cull levels if this seems appropriate. At the end of the period of formal

¹⁶ Note that such reductions in availability of adult stags will occur some 5-6 years after hind numbers are reduced to these lower levels, since sufficient calves are likely to be born in the interim to be sufficient (when reaching maturity) to sustain harvests for 6 or 7 years beyond the breakpoint (projected to be reached in 2018)

reduction culls in 2019, the Group will re-assess the situation and can produce new models for further reductions where required, or to model maintenance culls where appropriate (para. D1.13).

Monitoring of deer populations

C1.22 Successful management of a deer stock depends not only on monitoring population trend and ensuring that numbers and population structure (ratio of stags:hinds:calves) remains as desired; management also requires careful assessment of cull levels to be taken to sustain a population at steady state, or engineer a desired reduction (particularly in terms of hind numbers) where appropriate. Towards this, a close eye should be kept on recruitment rates and rates of natural mortality. These measures in addition offer indicators of the general condition and welfare status of the population within each area.

C1.23 Calving rates - or at least recruitment of surviving calves, may be assessed from calf:hind ratios in spring counts, as long as these are reasonably accurate and there is no gross misclassification of for example well-grown stag calves as young hinds. Refinement of these estimates will help improve the accuracy of future population models. **It is thus understood that every effort should be made in annual census to assess separately numbers of hinds and calves where possible (or at least assess calf: hind ratios for those groups where discrimination is straightforward).**

C1.24 All animals found dead should be recorded, and where possible aged as accurately as possible from tooth wear. Estimates of mortality rates of yearling stags and hinds, and more mature animals may be used to refine projected rates of population increase based on calf recruitment.

C1.25 Much information may also be obtained from the cull itself. Trends in weights of yearling males and adult females are the most sensitive indicators of changing condition within a deer herd. Some stochastic variation in recorded weights may be expected between years, and analyses should not be based simply on comparisons across two consecutive years; however four or five year trends in weight offer a good index of population performance which once again offers important feedback to managers on how their population may be performing – as well as providing an ‘early warning’ of any problems which may be developing.

C1.26 Pregnancy rates should also be recorded (pregnant/not pregnant, and for roe deer, the number of embryos present) for all females culled at least after January 1st when foetuses should be readily visible. Obvious changes in pregnancy rate over time may be used to double-check changes in recruitment apparent from simple calf/hind ratios; pregnancy rates again offer a simple indicator of condition, with regular pregnancies among younger red hinds (2 year old, or younger) indicating a population well in balance with available food resources.

C1.27 In relation to this, member estates are encouraged to keep careful records for each animal culled of location shot, approximate age (from the stage of tooth eruption in the lower jaw), whole carcass weight (entire eviscerated carcass) as well as dressed carcass weight (head off, feet off). In the interests of monitoring population condition and in determining that carcasses are safe to enter the human food chain, a record should also be kept of any evidence of disease, external or internal parasites (fluke, or lymphatic cysts). Many estates already have bespoke larder record sheets, but all are encouraged to review recording methods in the context of Best Practice Guides (below).

C1.28 As above, individual estates and groups of estates within the sub-population clusters identified above will attempt to use available data to develop rolling population models that aim to show how proposed management measures are expected to influence the population over time. It is accepted that this makes the deer population management much more visible to the DMG (and others).

Monitoring of habitat condition; habitat management:

C1.29 Where a major objective of management is to engineer some improvement in vegetation quality, or where some change in animal density is proposed, it is appropriate also to undertake some simple monitoring of the vegetation itself, to ensure that adjustments of animal density are, in the one case, sufficient to deliver the vegetational recovery required, or on the other hand are not imposing excessive increase in impact. It is accepted that such measures are actually of general value for all estates, outwith areas designated for primarily conservation objectives, since simple measures such as these offer some information on the relative balance of animal numbers with the capacity of their vegetational environment to support them – and to continue to support them in a sustainable way.

C1.30 Monitoring of habitat condition and herbivore impacts has not routinely been undertaken within the Group Area. The NDMG proposes to initiate a more formal programme of assessment of habitat condition more widely across the DMG area.

C1.31 Properties will vary in the extent and form of monitoring undertaken: for many, there is a single dominant habitat, while others present a more complex mosaic. In addition, many properties are wholly or largely encompassed within designated sites where SNH itself undertakes routine monitoring of the condition of designated features and herbivore impacts; in such properties any habitat assessments to be undertaken are merely complementary to this existing regime. At present therefore the Group does not propose to adopt a standardised protocol for ongoing monitoring of vegetation and proposals for specific future monitoring have been prepared for individual properties. Training will be provided to staff on individual estates over the coming year.

C1.32 The Group will however review such policy and proposes to explore the possibility of employing outside contractors to undertake a more standardised system of monitoring across all properties within the Management Area.

C1.33 Levels of impact sought will depend in large measure on the balance of interest of individual properties with different thresholds in terms of whether these are primarily managed for conservation, for livestock agriculture, or sport or as mixed-use properties. However, managers will anticipate that in general, recorded impacts from deer should not exceed light-moderate or moderate levels and should not reach levels at which decline in habitat condition is recorded through time.

C1.34 Impacts on areas of unenclosed native woodland will be separately surveyed within individual estates and, as above, habitats which are designated features of SSSIs or SACs will be subject to routine Habitat Condition Monitoring by SNH.

C1.35 Whether in native woodland or on open hill habitats, where declines are noted in habitat condition or high deer impacts are recorded - especially where this may occur within designated sites- appropriate action will be taken to reverse the trend (e.g. through a reduction of deer, targeted culling or other measures such as appropriate fencing or diversionary management of habitats outwith the sensitive area); the effectiveness of these management measures will be monitored and management further adjusted as necessary.

C1.36 Muirburn continues to be undertaken on some estates in order to maintain a mosaic of heather ages and to protect against the possibility of wildfires. In general burning shall be restricted to small areas of heather on emergent knolls or ridges within the area; no widespread burning shall be carried out and that no burning will occur on flat areas of blanket bog where heather constitutes less than 75% of the vegetation cover. It should be stressed that burning will only be undertaken between 1st October and 15th April and will be carried out in accordance with the Muirburn Code. Where estates may wish to carry out limited muirburn within designated sites (SSSI), agreement will be sought from SNH and a Muirburn Plan (and accompanying map of candidate areas to be burnt) must be agreed in advance with SNH.

Other issues:**Roe Deer:**

C2.1 While occasional roe deer are shot on some properties (and numbers reported to the Deer Group), there is no communal policy. The Group does urge members to be aware of increasing roe numbers and expansion into areas which were recently devoid of roe, such that any fencing to be undertaken for new woodland initiatives should not simply seek protection from red deer, but should consider adopting the higher specifications (and smaller mesh sizes) required for current or possible future need also to exclude roe.

C2.2 However, while roe are capable of causing very significant damage both in commercial and amenity woodland areas if they reach sufficient density, at low densities their impact can actually be of advantage in breaking up the even-aged nature of unbrowsed regeneration and producing a degree of spatial heterogeneity/diversity (since their browsing tends to be rather 'localised' with certain areas within their range clearly preferred and browsed more heavily than other, adjacent areas). Because of this, the Group does not wish to establish any fixed policy for management of roe but advocates that management should be adaptive and respond to close monitoring of impacts, with action to be taken not when estimated populations reach some given threshold, but when recorded impacts are deemed excessive.

Non-Native species:

C2.3 Sika are regularly observed in the area and increasingly encountered on a number of estates. Sika may cause very significant damage to unfenced or fenced woodlands if they break into restoration enclosures. Further, hybridisation between sika and red deer and the potential threat posed to the integrity of native red deer populations, is now a matter of widespread concern. While it is probably not practical to eliminate sika from parts of Scotland where they have become well-established, it may be possible to maintain control and protect the genetic integrity of local red deer populations. The Management Group will continue to pursue a policy of shooting sika when encountered to try and slow the rate of colonisation and may seek authorisation from SNH, for permission to shoot out of season on grounds of conservation of local red deer stocks.

C2.4 Muntjac are not currently present in the Management Area. Any evidence of colonisation or possible establishment of muntjac will be immediately reported to SNH.

Best Practice:

C2.5 The Group as a whole endorses the Government's Code of Practice on Deer Management and the ADMG's Principles of Collaboration in relation to Deer Management. In day to day management, managers will follow the individual prescriptions of individual Best Practice Guidance notes or other relevant Guidance (e.g the Muirburn Code).

All estates are fully committed to membership of the Northern Deer Management Group and will ensure a representative attends all Group meetings where practicable. Estates will continue to exchange information on counts and culls and other ongoing management practice with other members of this Management Group.

Training:

C2.6 The Group is committed to increasing standards of competence and to offer and deliver any necessary training to staff in relation to management practices. The majority of retained stalkers or managers on individual estates hold DMQ Level 1 and a significant number also hold DMQ2 as well as other qualifications such as the Lantra Certificate in Wild Game Meat Hygiene; ATV use/maintenance; use of herbicides etc. The NDMG keeps and updates a register of skills of practitioners and is committed to increasing this skills base. Training courses will be held over the coming years in Habitat Impact Assessments and all stalkers will be encouraged to achieve DMQ2 in the course of the current 5-year Plan period.

Welfare:

C2.7 Data on annual recruitment rates (from end of winter counts) as well as data on winter mortality are gathered by most estates. NDMG and individual estates also consider carefully the possible implications of restrictions on access to cover/shelter when reviewing proposals for new fencing or in the context of phasing of felling or enclosure-for-restocking within individual estates' proposed Forest Plans. These matters are now included on the Agenda for regular Group meetings.

C2.8 On other welfare issues (e.g. during culling operations) the Group is committed to guidance offered by BPG to minimise risk of injury or orphaning of dependent juveniles (thus for example, whenever practicable, culling the calf first when culling mother-calf pairs).

Economic Costs and benefits

C2.9 The Group will also, through the Secretary, seek to compile an assessment, at Group level, of the economic costs and benefits associated with Deer Management in the NDMG Management Area, although data for individual properties will be kept confidential and only summary figures released. Such costs and benefits include: how many full-time and how many part-time staff are employed within the Group Area in relation to deer and their management; salaries/wages paid to staff, additional costs (accommodation of staff); capital costs for purchase and maintenance of fences, vehicles; fuel costs etc.; and in terms of benefits: income from sporting lets; income from accommodation rental associated with sporting lets, venison income, investment in conservation initiatives etc.

Communication:

C2.10 The NDMG holds regular meetings which are in general well-attended by members. These meetings offer a forum for regular exchange of information on counts and culls and other routine monitoring information. Members are fully committed to attendance at such meetings or where unable to attend, to send representatives.

C2.11 It is intended that more informal meetings shall be convened from time to time among member estates of some of the sub-populations identified above, to coordinate counts and discuss the sustainability of combined culls. It is advisable that sub-groups meet on a regular basis as time allows but certainly close to the NDMG Board Meetings. The Group as a whole will encourage the development of these sub-cluster meetings across other discrete subpopulations within the overall management area and individual development of 'local' population models to inform local management in these areas.

C2.12 The Group proposes to establish its own website pages within the site hosted by the ADMG. This deer plan will be uploaded to that site together with minutes of regular meetings of the DMG and a brief Annual Report of activities carried out in the preceding period.

Education and wider Engagement:

C2.13 The Group already acts as a wider forum for discussion of matters relating to wider land management within the area. The Group and individual estates have a good relationship in the main with local crofter interests, liaising over wider deer management issues. The DMG is already widely engaged with a number of community stakeholders and community groups. To ensure ongoing engagement with these local and community interests, representatives of local Community Councils and other appropriate local bodies from within the Management Group Area will be invited to the Group AGM.

C2.14 In the development of the current Plan the Group was able to engage and involve a number of landowners within the Management Area who had not previously been active members of the NDMG. The Group was also able to establish good links with the owners/managers of a collective of properties east of the Causewaymire [Munsary Peatlands Nature Reserve, the Forse Estate (Ballachly and Badryrie) and FCS in relation to forest blocks at Rumster, Camster and Rowens (paragraphs A1.12, A1.13)]. This group of properties is not technically within the historic NDMG Management Area. However, they are independently currently developing their own management Plan which will in due course be appended to this document Plan in an effort to ensure that management is fully integrated across the wider deer range.

C2.15 However it became apparent that there were a number of smaller properties within the Management Area who did not wish to engage fully with the current Plan [e.g. Hope/Baledigle; Caen, Navidale Farm/Forest; Tacher Farm, Rangag Farm, Kirkton Farm]. Through the Secretary and Chairman, the Group will continue to maintain communication with these landowners over the coming months and attempt to bring them fully on board.

C2.16 Finally, there were a number of land-holdings (almost exclusively ring-fenced forest blocks) for which we could not determine ownership. [These were chiefly around Forsinard/Slethill, Strathy/Achrugan and to the east of the Management Area]. It was not felt that their exclusion from the current exercise compromised the Group Plan since as noted the vast majority of these comparatively small blocks are effectively deer-fenced and excluded from the open-hill range. However, **a major commitment for the Group going forward is to compile a complete and up to date inventory of ownership and establish communication with these landowners or their managers.**

Public Access; Public Safety

C2.17 Many of the properties within the NDMG Management Area have significant public access. Access is encouraged and there is signage advising of deer management activities within the area. All members of the Group have been encouraged to contribute to the SG initiative 'Heading for the Scottish Hills' and to complete the associated questionnaires.

C2.18 There are a number of traffic accidents involving deer within the area each year [A4.42 and Map 8]. While the bulk of these occur along the length of the A9, there are also occasional accidents reported in Strath Naver along the B871 and the A836 and a notable problem on the A897 around Reay. Deer-vehicle collisions clearly present a serious issue within the Management Area and must be taken into account in planning future management. It is noted however that recent reinstatement of fencing behind roadside plantations on Langwell and, continuous with that, construction of a hill fence across Dunbeath, now largely protects the A9 from Navidale/Ousdale to Latheronwheel.

C2.19 NDMG will continue to monitor the problem and will collate formal records of DVCs noted by members in the area, reporting these to the National Deer Collisions database, through SNH. If DVCs continue to be perceived as an issue in the future, NDMG will act as a forum to identify and assist in the delivery of appropriate actions and SNH/Transport Scotland/ Local Authority will be involved as required.

C2.20 In production of venison for human consumption, the Group is committed to promoting Trained hunter status and encouraging those handling carcasses to obtain e.g. Lantra Certificate in Wild Game Meat Hygiene. Estates are to be encouraged to register as approved outlets under the Scottish Quality Assurance Scheme for Venison Production [SQWV]. Uptake of this, and of the number of employed staff trained to DMQ1 and DMQ2 to be reviewed on periodic basis.

C2.21 The Group aims to increase awareness of Lyme disease and other tick-borne diseases amongst stalking staff and guests/visitors. In general however, it is felt that action lies with individual landholdings. The HPS Lyme awareness leaflet could be included as part of estate visitor information. The Group is also aware that Chronic Wasting Disease has recently been confirmed in deer populations in Fennoscandia and is aware of the risk posed to UK deer populations if were ever to be imported into this country. The Group will circulate members with information on the disease and its identification: <http://www.snh.gov.uk/docs/A1007359.pdf>. Member Estates will be encouraged to increase biosecurity measures for visitors or paying guests arriving from North America and Scandinavia.

PUBLIC INTEREST ACTIONS

D1.1 The following pages offer in tabular form a summary of the Public Interest issues and benefits associated with deer management within the Group Area and actions proposed in future management by individual estates and the NDMG as a whole in delivery of Public Interest Objectives.

D1.2 To assist in assessment of the success and delivery of this Plan, individual members shall be asked to complete an annual audit of actions undertaken on individual properties against targets set. A proforma template is provided at the end of this section. Example sheets should be tailored to each individual property in relation to actions to which they have committed (cull targets, population targets, other management measures committed) and actions undertaken entered each year by comparison to targets set. Completed forms should be submitted to the Group Secretary before each annual meeting.

D1.3 In relation to Group commitments made in section D, it is suggested that a regular part of the Agenda of each AGM should be to go through each of the Action Points listed in the table on pages 110-113 [final column] in relation to each of the 14 defined Public Benefits sought, and actions taken against each of those 14 named points should be individually and formally minuted. The Group will also undertake to update the database of skills and assess future training requirements of all involved in deer management.

Summary of Public Interest Benefits and Action Points:

	Requirement	Action	Action Points
1	Develop effective mechanisms to manage deer	The Group has revised its former Deer Management Plan and offers here a Plan for the period 2016-2020. Although management across much of the area is undertaken by contractors, the Group as a whole employs 24 full-time staff and 3 part-time staff in deer management. Of owners and staff, 10 hold DMQ1 and 16 DMQ2. The Group as a whole is fully committed to ensuring continuing training and development.	Progress under the Plan to be reviewed at annual meetings and full Plan to be updated in 2020. Group to encourage all owners and staff to seek suitable qualifications and to update records of DMQ qualified staff at annual meetings [Annual]
2	Contribute to the delivery of designated features into Favourable Condition	The condition of all sites is reviewed in this Plan with reference to the latest Site Condition Monitoring or Herbivore Impact assessments reported by SNH. Actions are included in future management proposals for individual Estates to address reported impacts. Reduction culls of hinds are already planned/in process on several estates.	Group /individual estates to initiate programmes of routine Habitat Impact Assessment. Results of ongoing Site Condition Monitoring of designated sites to be reported to Group meetings as soon as completed and necessary actions by individual estates/ Group to be discussed
3	Manage deer to retain existing native woodland cover and improve woodland condition in the medium to long term	According to members figures, the NDMG Management Area includes a total area of c1240 hectares of native woodland and the National Forest Inventory records approximately 14350 hectares of commercial or mixed woodland. Much of this area is fenced, but the Group proposes more active monitoring throughout to assess browsing impacts. Plans tabled for individual Estates contain provision for restoration or extension of the native woodland resource, especially within designated areas.	Impacts in native woodland areas to be assessed as part of ongoing Habitat Impact Assessments (above) and reported to the Group where collaborative action may be required in future management Group to encourage individual estates where proposals are brought forward to restore or extend native woodland resources, particularly within designated sites [Annual meetings]
4	Contribute to the Scottish Government woodland expansion target of 25% woodland cover.	The NDMG area currently supports c1240 ha of native woodland and an estimated 15000 hectares of commercial forestry. Perhaps 40 hectares of native woodland have been established within the last five years. It is noted however that given the particular circumstances of the NDMG management area, in many areas, there is a programme of active reduction/removal of exotic plantations and restoration to peatland.	Future proposals for new woodland creation to be discussed within the group in order to appreciate possible impact of new fencing on deer distribution and movements and also to assess what collaborative management may be required to undertake compensatory culls or address developing impacts

	Requirement	Action	Action Points
5	Monitor and manage deer impact in the wider countryside (not improved agricultural land)	Regular Herbivore Impact Assessments have not in the past been carried out within the area except where the condition of designated sites has been undertaken by SNH as part of routine Site Condition Monitoring. Some estates have undertaken their own assessments of browsing impacts within native woodland schemes. The Group as a whole will encourage individual estates to initiate a regular programme of HIA on representative open hill communities across the area in the future (and as part of this Plan) and will seek to provide necessary training in monitoring methods.	Member estates to be encouraged to initiate regular programme of monitoring of herbivore impacts in woodlands and on open hill habitats. Results of assessments to be discussed at annual Group meetings and implications considered for any necessary changes to management [Annual]
6	Maintain Scotland's Carbon storage capability and contribute to securing future carbon storage potential	The extent of existing woodland cover is detailed at (4) above) and current proposals already expect to increase this by c500 ha of native woodland. Total area of carbon-rich peatland and heathland (assessed by LCS at respectively 96151ha and 48236 ha) also contribute significantly to carbon storage/sequestration. Lack of artificial drainage of these soils further highlights their value and importance. The Group is committed to maintaining such areas in good condition with ongoing deer management to ensure that impacts do not exceed moderate levels.	In addition to existing areas of established woodland and 144387 ha of peatlands/ heathlands, there is significant commitment within the Group Area to restoration of the peatlands of the Flow Country with, in many areas, an active programme of removal of exotic plantations and restoration to peatland, likely significantly to increase peatland area over the next few years. The Group will consider further opportunities to enhance peatland areas and will explore suitable funding sources/ opportunities.
7	Reduce or mitigate the risk of establishment of invasive non-native species	The Group has a policy for culling of sika when encountered within the area; muntjac are not currently recorded but any sightings in the future will be reported to SNH.	Group to collate reports of invasive species of deer at annual meetings. [Annual]
8	Protect landscapes and historic features from deer and deer management activity.	The Group will consult a local archaeologist to identify sites and prepare a register of known sites; this will be circulated to all members. At a wider landscape level, any fencing proposals will be risk-assessed against potential impacts (as in the Joint Agency Agreement on Fencing) with appropriate mitigation put in place where potential impacts are identified	To be actioned. The group will also review sites already mapped on http://her.highland.gov.uk/Map.aspx?clear=true All fencing proposals will be brought to the Group for discussion of potential impacts on deer distribution and movement patterns and any necessary compensatory action considered and discussed

	Requirement	Action	Action Points
9	Contribute to delivering higher standards of competence in deer management	NDMG maintains a register of current skills and qualification of full-time and part-time staff employed in deer management. The Group as a whole has a commitment to ensure that all full-time staff shall in due course be qualified to DSC2. The Group is committed to offering ongoing training in other areas (e.g. in habitat impact assessment)	As above, Group to encourage all owners and staff to seek suitable qualifications and to update records of DMQ qualified staff at annual meetings. Annual meetings also to discuss new training needs which may be identified and seek opportunities for delivery of training required
10	Identify and promote opportunities contributing to public health and well-being benefits	Particular areas with high risk of DVCs (as shown on Map 8) are well-known and action has already been taken to restrict the risk of DVCs in a number of areas. If DVCs are perceived as a continuing issue, the DMG will act as a forum to identify and assist in the delivery of appropriate actions required. The Group aims to increase awareness of Lyme disease and other tick-borne diseases amongst stalking staff and guests/ visitors. In production of venison for human consumption, the Group is committed to promoting Trained Hunter status and encouraging those handling carcasses to obtain e.g. Lantra Certificate in Wild Game Meat Hygiene. Estates are to be encouraged to register as approved outlets under the Scottish Quality Assurance Scheme for Venison Production	The Group will collate data on DVCs reported within the Management Area and upload these to the National DVC database annually. They will also seek annual updates from SNH on the distribution and extents of DVCs within the Management Area, other than those noted by members. Group to advise SNH of any issues identified and discuss appropriate action Group to encourage all those handling venison for consumption to secure Trained Hunter status and to review this as part of the regular annual assessment of training and qualifications (above: 1, 9)
11	Optimise economic benefits of Deer Management in Scotland	The DMG has established an initiative to collect and collate information from individual estates on economic costs and benefits of deer and deer management	Group to establish a mechanism for collating and interpreting data available on economic costs and benefits of deer and their management
12	Minimise the economic cost of deer	although summary statistics only will be released more publicly. The Group also seeks to minimise ecological costs of deer impacts on habitats and wider biodiversity – and the associated economic costs of necessary mitigation	

13	Ensure effective communication of deer management issues	<p>The NDMG holds regular meetings which are in general well-attended by members. These meetings offer a forum for regular exchange of information on counts and culls and other routine monitoring information. Members are fully committed to attendance at such meetings or where unable to attend, to send representatives.</p> <p>The Group proposes to establish its own website pages within the site hosted by the ADMG. This deer plan will be uploaded to that site together with minutes of regular meetings of the DMG and a brief Annual Report of activities carried out in the preceding period.</p>	<p>The NDMG holds regular meetings which are in general well-attended by members. Members are fully committed to attendance at such meetings or where unable to attend, to send representatives. Representatives are also invited from other local stakeholders or community Groups where appropriate.</p> <p>The Group proposes to establish its own website pages within the site hosted by the ADMG. This deer plan will be uploaded to that site together with minutes of regular meetings of the DMG and a brief Annual Report of activities carried out in the preceding period.</p>
14	Ensure deer welfare is taken fully into account at individual animal and population level	<p>Data on annual recruitment rates (from end of winter counts) as well as data on winter mortality are gathered by most Estates.</p> <p>NDMG and individual Estates also consider carefully the implications on access to cover/shelter when reviewing proposals for new fencing or in the context of phasing of felling or enclosure for restocking within individual Estates' LTFP. On other welfare issues (e.g. during culling operations) The Group is committed to guidance offered by BPG.</p>	<p>Member Estates to report demographic information to annual meetings and also report estimated levels of winter mortality.</p> <p>The Group should also assess formally the implications of any new woodland felling/restocking proposals (and any fencing associated with restocking or woodland creation) in terms of future availability of cover/shelter to local deer populations.</p>

Example Annual Audit Sheet

For completion by individual estates and returned annually to NDMG. Sheets should be tailored to each individual property in relation to actions committed (cull targets, population targets, other management measures committed) and actions undertaken entered each year by comparison to targets set.

Sample Audit sheet for Deer Group Members

		2014/15		2015/16		2016/17		2017/18		2018/19	
CULL		target	actual	target	Actual	target	actual	target	Actual	target	actual
	Stags	10-12		10-12		10-12		?		?	
	Hinds	15-20		?		?		?		?	
	Calves										
COUNT	Ground Count	yes		Yes		yes		Yes		yes	
	Numbers S: H: C	S: H: C:		S: H: C:		S: H: C:		S: H: C:		S: H: C:	
	Heli-copter										
	Numbers S: H: C										
Target Population	Stags	up to 70		up to 70		up to 70		up to 70		up to 70	
	Hinds	[e.g.] 140-150		140-150		140-150		140-150		140-150	
OPEN HILL VEGETATION MANAGEMENT											
	Areas Burnt										
	Bracken sprayed										
	Conservation Measures										

TRAINING	INFRASTRUCTURE [e.g. Argo tracks and maintenance] list actions	HABITAT IMPACT ASSESSMENTS	WOODLAND MANAGEMENT		
			Native Creation/Restoration	Commercial Activity	Forestry

Other Notes:

Maps

- 1a. NDMG Deer Management Area and Property boundaries - West**
- 1b. NDMG Deer Management Area and Property boundaries - East**
- 2. Overall Vegetation Cover of the Management Area as denoted by Land Cover Scotland**
- 3. Reported Area of Woodland Cover (and potential woodland cover) mapped by the National Forest Inventory**
- 4. Areas of Recent Woodland Creation**
- 5. Designated sites within the NDMG Area**
- 6. Reported Condition of Designated Sites**
- 7. Condition of Native Woodlands reported by the Native Woodlands Survey of Scotland 2014**
- 8. Deer Vehicle Collisions reported in the Management Area between 2013 and 2017**