



LANGHOLM MOOR DEMONSTRATION PROJECT

ANNUAL REPORT
to 31st October 2009



Introduction

The Langholm Moor Demonstration Project is a partnership between Scottish Natural Heritage, Buccleuch Estates, the Game and Wildlife Conservation Trust, the Royal Society for the Protection of Birds and Natural England. The Project was formally launched in September 2007.

The Project area covers 11,960 hectares of land which incorporates all of the Special Protection Area and Site of Special Scientific Interest owned by Buccleuch Estates. It includes the area previously managed for as grouse beats and a surrounding buffer where legal predator control is undertaken to support the management of the grouse beats.

The partners have agreed that the core objective of the Project is

To establish Langholm Moor as a driven grouse moor to meet the nature conservation objectives of the Special Protection Area and the Site of Special Scientific Interest.

Under this objective, the following elements would be delivered:

- ***Demonstration of how to resolve the conflicts between moorland management for raptors and red grouse;***
- ***The hen harrier population would be maintained as a viable component of the Special Protection Area;***
- ***The heather moorland habitat would be extended and improved beyond its state in 2002; and***
- ***The number of red grouse shot would be sufficient to ensure the moor reaches a financial viable state.***

These elements would be reviewed every three years. Five broad criteria have been devised to evaluate the success of the Project. The basic criteria are:

Raptors and red grouse

The Project seeks to demonstrate if it is possible to manage the Special Protection Area for both raptors and red grouse interests.

Hen harriers and other raptors

The Project seeks to avoid deterioration in the habitats of hen harriers or significant disturbance to them. All raptors will be protected during the Project. The Special Protection Area will hold a nationally important population of hen harriers when there is 1% of the UK population (7 breeding females, based on 2007 population estimates). The Project aims to restore moorland habitats, reduce conflicts and create other conditions that allow the Special Protection Area conservation status to be maintained and will endeavour to meet a target of at least 1% of the UK population of hen harriers.

Red grouse numbers

Based on standard practice of shooting 30% of the grouse on a moor, 6,000 birds (equivalent to a July density of around 150 birds/Km²) would be required in order to shoot 1,000 brace. The target is set for 1,000 brace of grouse shot or a mean density of 150 birds/Km² in July across the sample plots in one year, with the sustainable employment of keepers. Grouse moor management would be the economic driver, supporting the employment of at least 5 keepers but not necessarily making a financial surplus.

Heather moorland

Milne and Pakeman's report of 2002 identifies 1240 hectares of dry heath. By October 2017 the target for the Project is to increase heather cover by 20% (250 hectares) on areas of 'white' ground and degraded heather moorland. The Project also aims to improve the condition assessment of the moor in accordance with Scottish Natural Heritage's Site Condition Monitoring principles.

Passerines and waders

In 2000-03, 14 species of bird were known to breed and/or feed on the moor. Given the populations of these bird species since 1992, the targets for breeding density are as follows

Lapwing:	0.6 birds/Km ²
Curlew:	1.9 birds/Km ²
Golden plover:	0.5 birds/Km ²
Meadow pipit:	21.9 birds/Km ²

All being based on June counts along two 1Km transect in each of 15 1Km squares, using the Breeding Bird Survey methods.

The Project comprises three broad elements of work

Moorland management – keeping, shepherding and associated activities

Monitoring – survey and monitoring of red grouse, raptors and other species and habitat interests

Project management – reporting and PR

Moorland Management

The management of the moorland is based around five key activities

- Programme of measures to benefit the habitat, including heather burning, bracken control, heather restoration, blanket bog management, livestock management and goat control;
- Legal predator control;
- Medication of red grouse for disease control (notably to combat strongylosis)
- Diversionary feeding of hen harriers
- If the recovery of game populations is slow by Year 3 (2009-10), red grouse may be taken from other moors to help 'kick start' the population

The Project will also explore habitat creation measures to create alternative nesting and feeding habitat for hen harriers.

The Project employs one head gamekeeper (Simon Lester) and four beat gamekeepers to undertake this work. They work alongside the shepherds employed by Buccleuch Estates and ecologists working for the Project.

A detailed Management Plan is being finalised with a view to being implemented from May 2010. Targets within the overall Project Plan are given below with progress to 31st October 2009 and targets for the year to October 2010.

Target	Progress (as at 31/10/2009)	Target for 2009-10
<p>Heather burning</p> <p>Aims to produce a mosaic of different aged heather.</p> <p>All burning in accordance with the Muirburn Code.</p> <p>Dry heather on 15-year rotation. Burnable blanket bog on 25 year rotation. With 1,240 hectares of dry heath and 1,490 hectares of burnable bog, this equates to around 150 hectares of burning per year.</p> <p>(note that these figures exclude Twislehope and Dinley)</p> <p>The within year target had been around 200 hectares from cutting and around 200 fires.</p>	<p>Burning was attempted on 21 days. Of these conditions allowed meaningful amounts of burning to take place on 15 days from 1st November 2008 to the end of the burning season. There were up to 3 burning squads active on any one day. Around 250 fires were burnt of which 146 were located using gps (only acquired in March 2009). Remaining fires will be plotted using 2009 aerial photographs. During October 2009, there were 2 days burning. Together all gps'd fires covered approximately 29.4 hectares with estimated further 20 hectares not yet plotted. A fire on 2nd April 2009 required outside assistance to be extinguished and covered approximate 50 hectares.</p> <p>In addition, there were 146 hours cutting achieved (estimated at around 78Km of 6m wide cut strip – estimated area approximately 46.8 hectares).</p> <p>The target for number of fires was exceeded. The extent of cutting/fires was approx 75% of the target amount.</p>	<p>All burning opportunities taken (any day in week).</p> <p>All burning in accordance with Muirburn Code.</p> <p>Target of around 200ha, 200 fires of around 1ha each (accepting that achievement is weather dependent, that fire, particularly in heather beetled areas, will be greater than 1ha and that cutting included in total)</p>

<p>Bracken Control Bracken expanding onto heather areas. Many areas untreatable as next to watercourses, scrub and grassland. The within year target is for 42 ha/year to be treated (targeting aerial spraying at Whita Hill and Roan Fell, and ground based treatment on accessible areas)</p>	<p>Aerial spraying undertaken on 201 hectares on Broomholmshiel, Middlemoss and Cooms Fell End. Target exceeded.</p>	<p>Follow-up treatment of any sizeable areas of regrowth following aerial spraying. If funding can be found, further aerial spraying on Lodgegill (east slope of Arkelton Hill and south west of Scawd Bank – estimated costs in the region of £30-35,000). (note both targets are weather permitting)</p>
<p>Heather restoration 11 areas identified with use of cattle and cutting <i>Molinia</i> and spray/burn/seed suggested. Within year target – action for each area identified within Moorland Plan</p>	<p>Consideration given to each area but as considered lower priority, work proposed for later years.</p>	<p>Take forward improvements as opportunities allow.</p>
<p>Blanket bog management Good practice management Consideration of ditch blocking on Roan Fell and Blackgate Rig Within year target - Careful use of atv's and ditch blocking considered in Moorland Plan</p>	<p>Careful use of atv's, some tracking, now introducing timber patching and seeking to extend existing tracks to improve all weather access for 4wheel drive vehicles. Ditch blocking considered as part of Moorland Plan but concerns from Langholm Farms over livestock implications</p>	<p>Continue timber patching and track improvements/extensions. Provide opportunity to Langholm Farms for visit to ditch blocking trials.</p>
<p>Livestock Management</p>		

<p>Shepherding to spread grazing across hefts Management of supplementary feeding sites Consideration of away wintering Within year targets - shepherds move sheep regularly. Cattle supplementary fed on 2 sites, not sensitive areas Winter grazing reductions on hefts identified in Moorland Plan.</p>	<p>Estate shepherd move sheep regularly, easier with heather burning/cutting. Bulk supplementary feeding stopped on hill Sheep removed from July from Middlemoss (due to heather beetle outbreak) and planning to remove from other areas for winter as part of SRDP</p>	<p>Regular shepherding. Sheep away wintered from agreed areas.</p>
<p>Other Herbivore Control Goat population to be managed around 200 animals by Oct 2010 Within year target - Goat count undertaken December 2008. Goat management plan developed. Estate maintain cull of billies, with gamekeepers nannies and kids.</p>	<p>Goat count undertaken with numbers in excess of 200. Estate culled a number of billies of animals, with gamekeepers taking others for fox middens and some sold to game dealer.</p>	<p>Estate to maintain cull of billies. Gamekeepers continue to cull others with a target population of 200 individuals (with indicative sex ratio of 1 mature billy to 2 nannies)</p>
<p>Legal Predator Control Foxes, corvids and mustelids controlled throughout year, with main effort in spring Within year target - Each keeper to run a full programme of predator control including Larsen traps, crow cages, spring traps, middens and snares. All live catch traps/snares checked at</p>	<p>Keepers running traps and lamping regularly. Fox scat collection suggested a reduction of over 75% in foxes from spring 2008.</p>	<p>Continue sustained predator control programme with all live catch traps/snares being checked at least daily. All traps/snares labelled as required by law.</p>

<p><i>least daily and corvid traps labelled. Each keeper lamps at least 2x per week, sitting out as required.</i></p>		
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<p>Disease control in red grouse Medicated grit out (withdrawn prior to shooting) Catching and direct dosing may be undertaken Within year target - Grouse worms counted in autumn and spring. Medicated grit out on 150m grid across grouse areas in suitable 'grit boxes'. Worm burdens checked to ensure no requirement to direct dose.</p>	<p>Samples for grouse worms counted, indicate generally low to modest worm burdens. Medicated grit put out in boxes on 150m grid across main grouse areas. Worm burdens do not warrant direct dosing at this time.</p>	<p>Medicated grit in boxes maintained. If grouse shooting to take place, medicated grit closed off by 11th July. Worm counts undertaken from any intact grouse corpses.</p>
<p>Diversionsary Feeding of Hen Harriers Carried out in accordance with 'Substitute Feeding of Hen Harriers on Grouse Moors' Within year target - 50% nest fed prior to hen sitting, then all nests fed for 60 days after hatching. Perches/nests with motion sensitive cameras</p>	<p>1 harrier nest produced 5 young. Nest fed prior to hen settling on eggs and for 60 days after hatching. In addition, feed perches and nests watched by movement sensitive cameras</p>	<p>50% harrier nest to be fed prior to hen settling on eggs and then all nests fed for 60 days after hatching. In addition, feed perches and nests watched by movement sensitive cameras</p>
<p>Habitat Creation Small scale scrub creation, small plantations or brash provision Within year target - Consider limited planting/scrub protection as part of Moorland Plan.</p>	<p>Some consideration to scrub, not early priority</p>	<p>Consider as opportunities permit.</p>

No grouse shooting took place during the 2009 season. The decision on whether to shoot grouse during the 2010 season will be dependent on grouse numbers in summer 2010.

There was no shooting of non-grouse gamebirds between 1st November 2008 and 31st October 2009.

Scientific Monitoring

The scientific monitoring of the moorland is based around six key topics

- Red grouse (abundance, breeding success, mortality, parasite burdens);
- Hen harriers;
- Other raptors and ravens;
- Other breeding birds and small mammals;
- Predator abundance and management;
- Habitat condition assessments

The monitoring is undertaken by one full time Project Scientist (Dr Damian Bubb) and two seasonal researchers. They work alongside the shepherds employed by Buccleuch Estates and game keeping team. A number of individuals from the local Raptor Study Groups have provided considerable assistance in monitoring the distribution and breeding success of raptors and ravens within the Project area and on surrounding land.

An agreed monitoring protocol outlines the work and methodologies being undertaken. This is based on similar previous work. Assistance and advice with the monitoring has been provided by the staff from the partner organisations and the Project's Scientific and Technical Advisory Group composed of specialists from across the UK.

Targets within the Project Plan are given below with progress to 31st October 2009. A full report of the scientific monitoring will be available during early 2010.

Topic	Progress (as at 31/10/2009)
<p>Red Grouse</p> <p>Pre and post breeding counts undertaken</p> <p>Breeding success</p> <p>Mortality will be assessed using kill searches and radio tracking</p>	<p>Traditional block counts undertaken. Spring count – 80 birds on 500ha (73 birds in 2008)</p> <p>Summer counts – 228 birds on 500ha (77 birds in 2008)</p> <p>Distance sampling counts were also undertaken.</p> <p>Spring count – 38.6 birds/Km2 (21.1 birds in 2008)</p> <p>Summer counts – 99.5 birds/Km2 (45.7 birds in 2008)</p> <p>Summer counts showed 4.6 young/ hen</p> <p>With low grouse numbers, specific kill searches were unlikely to produce many results so were not undertaken. Where</p>

<p>Parasite burdens</p>	<p>grouse were found dead, a likely cause of dead was attributed. A total of around 40 grouse have been fitted with radio tags. These have been followed and any found dead have had a likely cause of death attributed</p> <p>Sheep sampled for louping ill in 2008. All samples negative. Shepherds watching for signs of louping ill, nothing noted. Worm egg counts undertaken on sample of dropping suggesting birds have low worm burdens</p>
<p>Hen Harriers Numbers breeding/success</p> <p>Diversionsary feeding</p> <p>Harrier diet</p>	<p>1 nest within Project area rearing 5 chicks</p> <p>Pre and post incubation diversionsary feeding took place, with 349 dead white rats provided and 1313 dead day old poultry chicks. Over 200 rats and 800 poultry chicks were taken from the feeding posts by harriers.</p> <p>Nest watches were undertaken showing 13 poultry chicks, 33 passerines and 6 rats being taken into the nest.</p> <p>Pellets collected to be analysed later.</p>
<p>Other raptors and ravens Recording of nest locations and success on Project area</p>	<p>Peregrine – 1 nest with (1 further nest closeby)</p> <p>Raven – 4 nests (1 further nest closeby)</p> <p>Merlin – 1 nest</p> <p>Buzzard – 8 nests</p>
<p>Other breeding birds and small mammals 20 Breeding Bird Survey plots</p> <p>Small mammals</p>	<p>All plots surveyed. Recorded meadow pipit, skylark, curlew, lapwing, golden plover, snipe red grouse, black grouse, hen harrier, buzzard, carrion crow, raven, wren, chaffinch, wheatear, stonechat, blackbird, whinchat, willow warbler, reed bunting, sand martin, wood pigeon, pheasant, mallard and goldcrest</p> <p>Snap traps recorded 0.77 small mammals/100 trap nights.</p>

<p><i>Predator abundance and management</i> 5 Scat transects followed(Mar-Jun inc)</p> <p>Mustelid tunnels run spring and autumn</p> <p>Corvids to be recorded as part of the Breeding Bird Surveys</p> <p>Keeper trapping effort</p>	<p>Scat transects showed reduction of scats collected over period (March, clear-up 76, Apr 24, May 13, Jun 6 figs for 2008 were 279, 142, 55 and 24 respectively)</p> <p>75 tunnels run, in spring 2.8% showed signs of mustelids, 22.2% in autumn)</p> <p>Lamping took place on totalling 1260.4 hours. Also there had been 40,626 'snare' days, 87,275 'tunnel trap' days, 2589 'crow cage' days and 2213 'Larsen trap' days</p>
<p><i>Habitat condition assessments</i> Sample sites established to assess changes in vegetation following management changes</p>	<p>Sample areas established and baseline information collected and collated.</p>

In future years, the same monitoring will be undertaken. Data will be analysed periodically to provide a feedback into site management.

Project Management

The Project was formally launched in September 2007.

Langholm Moor Demonstration Project Limited, the company established to deliver the Project was incorporated on 31st March 2008. The Board of Directors is composed of a representative from each of the funding partners.

Scottish Natural Heritage	Colin Galbraith
Buccleuch Estates	Mark Oddy
Game and Wildlife Conservation Trust	Teresa Dent
Royal Society for the Protection of Birds	Duncan Orr-Ewing
Natural England	Martyn Howat

Colin Galbraith acts as the Chair for the Board and the Project Manager provides the necessary administration. The Board meet quarterly and direct Company policy, consider reports on progress and direct the overall management of the Company. The Board met on 3 occasions in May, July and September.

The Scientific and Technical Advisory Group has been established to ensure data gathering and land management accords with the highest standards and that data is interpreted with scientific rigour. Members of the Group are as follows;

Jeremy Greenwood	Steve Redpath
Alan Edwards	Mick Crawley
Simon Thirgood	Robert Kenward
Ian Newton	Alex Jameson

(Simon Thirgood died in late summer 2009)

In addition to the members of the Group, there are observers from the following organisations:

SNH	Buccleuch Estates	GWCT
RSPB	Natural England	

Jeremy Greenwood acts as the Chair for the Group and the Project Manager and Senior Scientist provide the necessary administration. The Group met in January 2009.

Their purpose is to ensure that

- success criteria for the Project were realistic and robust
- Monitoring Protocol provide all necessary data
- Moorland management/keeping are of suitable standards
- Project results reviewed annually and expected to meet success criteria
- Published outputs are scientifically and technically accurate

Graeme Dalby, the Project Manager, continues to be responsible for the day-to-day management of the Project Company, provides administration for the Board of Directors and Scientific and Technical Advisory Group and manages the media relations.

The Project is initially funded by contributions from each of the partner organisations. Contributions are either made over in kind, such as cottages made available by Buccleuch Estates to house the gamekeeping team, or in actual funds. The aggregate of these for the second year is as follows:

Scottish Natural Heritage	£89,065
Buccleuch Estates	£89,065
Game and Wildlife Conservation Trust	£89,065
Royal Society for the Protection of Birds	£30,750
Natural England	<u>£15,375</u>
	£305,680

(note that SNH contributed part of their Year 3 contribution, £47,818, in August 2009 to ensure a positive cash flow was maintained by the Company as in Year 1, there had been significant capital expenditure for purchases such as vehicles, machinery and equipment.)

The Project Manager provides the focus for media relations for the Langholm Moor Demonstration Project. They are supported by a media contact within each of the partner organisation as follows:

SNH	Heather Kinnin (technical input from Des Thompson)
Buccleuch Estates	Richard Williamson
GWCT	Steve Tapper
RSPB	Duncan Orr-Ewing
Natural England	Beth Rose

PR management is guided by a protocol which was developed by the partners to ensure that all partners receive recognition for their role within the Project. This protocol also provides for a mechanism whereby agreement over the content of any outgoing material is agreed between the Partners.

The following activities have been undertaken during the year to 31st October 2009:

November	<ul style="list-style-type: none"> • Project manager made presentation to Scotland's Moorland Forum • Head Keeper and Mark Oddy (Buccleuch) made presentation on Project to Moorland Association • Project Manager made presentation on Project to Natural England Upland Advisors' conference • Project Manager, Head Gamekeeper and Buccleuch's Estate Manager interviewed for Radio 4's Farming Today programme
December	<ul style="list-style-type: none"> • Gamekeepers visit neighbouring shoots and key north of England grouse moors to provide information on Project
January	No specific actions
February	<ul style="list-style-type: none"> • Head Gamekeeper provides presentation to local Rotary Club • Project Manager provides briefing and field visit for joint SNH Rural Surveyors and Deer Commission Deer Officers • Website updated with further text and photographs • Border TV filmed short feature on progress of Project
March	<ul style="list-style-type: none"> • Head Gamekeeper provided presentation to National Gamekeepers Organisation
April	<ul style="list-style-type: none"> • Head Gamekeeper provided presentation to BASC Northern Game Evening and Eden Valley Gamekeepers • Visit by Earl Peel, Edward Hay and other GWCT Trustees • Visit by 3 SNH Main Board members and 2 GCT Trustees • Visit by RSPB Scotland's Management Team
May	<ul style="list-style-type: none"> • Head Gamekeeper provided presentation to Langholm's Buccleuch Centre • Visit by JNCC Upland Lead Co-ordination Network • Provided filming opportunities for part of TV programme by Ty Pennington on Langholm
June	<ul style="list-style-type: none"> • Visit by Eden Valley Gamekeepers • Visit by Scotland's Moorland Forum
July	<ul style="list-style-type: none"> • National Gamekeepers Organisation visit • Roseanna Cunningham visit • Scone Game Fair with briefing provided for key GWCT staff • BASC staff and Council members visiting • Briefing provided to key GWCT staff attending National Game Fair

	<ul style="list-style-type: none"> • Head gamekeeper's monthly diary onto website and into Langholm info centre • Earl Peel, R Benson, L Waddle and A Edwards invited to assist with nest watches with scientific staff but due to short timescales unable to attend
August	<ul style="list-style-type: none"> • Shooting Times reporter and photographer visited Project • Scottish Government Natural Heritage and Landscapes Group, National Wildlife Crime Unit staff, local SGRPID and SNH staff visited • Elaine Murray MSP visited Project • GWCT piece for Glorious 12th featured work at Langholm and Project Manager did short piece for Radio Scotland at short notice
September	<ul style="list-style-type: none"> • Dumfries and Galloway Wildlife Crime Officers visited Project, • M Howat and Natural England Board member visited • GWCT Chairman visited and accompanied by no of GWCT Regional Group chairmen
October	No specific actions