



Kilbraur Wind Farm

Environmental Statement

April 2004



Quality Control



Publication title	Environmental Statement
CAN	WE0390008A
Volume number	Volume 1 of 1
Version	Final Report
Date	April 2004

Prepared under the management of:

Peter Moynan - Project Manager

Directed, reviewed and approved by:

Pat Alexander - Project Director

Client Address:	RDC Scotland Ltd Tower Mains Studios 18d Liberton Brae Edinburgh
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Enviros Contact Details:	Enviros Consulting Ltd 61 The Shore Leith Edinburgh EH6 6RA
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Web www.enviros.com

Non-Technical Summary



INTRODUCTION

RDC Scotland Ltd originally submitted a planning application to The Highland Council in September of 2003 for a 24 turbine wind farm development for this location known as "Strath Brora". During the consideration of the application, it became evident that the best option to progress a wind farm proposal here was to submit a revised application which took account of various issues raised by consultees, interested parties and the Council. The revised application, known as "Kilbraur", is the subject of this Environmental Statement and is outlined below.

RDC (Scotland) Ltd, through its agents West Coast Energy Ltd, has now submitted a revised planning application to Highland Council for consent to build and operate a wind farm on land owned by Sutherland Estate at Kilbraur (Figure 1.2). The revised application has a new layout of 19 turbines and a new access route to the site from the A9.

The contact address for the project is:

Peter Barker (Planning Manager)
West Coast Energy Ltd
48 Cassillis Road
Maybole
Ayrshire
(Tel: 01655-884209 Fax: 01655-884212)
Email: peter.barker@westcoastenergy.co.uk

This document is the Non-technical Summary of the Environmental Statement (ES) that was submitted with the planning application. The main purpose of the ES is to assess any potential environmental effects of the proposed Kilbraur wind farm. It describes the background to the project, provides details of the proposed development and the results of specific studies commissioned to assess the various environmental effects.

The ES includes a Non Technical Summary (NTS) which summarises the proposed development, its likely environmental effects and proposed mitigation measures. This NTS is also produced as a separate document.

The ES and the planning application can be viewed by members of the public at the local Highland Council offices and at Council Service Points in Golspie and Brora. It will also be available at Rogart Post Office and Stores.

RDC (Scotland) Ltd

RDC (Scotland) Ltd (RDC) is a sister company of The Renewable Development Company Ltd, a privately owned wind energy company based in North Wales. RDC is registered in Scotland with its office in Edinburgh; RDC is working to develop wind power projects for the Renewable Obligation Scotland (ROS). RDC has contract awards or confirmed permission for over 400MW of onshore and offshore wind power developments in England, Wales and Scotland. RDC hold additional interests in the UK and the Republic of Ireland, totalling in excess of 250MW. In December 2001, the Department of Trade and Industry granted approval for the development of 58.5MW wind project in Mid Wales, which was the largest wind farm permitted onshore within the UK at that time. RDC was also a partner with Edison Mission Energy in the Rhyl Flats Offshore wind farm Project, and successfully gained

consent for the 150MW offshore wind farm in December 2002. RDC has also just gained planning permission for a 7 turbine (up to 21MW) scheme at the former Boyndie Airfield, near Banff, in northern Aberdeenshire

Outline of Proposal

The Kilbraur proposal is for a medium size wind farm of 19 modern wind turbines. The wind farm would be sited on undesignated moorland to the south of the River Brora on land owned by the Sutherland Estate. The nearest individual dwelling would be about one kilometre from the closest wind turbine.

The wind farm is planned to be operational for 20 to 25 years, and will in a typical year generate an amount of electricity equivalent to the average consumption of about 28,700 homes. In so doing, it will make significant reductions in the emission of greenhouse gases and other pollutants.

Site Selection and Alternatives

The selection of an appropriate site for a wind farm involves examining and balancing a number of technical, environmental and planning issues.

The current site was originally identified by RDC because of good wind conditions, good grid connection potential and because it does not fall within any designated areas of national environmental importance. Other factors considered were that the site had no regional landscape designation; the land is part of a sporting estate where existing estate activities in terms of land use could be maintained; the main areas of settlement are distant allowing any perceived or potential noise or visibility effects to be minimised; and the site has suitable access.

The layout of turbines, site tracks and the access route take account of constraints identified during the environmental assessment for the wind farm. For example up to seven access route options were considered before a decision was taken on the chosen route. Also responses from consultees such as Scottish Natural Heritage (SNH) and the local community as a result of the previous planning application in September 2003 have been carefully reviewed.

Consultation

The EIA Regulations provide for obtaining a scoping opinion from the Scottish Executive or planning authority concerning the information to be provided in the ES. The authority is then obliged to consult other relevant 'consultation bodies', including SNH and SEPA, before issuing their opinion.

RDC Scotland requested a scoping opinion from the Scottish Executive in February 2003, for a larger conceptual scheme including land to the north of the current site. The Executive responded to this in May 2003 and details of the response are included in the ES.

The consultation exercise was extended to the Community Councils of Rogart and Brora. In these cases, in addition to an invitation to respond to the consultation, presentations were made at Community Council meetings by West Coast Energy on behalf of RDC Scotland to explain the background to the project, to provide some preliminary information about the wind farm, and to respond to any questions raised. Contact details were left at the meetings, and through this process and local dissemination of information, various individuals contacted West

Coast Energy with specific queries or concerns. Several face to face meetings have been held to progress these issues with individuals or groups of individuals.

The consultation carried out for the 2003 application has been repeated for this current new application.

It is planned to hold public exhibitions around the time of submission of the planning application, to inform the public of the final details of the scheme.

Need for the Development

1.18 The need for the development of renewable energy generation in the UK is a consequence of the need identified at World and European levels to reduce emissions of greenhouse gases and acid rain gases, and to move towards more sustainable means of energy production. Renewable energy sources, including wind energy, contribute towards targets for clean energy generation and for a reduction in emissions of greenhouse gases, and moves towards a more sustainable future.

Greater use of renewable energy sources, including wind energy, also reduces use of finite reserves of fossil fuels, reduces dependence on a small number of fuel sources, which increasingly need to be imported, and contributes towards establishing renewable energy industries in the UK.

Wind energy is an inherently sustainable means of generating electricity that does not produce harmful emissions or toxic waste products and is not dependent upon finite reserves of fossil fuels.

The UK has set a target of meeting 10% of its electricity requirements from renewable sources by the year 2010. In Scotland the target is to generate 18% from renewable sources over the same period. Most recently the Scottish Executive announced that the target should be raised to 40% by 2020. The Kilbraur wind farm would contribute towards these objectives. Using British Wind Energy Association figures, it is estimated that the Kilbraur wind farm could displace the following gaseous emissions which would otherwise have been produced by a power station burning fossil fuel:

- 107,353 tonnes of carbon dioxide (CO₂) per annum;
- 374 tonnes of sulphur dioxide (SO₂) per annum; and
- 1248 tonnes of nitrogen oxides (NO_x) per annum;

Over a 25-year period carbon dioxide emission savings alone could amount to nearly 2.6 million tonnes.

PROJECT DESCRIPTION

The Planning Application for the Kilbraur wind farm includes 19 wind turbine generators with associated access tracks, control building/grid connection compound and two anemometry masts. A site layout plan is shown in Figures 3.1a and 3.1b.

The environmental assessment has been carried out on the basis that each wind turbine will have a capacity of about 2-2.5MW giving a total installed capacity of up to 47.5MW. The turbines will have tubular towers up to 70 metres (m) tall, and the length of the turbine blades will be up to 45m, resulting in a maximum total height to blade tip of 115m. The colour and finish of the turbine towers and blades is proposed to be a mid-grey colour with a semi-matt finish, subject to agreement from the planning authority. The wind turbines would be mounted on concrete foundations approximately 16m x 16m in size. The delivery of the wind turbine components to the site will be by articulated low-loader lorries using a designated route.

The anemometer masts would be approximately 70m tall and would have wind speed and direction monitoring equipment to gather wind speed data for operational purposes.

Current proposals are to access the wind farm from the A9 Trunk Road west of Golspie at Drumbuie, then via the existing forest road in Ben Bhraggie Woods before 2.4 km of new road will be constructed crossing Dunrobin

Glen to join with the Dunrobin Glen road. The route will then follow the existing road, with the site access point being to the west of Farlary. Both the Ben Bhraggie Woods road and the existing Dunrobin Glen road will require upgrading to allow the passage of larger loads.

Approximately 10.9km of hard-core access tracks would be required on site, connecting the wind turbines for the purposes of construction and maintenance. Aggregate material for tracks and other construction activities will be sourced from a borrow pit within the wind farm site area

Electrical connections on site between the wind turbines and the control building will be underground, with cables being laid in trenches directly adjacent to the access tracks. The control building will comprise a small single storey building, with an associated grid connection compound for outside transformers and switchgear. It is anticipated that the grid connection will be made into the existing 275kV line which crosses the site on pylons.

The construction programme is expected to last for about 10 months following the main phases set out below:

- Site preparation groundworks and medium voltage equipment installation (months 1 - 7);
- Turbine erection and high voltage equipment installation (months 4 - 9); and
- Commissioning and testing (months 8 - 10).

During the construction period a contractors' compound will be required (50m x 100m) and this would be located close to the access point. Up to 60 full time construction staff will be employed throughout the construction period.

HGV traffic into the site is estimated at an average of 6 vehicles per day over the construction period. However this may peak at about 35 vehicles per day during on-site track construction.

Once operational, the wind farm will employ between 1 and 2 staff. The wind turbines will operate automatically, requiring visits to the site by operations staff approximately once or twice a week for scheduled services. Longer visits for servicing, typically every six months, and unscheduled maintenance may also be required. Wind farm performance will be monitored remotely.

At the end of its operational life, site clearance and reinstatement would take about six months.

ENVIRONMENTAL ASSESSMENT

Landscape and Visual Assessment

One inevitable consequence of siting wind turbines is that they are large structures, visible in the surrounding landscape. The appearance and visual effect of the Kilbraur wind farm has therefore been given detailed consideration, and photomontage views of the appearance of the wind farm from local viewpoints are included in the ES.

A landscape and visual assessment of the proposed wind farm has been carried out within a 35km radius from the centre of the application site (the "study area"). The viewpoint assessment has been carried out from 19 viewpoint locations selected in consultation with Highland Council and SNH.

The site does not lie within any landscape designations, however one National Scenic Area (NSA) and two Areas of Great Landscape Value (AGLV's) lie within the 35km radius study area. "Wildland" and proposed AGLV's also lie within the study area.

The site is located on a tract of open upland referred to locally as Kilbraur. The site lies in an area of land owned by the Sutherland Estate and is categorised as being 'Moorland Slopes and Hills' in the Caithness and Sutherland Landscape Character Assessment (SNH 1998). It is located approximately 9km to the north west of the settlement of Brora. The River Brora in the strath of the same name bounds the site to the north and west.

The previous "Strath Brora" (September 2003) scheme attracted criticism from a localised visibility point of view, and the new layout now being submitted significantly addresses these concerns. The deletion of 5 former turbine

locations north of Sciberscross is a major component of the current proposals. The layout has been optimised in respect of technical, economic and environmental constraints including landscape and visual amenity considerations

The landscape and visual assessment has established that the proposed development will change the landscape and visual baseline conditions during construction and operation phases of the wind farm, but to an acceptable degree.

The construction phase of the proposed wind farm is relatively short, lasting approximately 10 months, and will have only temporary, minor effects on landscape and visual amenity in the study area.

The assessment has concluded there will be some effects upon the landscape character of areas of Moorland Slopes and Hills and Sweeping Moorland landscape types located in close proximity to the proposed wind farm site. Areas of these landscape types located further from the proposed wind farm and all other landscape types in the study area will not experience significant landscape effects as a result of the development.

There will be no significant effect on the principal transport routes of the A9 and the Inverness - Wick railway line.

The assessment of the viewpoint analysis arising from the proposed wind farm at Kilbraur has identified that significant effects will be confined to 7 viewpoints. With the exception of viewpoint 17 Cnoc Caoruinn, all of the significant effects are found within 6km of the proposed site. Of these viewpoints; 2 are on lightly trafficked minor roads servicing a small, scattered population, one is within an infrequently visited upland area, one is located within the small settlement of Gordonbush within Strath Brora and two are immediately adjacent to the Kilbraur site at Sciberscross. Cnoc Caoruinn is located approximately 13.2km from the site.

Significant cumulative effects will occur at 7 of the viewpoints; again, with the exception of one viewpoint -13 Creag nam Fiadh, which is 15.2 km from the site, all of the viewpoints experiencing significant effects are within 6km of the site.

It should be noted that significant effects are not necessarily unacceptable. Surveys carried out in Wales, Cornwall, Cumbria and recently in Scotland, indicate that the majority of people who live nearby, look favourably on the wind farms after they are constructed and that tourism does not suffer as a result of wind farm development. Survey results issued in August 2003 by the Scottish Executive have reinforced this view.

The scheme is considered to be well sited with respect to landscape and visual effects and other environmental constraints. Settlement in the area is generally sparse and that to the south is screened from the proposed development by high ground. Land to the north and north west of the site has some elements of 'Wildland' character, namely a sense of remoteness and absence of settlement, and this has been deliberately avoided. Extensive coniferous forestry, major electricity pylon lines and adjacent settled areas create a landscape in the vicinity of the proposed wind farm characterised by prominent man made features and elements.

Having carefully examined the potential effects on landscape and visual amenity associated with the proposal, it is considered that whilst there will be some significant effects upon the landscape and upon views the scheme is acceptable in this location in landscape and visual terms.

After consideration of other wind farm sites within 70km of the site, the assessment of cumulative visual and landscape effects of the development concluded that there was the potential for some significant cumulative effects to occur in the Kilbraur study area.

Ecology

A baseline survey of the vegetation, other habitats, flora and fauna (including protected mammals) was completed in June, July and December 2003. The survey shows the site to comprise large extents of moorland type habitats. A small area of young coniferous plantation with some broadleaved planting is also present.

The site is moderately grazed by sheep and deer and has been subject to muirburn for many decades, if not centuries. Parts of the site show signs of attempts at man-made drainage.

The survey area is not a designated site and its ecological value has not been formally evaluated before for nature conservation interest, nor does it contain a quantity of any vegetation which can be considered scarce or rare on a local, regional or national scale in Scotland.

There was no sign of water vole or badger at the site. Otters use the site infrequently.

The survey area has no nationally rare and scarce plant species. It is very unlikely that the vegetation of the survey area would be considered suitable for designation. In particular it lacks very wet blanket bog.

A small extent of mainly blanket bog vegetation (approximately 5ha) will be lost to access track construction. This is considered to be a permanent impact of only low magnitude. All semi-natural habitat losses and disturbance from wind farm infrastructure are estimated to total about 22ha, most of which is due to track construction and the incorporation of surplus peat along track margins. This represents a minor impact which will be permanent if the road network is maintained beyond the life of the wind farm.

Overall, impacts on key site habitats and species are either negligible or of minor significance. Selective ditch blocking and the re-wetting of drained peatland are proposed to offset the few low magnitude impacts identified.

Ornithology

The ornithological assessment has included consideration of any potential effects of the wind farm on bird species using the site itself, as well as bird populations using important adjacent habitats and areas of conservation interest.

The assessment has included detailed field survey of the site and its surroundings undertaken during 2002, 2003 and 2004. This comprised an upland breeding bird survey, surveys of birds of prey and waterfowl, and vantage point counts to establish bird movement and use of specific areas.

Consultation was undertaken with SNH and RSPB from an early stage about any designated areas in the locality, and the scope of survey required and this has continued and evolved over the assessment period.

The proposed wind farm site is not statutorily identified for its bird interest, nor does it lie adjacent to any designated site. The nearest designated site is Loch Beannach Site of Special Scientific Interest (SSSI) (also part of the Lairg and Kilbraur Lochs Special Protection Area (SPA) for birds, which is about 5.5km from the nearest turbine. There was no evidence from the surveys to suggest there was any movement of birds over the wind farm site to or from the Lairg and Kilbraur Lochs SPA.

The bird survey identified four species of high importance, breeding close to the wind farm area; these were Hen Harrier (one pair), Merlin (one pair), Golden Plover (one pair) and Red-throated Diver (one pair). All of these have the potential to be affected by a wind farm development.

As well as significantly altering the previous ("Strath Brora") layout to avoid areas of bird interest mitigation measures are proposed to reduce any perceived remaining impacts on these birds to low and acceptable levels. This includes the installation of an artificial floating island on a lochan adjacent to where the Red-throated Diver currently breed and a substantial Conservation Management Plan as part of a wider initiative by the Sutherland Estate, to be agreed in consultation with SNH and RSPB, which would improve the nesting habitat for Hen Harrier.

The wider Sutherland Estate Initiative will:

- quantify the value of the Estate for Hen Harrier and other specially protected bird species;
- examine how this value might be improved by changes in land management;
- ultimately implement appropriate management prescriptions; and
- Increase biodiversity generally through works targeted at the Hen Harrier.

Archaeology

The archaeological assessment comprised a survey of sites of cultural heritage significance for the proposed development, the area adjacent to it, and along the access route from the A9, together with an assessment of the potential impacts of the development on these sites.

There are 22 known sites of cultural heritage significance within the site boundary; only 8 were known prior to fieldwork associated with the EIA. These comprise ten groups of prehistoric hut circles and/or their associated cultivation remains, one example of a possible burnt mound or prehistoric cooking site and eleven sites associated with post-medieval settlement, including the pre-Clearance townships of Rayen and Scottarie, and a newly identified site on the lower north-facing slopes of Meall Odhar.

None of the identified sites within the site boundary is a statutory designated monument (Scheduled Ancient Monument [SAM] or Listed Building [LB]); nor is any of them designated in the Highland Council Non Statutory Register [NSR] as a 'site of schedulable quality'. However, the pre-Clearance townships of Rayen and Scottarie have both been classified there as 'sites of regional importance'.

There are a further 54 known sites of cultural heritage significance within the adjacent study area. These include a similar range of sites to those identified within the site boundary. In this group there are two Scheduled Ancient Monuments; there is also a Grade B Listed Building (Dalreavoch bridge) on the NW edge of the adjacent study area. In addition, there are also nine NSR 'sites of schedulable quality' and seven NSR 'sites of regional importance'.

Eleven sites of cultural heritage significance have been identified within a 100m wide corridor of the proposed access route which leaves the A9 at Drummie and passes around Ben Bhraggie on existing forestry roads before joining the existing Dunrobin Glen road to the south-east of Bridge of Horn. There are two Category B Listed Buildings in this group (both at Drummie) and two NSR 'sites of regional importance'.

Finally, there are also eleven Scheduled Ancient Monuments and three Category B Listed Buildings within a 5km radius of the outermost elements of the wind farm.

Careful design of the site layout, and the repositioning of individual turbines, tracks and other related site infrastructure as a result of the iterative process has resulted in a comprehensive avoidance strategy for all identified sites of cultural heritage significance. Construction of the wind farm has the potential to adversely affect currently unknown archaeological sites. Such an impact may be mitigated by archaeological monitoring of the site during construction works to ensure that any such sites are recorded. A programme of detailed survey and marking-out is also proposed.

Impacts of the setting of Scheduled Ancient Monuments - as well as NSR 'sites of schedulable quality' - have been minimised. In response to concerns expressed by Historic Scotland, Highland Council Archaeology Service and Clyde Heritage Society. Remaining indirect impacts on the setting of archaeological sites are identified as negligible to minor. As these impacts are temporary and entirely reversible, no further mitigation is proposed.

Water and Geology

The assessment has identified areas of activity, particularly during construction operations which have the potential to impact upon the hydrology of the site and overall surface water and groundwater quality. The effects of construction on regional and local groundwater flows are considered minor.

A site construction environmental management plan will be put in place. In this way appropriate good practice and application of SEPA regulations will ensure pollution risk is minimised to levels which are entirely acceptable.

No private water supplies will be affected by the development.

A regime of surface water quality monitoring has been proposed, with sampling prior to commencement of works in order to provide a baseline of water quality. Choice of sampling points across the site would be agreed with SEPA prior to the commencement of testing.

Noise

Wind turbines are essentially quiet machines, and have been specifically designed for use in remote areas with low existing ambient (background) noise levels. However, they are not totally silent, and an assessment has been carried out on the noise levels predicted at nearest properties to the wind farm. This assessment involves comparing the expected noise created by the wind farm with the existing ambient noise levels at nearby properties.

The proposed development has been sited and designed so as to minimise noise levels at residential properties nearest to the site.

The assessment has taken account of current statutory and non-statutory guidance, particularly ETSU Report ETSU-R-97: 'The Assessment and Rating of Noise from Wind Farms' as well as relevant British Standards and other documents relating to noise and its effects upon humans.

The assessment shows that noise from the proposed wind farm, assuming that all turbines are operating at normal speed at the same time, would not exceed any of the noise limits defined in ETSU-R-97. Separate target criteria have been developed for both night time and daytime periods, in order to protect both the sleep of local residents and to protect the outdoor amenity of the area.

Predicted noise from turbines at all the identified properties is below the set criteria for both day and night, thus ensuring an acceptable level of amenity for local residents.

Concerning potential noise from construction work, the site is far enough away from the nearest houses to avoid significant noise effects. Nevertheless, the best practicable method of minimising construction noise on the site will be adopted.

In summary, it is anticipated that there will no disturbance from noise at properties within the vicinity of the proposed wind farm.

Social and Economic Effects

No significant adverse social or economic effects were identified. In fact, the converse is potentially the case and positive benefits are expected to result from the development.

Recreational access to the site, currently low, is likely to be made easier during the operation of the wind farm due to the presence of upgraded access tracks between the site entrance and the turbines' positions.

In terms of economic and social benefits, the proposed wind farm would generate:

- direct and some indirect employment opportunities for local people during the construction phase of the development;
- income to the landowners and crofters. This farm will represent a significant and important source of diversification income to assist in the financial stability of the respective land holdings;
- some employment opportunities during the operation of the wind farm, potentially employed within a dedicated operations and maintenance centre;
- opportunities for local businesses to supply goods and services;
- opportunities for local accommodation providers to temporarily increase occupancy levels within their hotels and bed & breakfast accommodation during the construction period;
- the potential for local industries to diversify into, or strengthen their existing experience, in the installation of renewable technologies;
- a potential increase in the number of visitors to the area by those tourists interested in wind farm development, and therefore the numbers of visitors using local accommodation; and
- significant contributions to a Community Trust Fund, in accordance with arrangements to be agreed with Highland Council in order to assist in the implementation of local initiatives.

Transport

The traffic and highways assessment concludes that traffic levels will increase slightly during the construction period on the proposed access route, which comprises use of predominantly the A9 (T) and the A839.

A slight increase in traffic locally is anticipated but this will be spread over the construction phase only and lasting approximately 10 months.

Traffic generated by the construction of the proposed development will be associated with the establishment of the site infrastructure, the delivery of mobile and fixed plant and machinery and erection of turbine and electrical components. Some of these traffic movements will be abnormal loads and will require special arrangements to be agreed with the Highways Authority and Police.

The highest level of traffic generation will be during the construction of the turbine foundations, and approximately 60 people will be on-site during this period.

Traffic generated during the operation and maintenance of the proposed wind farm is negligible compared with existing traffic levels.

Electromagnetic Interference, Infrastructure and Safety

Like other tall structures, wind farms have the potential to cause interference to radar and telecommunications such as television, radio and microwave systems. Consultations were carried out to ensure that aviation, radar and telecommunications interests will not be adversely affected by the proposed wind farm.

No known television/telecommunication links, civil/military aviation or radar/navigation systems will be affected by the proposed development.

The turbines are built to a high standard and specification. Shadow flicker will not cause a nuisance to people in the area due to the low frequency movements of the blades.

Public access and safety is not considered to be a problem at the wind farm site.

Conclusions

In summary the main conclusions of the environmental impact assessment are:

- The proposed wind farm would be located in an upland moorland landscape. While effects have been identified from certain viewpoints, the wind turbine layout proposed for this location is considered acceptable in terms of its potential effects on landscape and visual amenity;
- The wind farm will have no significant effects on habitat loss or disturbance;
- The potential for the development to impact on four identified bird species of conservation interest has been carefully assessed. It is considered that these impacts can be satisfactorily mitigated by the implementation of an extensive habitat management plan in conjunction with the implementation of other habitat enhancement measures on the Sutherland Estate;
- Careful micro-siting of turbines and site infrastructure will ensure that all the identified archaeological features will be maintained during construction activities. This will be accompanied by an archaeological watching brief;
- The development will have little impact on the aquatic environment, given appropriate environmental management and compliance with the relevant Codes of Practice;
- The noise effects of the construction and operation of the proposed development will be insignificant;
- The development is likely to have a net beneficial and valued effect on jobs in the area and on associated commercial activity. Income to the Estate and crofting community will represent a source of diversification. The proposed wind farm would also contribute towards sustaining the local economy and community by way of a proposed community fund;
- Existing traffic levels will not be significantly affected by construction traffic. Operational traffic will be negligible; and

- No adverse effects have been identified in terms of interference with telecommunications and radar.

In summary, the proposed wind farm will make a substantial contribution towards clean energy generation in Scotland. It will produce a significant quantity of electricity, with consequent savings in emissions of greenhouse gases.

For the reasons listed above it is concluded that the Kilbraur wind farm would be acceptable in terms of its effects on the local community, the environment, planning policy and national energy policy.

KILBRAUR WIND FARM



KEY:

- Site Boundary
- 1 Turbine Position
- Access Route

FIGURE 1.2
SITE LOCATION

SCALE 1:100,000
CONTENT RWW
CHECKED

CAN WE0390008A
DRAWN HLD
DATE MAR 2004

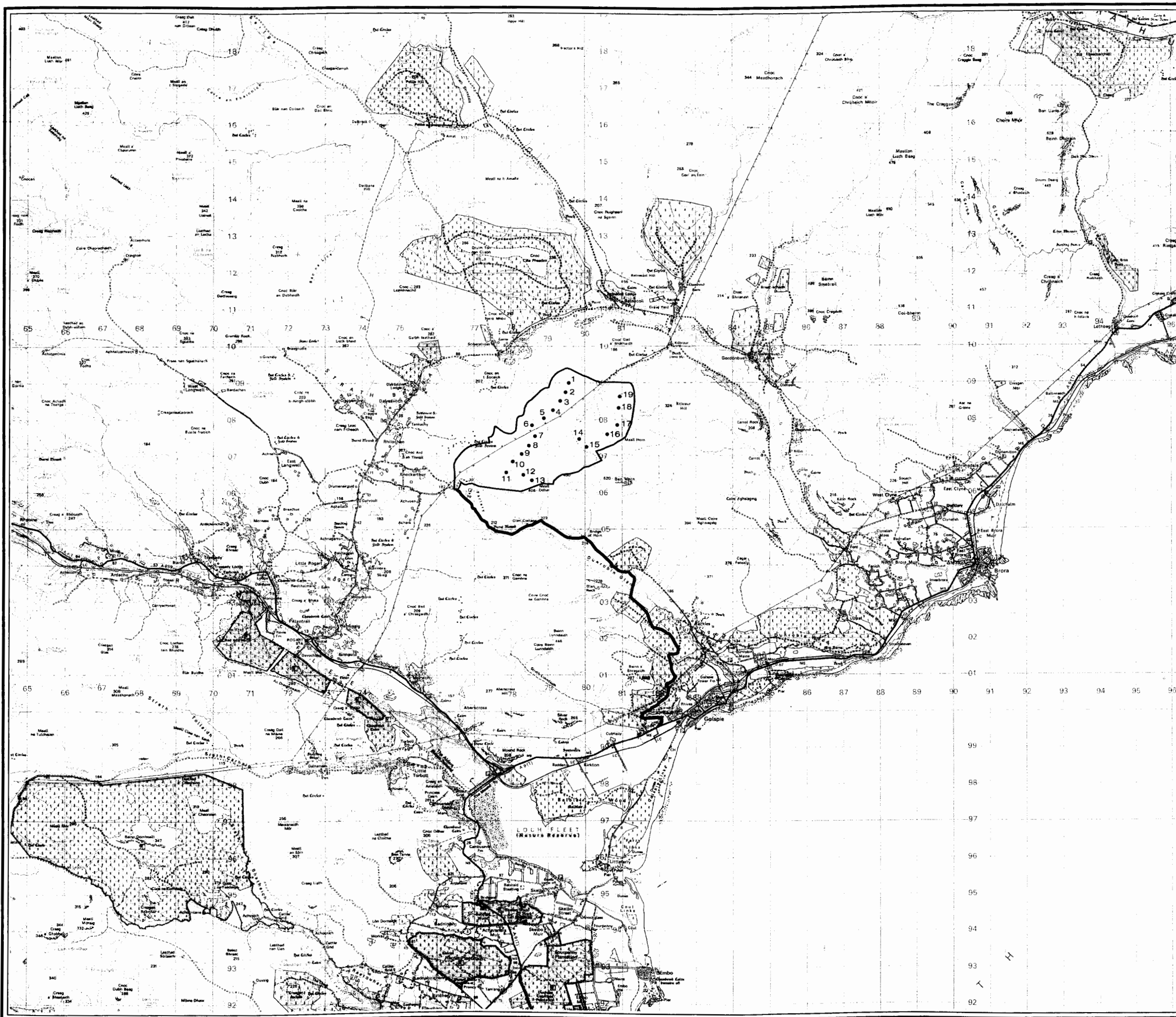


Plot date: Apr 03, 2004 - 10:04am

Ref: I:\WINDFARMS\StrathBroz2

File name: Location.dwg

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Appendix 4

Chapter 7 - Archaeology



Identified Sites within Site Boundary (Sites 1 - 22)

[SITE 1] Allt Clais a Chait

Type of Site: hut circles & clearance cairns

NMRS / SMR Numbers: previously unrecorded

NC 766 066. Two hut circles and a well-defined area of field clearance cairns.

(A) NC 76516 06686. Hut circle located at edge of terrace, overlooking lower ground to SW; 6m internal diameter, inside turf-covered stony bank up to 2.5m wide and 0.5m high, with sub-square annexe 3 x 3m inside SW side of building.

(B) NC 76608 06635. Hut circle, 7m internal diameter, inside turf-covered stony bank generally 1.5m wide and 0.6m high, with sub-square annexe 4 x 3m inside NE side of building. Entrance in SW side of building. Fourteen clearance cairns, up to 5 x 4m and 0.6m high, located in proximity to the two buildings; low turf-covered stony bank (20m long, 2.5m wide and 0.3m high) identified at NC 76597 06694, and possibly fragments of another at NC 76625 06654.

[SITE 2] Allt Clais a Chait

Type of Site: clearance cairns

NMRS / SMR Numbers: previously unrecorded

NC 767 065. Group of three clearance cairns, 3 - 4 m in diameter and 0.6m high, located to N of electricity pylon.

[SITE 3] Allt Clais a Chait

Type of Site: burnt mound (possible)

NMRS / SMR Numbers: previously unrecorded

NC 76991 07068. Arc of a heather-covered stony mound, up to 10m across and 1.2m high with hollow (0.5m deep) on top, located next to burn. Superficial resemblance to burnt mound but no exposed sections present.

[SITE 4] Farlary

Type of Site: hut circle & clearance cairns

NMRS Number: NC70NE 6

SMR Number: NC70NE 6

NC 7711 0681. Hut circle 14.0m in diameter between wall centres. The E arc has been destroyed during the erection of an adjacent electricity pylon. No entrance apparent. Extensive area of intermittent field clearance heaps lie to the E of the hut.

[SITE 5] Allt Clais a Chait

Type of Site: Hut circles & clearance cairns

NMRS / SMR Number: previously unrecorded

NC 772 070. Two hut circles are located on the west-facing slope above Farlary. Hut circle A (NC 77171 07015) is roughly 7 - 9m across internally with stony banks spread to 2m wide and up to 0.4m high. Entrance in the SW. Hut circle B (NC 77322 07082) is of a similar size with an entrance in the W. Located in an area of grass and young heather with a number of turf-covered stony mounds - probably field clearance stones - nearby. A robbed example or possibly a shieling-hut is located nearby at NC 77259 06961.

[SITE 6] Rayen

Type of Site: depopulated township

NMRS Number: NC70NE 38

SMR Number: NC70NE 37

NC778 073. A township comprising four unroofed buildings, five enclosures, a field and a ring-dyke is depicted on the 1st edition of the OS 6-inch map (Sutherland 1879, sheet xcvi). Five unroofed buildings, an enclosure, a field and part of a ring-dyke are shown on the 1970 OS 1:10,000 map.

[SITE 7] Meall Odhar

Type of Site: depopulated township

NMRS / SMR Numbers: previously unrecorded

NC 788 065. Remains of old head dyke located on lower N-facing slopes of Meall Odhar. Within the dyke are two buildings (A & B), a kiln (C), an enclosure (D) and areas of old improved pasture.

(A) NC 78786 06710. Low stony bank of sub-rectangular building, 17 x 2m internally, aligned roughly NW - SE; bank spread to 1.2m and standing up to 0.3m high.

(B) NC 78770 06703. Low stony bank of sub-rectangular building, 5 x 2m internally, aligned roughly NW - SE; bank spread to 1.5m and standing up to 0.4m high. Low stone wall, forming N side of yard, abuts N end walls of both buildings.

(C) NC 78751 06831. Located to N of Buildings A and B are the remains of a corn-drying kiln; low mound 6m diameter with infilled bowl (1.5m diameter) in centre, and loading room (2 x 1.5m) and flue to N.

(D) NC 78734 06506. Enclosure 12m diameter, formed of low turf bank 2m wide and 0.4m high (Highland SMR NC70NE 80).

On the basis of the disposition of the lettering on the Burnett & Scott (1832) map, Dr Lindsay (pers comm) has identified this settlement as possibly Bad-an-elich. On the earlier Forbes (1820) map, however, the place-name is located to the north-east, next to Orrachile (Urachioile) beside the river.

[SITE 8] Scottarie burn

Type of Site: clearance cairn

NMRS Number: -

SMR Number: NC70NE 79

NC 79341 07394. single low cairn formed of 9-10 medium to large rounded stones; 1m diameter and 0.2m high. Located at head of tongue of old improved pasture overlooking Scottarie burn to N.

[SITE 9] Ballynacairdach

Type of Site: turf-built enclosures

NMRS / SMR Number: previously unrecorded

(A) NC 78612 08192 & (B) NC 78745 08126. Two turf-built enclosures located on moorland above and to E of Ballynacairdach: (A) circular, 4m internal diameter; (B) sub-rectangular, 8 x 6m with banks 1.2m wide and 0.4m high.

KILBRAUR WIND FARM



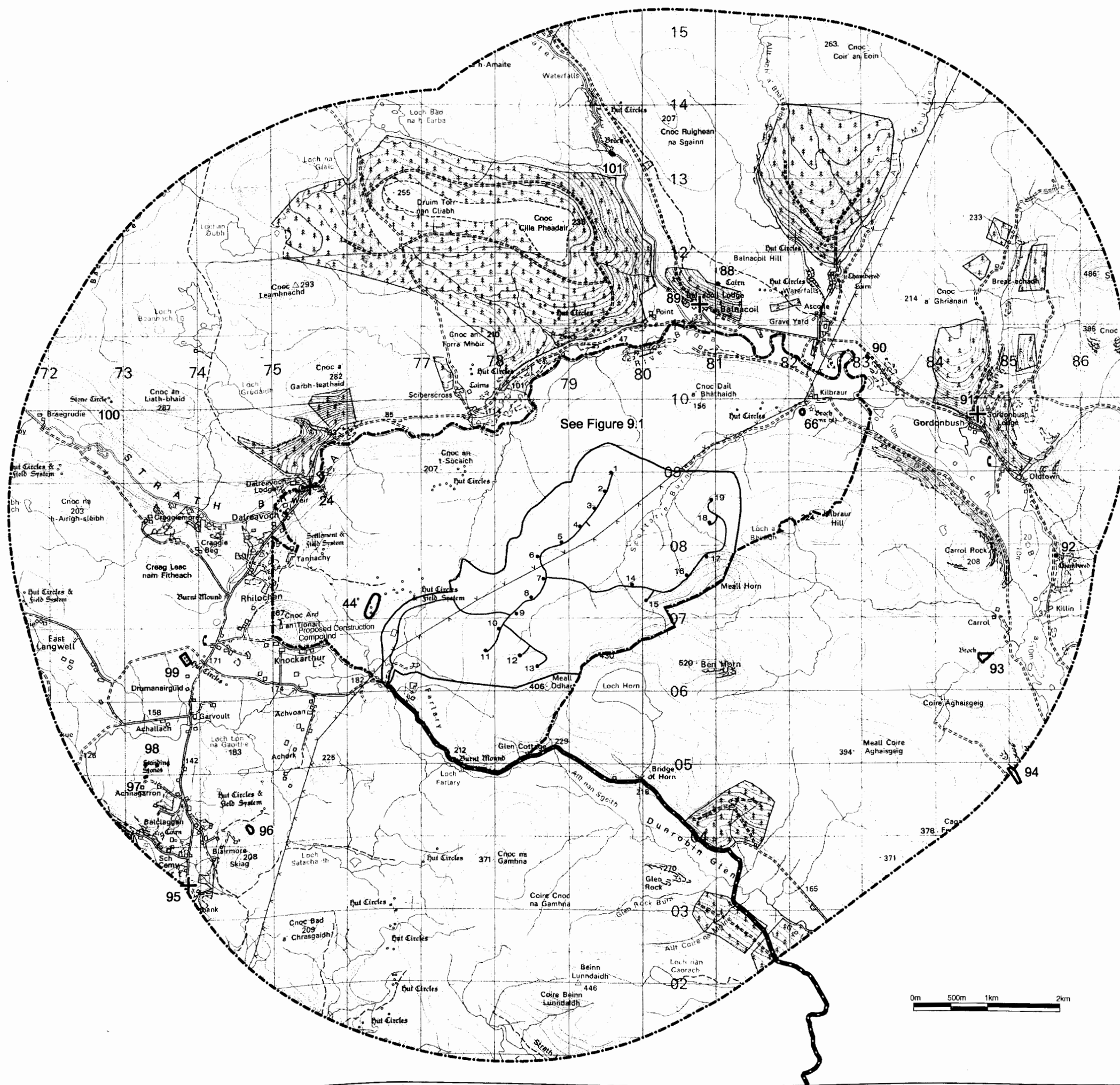
KEY:

- Site Boundary
- Turbine Positions
- Site Access Tracks
- Access Route
- Study Area
- Scheduled Ancient Monuments
- Listed Buildings and Reference Number

FIGURE 9.3

STATUTORY DESIGNATED SITES
WITHIN A 5KM RADIUS
OF THE WIND FARM

SCALE	AS SHOWN	CAN	WE0390011A
CONTENT	CL	DRAWN	MDF
CHECKED		DATE	MAR 2004



KILBRAUR WIND FARM



KEY:

- Site Boundary
- Turbine Positions
- Anemometer
- Site Access Tracks
- Substation
- Access Route
- Study Area
- Listed Buildings and reference number
- Scheduled Ancient Monument and reference number
- Monument of schedulable quality
- Monument of regional importance
- Other identified sites

FIGURE 9.1

SITES OF CULTURAL HERITAGE
SIGNIFICANCE WITHIN AND
ADJACENT TO THE WIND FARM

SCALE	1:25,000	CAN	WE0390011A
CONTENT	CL	DRAWN	MDF
CHECKED		DATE	MAR 2004

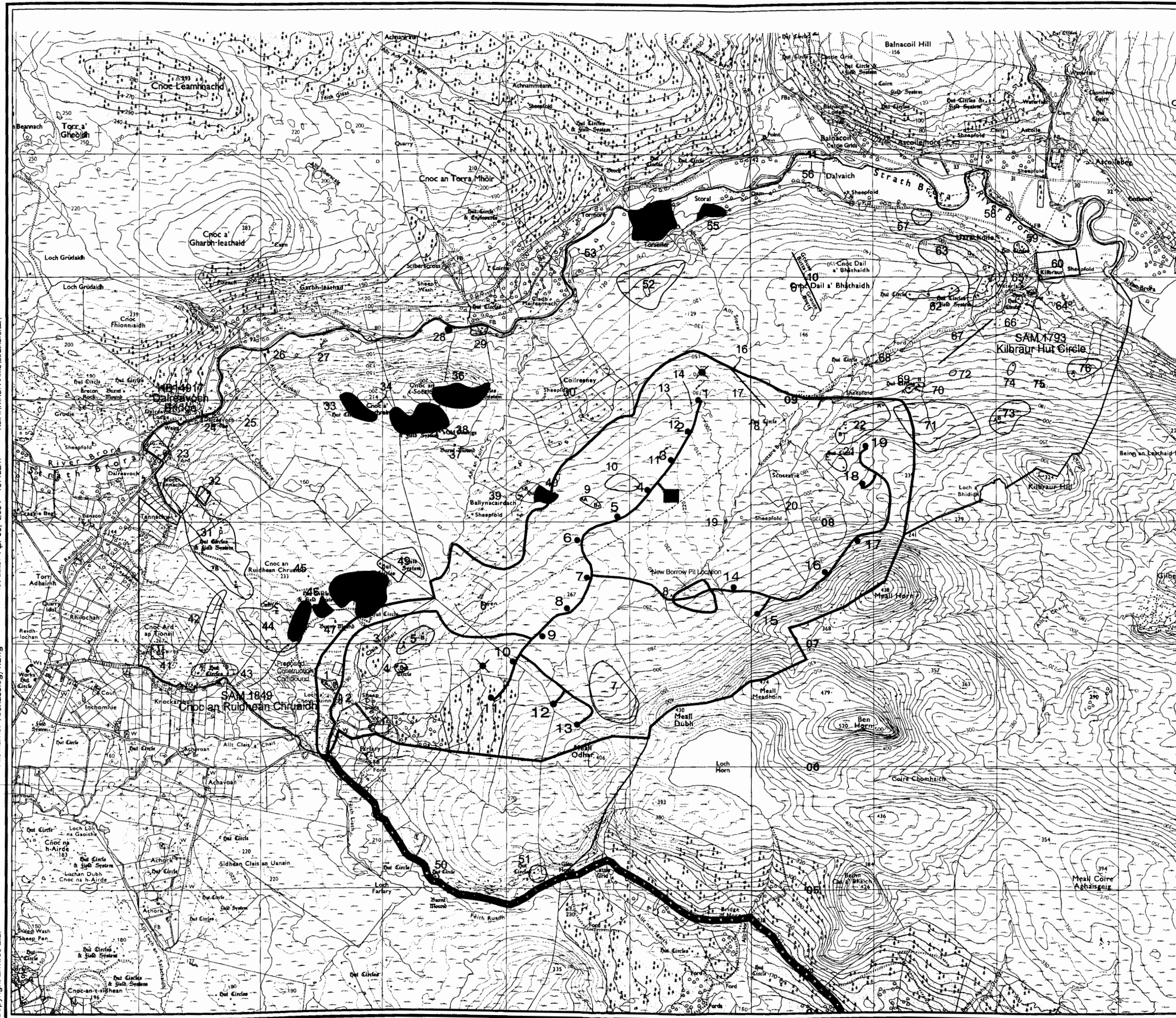


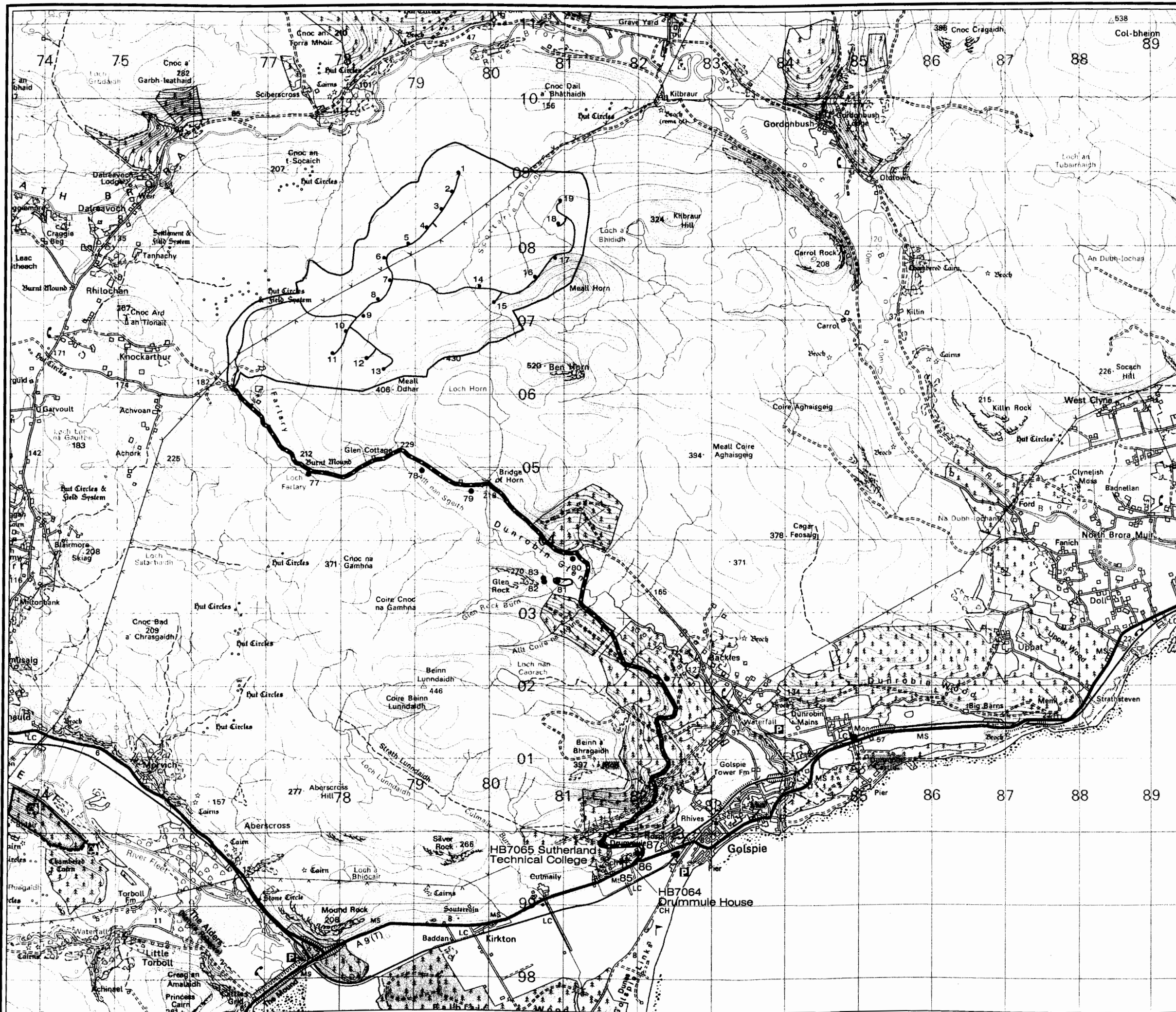
File name: Archaeology1.dwg

Plot date: Apr 06, 2004 - 10:46am

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KILBRAUR WIND FARM



KEY:

- Site Boundary
- Turbine Positions
- Site Access Tracks
- Access Route
- Sites and Reference Number
- Listed Buildings and Reference Number

FIGURE 9.2

SITES OF CULTURAL HERITAGE
SIGNIFICANCE WITHIN 50M OF
PROPOSED ACCESS ROUTE

SCALE	1:50,000	CAN	WE0390011A
CONTENT	CL	DRAWN	MDF
CHECKED		DATE	MAR 2004

ENVIROS

Proposed Kilbraur Windfarm, Strath Brora, Sutherland

Revised Chapter 9 – Archaeology

(Includes paleoenvironmental text)

October 2004

**Headland Archaeology Ltd.
13, Jane Street,
Edinburgh,
EH6 5HE**

**Tel: 0131-467-7705
Fax: 0131-467-7706**

CULTURAL HERITAGE

INTRODUCTION

This Chapter provides a survey of sites of cultural heritage significance within the site of the proposed wind farm and the surrounding area and an assessment of the potential effects of the proposed wind farm on these sites. Features of cultural heritage interest have been defined as all surviving man-made features pre-dating 1st edition OS mapping (1872 in this area) along with selected sites of more recent date, including all Listed Buildings. Given that the cultural landscape is also informed by environmental changes in the past, sites of palaeoenvironmental importance are also assessed. This approach reflects current survey practice by the Royal Commission for Ancient and Historical Monuments of Scotland (RCAHMS) and Historic Scotland. Cultural Heritage, as it is interpreted here, thus includes all types of historic buildings and archaeological sites, including sites which may be of palaeoenvironmental importance.

Study Area

The study area for this assessment comprises three principal areas. The inner area comprises the area within the site boundary. A broader study area comprises the area delineated by the River Brora to the north and east, by the Dunrobin Glen road to the west and by the range of hills to the south marked by Meall Odhar, Meall Horn and Kilbruar Hill (Figure 9.1). The outermost area comprises an irregular oval of 5km radius set out from the outermost elements of the wind farm. Assessment in this outer zone has been restricted to sites with formal cultural heritage designations where issues of setting must be considered (Figure 9.2). A subsidiary study has also been made of the access route between the site of the proposed wind farm and the A9; the assessment zone here comprises a 100m wide corridor centred on the existing and proposed road lines (Figure 9.3).

Objectives

The key objectives of the study are the identification of any visible or documented cultural heritage features which could be damaged in the course of construction of the wind farm, and of any areas in which there is potential for undiscovered remains to be present, which could also be damaged. As sites of cultural heritage interest are informed by their setting within a wider landscape, impacts on this setting, which could affect the experience and appreciation of historic sites, are also assessed. Where appropriate, mitigation measures are proposed and opportunities for enhancement of the cultural heritage resource are presented.

Key Issues

- Direct impacts of construction on known sites of cultural heritage interest
- Impacts of construction on areas with potential for undiscovered archaeological remains
- Operational impacts on the setting of sites of cultural heritage interest

ASSESSMENT METHODOLOGY

The cultural heritage assessment comprises a baseline survey (documentary research and field survey) followed by an assessment of direct and indirect impacts with proposals, where appropriate, for measures to mitigate these impacts.

Data Sources

The assessment has been based on research into readily available and relevant documentary sources. The following data archives were checked as part of the assessment:

- The Schedule of Ancient Monuments, and the Statutory List of Buildings of Special Architectural or Historic Interest, maintained by Historic Scotland;
- The National Monuments Record of Scotland (NMRS);
- The Highland Council Sites and Monuments Record (SMR);
- The Aerial Photographic Collection of the Royal Commission for the Ancient and Historical Monuments of Scotland (RCAHMS);
- Superseded Ordnance Survey maps and pre-Ordnance Survey maps and plans held in the Map Library of the National Library of Scotland

A full list of sources consulted is included in Appendix 4.

Field Survey Methodology

A walkover survey was carried out of the proposed wind farm to confirm the accuracy of information collected by documentary research and to identify any previously unrecorded sites of cultural heritage interest. All areas were covered within at least 100m of the proposed locations of turbines and other elements of the scheme likely to cause ground disturbance, including access tracks and borrow pits. The fieldwork was undertaken by Dr Christopher Lowe and Mr Magnar Dalland of Headland Archaeology Ltd; fieldwork on 11 December 2003 was undertaken in the company of Dr Nick Lindsay, of Clyne Heritage Society. Initial fieldwork, prior to the determination of the final site layout, was undertaken over the period 09 – 13 June 2003; a second phase of fieldwork was undertaken over the period 10 – 12 December 2003. With the exception of blizzard conditions on the afternoon of 12 December 2003, visibility and weather conditions were good throughout. The palaeoenvironmental assessment was undertaken by Dr Stephen Lancaster.

Newly identified sites were mapped and the extents of previously recorded sites were checked using a hand-held GPS system, the co-ordinates of which were subsequently plotted onto a digital OS map-base. A 2m long peat-probe was used to distinguish between hummocky mounds of peat and peat-covered features of archaeological interest such as stone clearance cairns.

Scheduled Ancient Monuments [SAMs] and NSR 'sites of schedulable quality' within the adjacent study area and SAMs and Listed Buildings within 5km of the proposed wind farm were also visited to assess potential effects on their setting.

The assessment of impacts and proposals for mitigation of impacts were based on the guidance provided in NPPG5 (Archaeology and Planning), NPPG18 (Planning and the Historic Environment) and the Memorandum of Guidance on Listed Buildings and Conservation Areas.

Methodology for the assessment of impacts on setting

There is no generally accepted methodology for the assessment of impacts on the setting of cultural heritage sites. The Memorandum of Guidance provides some advice of how the setting of Listed Buildings should be assessed. Planning guidance for archaeology (NPPG 5) does not define how or when setting of archaeological sites should be assessed; however, the requirement to ensure the preservation of archaeological sites within an appropriate setting implies a recognition that individual sites do not exist in isolation but as part of a broader historic landscape. Loss of functionally related elements of this broader landscape can impair understanding and appreciation of the site.

The extent of the area defined as its setting is specific to each individual cultural heritage site and is derived from an understanding of how that site would have functioned as a place within the landscape in the past. Following Colcutt (1999), setting is understood to imply the intentional placing of the site and refers to elements of the landscape that would have influenced the choice of location in the past. Such elements may be topographic, if the site was located to take advantage of natural features such as defensive slopes, views,

watercourses etc. They may also comprise elements of land use, in the case of sites that are related to a regime of land use, eg pastoral farming or extractive industry that is still operative or has shaped the landscape in recognisable ways. Other sites may also contribute towards the group setting of the main feature under discussion, if it can be convincingly argued that the sites were functionally related or that the presence of an earlier feature influenced the siting of the main heritage feature. Although landscape, and therefore setting, is a predominantly visual concept, other senses may also be relevant to a sense of place and, in the case of windfarms, alterations to the sound quality of a location may sometimes be relevant.

All sites exist within and are constructed with reference to an immediate setting, which is the area that makes the site location intelligible to the visitor. Some sites are also situated in relation to a wider landscape setting, having been deliberately sited to command specific views of other sites or features of the landscape, or sited in order to be visible from a distant viewpoint. In such cases, an appreciation of such views to and from it is integral to an understanding of the role of the site. Besides views from specific locations, consideration of the wider landscape setting of a site should also take into account other ways of experiencing the landscape in the past, such as the routes by which sites would have been approached.

All sites considered to be of national importance within 5km of the wind farm have been assessed for impacts on their setting. Cultural heritage sites are considered to be of National Importance if they are Category A Listed Buildings, Scheduled Ancient Monuments, or if they are un-designated but of equivalent quality in the opinion of the assessor.

For each nationally important site, the extent of the immediate setting and the extent of any wider landscape setting has been evaluated before determining whether there is any impact on either area. Significance of impacts on setting has been defined as the product of the magnitude of any impacts combined with the sensitivity of the site to impacts on its setting. Criteria for establishing these values are set out in the next section.

SIGNIFICANCE CRITERIA

The significance of the impacts of the development is based on an assessment of both the sensitivity of the receptor and the magnitude of the impact. Sites of cultural heritage importance are sensitive to direct impacts (ie physical damage) and also to impacts on their setting (ie indirect impacts). Criteria for assessing the sensitivity of sites to direct impacts and impacts on setting are summarised in Tables 9.1 to 9.5 below.

Criteria for Assessment of Direct Impacts on Cultural Heritage

The sensitivity of a cultural heritage feature to direct impacts reflects the level of importance assigned to it through designations applied respectively to archaeological sites and buildings. Scheduled Ancient Monuments are considered of national importance, as are sites identified as candidates for scheduling on non-statutory registers. *NPPG 5* also allows for other sites to be classified as of regional or local importance, although these are not formal designations and do not imply any legal status. The three grades of listed buildings, A, B and C, identified in the *Memorandum of Guidance*, approximate the levels of importance assigned respectively to archaeological sites of national, regional and local importance. The level of importance assigned to a feature can reflect a number of factors, including its potential as a resource of archaeological data, its association with significant historical events, its role as a local landmark with cultural associations and its aesthetic value. In defining what constitutes a key element of the site, or a major, slight or negligible alteration, account has been taken of the extent to which these factors contribute to the overall value of the feature.

Table 9.1 Criteria for assessing the sensitivity of cultural heritage features to direct impacts

Sensitivity of receptor	Definition
High	Sites of National Importance, including Category A Listed Buildings and Scheduled Ancient Monuments; non-statutory register 'sites of schedulable

	quality', as maintained by Highland Council Archaeology Service.
Medium	Archaeological sites or buildings of regional importance, including Category B Listed Buildings.
Low	Archaeological sites or buildings of local importance, including Category C (S) Listed Buildings
Negligible	A badly preserved or extremely common type of archaeological site/building of little value at local, regional or national levels.

Table 9.2 Criteria for assessing the magnitude of direct impacts on cultural heritage features

Magnitude of impact	Definition
Major	Total loss or major alteration of the site.
Moderate	Loss of one or more key elements of the site.
Minor	Slight alteration of the site.
Negligible	Very slight or negligible alteration of the site

Criteria for Assessment of Impacts on the Setting of Cultural Heritage Features

Two factors are considered relevant to an assessment of how sensitive a site is to potential impacts on its setting:

Presence in the landscape. This refers to the extent to which the site exists as an identifiable feature that can be appreciated and understood by the average visitor. A site is considered to have a **prominent** presence if it constitutes a local landmark, of which a majority of people living in the vicinity would be aware. A site that has a **noticeable** presence may be little-known but should be easily perceptible to the lay observer (as opposed to the trained archaeologist). A site's presence is **negligible** if it can only be identified on the ground by persons with an above-average knowledge of archaeology, or if it has no surface expression.

Promotion. This refers to awareness of the site beyond the archaeological community and is a measure of the extent to which it is presented to the public as a site worth visiting. A site where public access is **facilitated** is one where facilities, such as information boards or way-markers, have been installed to enhance and encourage appreciation of the site. A site where public interest is **promoted** would not be developed in this way, but would be referred to in non-specialist publications aimed at visitors to the area (eg local trail guides or OS 1:50,000 map sheet). Sites that are **not promoted** are discussed, if at all, only in specialist archaeological literature.

Table 9.3 Criteria for assessing the sensitivity of cultural heritage features to impacts on their setting

Promotion	Presence in the landscape		
	Negligible	Noticeable	Prominent
Facilitated	High sensitivity	High sensitivity	High sensitivity

Promoted	Low sensitivity	Medium sensitivity	Medium sensitivity
Not promoted	Negligible sensitivity	Low sensitivity	Medium sensitivity

Any development within the immediate setting of a site or its wider landscape setting (if any has been identified as relevant) potentially constitutes an impact on the setting of the site. The magnitude of the impact is an expression of the extent to which the development alters the character of the setting, and incorporates the following factors.

Scale: the size and visual attributes of the development in relation to the site determines whether the site, or the development, will be the dominant visual feature within the post-development setting of the site. Where the development would be the more noticeable feature it is said to be **dominant**; where both the development and the site would have a noticeable presence the scale is said to be **equal**; and where the development is less visually prominent than the site it is said to be **unobtrusive**.

Complementarity: the extent to which the development is in keeping with the land use history of the site and its setting, on the one hand, or introduces a new and incompatible element into the landscape, on the other, determines whether the character of the development significantly compromises the setting of the site. The complementarity of the site is assessed as **antithetical**, where it contradicts significant attributes of the site; as **unrelated**, where the development represents a land-use of more neutral character but irrelevant to the history of the site; or as **sympathetic**, where the development either continues a tradition of land use of which the site is representative, or does not involve any appreciable alteration to the character of the pre-development setting.

Permanence: the permanence of the development is the extent to which the alteration to the setting of the site is irreversible. The alteration to the setting of the site may be **irreversible**, where it will not be possible to approximate the pre-development conditions after the lifetime of the development; as **permanent**, where no provision is made for the reinstatement of pre-development conditions following the lifetime of the development, and it would not be possible to recreate the pre-development conditions without significant investment; or as **temporary**, where visible impact on the landscape is limited to short-lived results of the construction process, or where the development has a limited lifespan following which pre-development conditions could be easily approximated.

These three factors can be combined in a scoring system to give a measure of the magnitude of the impact of the development on the site (Table 9.4).

Table 9.4 Criteria for assessing the magnitude of impacts on the setting of cultural heritage features

Factor	Effect	Score
Scale	Dominant	2
	Equal	1
	Unobtrusive	0
Complementarity	Antithetical	2
	Unrelated	1
	Sympathetic	0
Permanence	Irreversible	2

		Permanent	1
		Temporary	0
Total Score	6	Major Impact	
	4-5	Moderate Impact	
	2-3	Minor Impact	
	0-1	Negligible Impact	

The criteria for assessment of significance are the same for direct impacts and for impacts on setting, following the definitions of feature sensitivity and impact magnitude given for both categories of impact. These criteria are summarised in Table 9.5. These criteria provide a guide to decision-making but are not a substitute for professional judgement and interpretation, particularly where the archaeological or built heritage value of a site and impact magnitudes are not clear and/or are borderline between categories. Predicted impacts of major or moderate significance equate to potentially significant impacts in the EIA Regulations.

Table 9.5 Criteria for assessing the significance of impacts on cultural heritage features

Magnitude of Impact	Feature Sensitivity			
	Negligible	Low	Medium	High
Major	Negligible significance	Moderate Significance	Major Significance	Major Significance
Moderate	Negligible Significance	Minor Significance	Moderate Significance	Major Significance
Minor	Negligible Significance	Negligible Significance	Minor Significance	Moderate Significance
Negligible	Negligible Significance	Negligible Significance	Negligible Significance	Minor Significance

PLANNING POLICY CONTEXT

National guidance on the treatment of Cultural Heritage in the planning process is provided in NPPG 5 (Archaeology and Planning) and its associated Planning Advice Note (PAN42), NPPG 18 (Planning and the Historic Environment) and the Memorandum of Guidance on Listed Buildings and Conservation Areas.

Highland Council Strategic Policy G2 preserves archaeological sites and their setting wherever possible. Planning Policy BC1, concerning the preservation of archaeological sites, states that all sites affected by development proposals should be preserved, or, in exceptional circumstances where preservation is impossible, the sites will be recorded at developers' expenses to professional standards.

Planning Policy BC2, concerning archaeology, tourism and education, states that sympathetically developed and well-managed proposals which increase the tourism potential of archaeological sites or increase public understanding and awareness through research projects will generally be supported.

CONSULTATION

Consultation has taken place with the Highland Council archaeologist, who provided existing information on the site. Historic Scotland were also consulted as part of the scoping exercise and their main comments have been summarised in Table 5.2 of Chapter 5.

In response to concerns expressed by Historic Scotland, Highland Council Archaeology Service and Clyne Heritage Society, the turbines and tracks of the former "Strath Brora" 24 turbine layout proposed in the September 2003 application which crossed the high ground of Cnoc a Cheathraimh, to the north-west of the current layout, have been removed and pulled back to the south-east.

EXISTING BASELINE CONDITIONS

Archaeological Baseline

The locations of known and newly discovered sites of cultural heritage significance within the proposed wind farm (Sites 1 – 22) and adjacent to it (Sites 23 – 76) – are shown in Figure 9.1. The locations of known sites of cultural heritage significance adjacent to the access route from the A9 to the site (Sites 77 – 87) are shown in Figure 9.3. The locations of statutory designated sites – SAMs and LBs – within 5km of the wind farm (Sites 88 – 101) are shown in Figure 9.2. A list of sites of cultural heritage interest within and adjacent to the scheme is given in Table 9.6, with full descriptions in Appendix 4.

Table 9.6: Sites of cultural heritage interest within and adjacent to the scheme

Site no.	Site Name	Monument Type	NGR	Designation
1	Allt Clais a Chait	hut circles & clearance cairns	NC 766 066	
2	Allt Clais a Chait	clearance cairns	NC 767 065	
3	Allt Clais a Chait	burnt mound (possible)	NC 76991 07068	
4	Farlary	hut circle & clearance cairns	NC 7711 0681	
5	Allt Clais a Chait	hut circles & clearance cairns	NC 772 070	
6	Rayen	depopulated township	NC 778 073	NSR: regional importance
7	Meall Odhar / 'Badinillich'	depopulated township	NC 788 065	
8	Scottarie burn	clearance cairn	NC 79341 07394	
9	Ballynacairdach	turf-built enclosures	NC 78612 08192 NC 78745 08126	
10	Ballynacairdach	clearance cairns & possible turf structure	NC 789 083	
11	Coilreaney	upright stone	NC 79330 08613	
12	Coilreaney	upright stone	NC 79405 08859	
13	Coilreaney	shepherd's cairn	NC 79343 08933	
14	Coilreaney	turf-built enclosure	NC 79512 08940	
15	Coilreaney	hut circle & clearance cairns	NC 79557 09103	
16	Coilreaney	hut circle	NC 79846 09245	
17	Scottarie	shooting butts	NC 79843 09253 NC 80123 08934	
18	Scottarie Burn	hut circle	NC 8013 0880	
19	Scottarie Burn	shielings, possible	NC 798 080	
20	Scottarie	depopulated township	NC 803 085	NSR: regional importance

21	Scottarie	hut circles & clearance cairns	NC 8062 0854	
22	Scottarie	hut circles & field system	NC 809 088	
23	Dalreavoch	enclosures	NC 7515 0865	
24	Dalreavoch bridge	bridge	NC 7551 0886	Category B Listed Building (HB14917)
25	Dalreavoch	hut circle	NC 7588 0888	
26	Allt An Sgiobail	hut circles, possible	NC 7606 0939	
27	Kerrynamanoch	depopulated township	NC 765 095	NSR: regional importance
28	Allt Siberscaig, Strath Brora	hut circle	NC 7753 0957	NSR: schedulable quality
29	Strath Brora	abandoned farmstead	NC 777 095	
30	Coilreaney	depopulated township	NC 785 090	NSR: regional importance
31	Tannachy	hut circles & field system	NC 756 077	
32	Tannachy	farmstead	NC 755 082	
33	Cnoc a Cheathraimh	hut circle & field system	NC 7680 0891	NSR: schedulable quality
34	Cnoc a Cheathraimh	summit marker cairn	NC 76963 08968	
35	Cnoc a Cheathraimh	settlement & field system	NC 773 088	NSR: schedulable quality
36	Sciberscross; Allt an Tuirc	settlement & field system	NC 776 090	NSR: schedulable quality
37	Allt Poll A Choire	burnt mound	NC 7758 0863	
38	Cnoc A Cheathraimh	shielings	NC 775 087	
39	Ballynacairdach	depopulated township	NC 779 082	NSR: regional importance
40	Ballynacairdach	hut circles & field system	NC 782 082	NSR: schedulable quality
41	Cnoc Ard An Tionail	cairn	NC 751 069	
42	Cnocarthur	site of conflict of Altunbeth	NC 750 070	
43	Breckhue	hut circles & clearance cairns	NC 7572 0676	
44	Cnoc An Ruidhean Chruaidh / Knockarthur	hut circles & field system	NC 762 071	Scheduled Ancient Monument (SAM1849)
45	Cnoc An Ruidhean Chruaidh	hut circle & clearance cairns	NC 7642 0756	
46	Cnoc An Ruidhean Chruaidh / Knockarthur	hut circles & field system	NC 765 073	NSR: schedulable quality
47	Cnoc An Ruidhean Chruaidh	burnt mound	NC 7661 0719	
48	Cnoc an Ruidhean Chruaidh	hut circles & field system	NC 765 074	NSR: schedulable quality
49	Cnoc an Ruidhean Chruaidh	hut circle & field system	NC 772 076	
50	Loch Farlary	hut circle & clearance cairns	NC 7742 0509	
51	Glen Cottage	hut circles & clearance cairns	NC 7816 0509	
52	Allt Storal	hut circles & field system	NC 793 100	
53	Kilphedir-More	depopulated township	NC 787 103	NSR: regional importance
54	Torseiller	depopulated township	NC 790 103	NSR: schedulable quality
55	Storal	depopulated township	NC 796 105	NSR: schedulable quality
56	Dalvaich	depopulated township	NC 808 106	NSR: regional importance
57	Strath Brora	abandoned farmstead	NC 814 105	
58	Urachoile	depopulated township	NC 819 103	NSR: regional importance
59	Urachoile	hut circles	NC 8219 1025	
60	Kilbraur	shepherd's cottage & outbuildings	NC 8230 1005	
61	Cnoc Dail a' Bhathaidh	shooting butts	NC 8034 1020 - NC 8057 0973	
62	Scottarie Burn	hut circles, enclosure & clearance cairns	NC 815 098	
63	Urachoile	hut circles & field system	NC 819 101	
64	Kilbraur	township	NC 825 098	NSR: regional importance
65	Kilbraur	broch	NC 8229 0987	NSR: schedulable quality

66	Kilbraur	hut circle & clearance cairns	NC 8218 0982	Scheduled Ancient Monument (SAM1793)
67	Scottarie Burn	shooting butts	NC 8153 0930 NC 8198 0966	
68	Scottarie Burn	hut circle	NC 8091 0930	
69	Scottarie	hut circles	NC 8137 0912	
70	Scottarie	building; enclosure	NC 8135 0908	
71	Kilbraur Hill	abandoned farmstead & clearance cairns	NC 815 088	
72	Kilbraur Hill	clearance cairn	NC 81648 09225	
73	Kilbraur Hill	hut circles & clearance cairns	NC 822 088	
74	Kilbraur Hill	clearance cairn	NC 82138 09286	
75	Kilbraur Hill	clearance cairn	NC 82416 09201	
76	Kilbraur Hill	hut circle & clearance cairns	NC 82640 09195	
77	Loch Farlary	burnt mound	NC 7753 0496	NSR: regional importance
78	Dunrobin Glen	farmstead; enclosures; lazy beds	NC 7915 0485	NSR: regional importance
79	Dunrobin Glen	hut circles & clearance cairns	NC 7950 0450	
80	Dunrobin Glen	hut circle	NC 81035 03643	
81	Dunrobin Glen	hut circle; cultivation	NC 80909 03384	
82	Dunrobin Glen	shieling	NC 8072 0339	
83	Dunrobin Glen	hut circle	NC 8073 0342	
84	Backies	building	NC 8240 0210	
85	Drummuie	Sutherland Technical School	NH 8178 9958	Category B Listed Building (HB7065)
86	Drummuie	Drummuie House	NH 81848 99618	Category B Listed Building (HB7064)
87	Drummuie	Drummuie Farm	NH 8200 9971	
88	Balnacoil Hill	cairn	NC 81034 11570	Scheduled Ancient Monument (SAM1769)
89	Balnacoil Lodge	building	NC 8060 1134	Category B Listed Building (HB591)
90	Ascoile	earthwork	NC 83087 10582	Scheduled Ancient Monument (SAM3288)
91	Gordonbush Lodge	building	NC 8460 0975	Category B Listed Building (HB584)
92	Killin / Allt nam Ban	chambered cairn	NC 85661 07839	Scheduled Ancient Monument (SAM1794)
93	Carrol	broch	NC 84703 06449	Scheduled Ancient Monument (SAM1846)
94	Duchary Rock	fort	NC 85084 04851	Scheduled Ancient Monument (SAM1854)
95	St Callan's church	building	NC 7385 0352	Category B Listed Building (HB17441)
96	Blairmore	hut circles & field system	NC 74656 04225	Scheduled Ancient Monument (SAM1838)
97	Achnagarron	two standing stones	NC 73280 04975	Scheduled Ancient Monument (SAM1762)
98	Achnagarron	hut circles	NC 73353 05141	Scheduled Ancient Monument (SAM1827)
99	Dremergid	hut circles & field system	NC 73789 06581	Scheduled Ancient Monument (SAM1853)
100	Cnoc an Liath-bhaid	stone circle	NC 7280 1016	Scheduled Ancient Monument (SAM1780)

101	Caisteal na Coile	broch	NC 7957 1337	Scheduled Monument (SAM1843)	Ancient
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Palaeoenvironmental Baseline

The Scottish Palaeoenvironmental Archive records relatively few recent palaeoenvironmental research projects as having been undertaken in the region within which the study area is situated. There have been a few local pollen studies near the study area. There has also been one major study undertaken at Farlary, which borders on the south west edge of the development area. This study uncovered a class of evidence unique in Britain – *in situ* pine trunks bearing prehistoric axe marks (Tipping *et al.* 2003). The study also provided data on vegetation history through pollen analysis and on the inception of peat formation in the valley bottom. As such the Holocene landscape evolution of the valley bottom is relatively well understood. By contrast little is known with regard to the upland region.

Pine stumps were identified in an exposed cutting at NC 80146 08653 within the township of Scottarie. No signs of axe marks, however, were noted and the site lies well outwith any area of potential ground disturbance. No examples of sub-peat tree trunks were identified within the survey corridor associated with the turbines, access tracks and related wind farm infrastructure.

Scheduled Ancient Monuments [SAMs]

There are no SAMs within the site boundary; nor are there any adjacent to the proposed Ben Bhraggie / Dunrobin Glen access route. Two SAMs are located within the adjacent study area:

- SAM 1849 Cnoc an Ruidhean Chruaidh hut circles & field system (part of Site 44)
- SAM 1793 Kilbruar hut circle (Site 66)

and there are a further eleven SAMs within 5km of the wind farm:

- SAM1769 Cairn, Balnacoil Hill (Site 88);
- SAM3288 Earthwork, Ascoile (Site 90);
- SAM1794 Chambered cairn, Killin (Site 92);
- SAM1846 Broch, Carrol (Site 93);
- SAM1854 Fort, Duchary Rock (Site 94);
- SAM1838 Hut circles and field system, Blairmore (Site 95);
- SAM1762 Standing stones, Achnagarron (Site 97);
- SAM1827 Hut circles, Achnagarron (Site 98);
- SAM1853 Hut circles, Dremergid (Site 99);
- SAM1780 Stone circle, Cnoc an Liath-bhaid (Site 100);
- SAM1843 Broch, Caisteal na Coille (Site 101).

Listed Buildings

There are no Listed Buildings within the site boundary. There is one Listed Building at the edge of the adjacent study area:

- HB14917 Dalreavoch bridge (Category B Listed: Site 24).

There are two Listed Buildings at Drummuie, where the proposed access route meets the A9:

- HB7065 Sutherland Technical School (Category B Listed: Site 85)
- HB7064 Drummuie House (Category B Listed: Site 86)

A further three Listed Buildings are located within 5km of the wind farm:

- HB591 Balnacoil Lodge (Category B Listed: Site 89)
- HB584 Gordonbush Lodge (Category B Listed: Site 91)
- HB17441 St Callan's church (Category B Listed: Site 95).

NSR 'sites of schedulable quality'

There are no NSR 'sites of schedulable quality' within the site boundary; nor are there any adjacent to the access route between the A9 and Farlary.

There are ten NSR 'sites of schedulable quality' in the adjacent study area. Although this designation is non-statutory, best practice in accordance with the guidance provided in NPPG5 (Paragraph 17) suggests that such sites should be treated in the same manner as Scheduled Ancient Monuments:

- Site 28 Hut circle, Allt Siberscaig
- Site 33 Hut circle and field system, Cnoc a Cheathraimh
- Site 35 Hut circles and field system, Cnoc a Cheathraimh
- Site 36 Hut circles and field system, Allt an Tuirc
- Site 40 Hut circles and field system, Ballynacairdach
- Site 46 Hut circles and field system, Cnoc an Ruidhean Chruaidh
- Site 48 Hut circles and field system, Cnoc an Ruidhean Chruaidh
- Site 54 Depopulated township, Torseiller
- Site 55 Depopulated township, Storal
- Site 65 Broch, Kilbraur

NSR 'sites of regional importance'

There are two NSR 'sites of regional importance' within the site boundary:

- Site 6 Depopulated township, Rayen
- Site 20 Depopulated township, Scottarie

and a further seven examples within the adjacent study area:

- Site 27 Depopulated township, Kerrynamanoch

- Site 30 Depopulated township, Coilreaney
- Site 39 Depopulated township, Ballynacairdach
- Site 53 Depopulated township, Kilphedir-more
- Site 56 Depopulated township, Dalvaich
- Site 58 Depopulated township, Urachaille
- Site 64 Depopulated township, Kilbruar

Two further NSR 'sites of regional importance' are located adjacent to the access route in Dunrobin Glen:

- Site 77 Burnt mound, Loch Farlary
- Site 78 Farmstead, Dunrobin Glen

The cultural heritage sites of Kilbraur area, Strath Brora : overview

Two major site-types or chronological periods are represented in the cultural heritage of the Kilbraur, Strath Brora, study area: (i) the hut circle groups and field systems which were abandoned in the Late Bronze Age and which survive as upstanding earthwork features beyond the limit of medieval and modern cultivation, and (ii) the late- or post-medieval townships which were abandoned at the time of the early 19th century Clearances. In addition to this there are also structures associated with Iron Age settlement (late first millennium BC / early first millennium AD), such as the broch at Kilbruar (Site 65), as well as post-Clearance structures, such as the shepherd's cottage and sheep pens (Site 60), also at Kilbruar (Site 45), which were established in the 19th century. Contemporary sporting activity is represented by lines of shooting butts (Sites 17, 61 & 67).

The main pre-Clearance townships and their small enclosed plots of arable land, first depicted in detail on Roy's mid 18th century *Military Survey*, lie along the banks of the River Brora. In addition to the settlements along the valley floor, there are also a number of scattered townships and farmsteads on the hill-ground, extending along the east side of Allt an Tuirc (Sites 6, 30 & 39) and along the Scottarie Burn (Sites 7, 20 & 71). Examples of old shielings – settlements associated with the former practice of transhumance, the movement of stock to their summer pastures on the hills – have also been identified on the hillside (Sites 19 & 38). The area was cleared in 1809 and the land given over to large-scale sheep farming.

The elements of medieval or later rural settlement (MOLRS) – the pre-Clearance townships, farmsteads and shielings – were established in a landscape that was already many centuries old. Fragments of this earlier, prehistoric landscape partially survive in and amongst the later farmsteads, both along the valley floor (eg Sites 26, 28, 59 & 66) and on the hill-ground above (eg Sites 21, 22, 40 & 68). Clearly once established, these cleared and settled plots of ground will have been more attractive for later settlement and, in these areas, the potential for the survival of prehistoric remains will have been much reduced as a result of later activity.

But there are also areas where elements of a prehistoric landscape – principally hut circle groups and field systems, and occasional burnt mounds – have survived without any later 'overlay'. There is a large number of such sites – including newly identified sites – on the hill-ground between Cnoc an t-Socaich and Farlary (Sites 1 – 5, 31, 33, 35 – 37 & 43 – 49) to the north-west of the proposed wind farm; there are others on the east-facing slopes between Cnoc Dail a' Bhathaidh and Kilbruar Hill (Sites 62, 63, 69 & 73 – 76) to the east of the development; and there are a handful of newly-identified hut circles and cairn groups (Sites 10, 15 & 16) inside the site boundary, near Turbines 1 – 4.

In terms of its cultural heritage remains, this is an archaeologically 'rich' landscape, as recent surveys in the area – by Catherine Dagg, on behalf of Sutherland Estates and Kilbraur Sheepstock Club (Dagg 2002) and by Dr Nick Lindsay and the Clyne Heritage Society (Lindsay 2002; 2003 & pers comm) – have shown. Indeed, several new sites have also been identified during the course of the fieldwork for this EIA and the footprint of the wind farm has been extensively modified to avoid areas of known archaeology.

In addition to the known sites within the proposed wind farm, there is potential for currently unknown sites in this area. Given the systematic walk-over of the proposed foot-print of the wind farm – and indeed survey of earlier versions of the wind farm – the potential for the discovery within the site boundary of further sites, visible as surface remains, is low. However, sub-surface remains of prehistoric settlement and agricultural activity, such as fields and boundaries, may be present within the development, particularly on the better-drained slopes on the west which are crossed by the access track from Farlary.

ASSESSMENT OF CONSTRUCTION IMPACTS

Predicted Impacts

Any ground-breaking works associated with the construction of the wind farm will have the potential to damage or destroy features of cultural heritage interest. Currently-known sites will be avoided but it will be important to ensure that they are not accidentally damaged by uncontrolled activities during construction.

Any ground-breaking works during construction of the wind farm will also have the potential to damage or destroy unrecorded sub-surface archaeological features. The extremely limited extent of disturbance caused during construction of a wind farm means that the probability that any one unrecorded site will be affected is very low. It is not possible to be precise about either the sensitivity of these sites or magnitude of the impacts but, given the likely condition of any sub-surface remains, the significance of the impacts is unlikely to be more than minor.

Ground-breaking works will also have the potential to damage sites that may be of palaeoenvironmental importance. The archaeological walkover and examination of the soil survey maps reveal that the majority of turbines and access tracks are sited in areas of blanket peat. The proposed layout avoids most of the areas where, in topographical terms, the deepest peat deposits, including basins, are likely to occur. As such the impact on those peat deposits which would have the greatest palaeoenvironmental value is generally low. There is, however, considerable debate concerning the chronology of peat formation in Scotland and the possibility of human influence in the process. The inception date of the blanket peat at this altitude is currently unknown; nor is it known whether axe-marked tree-stumps, like those studied at Farlary, may also survive below ground. Such material is rare and its sensitivity is correspondingly high. This is considered further in conjunction with the mitigation strategy for the development.

Construction works may also impact on the setting of cultural heritage sites in the vicinity of the wind farm. Predicted impacts include noise generated by construction works and related traffic, and the visual impact of cranes and other site plant. Given the short duration of construction works, these impacts have not been assessed in detail and none is considered to be significant for sites of cultural heritage interest.

Proposed Mitigation Measures (Table 9.7)

All known sites within the site boundary have been avoided by the wind farm and the extents depicted in Figures 9.1 and 9.3 represent the extreme extents of the various sites plus a 10m wide buffer. In order, however, to minimise the possibility of accidental damage, it is proposed that all identified sites within 100m of the wind farm (or, in the case of Scottarie [Site 20], that part of the site immediately adjacent to the scheme) should be suitably marked out on the ground for the duration of the construction works. It is envisaged that these measures would apply to the following: Sites 1 – 3, 5, 7 – 11, 14 & 20 – 22. Furthermore, in order to address

Highland Council's concerns about the proximity of new-build works to extant archaeological remains, these sites will also be surveyed in detail in advance of construction. The resultant plans, which will also be tied into the local topography, will then feed into the detailed layout design.

All known sites on the line of the proposed access route – in particular the new-build section between Ben Bhraggie plantation and Dunrobin Glen road – have also been avoided. However, in order to minimise the possibility of accidental damage to sites, it is proposed that the Dunrobin Glen hut circles (Sites 80 & 81) – which lie close to the projected line of the new-build section – are similarly marked out on the ground and surveyed in detail in advance of construction works. Again, it is proposed that the resultant site plans – which will enhance the cultural heritage record of these sites – will also guide and inform the design process.

There is a low probability that currently unrecorded sites will be disturbed during construction works. As a matter of course, the depth of peat stratigraphy will be recorded and assessed by a palaeoenvironmentalist for its suitability for radiocarbon dating. All initial ground-breaking will take place under archaeological supervision and, in the event that archaeological features or sites of palaeoenvironmental potential are encountered – for example, such as axe-marked tree stumps – a suitable programme of archaeological works will be implemented to the satisfaction of the planning authority.

Residual Impacts

All impacts on currently recorded and unrecorded archaeological sites, as well as sites of palaeoenvironmental potential, will be mitigated through an approved programme of archaeological works. Any residual impact is therefore considered to be negligible.

Site no.	Site name	Site type	Sensitivity to direct impacts	Predicted impacts	Significance of impacts	Proposed mitigation
1	Allt Clais a Chait	hut circles & clearance cairns	medium	none but potential for accidental damage to site	n/a	detail survey & mark-out extent of site prior to construction
2	Allt Clais a Chait	clearance cairns	Low	none but potential for accidental damage to site	n/a	detail survey & mark-out extent of site prior to construction
3	Allt Clais a Chait	burnt mound (possible)	medium	none but potential for accidental damage to site	n/a	detail survey & mark-out extent of site prior to construction
5	Allt Clais a Chait	hut circles & clearance cairns	medium	none but potential for accidental damage to site	n/a	detail survey & mark-out extent of site prior to construction
7	Meall Odhar	depopulated township	medium	none but potential for accidental damage to site	n/a	detail survey & mark-out extent of site prior to construction
8	Scottarie burn	clearance cairn	Low	none but potential for accidental damage to site	n/a	detail survey & mark-out extent of site prior to construction
9	Ballynacairdach	turf-built enclosures	Low	none but potential for accidental damage to site	n/a	detail survey & mark-out extent of site prior to construction
10	Ballynacairdach	clearance cairns & possible turf enclosure	Low	none but potential for accidental damage to site	n/a	detail survey & mark-out extent of site prior to construction
11	Coilreaney	upright stone	Low	none but potential for accidental damage to site	n/a	detail survey & mark-out extent of site prior to construction
14	Coilreaney	turf-built enclosure	Low	none but potential for accidental damage to site	n/a	detail survey & mark-out extent of site prior to construction
20	Scottarie	depopulated township	medium	none but potential for accidental damage to site	n/a	detail survey & mark-out extent of site prior to construction
21	Scottarie	hut circles & clearance cairns	medium	none but potential for accidental damage to site	n/a	detail survey & mark-out extent of site prior to construction
22	Scottarie	hut circles & field system	medium	none but potential for accidental damage to site	n/a	detail survey & mark-out extent of site prior to construction
80	Dunrobin Glen	hut circle	medium	none but potential for accidental damage to site	n/a	detail survey & mark-out extent of site prior to construction

81	Dunrobin Glen	hut circle & cultivation	medium	none but potential for accidental damage to site	n/a	detail survey & mark-out extent of site prior to construction
	unknown sites within wind farm	unknown	unknown	damage to previously unknown and unrecorded sites through construction processes	negligible - minor	archaeologically monitor all groundworks; excavate and record sites identified prior to construction
	unknown sites of palaeoenvironmental potential (1)	peat stratigraphy	negligible - low	damage to previously unknown and unrecorded sites through construction processes	negligible - minor	archaeologically monitor all groundworks; assess potential for radiocarbon-dating of basal peat.
	unknown sites of palaeoenvironmental potential (2)	axe-marked tree stumps (sub-peat)	High	damage to previously unknown and unrecorded sites through construction processes	minor - moderate	archaeologically monitor all groundworks; excavate and record in advance of construction

Table 9.7: Assessment of construction impacts: summary of predicted impacts and proposed mitigation measures

ASSESSMENT OF OPERATIONAL IMPACTS

The potential for operational impacts on setting has been assessed for all cultural heritage sites within the proposed wind farm (Sites 1 – 22), as well as NSR 'sites of schedulable quality' within the adjacent study area (Sites 28, 33, 35, 36, 40, 46, 48, 54, 55 & 65) and all Scheduled Ancient Monuments and Listed Buildings (Sites 24, 44, 66 & 88 – 101) up to 5km from the turbines. The assessment for impacts on the setting of cultural heritage features is based on the methodology and criteria set out above.

Predicted Impacts

The presence of the wind farm, primarily the turbines, will have an impact on the setting of cultural heritage sites in the vicinity of the wind farm. Potentially significant impacts are caused by the visual impact of the turbines on the landscape setting of cultural heritage sites, affecting the ability of the observer to appreciate and enjoy the site. Other possible impacts on setting, such as noise, are not considered to be significant in this case and are not considered further.

The definition of a site's setting is to some extent a subjective judgement, based on an interpretation of its unique role in a historic landscape. For certain categories of site, however, corresponding types of setting element are particularly relevant. Sites whose primary rationale was defensive count as part of their setting topographic elements that contribute to their defensibility. They may also command strategic views over a longer distance of topographic elements or other, related historic sites. The majority of identified sites within the area of the wind farm can be classed broadly as related to settlement and agriculture, or to transhumance activity (the movement of stock to the higher summer pastures). Such settlement sites generally have more spatially restricted settings, related to concerns such as the fertility of the soil, aspect, accessibility and proximity to watercourses. Wider views in the context of these types of sites were seldom relevant.

The magnitude of impacts has been assessed in terms of *scale*, *complementarity*, and *permanence* of the development. *Permanence* is most readily determined in all cases as the wind farm is a *temporary* development that will be dismantled at the end of its operational period. The *complementarity* of a wind farm with cultural heritage features of prehistoric or even early modern date is less clear. It is concluded that, as the construction of the wind farm does not significantly change the landform or land-use of the area, its complementarity is best described as *unrelated* to the surrounding cultural heritage sites. The key variable in assessing the magnitude of impacts on setting is therefore *scale*.

The results of the assessment are summarised in Tables 9.8a, b & c. Although the wind farm will be visible from most of the sites that are being considered here, the analysis suggests, however, that any impact on their setting will be of only negligible to minor significance.

This is because the identified sites – predominantly associated with settlement, cultivation and the management of livestock – have no broader landscape setting beyond their immediate location. For example, the relevant setting of the prehistoric hut circle groups will be related to aspects of contemporary land-use, notably cultivation; in this case, the immediate setting of the site comprises the extent of any associated features such as field boundaries, lynchets and clearance cairns. Usually located on well-drained slopes or discrete knolls, the location of prehistoric settlements is more likely to be determined by the pattern of cultivation and pastoral farming rather than the need to command extensive views across a landscape, and therefore no wider setting is relevant. The setting of the broch (Site 65) is also closely related to its immediate topographic setting. It occupies a dominant position on the hillside overlooking the old cultivable ground beside the river and significant views from the site – those that inform its setting – are essentially those to the north and east, away from the wind farm.

Burnt mounds – prehistoric cooking sites – manifest themselves as large, usually crescent-shaped mounds of burnt stones. Excavation has shown that at the centre or to one side of the mound there is a water trough and, next to it, a hearth; stones are heated on the hearth and then deposited in the water, in which meats are then cooked. The determining factor in their

location is the presence of a water source and this is therefore a significant setting element; no wider setting issues, however, are relevant for understanding why the site is where it is and how it was used in the past.

For structures and features associated with medieval or later rural settlement – such as the townships and shielings – again their immediate setting is defined in terms of land-use and features associated with that land-use regime, such as field walls, head-dykes and sheep-folds. Wider setting issues – such as distant views to or from the sites – would not have been considered in deciding the location of such features and are therefore not relevant.

Proposed Mitigation Measures

All of the operational impacts that have been identified have been assessed as ***setting impacts of minor or negligible significance***. No measures will be taken to mitigate these impacts as they are insignificant within the terms of the Environmental Statement.

Residual Impacts

In the absence of mitigation, the operational impacts identified above will remain for the lifetime of the wind farm.

Table 9.8a Kilbraur, Strath Brora wind farm. Assessment of operational impacts: summary of predicted impacts on setting for sites inside site boundary [Sites 1 – 22] and proposed mitigation measures.

Site no.	Site Name	Monument Type	Sensitivity to impacts on setting	Predicted impact	Significance of impact	Proposed mitigation
1	Allt Clais a Chait	hut circles & clearance cairns	low	minor	negligible	none
2	Allt Clais a Chait	clearance cairns	low	minor	negligible	none
3	Allt Clais a Chait	burnt mound (possible)	negligible	minor	negligible	none
4	Farlary	hut circle & clearance cairns	low	minor	negligible	none
5	Allt Clais a Chait	hut circles & clearance cairns	low	minor	negligible	none
6	Rayen	depopulated township	low	moderate	minor	none
7	Meall Odhar / 'Badinillich'	depopulated township	low	moderate	minor	none
8	Scottarie burn	clearance cairn	negligible	minor	negligible	none
9	Ballynacairdach	turf-built enclosures	negligible	moderate	negligible	none
10	Ballynacairdach	clearance cairns & possible turf structure	low	moderate	minor	none
11	Coilreaney	upright stone	negligible	moderate	negligible	none
12	Coilreaney	upright stone	negligible	moderate	negligible	none
13	Coilreaney	shepherd's cairn	negligible	moderate	negligible	none
14	Coilreaney	turf-built enclosure	negligible	moderate	negligible	none
15	Coilreaney	hut circle & clearance cairns	low	moderate	minor	none
16	Coilreaney	hut circle	low	minor	negligible	none
17	Scottarie	shooting butts	low	minor	negligible	none
18	Scottarie Burn	hut circle	low	minor	negligible	none
19	Scottarie Burn	shielings, possible	low	minor	negligible	none
20	Scottarie	depopulated township	medium	minor	minor	none
21	Scottarie	hut circles & clearance cairns	low	minor	negligible	none
22	Scottarie	hut circles & field system	low	minor	negligible	none

Table 9.8b Kilbraur, Strath Brora wind farm. Assessment of operational impacts: summary of predicted impacts on setting for NSR 'sites of schedulable quality' within the adjacent study area and proposed mitigation measures.

Site no.	Site Name	Monument Type	Sensitivity to impacts on setting	Predicted impact	Significance of impact	Proposed mitigation
28	Allt Siberscaig, Strath Brora	hut circle	negligible	minor	negligible	none
33	Cnoc a Cheathraimh	hut circle & field system	low	minor	negligible	none
35	Cnoc a Cheathraimh	settlement & field system	medium	minor	minor	none
36	Sciberscross; Allt an Tuirc	settlement & field system	medium	minor	minor	none
40	Ballynacairdach	hut circles & field system	low	minor	negligible	none
46	Cnoc An Ruidhean Chruaidh / Knockarthur	hut circles & field system	medium	minor	minor	none
48	Cnoc an Ruidhean Chruaidh	hut circles & field system	medium	minor	minor	none
54	Torseiller	depopulated township	negligible	minor	negligible	none
55	Storal	depopulated township	negligible	minor	negligible	none
65	Kilbraur	Broch	medium	minor	minor	none

Table 9.8c Kilbraur, Strath Brora wind farm. Assessment of operational impacts: summary of predicted impacts on setting for all Scheduled Ancient Monuments and Listed Buildings (Sites 24, 44, 66 & 88 – 101) up to 5km from the turbines and proposed mitigation measures.

Site no.	Site Name	Monument Type	Designation	Sensitivity to impacts on setting	Predicted impact	Significance of impact	Proposed mitigation
24	Dalreavoch bridge	Bridge	Listed Building B	medium	minor	minor	none
44	Cnoc An Ruidhean Chruaidh / Knockarthur	hut circles & field system	SAM	medium	minor	minor	none
66	Kilbraur	hut circle & clearance cairns	SAM	low	minor	negligible	none
88	Balnacoil Hill	cairn	SAM	medium	minor	minor	none
89	Balnacoil Lodge	Building	Listed Building B	medium	minor	minor	none
90	Ascoile	Earthwork	SAM	negligible	minor	negligible	none
91	Gordonbush Lodge	Building	Listed Building B	medium	minor	minor	none
92	Killin / Allt nam Ban	chambered cairn	SAM	medium	none: outwith ZVI	none	none
93	Carrol	Broch	SAM	medium	none: outwith ZVI	none	none
94	Duchary Rock	Fort	SAM	medium	none: outwith ZVI	none	none
95	St Callan's church	Building	Listed Building B	medium	none: outwith ZVI	none	none
96	Blairmore	hut circles & field system	SAM	low	minor	negligible	none
97	Achnagarron	two standing stones	SAM	medium	negligible	negligible	none
98	Achnagarron	hut circles	SAM	low	minor	negligible	none
99	Dremergid	hut circles & field system	SAM	medium	minor	minor	none
100	Cnoc an Liath-bhaid	stone circle	SAM	medium	negligible	negligible	none
101	Caisteal na Coile	Broch	SAM	medium	negligible	negligible	none

Future monitoring requirements

No future monitoring is required for cultural heritage reasons.

SUMMARY

There are 22 known sites of cultural heritage significance (Sites 1 – 22) within the site boundary (Figure 9.1); only 8 were known prior to the fieldwork associated with the EIA. The sites comprise ten groups of prehistoric hut circles and / or their associated cultivation remains (Sites 1, 2, 4, 5, 10, 15, 16, 18, 21 & 22), one example of a possible burnt mound or prehistoric 'cooking site' (Site 3), and eleven sites associated with post-medieval settlement (Sites 6 – 9, 11 – 14, 17, 19 & 20) including the pre-Clearance townships of Rayen (Site 6), Scottarie (Site 20) and a newly identified site on the lower north-facing slopes of Meall Odhar (Site 7).

None of the identified sites within the site boundary is a statutory designated monument (Scheduled Ancient Monument [SAM] or Listed Building [LB]); nor is any of them designated in the Highland Council Non Statutory Register [NSR] as a 'site of schedulable quality'. However, the pre-Clearance townships of Rayen (Site 6) and Scottarie (Site 20) have both been classified there as 'sites of regional importance'.

There are a further 54 known sites of cultural heritage significance (Sites 23 – 76) within the adjacent study area (Figure 9.1). These include a similar range of sites to those identified within the site boundary. In this group there are two Scheduled Ancient Monuments – a hut

circle group and field system on Cnoc an Ruidhean Chruaidh (SAM1849, part of Site 44) to the west of the proposed wind farm, and a hut circle at Kilbraur (SAM1793, Site 66) to the east; there is also a Grade B Listed Building (Dalreavoch bridge: Site 24) on the NW edge of the adjacent study area. In addition, there are also ten NSR 'sites of schedulable quality' (Sites 28, 33, 35, 36, 40, 46, 48, 54, 55 & 65) and seven NSR 'sites of regional importance' (Sites 27, 30, 39, 53, 56, 58 & 64).

Eleven sites of cultural heritage significance (Sites 77 – 87) have been identified within a 100m wide corridor centred on the proposed access route which leaves the A9 at Drummie and passes around Ben Bhraggie on existing forestry roads before joining the existing Dunrobin Glen road to the south-east of Bridge of Horn (Figure 9.3). There are two Category B Listed Buildings in this group (both at Drummie: Sites 86 & 87) and two NSR 'sites of regional importance' (Sites 77 & 78).

Finally, there are also eleven Scheduled Ancient Monuments and three Category B Listed Buildings (Sites 88 – 101) within a 5km radius of the outermost elements of the wind farm (Figure 9.2).

Careful design of the site layout, and the repositioning of individual turbines, tracks and other related site infrastructure as a result of the iterative process has resulted in a comprehensive avoidance strategy for all identified sites of cultural heritage significance. Nonetheless, construction of the wind farm has the potential to adversely affect currently unknown archaeological sites and sites of palaeoenvironmental interest. Such an impact would be permanent and irreversible but may be mitigated by archaeological monitoring of the site during construction works to ensure that any such sites are recorded. A programme of detailed survey and marking-out is also proposed.

Impacts of the setting of Scheduled Ancient Monuments – as well as NSR 'sites of schedulable quality' – have been minimised. In response to concerns expressed by Historic Scotland, Highland Council Archaeology Service and Clyne Heritage Society, the turbines and tracks of the former "Strath Brora" 24 turbine layout which crossed the high ground of Cnoc a Cheathraimh, to the north-west of the current layout, have been removed and pulled back to the south-east. Remaining indirect impacts on the setting of archaeological sites are identified as negligible to minor. As these impacts are temporary and entirely reversible, no further mitigation is proposed.

STATEMENT OF SIGNIFICANCE

This is an upland landscape, the more favoured parts of which have been intensively exploited since the prehistoric period. The 'high tide' mark of Late Bronze Age settlement is represented by the many hut circles and field systems which have been identified in the area. Perhaps not surprisingly, given the effort that had gone into their creation, many of these same areas were subsequently reused in the medieval and later period, as shielings and permanent townships, only to be abandoned in the early 19th century during the course of The Clearances, a sequence by no means unique to this part of Strath Brora. The cultural heritage sites here tell this story well but they will continue to do so, both with the wind farm in place and long after it has been decommissioned. Improved and easier access to the hillside will also open up the area, making the archaeology more accessible and potentially providing the opportunity for the development of self-guided heritage trails of the area. Detailed survey of these sites – undertaken as part of the design process for the access roads – will also provide the basic data that would be of interest to the local heritage groups and will enhance the current records that are held in the Highland Sites & Monuments Record.

Construction of a wind farm on the high moorland above Kilbraur in Strath Brora will cause localised ground disturbance. Careful design and avoidance of known sites means that, with due mitigation, direct impacts on the cultural heritage of the area are likely to be minor. Temporary indirect impacts on setting, of negligible to minor significance, are envisaged but these will not fundamentally impede our understanding of the cultural heritage of the area and its development over time.

REFERENCES TO ADD TO APPENDICES

(See Original Kilbraur ES, April 2004, for full reference list)

SITE GAZETTEER

Title line for Site 65 should read as follows:

[SITE 65] Kilbraur [NSR 'site of schedulable quality']

TO ADD TO BIBLIOGRAPHY

(See Original Kilbraur ES, April 2004, for full Bibliography list)

Tipping, R., Ashmore, P., Davies, A., Haggart, A., Moir, A., Newton, A., Sands, R., Skinner, T. & Tisdall, E 2003 *The Chronology, Significance and Environmental Context of later prehistoric axe marks on in situ pine trees at Farlary, near Golspie, Sutherland.*

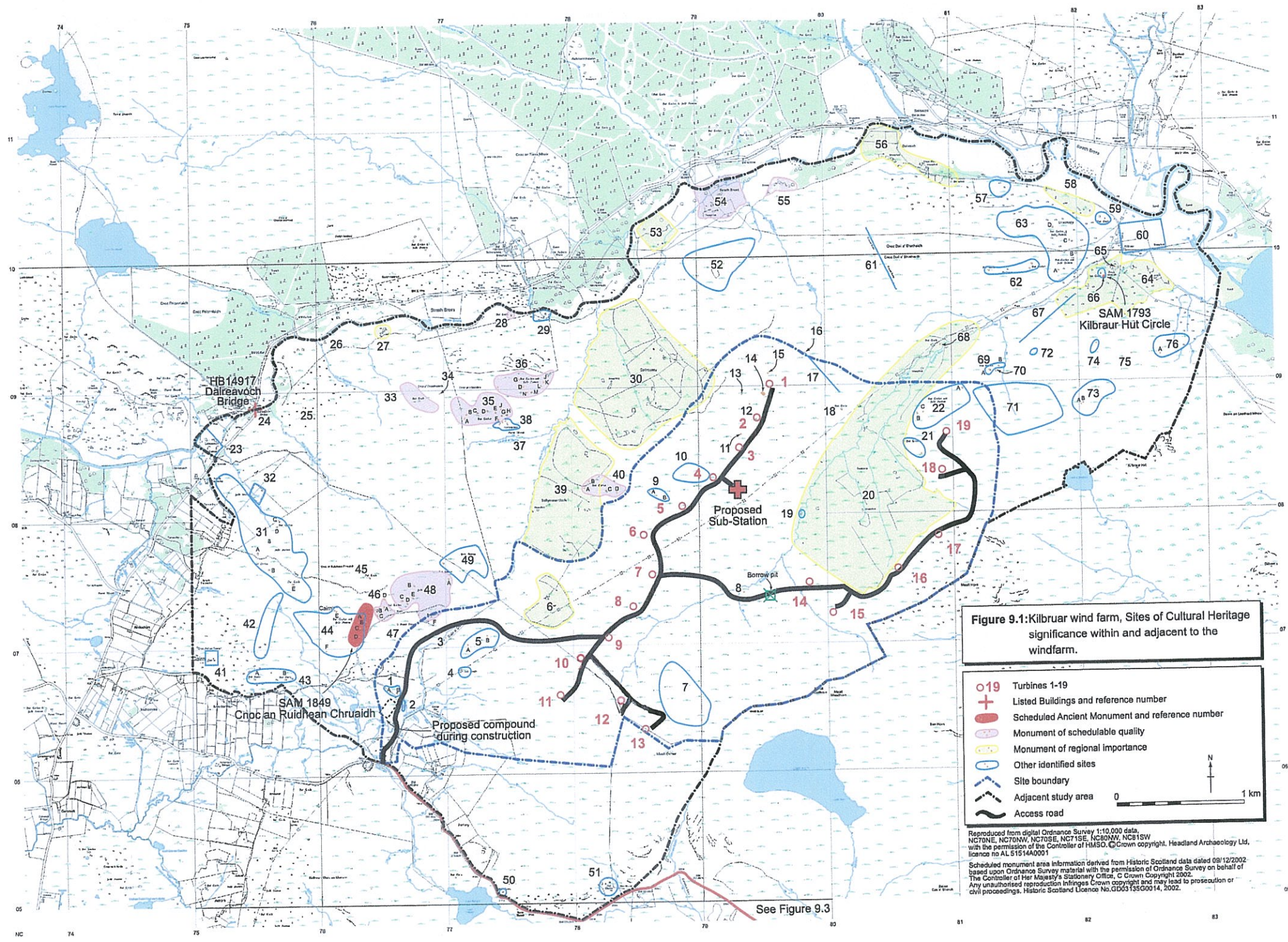
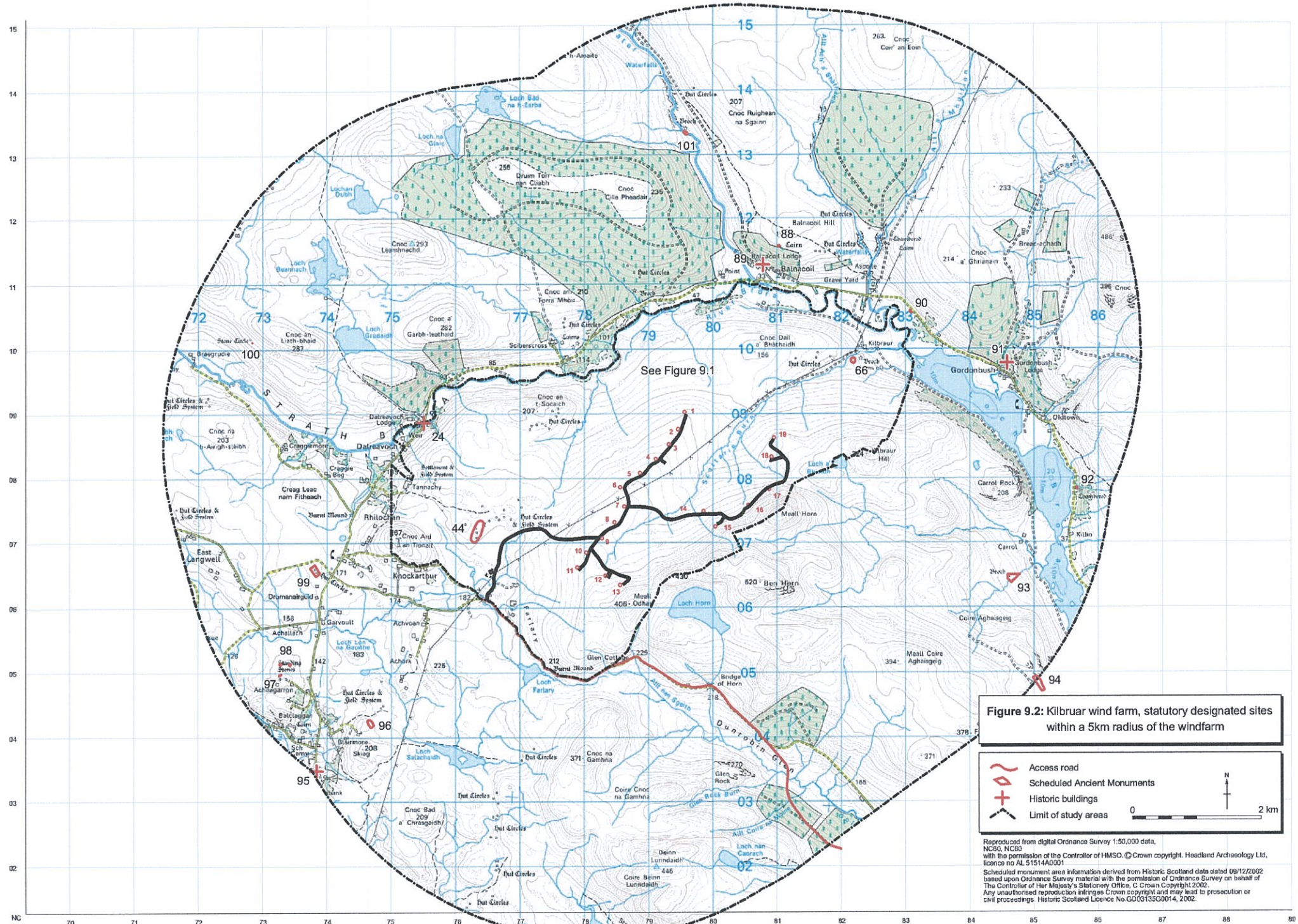


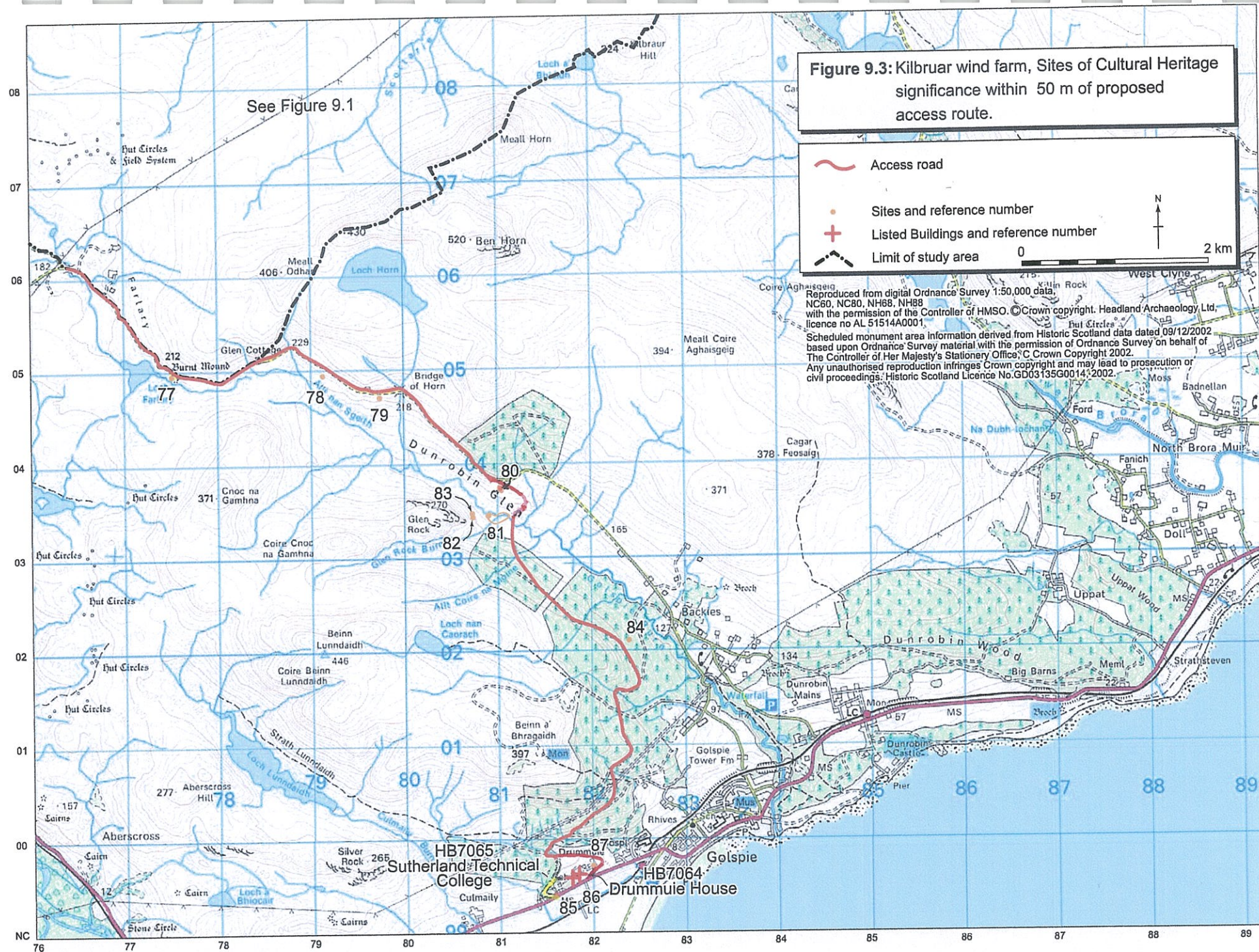
Figure 9.1: Kilbraur wind farm, Sites of Cultural Heritage significance within and adjacent to the windfarm.

- 19 Turbines 1-19
- ✚ Listed Buildings and reference number
- Red oval Scheduled Ancient Monument and reference number
- Pink oval Monument of schedulable quality
- Yellow oval Monument of regional importance
- Blue oval Other identified sites
- Blue dashed line Site boundary
- Blue dashed line Adjacent study area
- Black line Access road

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See Figure 9.3





Appendix 4

Chapter 7 - Archaeology



Identified Sites within Site Boundary (Sites 1 - 22)

[SITE 1] Ailt Clais a Chait

Type of Site: hut circles & clearance cairns

NMRS / SMR Numbers: previously unrecorded

NC 766 066. Two hut circles and a well-defined area of field clearance cairns.

(A) NC 76516 06686. Hut circle located at edge of terrace, overlooking lower ground to SW; 6m internal diameter, inside turf-covered stony bank up to 2.5m wide and 0.5m high, with sub-square annexe 3 x 3m inside SW side of building.

(B) NC 76608 06635. Hut circle, 7m internal diameter, inside turf-covered stony bank generally 1.5m wide and 0.6m high, with sub-square annexe 4 x 3m inside NE side of building. Entrance in SW side of building. Fourteen clearance cairns, up to 5 x 4m and 0.6m high, located in proximity to the two buildings; low turf-covered stony bank (20m long, 2.5m wide and 0.3m high) identified at NC 76597 06694, and possibly fragments of another at NC 76625 06654.

[SITE 2] Ailt Clais a Chait

Type of Site: clearance cairns

NMRS / SMR Numbers: previously unrecorded

NC 767 065. Group of three clearance cairns, 3 - 4 m in diameter and 0.6m high, located to N of electricity pylon.

[SITE 3] Ailt Clais a Chait

Type of Site: burnt mound (possible)

NMRS / SMR Numbers: previously unrecorded

NC 76991 07068. Arc of a heather-covered stony mound, up to 10m across and 1.2m high with hollow (0.5m deep) on top, located next to burn. Superficial resemblance to burnt mound but no exposed sections present.

[SITE 4] Farlary

Type of Site: hut circle & clearance cairns

NMRS Number: NC70NE 6

SMR Number: NC70NE 6

NC 7711 0681. Hut circle 14.0m in diameter between wall centres. The E arc has been destroyed during the erection of an adjacent electricity pylon. No entrance apparent. Extensive area of intermittent field clearance heaps lie to the E of the hut.

[SITE 5] Ailt Clais a Chait

Type of Site: Hut circles & clearance cairns

NMRS / SMR Number: previously unrecorded

NC 772 070. Two hut circles are located on the west-facing slope above Farlary. Hut circle A (NC 77171 07015) is roughly 7 - 9m across internally with stony banks spread to 2m wide and up to 0.4m high. Entrance in the SW. Hut circle B (NC 77322 07082) is of a similar size with an entrance in the W. Located in an area of grass and young heather with a number of turf-covered stony mounds - probably field clearance stones - nearby. A robbed example or possibly a shieling-hut is located nearby at NC 77259 06961.

[SITE 6] Rayen

Type of Site: depopulated township

NMRS Number: NC70NE 38

SMR Number: NC70NE 37

NC778 073. A township comprising four unroofed buildings, five enclosures, a field and a ring-dyke is depicted on the 1st edition of the OS 6-inch map (Sutherland 1879, sheet xcvi). Five unroofed buildings, an enclosure, a field and part of a ring-dyke are shown on the 1970 OS 1:10,000 map.

[SITE 7] Meall Odhar

Type of Site: depopulated township

NMRS / SMR Numbers: previously unrecorded

NC 788 065. Remains of old head dyke located on lower N-facing slopes of Meall Odhar. Within the dyke are two buildings (A & B), a kiln (C), an enclosure (D) and areas of old improved pasture.

(A) NC 78786 06710. Low stony bank of sub-rectangular building, 17 x 2m internally, aligned roughly NW - SE; bank spread to 1.2m and standing up to 0.3m high.

(B) NC 78770 06703. Low stony bank of sub-rectangular building, 5 x 2m internally, aligned roughly NW - SE; bank spread to 1.5m and standing up to 0.4m high. Low stone wall, forming N side of yard, abuts N end walls of both buildings.

(C) NC 78751 06831. Located to N of Buildings A and B are the remains of a corn-drying kiln; low mound 6m diameter with infilled bowl (1.5m diameter) in centre, and loading room (2 x 1.5m) and flue to N.

(D) NC 78734 06506. Enclosure 12m diameter, formed of low turf bank 2m wide and 0.4m high (Highland SMR NC70NE 80).

On the basis of the disposition of the lettering on the Burnett & Scott (1832) map, Dr Lindsay (pers comm) has identified this settlement as possibly Bad-an-elich. On the earlier Forbes (1820) map, however, the place-name is located to the north-east, next to Orrachile (Urachaille) beside the river.

[SITE 8] Scottarie burn

Type of Site: clearance cairn

NMRS Number: -

SMR Number: NC70NE 79

NC 79341 07394. single low cairn formed of 9-10 medium to large rounded stones; 1m diameter and 0.2m high. Located at head of tongue of old improved pasture overlooking Scottarie burn to N.

[SITE 9] Ballynacairdach

Type of Site: turf-built enclosures

NMRS / SMR Number: previously unrecorded

(A) NC 78612 08192 & (B) NC 78745 08126. Two turf-built enclosures located on moorland above and to E of Ballynacairdach: (A) circular, 4m internal diameter; (B) sub-rectangular, 8 x 6m with banks 1.2m wide and 0.4m high.

[SITE 10] Ballynacairdach

Type of Site: clearance cairns (& possible turf structure)

NMRS / SMR Number: previously unrecorded

NC 789 083 site centre for extensive area of field clearance cairns. No hut circles identified within the area or in proximity to the proposed wind turbine and track. At NC 79057 08296 there is a possible turf-built hut or shieling, 2 x 2m internally inside a bank 1.2m wide and 0.2m high

[SITE 11] Coilreaney

Type of Site: upright stone

NMRS / SMR Number: previously unrecorded

NC 79330 08613. Erect stone, 1 x 0.4 x 0.8m high and aligned N34E. Possible marker stone.

[SITE 12] Coilreaney

Type of Site: upright stone

NMRS / SMR Number: previously unrecorded

NC 79405 08859. Large boulder, 1m high and with sides up to 2m long. Possible marker stone.

[SITE 13] Coilreaney

Type of Site: shepherd's cairn

NMRS / SMR Number: previously unrecorded

NC 79343 08933. Small cairn of stones, 1.2m diameter.

[SITE 14] Coilreaney

Type of Site: enclosure

NMRS / SMR Number: previously unrecorded

NC 79512 08940. Turf bank, 2m wide and 0.4m high, forming arc of small D-shaped enclosure, roughly 9 x 4m. Located on moorland between townships of Coilreaney and Scottarie.

[SITE 15] Coilreaney

Type of Site: hut circle & clearance cairns

NMRS / SMR Number: previously unrecorded

NC 79557 09103. Hut circle, 11m internal diameter, located on low broad shelf overlooking Strath Brora to N. Several clearance cairns to W of building.

[SITE 16] Coilreaney

Type of Site: hut circle

NMRS / SMR Number: previously unrecorded

NC 79846 09245. Hut circle, 6m internal diameter (Dr N Lindsay, pers comm).

[SITE 17] Scottarie

Type of Site: shooting butts

NMRS / SMR Number: previously unrecorded

NC 79843 09253 - NC 80123 08934. Line of eleven turf- and stone-built shooting butts, aligned NW - SE (Dr N Lindsay, pers comm).

[SITE 18] Scottarie Burn

Type of Site: Hut-Circle

NMRS Number: NC80NW 18

SMR Number: NC80NW 18

NC 8013 0880. On the NW side of the valley floor is a well-defined hut circle, measuring 13.0m in diameter between wall centres. The entrance is in the SE. There is no trace of associated cultivation.

[SITE 19] Grudie Burn

Type of Site: Shieling-Huts (possible)

NMRS Number: NC70NE 42

SMR Number: NC70NE 42

NC 798 080. What may be an unroofed shieling-hut is depicted on the 1st edition of the OS 6-inch map (Sutherland 1879, sheet xcvi). An unroofed building and an unroofed structure, which may both be shieling-huts, are shown on the current edition of the OS 1:10,000 map (1970). A large number of additional features - dykes, enclosures and a possible mill - have been identified in this area by Dr Nick Lindsay (2002; Highland SMR sites NC70NE 66-75).

[SITE 20] Grudie Burn

Type of Site: depopulated township

NMRS Number: NC80NW 10

SMR Number: NC80NW 10

NC 803 085. Large area of depopulation, within which are the remains of seven rectangular buildings with associated enclosures and two kilns. The buildings vary in size from 30 x 4m to 5 x 3.5m with walls up to 0.7m high. A township comprising six unroofed buildings, an enclosure and a field wall or head-dyke is depicted on the 1st edition of the OS 6-inch map (Sutherland 1879, sheet xcvi). Eight unroofed buildings, five enclosures and some field walls are shown on the 1969 OS 1:10,560 map. A large number of additional sites and detail on mapped features have also been identified inside the Scottarie head-dyke by Dr Nick Lindsay (2002; Highland SMR sites NC70NE 59, 60, 62, 63, 65, 76 & 77 and NC80NW 36-41 & 48-50).

[SITE 21] Grudie Burn

Type of Site: hut circles & clearance cairns

NMRS Number: NC80NW 17

SMR Numbers: NC80NW 17 & 42

NC 8062 0854. Hut circle, set into the NW facing slope, 14.0m in diameter. The entrance is in the E. A small number of contemporary field clearance heaps surround the hut. Three additional hut circles were identified in this area during the course of Dagg's recent survey (Dagg 2002, Sites 2a, 2c & 2d).

[SITE 22] Grudie Burn

Type of Site: hut circles & clearance cairns

NMRS Number: NC80NW 9

SMR Numbers: NC80NW 9, 43 & 44

Centred NC 809 088. Two oval hut circles ('A' and 'B') and a contemporary field system. Both huts have been built onto a NW-facing slope and measure 11.5m E-W by 10.5m and 11.0m E-W by 9.5m between wall centres. The entrances are in the E. A field system of clearance heaps and occasional lynchets extend between and above the two huts. At least two additional hut circles were identified in this area during the course of Dagg's recent survey (Dagg 2002, Site 2f & 2g).

Identified Sites Within Adjacent Study Area (Sites 23 - 76)

[SITE 23] Grudie Burn

Type of Site: Enclosures

NMRS Number: NC70NE 51

NC 7515 0865. Oblique aerial photographs show the remains of four subrectangular enclosures, immediately to the SE of Grudie township (NC70NW 3). Three of the enclosures are depicted on the 1st edition of the OS 6-inch map (Sutherland, 1879, sheet xcvi), and on the 1970 OS 1:10000 map.

[SITE 24] Grudie Burn, Grudie Burn, Grudie Burn, Grudie Burn, Grudie Burn

Type of Site: Transport And Communications/ Roads And Paths/ Road Bridge

NMRS Number: NC70NE 36

SMRS Number: NC70NE 36

NC 7551 0886. Bridge. SU/1101 List C Survey 1975-6; subsequently re-graded to Category B.

[SITE 25] Dalreavoch

Type of Site: Hut-Circle

NMRS Number: NC70NE 53

NC 7588 0888. Oblique aerial photographs show a hut-circle, measuring 15m across, approximately 380m E of Dalreavoch Bridge (NC70NE 36).

[SITE 26] Allt An Sgiobail

Type of Site: Hut-Circles (possible)

NMRS Number: NC70NE 52

NC 7606 0939. Oblique aerial photographs show the remains of two possible hut-circles, 10 - 15m across, situated immediately NW of Kerrynamanoch township (NC70NE 22). Not depicted on 1st edition OS 6-inch map (Sutherland, 1879, sheet xcvi) but are shown on the 1970 OS 1:10000 map.

[SITE 27] Kerrynamanoch

Type of Site: Township; Head-Dyke

NMRS Number: NC70NE 22

SMR Number: NC70NE 22

NC 761 093. Large area of depopulation on the south bank of the Brora River. Within the area are the remains and footings of eleven rectangular buildings with associated enclosures and two kilns. The buildings vary in size from 20.0m by 4.0m to 7.6m by 4.0m with walls 1.2m maximum height. A township comprising three unroofed buildings, twelve enclosures and a head-dyke is depicted on the 1st edition of the OS 6-inch map (Sutherland 1879, sheet xcvi). Ten unroofed buildings, eleven enclosures and a head-dyke are shown on the current edition of the OS 1:10,000 map (1970).

[SITE 28] Allt Siberscaig, Strath Brora [NSR 'site of schedulable quality']

Type of Site: Hut-Circle

NMRS Number: NC70NE 23

SMR Number: NC70NE 23

NC 7753 0957. A solitary well-preserved hut with no associated field system visible. It measures 6.7m internal diameter with a wall thickness of 1.6m. The inner face of stones on edge is almost complete, the outer face is visible in places. The entrance is in the E.

[SITE 29] Strath Brora

Type of Site: Farmstead; Head-Dyke

NMRS Number: NC70NE 41

SMR Number: NC70NE 56

NC 777 095. A farmstead comprising three unroofed buildings and an enclosure, and a head-dyke are depicted on the 1st edition of the OS 6-inch map (Sutherland 1879, sheet xcvi). Three unroofed buildings, some field walls and a head-dyke are shown on the current OS 1:10000 map (1970).

[SITE 30] Coilreaney

Type of Site: Township; Field-System; Head-Dyke

NMRS Number: NC70NE 25

SMR Number: NC70NE 25

NC 785 090. Under the name Kylvrannie, this tenancy was still rented in 1815, but by 1872 only the footings of the buildings remained (Name Book 1872; R J Adam 1972). A large scattered area of depopulation lying to the SE of the junction of the River Brora and the Allt an Tuirc. Within the area are the footings and remains of fourteen rectangular buildings with associated enclosures and four kilns. The buildings vary in size from 31.0m by 4.0m to 6.5m by 3.7m with walls up to 1.7m in height. A township comprising fourteen unroofed buildings, nine enclosures and a field-system and head-dykes is depicted on the 1st edition of the OS 6-inch map (Sutherland 1879, sheet xcvi). Thirteen unroofed buildings, eleven enclosures and a field-system and head-dykes are shown on the current edition of the OS 1:10,000 map (1970).

[SITE 31] Tannachy

Type of Site: Hut-Circles; Field-System

NMRS Number: NC70NE 8

SMR Number: NC70NE 8

NC 756 077. A settlement of five huts ('A'-'E') within a relatively large field system of numerous heaps, ruinous field walls and occasional lynchets. All dimensions are between wall centres. 'A' is 15.5m SE-NW by 13.5m. The curving inner wall forms an enclosure measuring 11.0m NW-SE. The chamber illustrated in the W arc is extant, but because of heavy peat growth, it is uncertain whether it is contemporary with the hut. The other chambers were not traced. 'B' is a small circular enclosure 5.0m in diameter. 'C' is 10.5 SW-NE by 10.0m. The entrance is in the SW. 'D' measures 13.0m E-W by 10.5m. The wall, spread to 2.5m in the W, expands to 3.5m at the entrance in the E. 'E' is 12.5 ESE-WNW by 10.0m. The entrance is in the ESE.

[SITE 32] Tannachy

Type of Site: Farmstead

NMRS Number: NC70NE 46

SMR Number: NC70NE 47

NC 755 082. Farmstead comprising one roofed and one unroofed building, and an enclosure are depicted on OS 1st edition 6-inch map (Sutherland 1879, sheet xcvi). The remains of a building and a field are shown on the 1970 OS 1:10000 map.

[SITE 33] Cnoc a Cheathraimh [NSR 'site of schedulable quality']

Type of Site: Hut-Circle; Small Cairns

NMRS Number: NC70NE 15

SMR Number: NC70NE 15

NC7680 0891. On a sloping shelf to the SW of Cnoc a' Cheathraimh is a solitary well-preserved hut, oval in plan, measuring 15.0m NW-SE by 12.0m between wall centres. At the entrance in the SE are three, possibly four, portal stones. Stone clearance heaps nearby.

[SITE 34] Cnoc a Cheathraimh

Type of Site: Marker cairn

NMRS / SMR Number: previously unrecorded

NC 76963 08968. Small cairn of lichen-covered stones, 2.5m diameter and 0.4m high, located on summit of Cnoc a Cheathraimh. Probable marker cairn, formed from robbed clearance cairns nearby.

[SITE 35] Cnoc a Cheathraimh [NSR 'site of schedulable quality']

Type of Site: Hut-Circles; Field-System

NMRS Number: NC70NE 16

SMR Number: NC70NE 16

NC 773 088. On the lower S slopes of Cnoc an t-Socaich is a settlement of nine oval stone-walled huts ('A' - 'J') within a contemporary field system. With the exception of hut 'A' which is slight, measuring 7.5m NW-SE by 6.5m, all are massive and well preserved, varying in size from 12.5m by 11.0m to 17.0m by 16.0m between wall centres. In each case the entrance is in the SE arc; a portal slab on edge, 0.4m high, can be seen on the E side of the entrance to hut F, and in the same hut is a slab 1.1m high marking the inner wall face on the NW side. Within hut 'H' are traces of a concentric ring of rubble stones, much obscured by heather and peat, which measures 7.0m NW-SE by 6.0m. A gap in the wall of this feature corresponds with the hut entrance. The purpose of this internal feature is uncertain. The field system comprises numerous clearance heaps and good examples of field walls and lynchets.

[SITE 36] Sciberscross; Allt an Tuirc [NSR 'site of schedulable quality']

Type of Site: Hut-Circles; Field-System

NMRS Number: NC70NE 18

SMR Number: NC70NE 18

NC 776 090. Of the nine circular features shown on OS 1:10,000, only 'D' and 'G' are huts. 'A', 'C', 'E', 'F', 'H' and 'I' are stone clearance heaps, the centre of which have been removed, either by excavators or possibly for later use as shielings. 'B' appears to comprise of two mutilated clearance heaps, connected by curving field walls. A further five hut circles ('J'-N') were discovered during recent field investigation (OS 1964); this is therefore a settlement of seven huts ('D', 'G', 'J'-N'). All measurements are between wall centres except where otherwise stated. 'D' is 7.0m in diameter with no entrance visible. 'G' as planned by RCAHMS (1911) and the best preserved of the group. 'J' and 'K' are 5.5m in diameter with entrances in the SE arc. 'L' survives as a platform 14.0m in overall diameter. Due to peat build-up the wall is barely visible. 'M' and 'N' are 9.5m in diameter. The positions of their entrances are uncertain; in the NE arc of 'N' are two upright stones on edge, superficially resembling portal stones, but possibly a result of later clearance. Associated with the huts is an extensive field system of numerous large stone clearance heaps, of which a number have been disturbed, and occasional low field walls.

[SITE 37] Allt Poll a' Choire

Type of Site: Burnt Mound

NMRS Number: NC70NE 17

SMR Number: NC70NE 17

NC 7758 0863. Situated on the left bank of the Allt Poll a' Choire is a large heather-covered burnt mound. It measures 14.0m N-S by 17.0m E-W with a maximum height of 1.3m. An elongated hollow running NW-SE occupies the centre of the mound.

[SITE 38] Cnoc a' Cheathraimh

Type of Site: Shielings

NMRS Number: NC70NE 32

SMR Number: NC70NE 32

NC775 087. Situated immediately SE of the hut circles (NC70NE16) are the remains of six shielings, five being rectangular the other 'oval-shaped', and a small circular structure 2m in diameter. They are outlined by a course of stones and vary in size from 9 x 3m to 3 x 2.5m.

[SITE 39] Ballynacairdach

Type of Site: Township; Cultivation Remains; Kilns

NMRS Number: NC70NE 19

SMR Number: NC70NE 19

Area NC 779 082. Large area of depopulation on the right bank of the Allt on Tuirc. Within the area are the remains and footings of fifteen rectangular buildings with associated enclosures, and four kilns. The buildings vary in size from 28 x 3.6m to 8.3 x 4.5m with walls up to 0.6m high. A township comprising ten unroofed buildings, four enclosures, a partially enclosed field and some field walls is depicted on the 1st edition OS 6-inch map (Sutherland 1879, sheet xcvi). Nine unroofed buildings, six enclosures, a sheepfold and some field walls are shown on the 1970 OS 1:10,000 map.

[SITE 40] Ballynacairdach [NSR 'site of schedulable quality']

Type of Site: Hut-Circles; Small Cairns

NMRS Number: NC70NE 20

SMR Number: NC70NE 20

Centred at NC 782 082 and bordering the deserted hamlet of Ballynacairdach, is a settlement of four huts ('A'-D') and a contemporary field system, marked by field clearance heaps. All dimensions are between wall centres unless otherwise stated. Huts 'A' and 'B' measure respectively 14.0m ENE-WSW by 13.0m and 13.0m E-W by 12.0m. Entrances are in the ENW and E. Both huts are composed of earth and stone banks with no evident facing stones. 'C' is an unusual oval hut measuring 13.5m ENE-WNW by 11.0m. The hut has a passage-like entrance in the ENE, 4.5m long, formed by an expansion of the wall. This gives the hut an internal diameter of 10.0m. 'D', the best preserved of the huts, measures 11.0m in diameter. The entrance is in the E.

[SITE 41]

Type of Site: Cairn

NMRS Number: NC70NE 40

NC 751 069. The remains of a probable cairn, on the crest of Cnoc Ard an Tionail, has been partially destroyed by the construction of a steel pylon.

[SITE 42]

Type of Site: Battle Site

NMRS Number: NC70NE 7

SMR Number: NC70NE 7

NC 750 070. Battlefield situated in and about the district of Cnoc Arthur. The conflict took place about AD 1542 between Donald MacKay and the followers of the Earl of Sutherland. (Name Book 1871). After the death of Earl Adam of Sutherland, Donald MacKay came with a company of men in 1542, burning the village of Knockartoll and plundering Strathbrora. The Sutherland lairds hastily assembled and overtook MacKay beside Aldy-ne-Beth. They made a very sudden attack upon MacKay. There was a hard sharp conflict; the Strathnaver men fled and the booty was recovered (R Gordon 1813).

[SITE 43]

Type of Site: Hut-Circles

NMRS Number: NC70NE 5

SMR Number: NC70NE 5

NC 7572 0676. Hut circle, 'A': 13.0m in diameter between wall centres. The inner face of the wall is visible in the N half as an almost contiguous wall of small slabs on edge backed by rubble. Intermittent inner facing stones protrude in the S half. The hut bears an unusual and slightly questionable characteristic in the S arc, where the wall and floor level drop sharply by 0.7m; this appears to be an original feature, though possibly caused by earth slip. The entrance is in the SSE.

NC 7548 0677. Hut circle, 'B': 15.0m in diameter between wall centres, levelled into an E-facing slope. The entrance is in the SE. Contemporary cultivation in the form of clearance heaps and occasional ruined field walls occur in the area.

Type of Site: Hut-Circles; Field-System

NMRS Number: NC70NE 9

SMR Number: NC70NE 9

NC 762 071. Settlement of six huts (A-F) and a well-preserved, contemporary field system. 'A' measures circa 10.5m in diameter between the centres of a wall best-preserved at the entrance in the SE, where it is 0.4m high. 'B' is 11.0m internal diameter within a wall of stones on edge, 1.1m thick, widening to 1.9m at the SE entrance, 1.0m wide. The wall appears to have been built up and utilised later, probably as a sheepfold. 'C' also appears to have been utilised as a sheepfold the wall surviving to a height of 0.8m. It is 9.9m internal diameter within a wall 2.2m thick, widening to 2.8m at the SE entrance, which is about 1.0m wide between inner portal stones (one of which is displaced), but displaying a slight outward splay. 'D' is oval, 14.0m NNW - SSE by 12.5m between the centres of a tumbled turf-covered wall, 4.0m wide. The entrance is probably in the SSE; there is a mutilation of the bank 10.0m long on the N side. 'E' is greatly denuded, but both faces are visible intermittently, indicating an internal diameter of 9.5m, within a wall 1.9m thick widening to 2.6m at the SE entrance, now choked with rubble. 'F', smaller with less strong wall than the others is 9.0m in diameter between wall centres. The entrance was probably in the SE. The field system comprises cultivation plots defined by stone clearance heaps, low field walls and lynchets, particularly well-preserved in the vicinity of huts 'B' and 'C'.

Type of Site: Hut-Circle

NMRS Number: NC70NE 26

SMR Number: NC70NE 26

NC 7642 0756. A slight heather-covered hut-circle measuring 12.0m NW - SE by 11.0m. It is formed by an earth-and-stone bank very slight, except on the E side where it is 4.2m wide and 0.4m high internally, 0.6m high externally. The entrance 1.5m wide is in the SE, a large stone stands on the W side of the entrance. Nearby are a few field clearance mounds.

[SITE 46] Cnoc An Ruidhean Chruaidh [NSR 'site of schedulable quality']

Type of Site: Hut-Circles; Field-System

NMRS Number: NC70NE 11

SMR Number: NC70NE 11

centred NC 765 073. Settlement of four huts (A - D) within a minor field system comprising occasional stone clearance heaps. All hut dimensions are between wall centres. Hut 'A' is severely mutilated, measuring about 8.5m WNW-ESE by 6.0m. In the N quadrant is an internal enclosure. Whether it is contemporary or not is uncertain due to peat growth. The entrance is probably in the ESE. 'B', a hut within a hut as described by the RCAHMS, with a common entrance in the SSE. The outer hut, 16.0m in diameter, is severely mutilated, and is formed by a denuded, spread bank. A cultivation plot appears to extend through a wide gap in the NW wall, and end on the back wall of the inner hut. The 'enclosure' contiguous with the outer wall appears to be a low clearance heap. The inner hut, 9.0m in diameter, is well-preserved, of bare stones with both faces visible, indicating a wall thickness of 1.3m. It appears to overlie the outer circle. 'C' is 6.0m in diameter with a S entrance. 'D' is 6.5m NW-SE by 5.5m, with a SE entrance.

[SITE 47] Cnoc An Ruidhean Chruaidh

Type of Site: Burnt Mound

NMRS Number: NC70NE 12

SMR Number: NC70NE 12

NC 7661 0719. On the edge of damp ground and adjacent to a settlement of hut circles and a field system, is a 'U'-shaped burnt mound, overgrown with heather. It is unusually large, measuring 14.0m NW-SE by 16.0m transversely and survives to a height of 1.4m. A depression extends from the centre to the SE arc and contains at its base three large earthfast stones. Small burnt stones are exposed in molehills in the summit of the mound.

[SITE 48] Cnoc an Ruidhean Chruaidh [NSR 'site of schedulable quality']

Type of Site: Hut-Circles; Field-System

NMRS Number: NC70NE 13

SMR Number: NC70NE 13

NC 765 074. A settlement of six huts ('A' to 'F') within a contemporary field system (defined as mounds by RCAHMS 1911) marked by numerous field clearance heaps, especially dense on the SE spur, occasional lynchets and ruinous field walls. All huts are oval and measurements are given between wall centres:

'A' is 13.5m NW-SE by 11.5m with a wall spread to 4.4m widening towards the SE entrance. The outer face is visible to the E of the entrance (OS 1964).

'B' is 12.0m NW-SE by 10.8m with the wall spread to 3.2m The entrance is in the SE. A low bank extends southwards from the hut (OS 1964).

'C' (RCAHMS 1911) is 14.0m N-S by 13.0m set into a N-facing slope. The S entrance appears to have a deep splay on its E side, though this may be the result of later mutilation.

'D' measures 15m E-W by 12.5m with an entrance in the SSW. In the interior, a setting of stones of which the NW half survives measures 5.7m in diameter.

'E' measures 13.2m N-S 12.0m with an entrance in the S.

'F' measures 12.4m NW-SE by 8.8m with a bank spread to 4.0m in places. The interior of the hut is divided almost midway giving the effect of an inner circle 5.0m internal diameter, approached by a passage 6.0m long by 2.7m wide.

[SITE 49] Cnoc an Ruidhean Chruaidh

Type of Site: Hut-Circles; Field-System

NMRS Number: NC70NE 14

SMR Number: NC70NE 14

NC 7698 0766. On the W flank of a hillock, and separated from NC70NE13 by a small gully, is a hut circle, 10.5m in diameter, with an entrance in the SE. The west arc of walling has been mutilated by two sub-rectangular stone settings averaging 2.0m by 2.0m in size, which probably post-date the hut. Within the E arc of the hut is another sub-rectangular setting 1.6m by 1.6m, possibly stone tumble. The hut lies within a contemporary field system marked by field clearance heaps, the majority of which lie on the opposite E flank of the hillock.

[SITE 50] Loch Farlary

Type of Site: Hut circle & clearance cairns

NMRS Number: NC70NE3

SMR Number: NC70NE3

NC 7742 0509. On the ridge of a spur projecting towards the SE end of Loch na Fuar-laraiche (Loch Farlary) about 40ft above the road is a hut circle measuring internally 29ft by 30ft. It abuts onto a wall which runs past the entrance down the hillside. Several mounds, one 24ft in diameter, lie between the hut and the loch. A short distance to the E on a flat below the road is a mounded construction, evidently a kiln. Several old walls are visible along the hill face (RCAHMS 1911).

[SITE 51] Glen Cottage

Type of Site: Hut circles & clearance cairns

NMRS Number: NC70NE4

SMR Number: NC70NE4

NC 7816 0509 and 7822 0514. Hut 'A', ill preserved, is 11.0m NW-SE by 10.0m with an entrance in the SE. Hut 'B' is 8.5m WNW-ESE by 7.0m between centres of a wasted wall practically destroyed around ESE quadrant. No entrance is evident. Contemporary cultivation is indicated by some stone clearance heaps on hill slope just N of Hut B.

[SITE 52] Allt Storal

Type of Site: hut circles & field system

NMRS / SMR Number: NC70NE -

NC 793 100. A settlement of at least six hut circles and associated field systems on a gentle NW facing slope, west of the Allt Storal and south of cultivation features of the Torseiller post-medieval settlement (Dagg 2002, 5-6, Site 12).

[SITE 53] Kilpheder-mor

Type of Site: Township; Head-Dyke

NMRS Number: NC71SE 48

SMR Number: NC71SE 45

NC 787 103. Early maps name this township variously as Cill Pheadair Mhor or Cill Pheadair Bheag. The visible features of the township consist of a cluster of three to four buildings on the edge of the platform overlooking the flood-plain, two substantial enclosures towards the river, the easternmost with two attached buildings, and two small structures or enclosures SW of the main cluster. Cultivation features extend south and west up the slope (Dagg 2002, 9, Site 27).

[SITE 54] Torseiller [NSR 'site of schedulable quality']

Type of Site: Township; Head-Dyke

NMRS Number: NC71SE 5

SMR Number: NC71SE 5

NC 790 103. In this area there are footings and remains up to 0.6m high, of at least fourteen dwellings ranging from 7.0m by 4.0m to 36.0m by 5.0m, together with associated enclosures and the remains of two kilns. A township comprising eleven unroofed buildings, one of which is T-shaped, seven enclosures, some lengths of field wall and part of a head-dyke is depicted on the 1st edition of the OS 6-inch map (Sutherland 1879, sheet xcvi). Fourteen unroofed buildings, nine enclosures, a field, some field walls and part of a head-dyke are shown on the current edition of the OS 1:10,560 map (1969).

[SITE 55] Storal [NSR 'site of schedulable quality']

Type of Site: Township; Head-Dyke

NMRS Number: NC71SE 4

SMR Number: NC71SE 4

NC 796 105. The footings and remains up to 0.8m high of at least five dwellings ranging in size from 8.0m by 4.0m to 36.0m by 5.0m together with associated enclosures and the remains of a kiln. A township comprising four unroofed buildings, two enclosures and a length of head-dyke is depicted on the 1st edition of the OS 6-inch map (Sutherland 1879, sheet xcvi). Six unroofed buildings, two enclosures and a length of head-dyke are shown on the current edition of the OS 1:10,560 map (1969).

[SITE 56] Dalvaich

Type of Site: Township; Kilns; Head-Dyke

NMRS Number: NC81SW 17

SMR Number: NC81SW 17

NC 808 106. Dalvaich: a group of about five buildings with arable (W Roy 1747-55). Footings and remains up to 0.5m high of at least twelve dwellings ranging in size from 6.0 by 3.0m to a T-shaped building 25.0 by 4.0m with a wing 14.0 by 4.0m, together with associated enclosures and the remains of two kilns. An area of rig and furrow lies between this site and the River Brora to the North. A township comprising eleven unroofed buildings, four enclosures and a head-dyke is depicted on the 1st edition of the OS 6-inch map (Sutherland 1879, sheet xcvi). Eight unroofed buildings, at least three enclosures, two sheepfolds and a head-dyke are shown on the current OS 1:10,560 map (1969).

[SITE 57] Strath Brora

Type of Site: Farmstead

NMRS Number: NC81SW 58

SMR Number: NC81SW 59

NC 814 105. A farmstead comprising three unroofed buildings and three enclosures is depicted on the 1st edition of the OS 6-inch map (Sutherland 1879, sheet xcvi).

[SITE 58] Urachaille

Type of Site: Township; Corn-Drying Kiln; Head-Dyke

NMRS Number: NC81SW 42

SMR Number: NC81SW 43

NC 819 103. Footings of about six buildings 18.0m by 4.0m to 34.0m by 4.0m up to 0.5m high, enclosures and kiln. A township comprising three unroofed buildings, four enclosures and a length of wall which may be a head-dyke is depicted on the 1st edition of the OS 6-inch map (Sutherland 1879, sheet xcvi). Six unroofed buildings and an enclosure are shown on the current edition of the OS 1:10,560 map (1969).

[SITE 59] Urachaille

Type of Site: Hut-Circles

NMRS Number: NC81SW 22

SMR Number: NC81SW 22

NC 8219 1025 (A: NC 8218 1026, B: NC 8221 1024) Situated on separate dry knolls towards the base of a general NE-facing slope are two stone-walled huts of different character. Hut 'A' is well-preserved measuring 10.0m internal diameter within a wall 0.4m interior height spread to 3.0m broad all round. Occasional inner facing stones are discernible. 'B' is small and insignificant measuring 4.5m NW-SE by 4.0m NE-SW internally within a wall spread to 2.0m all round. No details of construction are exposed. Each hut is entered from the SE. Cultivation is confined to scattered dry rises; not more than six clearance heaps can be seen, and there are no measurable field plots.

[SITE 60] Kilbruar

Type of Site: shepherd's cottage and outbuildings

NMRS / SMR Number: NC81SW -

NC 8230 1005. Cottage with associated outbuildings, drystone enclosures and park would appear to date to the inclusion of Scottarie into Sciberscross sheep farm in the late 19th century (Dagg 2002, 11, Site 36).

[SITE 61] Cnoc Dail a' Bhathaidh

Type of Site: shooting butts

NMRS / SMR Number: NC81SW -

NC 8034 1020 - NC 8057 0973. A line of twelve turf and stone shooting butts, aligned NW - SE across the high ground of Cnoc Dail a' Bhathaidh.

[SITE 62] Scottarie Burn

Type of Site: Hut-Circles; Small Cairns; Enclosure

NMRS Numbers: NC80NW 6, 7 & 8

SMR Numbers: NC80NW 6, 7 & 8

NC80NW 6: NC 8130 0986. Hut circle 8.8m in diameter between wall centres with the entrance in the SE. The northern half of the circle is almost obliterated. Surrounding the hut is a small concentration of contemporary field clearance heaps.

NC80NW 7: NC 8163 0989. ('A' NC 8162 0987: 'B' NC 8164 0991) Hut Circles. 'A' is 11.5m in diameter between the centres of a wall 1.6m thick widening to 2.7m at the entrance in the E. Inner facing stones occur intermittently around the whole periphery. The vague outline of 'B' occurs on a low knoll. It measures about 7.0m in diameter; a gap in the E is probably an entrance. A few stone clearance heaps occur in the vicinity.

NC80NW 8: NC 8145 0985. Stone-walled oblong structure, containing the ruins of a circular structure (RCAHMS 1911): internally 13.5m NW-SE by 5.4m within a wall of base stones about 2.0m thick widening to 3.0m at the entrance in the SE side. No evidence of cultivation in immediate vicinity.

[SITE 63] Urachaille

Type of Site: Hut-Circles; Field-System

NMRS Number: NC81SW 26

SMR Number: NC81SW 26

NC 819 101. On the N and E facing slopes in open moorland is a settlement of four stone-walled huts ('A'-D') within a well-defined associated field system. 'A' and 'B' are set into a SE facing slope and measure 9.0m internal diameter within a wall generally spread to 2.0m broad but expanding to 3.5m on the revetted downslope. The entrance to 'A' is in the SE arc, this arc being mutilated in 'B'.

'C' and 'D' are smaller and poorly-defined. They measure 5.0m internal diameter within a heather-covered wall spread to 2.0m broad all round. Each hut is entered from the SE. The extensive field system, 20 hectares in area, comprises numerous field plots varying from 20.0m by 15.0m to 40.0m by 30.0m, their size largely determined by the angle of slope. The plots are delineated by stone clearance heaps, lynchets and field walls.

[SITE 64] Kilbruar

Type of Site: depopulated township

NMRS Number: NC80NW 25

NMRS Number: NC80NW 27

NC 825 098. A township comprising two roofed and one unroofed building and eight enclosures is depicted on the 1st edition of the OS 6-inch map (Sutherland 1879, sheet xcvi). One roofed and ten unroofed buildings and eight enclosures are shown on the current OS 1:10560 map (1969). Additional structures, enclosures and field boundaries have been identified by Lindsay (2002; 2003, pers comm.) in the area immediately to the south of the Scottarie burn; among these are the low foundations of a rectilinear building 18 x 3m at NC 82454 09692 and a smaller structure (3.5 x 2m) at NC 82382 09501. A possible still (3 x 2m) has been identified at NC 82097 09796.

[SITE 65] Kilbruar

Type of Site: Broch

NMRS Number: NC80NW 4

SMR Number: NC80NW 4

NC 8229 0987. Circular structure, 30 yards in diameter on top and about 50 yards at its base with a height of about 30ft. Small enclosure on top has been used as a vegetable plot (Name Book 1879). All that remains of the broch is a turf-covered mound, 1.7m high, in which no structural details are exposed. The mound is surmounted by a 'post-Clearances' circular enclosure. The broch is situated on the flattened summit of an isolated, natural knoll which has been scarped. Around the rim of the summit are the remains of a denuded wall reduced to a rickle of stones which encloses an area of about 36.0m in diameter. It has been quarried on the S side. At a lower level towards the base of the knoll is an outer encircling wall, its outer face defined by occasional boulders, but largely reduced to a stone scatter. It is overlaid in places by later walls. It is destroyed in the N and NW arcs by the construction of a mill race, now dry.

[SITE 66] Kilbruar [SAML/93]

Type of Site: Hut-Circle; Small Cairns

NMRS Number: NC80NW 5

SMR Number: NC80NW 5

NC 8218 0982. Small clearly-defined hut circle, 5.1m in internal diameter. The mounds in the area are field clearance heaps of a minor contemporary field system.

[SITE 67] Scottarie burn

Type of Site: shooting butts

NMRS / SMR Number: NC80NW -

NC 8153 0930 - NC 8198 0966. A line of four turf and stone shooting butts, aligned NE - SW above the Scottarie burn.

[SITE 68] Scottarie Burn

Type of Site: Hut-Circle

NMRS Number: NC80NW 19

SMR Number: NC80NW 19

NC 8091 0930. Oval hut circle situated on a dry, flat area close to the Scottarie Burn: 12.0m E-W by 9.5m between the centres of the wall spread to 2.5m and obscured by peat. Entrance in E.

[SITE 69] Scottarie

Type of Site: Hut-Circles

NMRS Number: NC80NW 16

SMR Number: NC80NW 16

NC 8130 0909 'A'. An ill-defined hut circle measuring between wall centres 12.0m E-W by 10.5m. Immediately to the N of the entrance in the E is an upright slab possibly a portal stone.

NC 8137 0912. 'B' Well preserved hut circle with an internal diameter of 7.5m. A few inner and outer facing stones are apparent around the periphery giving the wall a thickness of 2.0m; an entrance gap is in the SE. There are no traces of contemporary agriculture in the immediate vicinity of the hut, but two small areas of field clearance heaps lie close by to the N and S.

[SITE 70] Scottarie

Type of Site: Building; Enclosure

NMRS Number: NC80NW 20

SMR Number: NC80NW 20

NC 8135 0908. Building with enclosure attached.

[SITE 71] Kilbruar Hill

Type of Site: farmstead and clearance cairns

NMRS Number: NC80NW -

SMR Numbers: NC80NW 71 & 73-76

NC 815 088. Turf dykes enclose two large areas and continue to the north down the stream and to the NW. Within the southern of the enclosures are areas of cleared field with substantial field clearance cairns and clearance banks. At NC 8144 0884 and NC 8146 0885 are two buildings aligned down the slope, measuring 10m and 23m in length, one on each side of the stream. At NC 8153 0874 is a building, 8m in length and aligned N-S, in the corner of a square enclosure measuring approximately 22m. East of this, attached to the inside of the head dyke, is a small semi-circular enclosure. At NC 8149 0868 is a corn kiln adjacent to an arc of rubble which may represent the remains of a hut circle which has been robbed to build the kiln (Dagg 2002, 8, Site 20).

[SITE 72] Kilbruar Hill

Type of Site: clearance cairn

NMRS / SMR Number: NC80NW -

NC 81648 09225. Single clearance cairn recorded by Dr N Lindsay (pers comm, 11.05.03), 5m in diameter.

[SITE 73] Kilbruar Hill

Type of Site: hut circles & clearance cairns

NMRS Number: -

SMR Numbers: NC80NW 58, 61-65, 69, 70

NC 822 088. Area of cleared ground surrounded by field clearance piles, on a gentle N-facing slope. At the NE edge of the cleared area is a stony bank running ESE-WNW. Although mostly overgrown with heather and mosses, some are opened, possibly by animals, to reveal the stone pile (Dagg 2002, 8, Site 20). Two hut circles have recently been identified in this area at NC 8202 0882 and NC 8204 0882 (Highland SMR Sites NC80NW 0061 & 0063 respectively).

[SITE 74] Kilbruar Hill

Type of Site: clearance cairn

NMRS Number: -

SMR Number: NC80NW 0052.

NC 82138 09286. Clearance cairn identified by Dr N Lindsay of Clyne Heritage Society.

[SITE 75] Kilbruar Hill

Type of Site: clearance cairn

NMRS Number: -

SMR Number: NC80NW 0053.

NC 82416 09201. Clearance cairn identified by Dr N Lindsay of Clyne Heritage Society.

[SITE 76] Kilbruar Hill

Type of Site: hut circle & clearance cairns

NMRS Number: -

SMR Numbers: NC80NW 0054-56.

NC 82640 09195. Hut circle, mounds and a clearance cairn identified by Dr N Lindsay of Clyne Heritage Society.

Identified Sites within Adjacent Study Area (Sites 23 - 76)

[SITE 77] Loch Farlary

Type of Site: Burnt mound

NMRS Number: NC70SE 41

SMR Number: NC70SE 41

NC 7753 0496. Located in damp ground is a burnt mound, overgrown with heather, and measuring 12.5m NW-SE by 11.5m transversely and 1.2m high. There is a depression extending from the centre towards the SE arc. The content of small friable stones is exposed in the eroded west flank.

[SITE 78] Dunrobin Glen

Type of Site: farmstead; enclosures; lazy beds

NMRS Number: NC70SE 47

SMR Number: NC70SE 48

NC 7915 0485. Post-medieval settlement, dykes, lazy-beds. A field is depicted on the 1st edition of the OS 6-inch map (Sutherland 1879, sheet xcvi). Three unroofed buildings, two enclosures and two fields are shown on the current edition of the OS 1:10,000 map (1970).

[SITE 79] Dunrobin Glen

Type of Site: hut circles & clearance cairns

NMRS Number: NC70SE 40

SMR Number: NC70SE 40

NC 7950 0450. At the base of a steepening south-facing slope, is a close group of three similar hut circles (A-C), now overgrown with heather. They measure from 13.0m by 11.5m to 12.5m by 10.5m within tumbled walls spread from 2.5m to 3.5m, and up to 0.6m high. The entrance in each case is in the south or south-south-east on the line of the longer axis. There is no definite evidence of cultivation around the huts, but some 200m to the NE are several stone clearance heaps and cleared ground, which are probably contemporary with the huts.

[SITE 80] Dunrobin Glen

Type of Site: hut circle

NMRS Number: NC80SW 37

SMR Number: NC80SW 37

NC 81035 03643. Hut circle, 11m diameter with turf-covered stony bank up to 1m high and spread up to 4m wide at the entrance, to S. On SW side of the building there is a second entrance leading into the low foundations of a subrectangular annexe, 5 x 4m. Located in recently planted area of young birch and conifer.

[SITE 81] Dunrobin Glen

Type of Site: hut circle; cultivation

NMRS Number: NC80SW 38

SMR Number: NC80SW 38

NC 80909 03384. Hut circle, 6m internal diameter inside bank 2.5 - 3m wide and standing up to 0.7m high externally. Possible entrance in S. An area of old improved ground lies to E and the remains of an old stone dyke (or linear clearance cairn), 3 - 4m wide, can be traced between NC 80988 03376 and NC 81019 03371.

[SITE 82] Dunrobin Glen

Type of Site: shieling

NMRS Number: NC80SW 39

SMR Number: NC80SW 39

NC 8072 0339. Shieling, identified by Jill Harden (DES 1990, 28) during course of pre-afforestation survey.

[SITE 83] Dunrobin Glen

Type of Site: hut circle

NMRS Number: NC80SW 40

SMR Number: NC80SW 40

NC 8073 0342. Hut circle, identified by Jill Harden (DES 1990, 28) during course of pre-afforestation survey.

[SITE 84] Backies

Type of Site: building

NMRS Number: NC80SW 49

SMR Number: NC80SW 97

NC 8240 0210. Site of building depicted on OS First Edition map. Area now forested.

[SITE 85] Sutherland Technical School, Drummie [Category B Listed Building: HB7465]

Type of Site: building

NMRS Number: NH89NW 32

SMR Number: NH89NW 29

NH 8178 9958. Sutherland Technical School, built 1903.

[SITE 86] Drummie House [Category B Listed Building: HB7041]

Type of Site: building

NMRS Number: NH89NW 28

SMR Number: NH89NW 27

NH 81848 99618. Drummie House.

[SITE 87] Drummie Farm

Type of Site: farmstead

NMRS Number: NH89NW 44

SMR Number: NH89NW 44

NH 8200 9971. Drummie Farm.

Statutory Designated Sites Within 5km Radius Of The Wind Farm(Sites 88 - 101)

(see also Sites 24, 44 & 66 above)

[SITE 88] Balnacoll Hill [SAM1769]

Type of Site: cairn

NMRS Number: NC81SW 16

NC 81034 11570. Near the top of Balnacoll Hill is a cairn of from 48 to 50ft in diameter and about 4ft high. Slight excavations have been made in several places, but no cist is exposed (RCAHMS 1911).

[SITE 89] Balnacoll Lodge [Category B Listed Building: HB5911]

Type of Site: building

NMRS Number: NC81SW 59

NC 8060 1134. Balnacoll Lodge.

[SITE 90] Ascoille [SAM3288]

Type of Site: earthwork

NMRS Number: NC81SW 4

NC 83087 10582. On the S side of the roadway, one mile W of Allt Smeorail are the remains of a circular earthwork of which rather less than half has been destroyed by the intersection of the road. It consists of a mound 27 feet in diameter, surrounded by a ditch 6 feet wide. The upcast from the ditch has been heaped on the outer perimeter. In the centre are some large stones suggestive of the interior of a cairn, and large stones remain on the outer rampart and in the ditch.

[SITE 91] Gordonbush Lodge [Category B Listed Building: HB5841]

Type of Site: building

NMRS Number: NC80NW 26.00

NC 8460 0975. Gordonbush Lodge

[SITE 92] Killin / Allt nam Ban [SAM1794]

Type of Site: chambered cairn

NMRS Number: NC80NE 4

NC 85661 07839. Orkney-Cromarty with a Camster type chamber. The cairn lies in a thin birch wood gently sloping down to the E shore of Loch Brora and close to the left bank of the burn at 200ft OD. It is composed of small rounded boulders, has been greatly disturbed and a large part of it carted away for road metal but the N half of a tripartite chamber remains backed by cairn material which still reaches a height of 6ft. The cairn has been oval in plan and now appears to measure about 66ft by 47ft, but when seen in a less ruined state by RCAHMS (1911) the length was judged to be about 54ft. The chamber is orientated E - W along the main axis. The entrance has been from the W side which faces the loch. The S wall of the passage, built of large slabs set on end, still survives, 27ft long. The entrance into the chamber is between transversely set portal stones 2ft 6ins high and 2ft apart. Two lintels remain, the inner over the portal stones but resting on an intervening stone on each side which serves to increase the height of the entrance; the outer lintel rests on the passage walls, here 2ft 7ins apart. The height of the lintel is 2 - 3ft above the present floor level. The chamber has three compartments, with a total length of 15ft. The N wall of drystone, attains a maximum height of 4ft but the S wall is virtually destroyed. Due to the birch and dense bracken it is not possible to determine the exact dimensions of the cairn but it appears to have measured 24.0m E to W by 20.0m N to S. Only parts of the N and W sides remain, together with the tripartite chambers. The S wall of the entrance passage is not now apparent. The maximum height of the cairn is 1.7m, measured on the N side, this side being a mass of rubble. There are several field clearance mounds in the vicinity.

[SITE 93] Carol [SAM1816]

Type of Site: broch

NMRS Number: NC80NW 1

NC 84703 06449. Broch, measuring between 30ft 6ins and 31ft internal diameter and surviving to an average height of 10ft, has been excavated. The entrance in the ESE with two door checks and a guard chamber is still roofed, at this point the wall is 14ft thick. In the SW arc is an entrance to a ground floor chamber and to steps rising to first floor level. A first floor gallery is discernible in the NE arc. The broch is surrounded by an outer wall 7 to 8 ft thick, with a ditch or trench outside it about 20ft wide. The entrance through this outer defence is in line with that of the broch, and a walled passage 5ft wide connects the two. Finds from the excavation, now in Dunrobin Museum, include a steatite cup with side handle, a rude shale ring and a concave oval plate of ox horn with four rivet holes at one end and two iron rivets in situ (RCAHMS 1911).

[SITE 94] Duchally Rock [SAM1851]

Type of Site: fort

NMRS Number: NC80SE 3

NC 85084 04851. The fort, measuring about 300.0m NW-SE by about 110.0m maximum transversely, is defended by steep natural cliffs along the NE and SW sides, the latter reinforced towards the NW end by a denuded wall, most of which has tumbled over the cliff edges. The relatively easy approaches from the N and SE are defended by massive bare tone walls largely obscured by tumble, but measuring 4.0m average width and surviving up to 1.5m in height. There are two opposing entrances at the NW and SE extremities. The former is 1.8m wide, faced on the W side with two upright slabs. The SE entrance is 1.3m wide with indications of a mural chamber on the W side choked with debris. The interior of the fort is overgrown with peat and no domestic structures can be seen.

[SITE 95] St Callan's Church [Category B Listed Building: HB17441]

Type of Site: building

NMRS Number: NC70SW 20

NC 7385 0352. The Church of Rogart was given by Bishop Gilbert (bishop in the second quarter of the 13th century) to the Church of Dornoch. The church, dedicated apparently to a saint known locally as St Callan, was repaired between 1602 and 1619 by Sir Robert Gordon. The church appears to have stood at all times in the village of Rogart where the present building was erected in 1777 (Orig Paroch Scot 1855). The present church of St Callan was gutted about 1770 and rebuilt in 1777. It was restored in 1956, and is still in use.

[SITE 96] Blairmore [SAM1838]

Type of Site: hut circles & field system

NMRS Number: NC70SW 6

NC 74656 04225. On the E flank of a hill is a settlement of three hut circles (A-C) accompanied by a field system. 'A', heather-covered, measures 11.0m in diameter inside a collapsed wall 0.6m high with a general spread of 3.0m expanding to 4.0m in the sides of a clubbed entrance in the SE. 'B', set into the slope and completely heather-blanketed, measures 5.0m in diameter within a wall spread to 2.5m on average and up to 0.5m high; the entrance is in the SE. 'C', levelled back into the slope and turf-covered, measures 20.0m N-S overall; the E wall arc is mutilated and only a conjectural, transverse length of 17.0m is indicated. The entrance is in the SE. Large blocks are evident in the hut build, in particular two contiguous slabs in the N, one up to 1.0m high, that may be inner facing-stones in situ. The collapsed walling where not disturbed is 4.0m broad and up to 1.0m high. In comparison with huts A and B, hut C, notwithstanding the poor state of preservation, presents a markedly more robust construction. The field system is evident in numerous field clearance heaps, spaced on average from 8.0m to 20.0m apart. No measurable plots are discernible; interspersed with occasional signs of lynchets and banks.

[SITE 97] Achnagarron [SAM1762]

Type of Site: standing stones

NMRS Number: NC70SW 18

NC 73280 04975. Two standing stones, situated about 30m apart, and a spread of small cairns are situated on a heather-covered rise to the N of Achnagarron. The ENE stone (NC 7329 0498, ROG95 921) stands 1.6m high, is 0.8m square at the base, with its faces presented to the cardinal points of the compass. It leans to the S and there are packing stones visible at the base of the stone. The WSW stone (NC 7327 0497, ROG95 922) is 1.3m in height, subrectangular in section, and measures 0.9m from N to S by 0.6m transversely. The small cairns extend for a distance of up to 140m from E to W by 60m transversely along the spine of the hill on which the standing stones are set (ROG95 921-2).

[SITE 98] Achnagarron [SAM1827]

Type of Site: hut circles

NMRS Number: NC70NW 9

NC 73353 05141. Four hut-circles on the rounded, heather-covered ridge between Cnoc Cairaidh and Cnoc Meadhonach, to the W of Glenelg. Three (ROG95 271-3) have been noted previously. They measure between 9.7m by 8.8m (ROG95 271) and 13.1m by 10.9m (ROG95 273) within stony banks spread to 2.4m in thickness and up to 1m in height. The entrances lie on the S, SSE and E respectively, and the terminals of the banks of two of the hut-circles (ROG95 271-2) have been expanded. A secondary hut-circle, measuring 5.9m in diameter within a faced bank, 1.2m in thickness, has been inserted into the interior of one of the hut-circles (ROG95 272), sharing a common entrance with the earlier building. The fourth hut-circle (ROG95 274) is a new discovery and comprises no more than a low circular platform, measuring about 10m in diameter and up to 0.4m in height. There is a scatter of small cairns, measuring up to 5m in diameter and 0.5m in height, along the crest and well-drained N and W flanks of the ridge. To the S and W the distribution of cairns peters out in increasingly boggy ground. Fragments of banks were visible amongst the cairns, largely obscured by the rank heather covering most of the ridge. In a patch of intensively burnt ground on the W flank of the ridge (NC c.7025 0520), what may be cord rig, measuring about 1.5m between furrows, is visible.

[SITE 99] Dremergid [SAM1839]

Type of Site: hut circles & field system

NMRS Number: NC70NW

NC 73789 06581. On a ridge are three hut circles (A-C) (hut C newly located at NC 7375 0661) and an accompanying field system. Hut A, levelled back into a slight rise and heather and turf-covered, measures 13.0m in diameter within a wall up to 1.0m high and spread from 3.5m to 4.0m expanding to 5.0m in the sides of a splayed entrance in the SE. Inner-facing boulders show in the wall. Springing from the inside of the hut wall in the NE half, an arc of subsidiary walling, 2.0m broad by 0.4m high, forms a compartment 9.0m by 3.5m internally. The alleged enclosures against the W side is vague but the remainder of the interior is broken by loose and protruding stones suggesting footings of later bothy-type structures. Hut B, levelled into the same slight rise at a marginally lower level, measures 11.0m in diameter within a heather-covered wall spread from 2.0m to 2.5m and up to 0.5m high; the ill-defined entrance is in the SE. The heather-covered bank or collapsed wall surrounding hut A is as planned by the RCAHMS; it appears to be contemporary with the hut, but its purpose is uncertain. The horse-shoe shaped enclosure measures 14.5m across the open NE side by 13.0m transversely within a heather-covered bank, 3.0m broad by 0.4m maximum height, in which several boulders protrude. It is not a hut circle but a field plot. The similar enclosure at NC 7381 0660 measures 14.5m across the open W side by 11.0m transversely within a heather-covered, stony bank up to 4.5m broad by 0.6m high and is also a field plot. Hut C measures 7.0m in diameter within a heather-covered wall, obscure in the NW sector but elsewhere 2.0m to 2.5m broad and up to 0.4m high. The entrance is not evident. The field system is denoted by numerous stone clearance heaps, spaced on average from 5.0m to 20.0m apart, with occasional traces of lynchets and banks. With the exception of the two field plots mentioned, no other measurable plots are discernible.

[SITE 100] Cnoc an Lath-bhaile [SAM1780]

Type of Site: stone circle

NMRS Number: NC71SW 1

NC 7280 1016. Stone circle, a little more than 1/2 mile ENE of the shepherd's house at Braegrudie, has had a double ring of stones - an outer, 28ft in diameter and an inner, 22ft in diameter. Of the outer circle, two stones remain upright in position, one merely protrudes above the ground and two lie prostrate. Of the inner circle there appear to be five stones in situ and one prostrate. They appear to have been set with their broad faces in line of the circumference. Slightly N of the centre of the circle are signs of a low cairn which seems to have been excavated. There are numerous small mounds for nearly 1/4 mile north-wards along the haunch of the hill (RCAHMS 1911). Situated on a natural terrace within a field system (NC71SW 2).

[SITE 101] Caisteal na Colle [SAM1843]

Type of Site: broch

NMRS Number: NC71SE 13

NC 7957 1337. Situated in a strong position on a rocky eminence on the left bank of the Black Water, and further defended by outworks. It measures 21' in diameter within a wall 13' thick with an entrance, 2' 8" to 3' 6" wide, in the ESE. Mural chambers were identifiable in the NE and south in 1909, but in neither case was an entrance visible. A guard-chamber was also visible to the north of the entrance passage leading off between two sets of door-checks. The broch wall stood to a maximum height of 10', on the east, but only the foundation remained in the SW. An outwork wall defends the broch on the north and east of the summit.

List of Documentary Sources Consulted

Archaeological records

The relevant records, consulted in the National Monuments Record of Scotland and in the Highland Council Sites and Monuments Record, are listed in full in Appendix 1.

Aerial photographs (Royal Commission on the Ancient & Historical Monuments of Scotland)

106G/Scot/UK166 3183-3189, 4183-4192, 3221-3231 (23 August 1946)

541/A/464 3023-3027, 4003-4007, 4010, 4014, 4021-4026
(17 April 2003)

CPE/Scot/UK 180 4446-4450 (8 October 1946)

618 89 045-050, 069-074 (20 May 1989)

Maps (National Library of Scotland)

1636-52 Gordon, R *Sutherland, Strath Okel and Strath Charron*

1654 Blaeu, J *Southerlandia*

1745 Moll, H *The Shires of Caithness and Sutherland*

1747-55 Roy, W *Military Survey of Scotland* Sheet 36/1 & 2

1815 Anon, *Sketch of the county of Sutherland showing the Boundaries and Divisions of the Earldom of Sutherland*

1820 Forbes, W *Sutherlandshire*

1823 Thomson, J *Sutherlandshire*

1832 Burnett, G & Scott, W *Sutherlandshire*

1879 Ordnance Survey *Sutherlandshire 1:10,560 scale map* Sheet LXXXVIII (surveyed 1872)

1879 Ordnance Survey *Sutherlandshire 1:10,560 scale map* Sheet XCVI (surveyed 1872)

1879 Ordnance Survey *Sutherlandshire 1:10,560 scale map* Sheet XCVII (surveyed 1872)

1907 Ordnance Survey *Sutherlandshire 1:10,560 scale map* Sheet LXXXVIII (surveyed 1872, revised 1904)

1907 Ordnance Survey *Sutherlandshire 1:10,560 scale map* Sheet XCVI (surveyed 1872, revised 1904)

1907 Ordnance Survey *Sutherlandshire 1:10,560 scale map* Sheet XCVII (surveyed 1872, revised 1904)

Published accounts

Adam, R J 1972 *Sutherland Estate Management, 1802 - 1816*. Scottish History Society.

Colcutt, S. (1999). 'The setting of cultural heritage features', *Journal of Planning and Environment Law* 1999, 498-513.

Dagg, C 2002 *Archaeological evaluation of the area of a proposed Woodland Grant Scheme at Kilbruar, Strath Brora, Clyne parish, Sutherland*.

Keith, W 1794 'Parish of Golspie' (*Old Statistical Account* IX, 26-33)

Lindsay, N 2002 *Report on a brief walk-over archaeological survey: Scottarie, Clyne parish, Sutherland: 18 February 2001* (unpublished archive report)

Lindsay, N 2003 *Catalogue of identified sites, Scottarie: 21 August 2002; 19 March 2003; 11 May 2003*. (unpublished archive report)

McLeod, A 1845 'Parish of Rogart' *New Statistical Account* XV, 46-57

Mackay, G 1845 'Parish of Clyne' *New Statistical Account* XV, 149-164

Mackenzie, J 1794 'Parish of Rogart' (*Old Statistical Account* III, 563-567)

Macpherson, A 1845 'Parish of Golspie' *New Statistical Account* XV, 24-45

Ross, W 1794 'Parish of Clyne' (*Old Statistical Account* X, 298-305)

RCAHMS 1911 *Royal Commission on the Ancient and Historical Monuments and Constructions of Scotland Second Report and Inventory of Monuments and Constructions in the County of Sutherland*. Edinburgh.