



## Report in support of the Feasibility Masterplan for Stronafian Community Forest



### Cameron Planning

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## Stronafian Community Forest Masterplan

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## 1.0 Introduction

Colintraive and Glendaruel Development Trust (CGDT) appointed Cameron Planning and TGP Landscape Architects in August 2013 to prepare a feasibility master plan for Stronafian Forest, a Community owned forest on the Cowal peninsula between Colintraive and Clachan of Glendaruel.

CGDT purchased Stronafian Forest from the Forestry Commission under the National Forest Land Scheme, leasing the commercial forestry rights for a period of 99 years on behalf of the Colintraive and Glendaruel community.

The master plan for the forest prescribes an approach to accessing and managing the three community owned areas of woodland during the next 20 years.

The consultant team reported to Mark Chambers, Community Forest Development Officer during the study.

## 2.0 Methodology and Approach

### Background Research and desk top survey

The study commenced with a review of previous studies and reports commissioned by CGDT, notably the Stronafian Forest Options Appraisal by Scottish Native Woods, together with the Stronafian Forest Business Plan prepared by Murdo Gauld. The first report includes recommendations for future activities with the forest. The second report was prepared in support of the community's acquisition of the Stronafian Forest.

We undertook a search for sites of archaeological interest using RCHAMS canmore <http://canmoremapping.rcahms.gov.uk> search facility, recording archaeological sites within the study area, together with nearby sites which may be of interest.

The outcome of the review of the First and Second Edition OS Map series to identify historic features and place names within the study area is indicated below.

### Comparison of First and Second Edition OS Map Series

First Edition OS Argyllshire Sht. CLXXII surveyed 1866 and Second Edition OS 6 inch series revised 1898.

Area	First Edition 1866	Second Edition 1898
Tamhnich Burn	Deciduous trees indicated	indicated
	Footbridge	indicated
	2 x waterfalls	indicated
Lower Stronafian	Access track to Sheepfold	lost
	Cornmill on Auchenbreck Burn inc. holding pond	lost
	Castle remains wall and earthworks	indicated
Upper Stronafian	School	Indicated plus dwelling

	Deciduous trees to burn	indicated
	Scattered deciduous trees to Coille Mhor	indicated
		Milestone (Dunoon 15 miles) on north side after bridge crossing burn
Lephinkill Clachan of Glendaruel	Crnadail (Site of Battle between the Norwegians & Scots 11 <sup>th</sup> Century)	Indicated
	St. Modan's Chapel (site of) appears to be location of Chambered Cairn	Indicated
	St. Modan's Well (site of) appears to be standing stone circle	Indicated
Auchateggan Burn	Deciduous trees to burn	Indicated

**Existing Land Designations**

Existing land designations are recorded on Plan 1742 Ext L02. The plan records physical features within the landscape including: roads; tracks; watercourses; topography; the Cowal Way Long Distance Route and Argyll & Bute Core Path routes in addition to the land designations.

Land designations within the area include the national designation of the Kyles of Bute National Scenic Area (NSA). NSAs are designated by Scottish Natural Heritage SNH, and have statutory basis under current legislation; they are also safeguarded through the local planning system. They are defined as areas of 'Outstanding scenic value in a National context'. There are 40 NSA's in Scotland, which represent Scotland's finest landscapes.

The Special Qualities of the Kyles of Bute NSA are stated as:

- The drama of the Kyles
- Verdant woodland on the enclosing hills
- Rocky outcrops punctuating the wooded slopes
- Small fields between the water and the woods
- The juxtaposition of human settlement and a wider undeveloped landscape of sea and hills
- A peaceful landscape of constant movement
- The ever changing vistas
- The gradual transition from land to sea in Loch Ruel.

The Kyles of Bute NSA includes the southern portion of the Stronafian Forest study area between Coille Mhor and Barmore Fort. The special qualities of the Kyles of Bute NSA are stated as 'The gradual transition from land to sea in Loch Ruel'.

The description states 'The head of Loch Ruel shows one of the best transitions in the west of Scotland from Woodland, through extensive shingle, sand and mud to open water'.

The head of Loch Ruel has been designated as a Site of Special Scientific Interest (SSSI), another national designation. The Ruel estuary SSSI comprises the head of the tidal estuary at Loch Riddon. The SSSI description states that the 'site represents one of the best examples in the west of Scotland of the transition from estuarine to terrestrial habitats'.

In addition to the above national designations there are also local planning

designations within the study area. These have been designated by Argyll and Bute Council as Planning Authority and include a Potential Development Area (PDA) and Rural Opportunity Areas defined through the emerging Local Development Plan (LDP). The LDP is at the time of writing in the final stages of adoption; the LDP has been subject to statutory public consultation and the Proposed Plan has been submitted to the Scottish Ministers for their consideration.

In relation to land designations, Clachan of Glendaruel is defined as a small settlement with the settlement zone area delineated on the LDP Proposals Map. It is generally anticipated that development proposals will be guided to existing settlements. An additional smaller settlement zone is defined at Stronafian, to the south of the study area.

Out with the settlement zones the area is defined different categories of countryside where the LDP defines the type and scale of development proposals that may be considered acceptable. These include, in order of hierarchy, Rural Opportunity Areas, Countryside Zones and Very Sensitive Countryside. The area immediately out with the Clachan of Glendaruel settlement is defined as Countryside although areas of Rural Opportunity are also defined as locations where some development may be supported. The wider countryside is defined as Very Sensitive Countryside.

Through the consultation process a Potential Development Area has been delineated in an area within Stronafian Forest, situated on the eastern valley slope above the Clachan of Glendaruel. In addition the LDP proposes an extension to the settlement zone to the east of Kyles View, Stronafian. In this latter case the extension to the settlement would allow in additional 3 – 4 dwellings to be built. As these would be within the settlement zone there would be no restriction on occupancy and no exceptional justification required; the housing would be market housing.

The LDP includes Policy LDP DM1 which defines the different development management zones in terms of a spatial development strategy. The Policy in effect encourages different levels of development in different zones, for example on the following basis:

- a) within the villages and minor settlements up to a small scale on appropriate sites;
- b) within the Rural Opportunity Areas up to small scale on appropriate sites including the open countryside as well as small scale infill, rounding off, redevelopment and change of use of existing buildings. In exceptional cases, up to and including large scale may be supported if this accords with an Area Capacity Evaluation (ACE);
- c) within the Countryside Zone up to small scale on appropriate infill, rounding off, redevelopment and change of use of existing buildings. In exceptional cases development in the open countryside up to and including large scale may be supported on appropriate sites if this accords with an ACE. There is a presumption against extending an existing settlement into the countryside zone;
- d) within Very Sensitive Countryside encouragement will only be given to specific categories of development on appropriate site, comprising renewable energy related development, telecommunications related

development and development directly supporting agriculture, nature conservation or other established activity.

The PDA for Glendaruel is defined within the LDP as PDA 1003 and supports 'forest crofts and or enterprise centre. The PDA is defined on the LDP Proposals Map to the east of the A886 and plotted on plan 1742 Ext L02.

PDA's are defined as broad areas that are mainly but not exclusively located on the settlement edge and which constitute land within which opportunities may emerge during the plan period for infill, rounding off, redevelopment or new development. Such opportunities are not currently fully resolved and issues may require to be overcome in terms of the mini-development briefs that accompany the defined PDA's .

Any development proposals will be subject to assessment through LDP policies and appropriate Supplementary Planning Guidance (SPG). The following is an indicative list of SPGs that any development proposal should take into account:

- SPG LDP ENV 1 - Development Impact on Habitats, Species and Our Biodiversity (ie. biological diversity);
- SG LDP ENV 6 – Development Impact on Trees/Woodland;
- SG LDP ENV 20 – Development Impact on Sites of Archaeological Importance;
- SG LDP REN 1 – Wind Farm and Wind Turbine Development Over 50 Meters High;
- SG LDP REN 2 – Wind Turbine Development Up To 50 Metres High;
- SG LDP REN 3 – Other (Non-Wind) Forms of Renewables Energy Related Development;
- SG LDP COM 2 – Community Plans and New/Extended Crofting Townships;
- SG LDP TRAN 1 – Access to the Outdoors.

With specific regard to SG LDP COM2 and woodland crofts this SPG states that Proposals for community plans and new or extended crofting townships (including forest crofts) are generally supported by the council where they can successfully demonstrate that:

- (A) they can bring significant benefits to the local community concerned and have widespread community support;
- (B) they are compatible with landscape character, including landform and the surrounding settlement pattern;
- (C) they offer a high standard of design and amenity for local residents to enjoy;
- (D) there are no significant adverse impacts on natural, built and cultural features particularly with regard to designated sites;
- (E) adequate access and servicing arrangements can be achieved in accordance with establish policy and supplementary guidance;
- (F) good land management practices will be delivered (the Crofter's Commission will confirm the bona fides for crofting proposals);

(G) the proposals comply with all other relevant policy and SG of the Local Development Plan. In particular an ACE will be required when the proposed Community Plan or Crofting Township lies within the Countryside development management zone.

(H) in support of planning applications for new crofting townships, the following information will also be required:

(I) a business plan (albeit, there is no expectation of a full time income from a croft);

(J) for woodland crofts, a management plan must be submitted which meets the UK Forestry Standard and where deforestation of an area is required, or the proposal involves the large scale restructuring of agricultural land or use of uncultivated /semi-natural areas for intensive purposes, then an Environmental Impact Assessment also may be required;

(K) a masterplan for the entire development area, focussing on issues such as the preferred density, siting, design and layout of buildings (with reference to the Council's suite of Sustainable Design Guides) and associated infrastructure and services.

In addition the Council considers that Masterplans associated with PDAs should contain the following information:

(i) an indication of the developer's intended vision for the site and an explanation as to how the form of the development will achieve that vision;

(ii) an indication as to how the proposed development will be implemented;

(iii) an indication of the proposed phasing of the development that provides reassurances that none of the site will be sterilised for future development;

(iv) an indication of the location and type of uses to be provided;

(v) an indication of the location and amount of public open space to be provided within the development;

(vi) an indication of how the proposed development will be integrated with existing communities, the natural environment and the topography of the site;

(vii) an indication of pedestrian and vehicular access arrangements to the site, proposed internal road, footpath and cycle infrastructure and linkages with external access networks;

(viii) an indication of the landscaping regime proposed for the site and the measures to be taken to protect and enhance any important existing landscape features contained in the site.

We recommend that the delivery of the proposed Woodland Crofts within the PDA is subject to a separate mini-masterplan to fall within the wider scope of this

Stronafian Forest Masterplan; this will ensure that the PDA is properly masterplanned in accordance with emerging LDP policy and Supplementary Planning Guidance. It may separately be worthwhile to consider the opportunity of developing woodland crofts outwith the defined PDA in order to determine the level of LDP support.

#### **Existing Access**

Our approach to accessing the Stronafian community owned forest focussed on the two principle entrances into the study area. These are locally known as 'The Quarry' track on the A886 approx. 700m north of the Clachan of Glendaruel. The second known as the 'Telephone Exchange' is on the B836 Dunoon road.

The Quarry track provides access into the northern portion of the Stronafian forest and importantly facilitates access to the Chambered Cairn, a site of archaeological importance.

The first 200m of the Quarry track is outwith the study area and accessed through metal field gates across a field currently grazed by Highland cattle.

The disused quarry sits outside the study area, however it would make a useful car park with capacity for upto 30no. vehicles.

The Telephone Exchange track provides access into the southern portion of the forest. There is space for two cars to park on the road verge adjacent to the exchange building. As with the Quarry access, the first 250m are on land outwith the community's ownership. The track is secured by a metal field gate, again due to cattle, currently sheep, grazing the adjacent fields.

In order to prevent unwanted vehicular access, the gate has been secured by the CGDT with a padlock.

#### **Site Surveys**

We undertook two site surveys on foot over two days by team members, Matthew Benians, Steven Cameron and Serena Welton.

The first day included the Quarry track, access to the Chambered Cairn and Clachan Burn at Glendaruel, together with the village itself to identify potential routes between the former Hotel and the study area, which at this point abuts the main A886. We also accessed the study area from the Telephone Exchange, walking the forest extraction tracks and accessing the crags to Sron na Ceardaich.

The second survey day involved re-walking the route from the Quarry track to the Chambered Cairn and recording the existing route together with physical features such as watercourses and ditches. The GPS readings are included under Appendix B.

We entered the southern portion of the forest from the Telephone Exchange and walking the length of the forest extraction track as far as Cruch nam Mult.

In addition to the surveys carried out on foot, we drove the Otter Ferry Road in order to appreciate long views into the forest from the adjacent ridgeline. We drove the old valley road between Stronafian and Auchnagarron and between Stronafian and Auchenbreck to explore the Castle remains and Mill on Auchenbreck Burn.



We stopped at the entrance into the forest track on the B836 to appreciate long northerly views into the study area, notably the slopes of Coille Mhor.

**Community Consultation**

Two community workshops took place to inform the development of the forest Masterplan. Both events were held in Colintraive Village Hall.

The first consultation took place on 13<sup>th</sup> September 2013. The workshop benefitted from a high attendance with approximately 60 members of the community, with all ages represented.

The first workshop sought to gain a consensus on the type of developments which should be accommodated within the forest. We identified four outcomes from the workshop as follows:

1. Understand how people currently access the woodland and why?
2. Review prioritised developments;
3. Identify further development opportunities;
4. Gain a consensus of opinion on prioritised developments.

The workshop built upon the outcomes of an earlier questionnaire undertaken by Mark Chambers, Community Forest Development Officer which identified potential prioritised developments.

The outcomes of the questionnaire are indicated in the below table.

<b>Respondents 3 choices for their prioritised developments</b>	
Several picnic sites connected by Forest walks	35
Hides for wildlife watching	21
Energy production (biomass/hydro/wind/solar)	19
Saw mill, providing wood and bark chippings etc.	16
A Forest style children’s’ playground	15
Woodland crofts	15
Conservation of chambered Cairn	14
Local food production	14
A nursery for native plants and trees	12
Sustainable housing	12
Tennis courts	7
A stocked fishing lake	6

Bridleway for pony trekking	6
Stalking and clay pigeon shooting	6
Astronomy centre	4
Quad biking	4
Archery	3
Forest burials	3

This workshop focused on the known activities which will influence the woodland in the next 20 years including planned felling of commercial timber.

We prepared a presentation to assist the community in visualising prioritised developments which were grouped accordingly:

- Access & recreation;
- Way finding;
- Interpretation – flora, fauna and built heritage;
- Forest furniture;
- Art & sculpture;
- Structures - observation towers and wildlife hides;
- Natural play;
- Renewable energy;
- Other possibilities.

Attendees were split into three groups facilitated by Mark Chambers, Steven Cameron and Matthew Benians.

The collated outcomes from the workshop grouped into the above headings were as follows.

<b>List of prioritised developments by groups A,B&amp;C identified at community workshop dated 13.09.2013</b>
<b>ACCESS AND RECREATION:</b> Way marked walks and graded routes (for) Mountain biking and Dog walking Interpretation boards for flora and fauna Trim trail (activity fitness trail) distributed through woodland Abseiling/ free climbing on crags
<b>INFRASTRUCTURE:</b> Car parking and facilities Bothy or simple shelters Bunk House
<b>REVENUE/ COMMERCIAL OPPORTUNITIES:</b> Residential housing plots at Stronafian Go Ape type aerial activity course Wind turbine(s) Micro distillery
<b>OTHER POSSIBILITIES:</b> Pet burial and memorial garden Orchard Maximise links with Primary School Sensory development opportunities

The second workshop took place on 28<sup>th</sup> November 2013. The workshop had a very low attendance compared with the first, with only 12 members of the community, mostly residents from Stronafian attending. Of these 12 attendees, only four had attended the first workshop.

The agenda for the second workshop was as follows:

1. Review progress since first workshop;
2. Review outcomes from first workshop;
3. Review land designations within or adjacent to the study area;
4. Review draft feasibility Masterplan;
5. Facilitators to obtain feedback on draft feasibility Masterplan.

Comments received during the review of the draft masterplan were as follows:

- Potential conflict between mountain bikes and walkers using the same paths, need to designate separate routes?
- Discussion on pony trekking and equestrian tourism; albeit some attendees were against the idea at the first workshop this time there was more agreement on the benefits and opportunities from these activities;
- Forest insurance liability – Who pays? How much? What is covered?
- General conflicts of interest between different user groups, e.g. stalkers, shooting, walkers, birders etc.
- Burial site for humans and pets (not necessarily co-located!);
- Opportunity for memorial site designation or ash scattering rather than burials, impact on water courses?
- Historical 8 mile line of burial sites through Cowal?
- Potential use of old Colintraive road for cycling and footpath – would be good to identify its presence and availability as a quieter route away from

traffic but also linking in with Stronafian Forest and Cowal Way etc.

- Disabled access should not be ignored – (Mid Argyll Group);
- Stramash – Children’s education, forest skills etc.
- Dark Skies designation;
- Utilise forest extraction routes to access forest – what are the opportunities to influence the phasing programme, provision of routes, availability to user groups etc.

Feedback obtained from both community workshops informed the finalised Masterplan.

### 3.0 Masterplan

The findings from the site surveys together with both community consultation workshops informed the draft masterplan for Stronafian forest. Refer to plan 1742 Ext L01. We are also aware of other working groups established through CGDT and which have task specific objectives, for example delivering the woodland croft aspirations of CGDT, developing an archaeology interpretation strategy, delivering a community wind turbine development, and the Long Term Forest Plan.

As the foregoing matters are promoted within the extent of Stronafian Forest they need to be taken into account in any Forest Masterplan. In particular, consideration should be given to the operational requirements relating to the forest and the phasing programme for an extraction/replanting cycle, as the provision of forest extraction routes and planting regimes will impact on how the forest can be used at specific times. There will also be benefits in utilising new extraction routes that open up access to for example picnic areas, potential community wind turbine sites etc. It may also be possible to explore the use of heavy equipment when this is on site for extraction route provision, for the provision of new access routes. This requires a strengthening of the relationship between CGDT and those parties that own the timber product and who are responsible for its harvesting.

#### Access Network

Our approach to the development of an access network is to create a network of paths which served the two areas of forest whilst linking the existing Telephone and Quarry entrances.

The path network utilises the existing and proposed forest extraction roads, and complements these with a network of paths which: access summits and viewpoints; extend the path network; and access the Chambered Cairn. Importantly the paths connect the three Community Owned Woodlands.

When defining the access network we have utilised existing metaled and unmetaled routes to promote circuits. For example one of the circuits utilises the old road between Stronafian and Auchnagarron, links the forest extraction road at Creag na Bonald with a new length of aspirational track (purple dashed line) to connect into the forest extraction roads, and link the Telephone Exchange entrance. In this instance we have maximised the existing infrastructure to create an access network aimed at walkers, cyclists and equestrian users.

The particulars of this route, Route.1 which is approx. 7.5Km long, are expressed in a table included under Appendix A. The particulars include the following: ref code;

place names linked by the route; distance; ex. Infrastructure; new infrastructure; change in height; intended user(s).

The second circuit, Route.2 approx. 5.5Km long starts at the Clachan of Glendaruel. Here the intended route connects the settlement of Glendaruel, which is connected with the Cowal Way Long Distance Path, the old road towards Auchtegan, via. a short length of new path to connect with the Quarry access. This circuit requires new aspirational paths and tracks to connect into the proposed Forestry extraction roads. This circuit promotes access to the highest peak within the Stronafian Woodland area at a height of 308m before returning to Glendaruel on a new aspirational path descending along the line of the Clachan Burn.

The third circuit, Route.3 is a short loop approx. 2.5Km long from Clachan of Glendaruel to the Chambered Cairn, and returns to the Clachan of Glendaruel via. the existing desire path which follows the Clachan Burn. There is a spur path off the Clachan Burn path which maximises access to the Community Owned Woodland and emerges opposite the turning into Glendaruel off the A886.

This route was plotted using a hand held GPS device. The co-ordinates have been included under Appendix B.

The fourth circuit, Route.4 approx. 6Km long, utilises the existing Forest extraction roads within Stronafian forest before climbing to An t-Suil at a height of 297m before returning south to traverse along the ridge line on an aspirational path and descending between the crags at Sron na Ceardaich to the Telephone Exchange.

Route.5 approx. 1Km long, connects the existing Stronafian forest extraction road with the community owned woodland at Coille Mhor with the Conduit path at the abandoned settlement.

This is entirely a new length of path which would run along the 100 meter contour line and therefore, given the topography elsewhere within the study area, a relatively easy walk route. Importantly this path would provide access to Woodland Crofts within the community owned area.

Route.6 approx. 750m in length represents an aspirational path spur off a proposed Forestry extraction road to access the Cruach nam Mult summit. It is recognised that this area is Community owned woodland which is also being considered as the location of turbines as part of the Community wind turbines feasibility study.

We have prepared particulars for the main routes which make up the access network.

Refer to the tables enclosed in Appendix A together with the Masterplan.

### **Way marking and Orientation**

In order to assist the public in accessing Stronafian Forest, build visitor confidence and safety, there is the requirement to install a variety of orientation, way marking and distance markers throughout the access network. The Masterplan reflects the introduction of orientation panels at two locations. The principle entrance into the site at Telephone Exchange, and within the village of Clachan of Glendaruel.

Way marking in the form of directional finger posts are proposed at the intersections of forest extraction roads and aspirational tracks and paths.

Consideration should be given to installing colour coded distance posts at 1Km intervals along each path circuit.

Refer to Plate 1 for examples of way marking and orientation.

### **Interpretation**

In order to assist visitors understanding of the areas rich natural and archaeological heritage interpretation panels should be installed along the access network.

Refer to Plate 2 for examples of interpretation.

### **Shelters and Viewing hides**

The Masterplan reflects the introduction of three viewing shelters along the access network. These are structures which are small in size and have a multiplicity of uses.

One of the structures would be tailored towards star gazing 'dark skies'. The others tailored towards observing raptors or an invitation to shelter and admire the long southerly view down Loch Ruel.

Refer to Plate 3 for examples of shelters and viewing hides.

### **Picnic Areas**

The masterplan indicates two potential sites for picnic areas. These have been sited nearby the Chambered burial Cairn on the short circuit from Glendaruel, and next to the panoramic view point above Stronafian.

### **Parking**

The promotion of Stronafian Forest as a 'destination' will result in increased visitors, the majority of whom will arrive by car. However, the ideal locations for car parks are compromised due to the constraints of the Stronafian Woodland boundary which only abuts existing infrastructure in a single location, namely near Glendaruel.

The masterplan identifies three locations where new car parks could be introduced. However, only one of these is located within the ownership area, the car park near Clachan of Glendaruel.

We understand that the majority of visitors to the area, arrive by car having crossed the Kyles of Bute by ferry. Of these the majority are travelling south to north on the A886. Therefore the Clachan of Glendaruel represents a principle visitor destination after the ferry crossing. Existing parking provision is at the Kilmodan Church, noted for the collection of pre-reformation West of Scotland grave stones under the care of Historic Scotland. The village is Brown signed off the A886.

However, in order to facilitate visitor to the Stronafian Woodland, without crossing the A886, a small car park could be located at the foot of the Clachan Burn within the community owned woodland. This car park could accommodate upto 3-5 cars.

The two other car parks are located at the main access points into the forest, namely The Quarry and telephone Exchange entrances.

During the community consultation workshops it was agreed that the main benefit in location car parks at entrances is this deters unwanted vehicular access and conflict between users. The car park at the Quarry entrance should be located off the existing forest extraction track. However, the opportunity also exists to utilise the quarry itself for car parking. This location would both conceal vehicles and have the capacity to accommodate upto 30 vehicles.

The ideal location for a car park at the Telephone Exchange entrance would be to tuck the car park in on the right hand side immediately behind the Tel exchange building. With the addition of planting to the boundary, the car park would be concealed and reasonably inconspicuous in the landscape. The capacity of this car park should be up to 10 cars.

Refer to Plate 4 for examples of car parks and picnic areas in a rural setting.

#### **Complementary Land Use**

There were two complementary land uses for the community owned land areas which came out of the community workshops. These were Woodland Crofts and Community or Woodland Burial grounds.

#### **Woodland Crofts**

The Forestry Commission Scotland describes woodland crofts as '*a registered croft with sufficient tree cover overall to be considered a woodland under UK forestry policy*'.

*Further 'Lifestyles and livelihoods based on woodlands are traditional in many parts of the world, but are currently rare in Scotland. Woodland crofts are an opportunity for individuals and communities to develop them, and the approach to management taken by woodland crofters is expected to deliver increased social, economic and environmental benefits'.*

Woodland crofts are always likely to involve an element of woodland management, however, the exact nature and extent of this is not prescribed, and there is considerable flexibility for individual woodland croft tenants to manage their crofts to meet their own needs and aspirations. Therefore it is up to the CGDT as to how prescriptive the conditions are.

The existing tree coverage and maturity within the three areas identified on the masterplan for woodland crofts is complementary to meet different users' requirements.

The three woodland croft areas identified, namely the PDA, the Clachan Burn and Coille Mhor consist of: newly planted commercial Sitka spruce forest trees in 2009-10; a combination of mature forestry plantation comprising Douglas Fir, Japanese Larch approx. 30 years old with mixed native broadleaf trees to the watercourse; and Collie Mhor which comprises native Birch.

With regard to the Local Development Plan it has been noted above that there is

only one area proposed through the new LDP process that explicitly supports woodland croft development and that it within the PDA. To deliver a woodland croft development in the short term the focus should be on the PDA in order to ensure Development Plan policy compliance. Other areas can be promoted through future LDP and there will be an opportunity to consider pursuing woodland crofts outwith the PDA whilst remaining in accordance with the LDP. Further discussions with the planning authority are required in this regard.

#### ***Community burial grounds***

The popularity of 'alternative' natural burials as a method of internment within the UK has grown considerably over the past 25 years. To such an extent that the practice will potentially become mainstream. A natural burial typically involves scattering ashes, or burying an urn in a tranquil setting. The plot may be marked by a simple inscribed plaque, the planting of a tree, or not at all.

Whether within a field or woodland, the burial grounds are typically sited on level ground, accessed by paths with a provision of seating and discrete shelters.

The site which best fits the above criteria is situated within the community owned woodland adjacent to Glendaruel.

There is a long history of recorded human activity, at least 5000 years, which includes burials within the immediate landscape, notably the Chambered burial Cairn and Kilmodan Church.

Therefore a combination of the sites tranquillity, beauty and history combine to make a compelling case for natural burials within Stronafian Forest, notably around the Clachan of Glendaruel.

#### **Conclusion**

The Feasibility Masterplan is a look ahead to the next 10-12 years in the potential development which could take place within Stronafian Forest. The masterplan proposals provide an indication of the types of development which can be accommodated within the context of an ever-changing landscape.

Importantly the development of the masterplan has been undertaken with the communities input, on behalf of the community.

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**Cameron Planning**  
**Colintraive and Glendaruel Development Trust**



Plate 1 Way marking & orientation

# Cameron Planning Colintraive and Glendaruel Development Trust



**Cameron Planning**  
**Colintraive and Glendaruel Development Trust**



Plate 3      Shelters

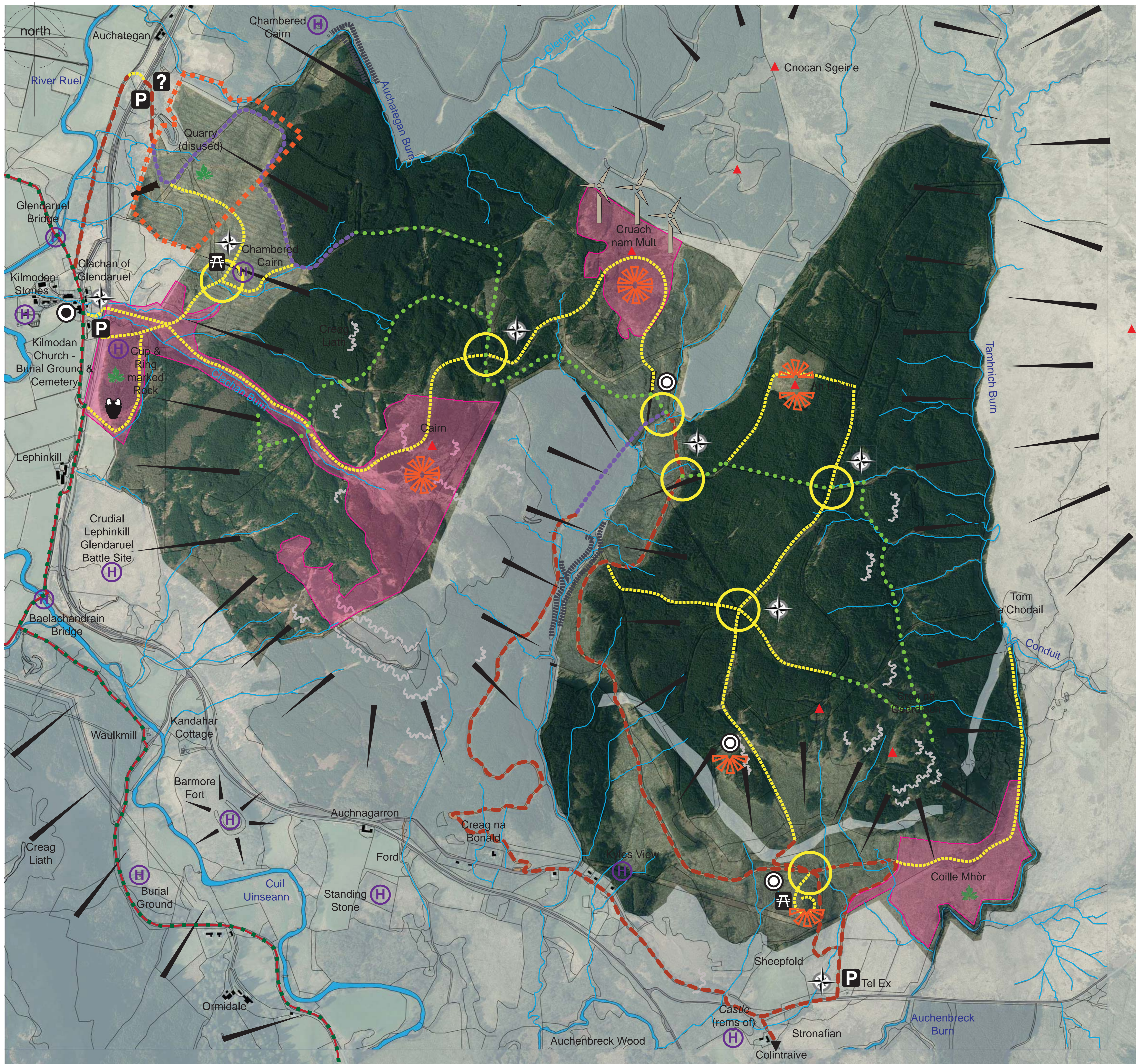
**Cameron Planning**  
**Colintraive and Glendaruel Development Trust**



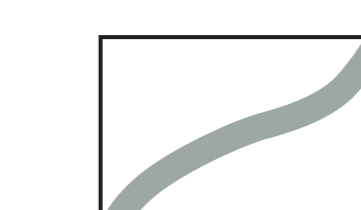
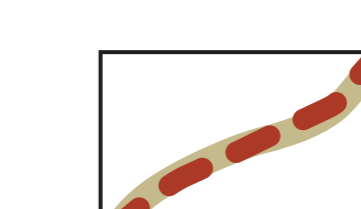
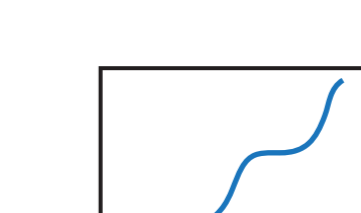


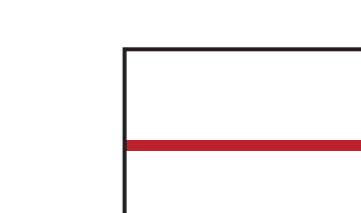











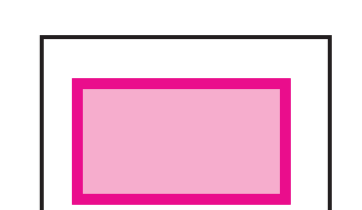




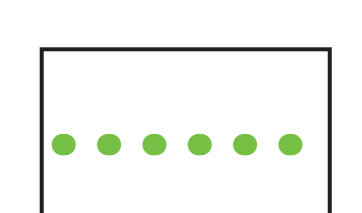
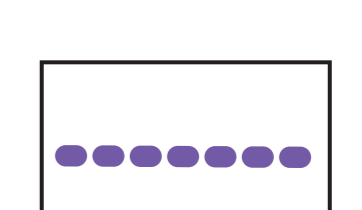
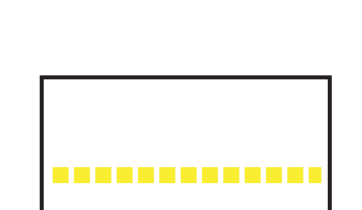
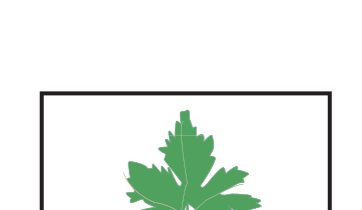
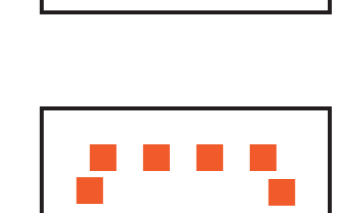
Plate 4 Picnic Areas and Car parks

Appendix A L01 Masterplan Feasibility Plan





**Legend**

-  Existing Roads
-  Access Network
-  Rivers/Burns
-  Existing Dam / Waterfall
-  Summits
-  Argyll & Bute Core Paths
-  Panoramic View Point
-  Saw Mill
-  Historical Feature
-  Key Junction & Wayfinding
-  Picnic Site
-  Interpretation & Orientation Point
-  Visitor Centre
-  Parking
-  Viewing Shelter
-  Community Burial Grounds
-  Community Wind Turbines Potential Search Area
-  Community Owned Woodland
-  Slope
-  Gorge
-  Crags
-  Cowal Way Long Distance Route
-  Proposed Forestry Extraction Roads
-  Aspirational Tracks
-  Aspirational Paths
-  Woodland Crofts
-  Argyll & Bute LDP - Potential Development Area

**Cameron Planning**



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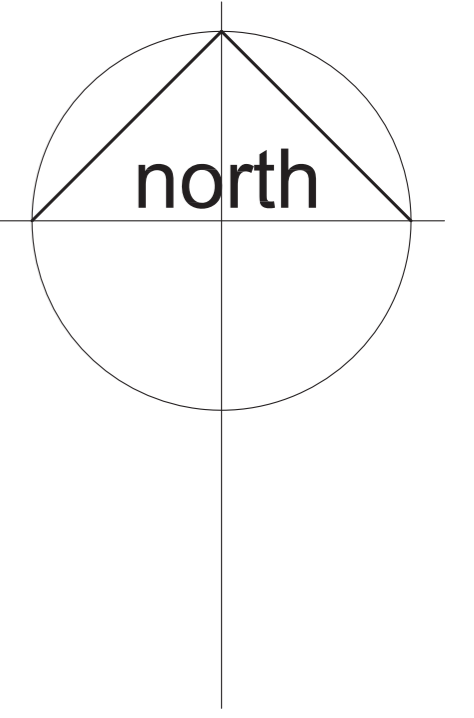
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Title		Masterplan Feasibility Study			
Date	Scale	Drawn	Checked		
08/11/13	1:5000 @ A0	SW	MB		
Job	Element	No.	Issue	Revision	
1742	Ext	L01	Information	p	
CDM DRA STAGE:		B/C	D/E	F	K/L

Rev. A 08/11/13 Land use designations omitted.  
 Rev.B 14/11/13 Paths updated.  
 Rev.C 27/11/13 Minor Amendments (Graphics)  
 Rev.D 20/01/14 Ratification post survey; Paths & Features etc. Plan re-scaled, Finalised Plan

DISCLAIMER:  
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 Drawing to be read in conjunction with related TGP drawings, consultants drawings and any other relevant information.  
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## Appendix B L02 Existing Land Designations





- |                 |  |                               |  |
|-----------------|--|-------------------------------|--|
| Existing Roads  | High Points                                    | Crags                         | National Scenic Area (NSA)                 |
| Existing Tracks | Slope  | Cowal Way Long Distance Route | Site of Special Scientific Interest (SSSI) |
| Rivers/Burns    | Gorge  | Argyle & Bute Core Path       | Rural Area Opportunity                     |
| Dam / Waterfall | Argyle & Bute LDP - Potential Development Area |                               |  |

**Cameron Planning**



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Project		CGDT Stronafian Woodland			
Title		Existing Land Designations			
Date	Scale	Drawn	Checked		
08/11/13	1:10000@ A1	SW	MB		
Job	Element	No.	Issue	Revision	
1742	Ext	L02	Information	-	
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## Appendix C Particulars of access routes



**Particulars of access routes indicated on Stronafian Woodland Masterplan Feasibility Study**

Ref.	Route (place names)	Distance (metres)	Ex. Infrastructure (metres)	Pro. Infrastructure Forestry Extraction (meters)	Pro. Infrastructure CGDT (meters)	Change in height (metres)	User group(s)
1	Tel. Ex./ Creag na Bonald/ (pinch point)/ Tel. Ex.	7,475	6,975	0	500 track	150	Walkers; Cyclists; Equestrians.
2	Clachan of Glendaruel/ Quarry/ Cairn @ 308m/ Clachan Burn/ Clachan of Glendaruel	5,375	1,210	960 track	1,725 path 1,480 track	290	Walkers; Woodland Crofters
3	Clachan of Glendaruel/ Quarry/ Chambered Cairn/ Clachan Burn/ Clachan of Glendaruel	2,625	1,265	0	1,360 path	120	Walkers
4	Tel. Ex./ ex. Forest road/ An t-Suil/ Coille Mhor/ Tel. Ex.	5,950	3,230	180 track	2,540 path	240	Walkers
5	Tel. Ex./ Coille Mhor/ Conduit	1,100	0	0	1,100 path	100	Walkers; Woodland Crofters
6	Cruach nam Mult	750	0	0	750 path	100	Walkers

Appendix D    Route 3 GPS co-ordinates



<b>SIDE</b>	<b>NUMBER</b>	<b>NS</b>	<b>BNG</b>	<b>HEIGHT</b>
R	17	201719	684278	192
R	18	201748	684212	210
R	19	201573	683106	149
L	20	199888	685126	59
L	21	199910	685119	58
L	22	199970	685104	60
L	23	200013	685095	64
L	24	200051	685050	75
L	25	200070	685008	77
L	26	200078	685008	78
L	27	200125	684999	89
L	28	200136	684953	88
L	29	200136	684898	108
L	30	200145	684892	112
L	31	200197	684887	119
L	32	200210	684866	122
L	33	200221	684844	127
L	34	200170	684770	149
L	35	200133	684755	134
L	36	200099	684763	118
L	37	200037	684737	93
L	38	200008	684719	99
L	39	199984	684636	99
L	40	199957	684662	135
L	41	199893	684689	73
L	42	199822	684675	50
L	43	199702	684688	58
L	43	199713	684731	29

Appendix E Stronafian Long Term Forest Plan dga forestry



**Stronafian**  
**Long Term Forest Plan**  
**BRN: 167163**  
**Main Location Code: 770/0037**  
**Case No: 4889763**

Document	Initials	date	<b>DGA Forestry</b> Lochanhead Wood Lochanhead DG2 8JB  Tel: 01387 730 634 e mail: <a href="mailto:mail@dga-forestry.co.uk">mail@dga-forestry.co.uk</a>	 <small>established 1972</small>
Prepared	MSG	February 2014		
Checked	AEA	February 2014		
Approved				

## **Contents**

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- 1.1 Property
- 1.2 Location
- 1.3 Existing Schemes
- 1.4 Stakeholder Engagement
- 1.5 Management Objectives
- 1.6 Site Description

### **2. Survey Data**

### **3. Information Analysis**

- 3.1 Constraints and Opportunities
  - 3.1.1 Site Constraints
  - 3.1.2 Archaeological Impact
  - 3.1.3 Visual Impact
  - 3.1.4 Ecological Impact
  - 3.1.5 Herbivore Impact
  - 3.1.6 Social Impact
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  - 3.2.1 Landscape Character Analysis
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### **4. Management Proposals**

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  - 4.2.1 Felling
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  - 4.2.4 Protection and Maintenance
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  - 4.2.6 Road Operations

## **Appendices**

### **1. Production Forecast**

Basic crop data for Stronafian Forest Plan is supplied via the Forestry Commission Scotland Production Forecast Spreadsheet.

### **2. Maps**

- M1. Location Map
- M2. Management Areas Map
- M2a. IACS Map
- M3. Concept Map
- M3a. CGDT Concept Map
- M4. Species Map 2013
- M5. Landscape Analysis Map
- M5a. Landscape Analysis Map Lines of Force Map
- M5b. Landscape Analysis 3D Views
- M6. 10 Year Felling Plan
- M7. Felling Plan
- M8. 10 Year Restructuring Map
- M8a. 10 Year Restructuring map (restocking only)
- M9. Final Design Plan

### **3. Scoping Report Summary**

### **4. Deadwood Management Policy**

### **5. Deer Management Plan**

## 1. Overview

### 1.1 Property

- Applicant: DGA Forestry
- Owner: Stakis Forestry LLP & Colintraive and Glendaruel Development Trust (CGDT)
- BRN: 167163 (Stakis Forestry LLP)
- Main Location Code: 770/0037 (Stakis Forestry LLP)
- Agent: Matthew Giles  
DGA Forestry  
Lochanhead Wood,  
Lochanhead,  
DG2 8JB
- Payee: Stakis Forestry LLP

### 1.2 Location and Background

The forest is owned by the Colintraive and Glendaruel Development Trust (CGDT) following a local community buyout from the Forestry Commission. The timber is owned by Stakis LLP on a 99 year lease. This forest plan is being drawn up on behalf of both parties.

The Forest is located in Argyll on the Cowal Peninsula around 21 km west of Dunoon on the B836 adjacent to the A886 road junction. A Location Map is included in the appendices - Grid Ref at main entrance is NS023817.

Management Areas	Area ha
Community Managed Area	58.16
Community Opportunity Area	46.00
Leased Area	500.89
<b>Grand Total</b>	<b>605.05</b>

The IACS Field boundaries do not match the legal titles so currently the forest plan claim area is 550.036ha (Stakis Forestry LLP) shown on Map 2a IACS Map

Location code	Field Identification no.	Area ha
143/0039	NS/00224/83543	62.036
143/0039	NS/01773/83605	488.000

The Forest extends to 605.05ha in total, of which 99ha is open ground. Stronafian forms part of a much larger coniferous forest (Glendaruel Forest) and is surrounded to the North, West and South by other forests. Initial planting was carried out from 1957 onwards and restructuring began in 2010.

Access to the forest is directly off the B836, Dunoon road. Another spur road from the A886 allows access to the West of the forest. The internal forest road extends to approximately 4.5km and will need to be extended to meet the needs of future timber extraction.



## Summary of monitoring results and work undertaken over the past five years

Objective	Monitoring Type	Results
Timber production	Forest file summaries and felling forecasts	2013
Landscape impact	Visual and photo assessment	2014
Minimum chemical use	Application records	None
Grazing impacts	Visual checks, site reports	Browsing damage reduced through increased culling
Tree health	Visual checks, site reports	No issues
Develop forest structure	Compartment records	Forest records will continue as management continues
Protect archaeology	Visual checks	No damage observed

### 1.3 Existing Schemes and Felling Licences

Scheme	Reference	Comments	Compartments
Forest Plans	Unknown	Carried out by Forest Enterprise and due to expire shortly	All

There are no FC grants currently active at Stronafian other than the Forest Plan Application.

### 1.4 Stakeholder Engagement

As part of the scoping process all the relevant stakeholders were consulted and the following issues were discussed:

- Landscape
- Conservation
- Watercourses
- Roads and Timber traffic
- Archaeology
- Deer Control

The Scoping Report is included as Appendix 3

## 1.5 Management Objectives

The principal management objectives are:-

"Timber production through the practice of sound silviculture and forest management and in accordance with the requirements of the UK Forestry Standard and the UK Woodland Assurance Standard."

"To protect, maintain and, where possible, enhance the conservation and amenity value of the Estate and to safeguard landscape and heritage resources."

The purpose of the CGDT is to work with, and for, the community to identify projects and activities which will improve access to, and provision of, facilities, amenities and services for employment, education, health and recreation. The CGDT will do this while maintaining the benefits of living in the area such as safety, tranquillity and community spirit.

During the first 10 years of the plan, the proposed works will concentrate on felling 143ha and restocking 172ha starting in 2014. Beyond this period restructuring and regeneration of the remaining mature conifer crop will continue.

The aim is to improve the age class structure and diversify the woodland with a phased felling programme; this will include natural regeneration of broadleaves and open ground as appropriate in the restocking proposal.

Long term forest structure proposals aim to achieve:-

	<b>Standard</b>	<b>Current</b>	<b>Year 10</b>	<b>Final</b>
<b>Primary conifer</b>	<75%	60%	59%	57%
<b>Secondary conifer</b>	0%	9%	9%	8%
<b>Broadleaves</b>	>5%	9%	9%	9%
<b>Open Ground</b>	>10%	22%	24%	27%
<b>Long Term Retentions</b>	>1%	10%	10%	10%
<b>Natural Reserves</b>	>1%	8%	8%	8%
<b>Biodiversity areas</b>	15%	27%	27%	32%

## 1.6 Site Description

### General Topography

Landscape - Steep Ridgeland and Mountains

Landform - Mountain Mountain-Ridge Slope- Steep Outcrops-Rocky Bays-Small

### Geology and Soils

The bedrock geology is classified as Metamorphic-Southernhighland. The superficial soils are mainly upland peats, peaty podzols and peaty gleys. The deeper peats result in poor natural drainage and tree growth is often constrained by poor fertility.

### Elevation

The forest ranges from 45m above sea level to around 280m at the highest points.

### Rainfall

Average annual rainfall is 1,905mm – 2,305mm

## Crop Data

### Species by area

Species 2014	Area ha	% Area
SS	363.16	60.02%
HL	15.23	2.52%
MB	48.00	7.93%
MB/MC	9.85	1.63%
MC	23.05	3.81%
NS	3.24	0.53%
SP	10.50	1.74%
OG	99.02	16.37%
Felled	32.99	5.45%
<b>Grand Total</b>	<b>605.05</b>	<b>100.00%</b>

### Area by planting year

Years	Age range current species (ha)
<b>0</b>	132.01
<b>1-10</b>	60.39
<b>11-20</b>	0.00
<b>21-30</b>	2.92
<b>31-40</b>	66.44
<b>41-50</b>	268.22
<b>51-60</b>	48.31
<b>61-70</b>	0.00
<b>71-80</b>	0.00
<b>111-120</b>	26.75
<b>121-130</b>	0.00
<b>131-140</b>	0.00

## **2 Survey Data**

<b>Data Type</b>	<b>Source</b>	<b>Date</b>
Aerial Photographs	Bing	2012
Crop Data – based on ground checking of the forest crops to compile the compartment schedules	DGA	2013
Forest Map – based on an interpretation of aerial photographs with ground truthing	DGA	2014
Raptor Survey	Argyll Raptor Study Group	2013
Archaeology Survey (desktop)	WOSAS	2013
Landscape Analysis	DGA	2014

### **3 Information Analysis**

#### **3.1 Constraints and Opportunities Analysis**

##### **3.1.1 Site constraints**

<b>Factor</b>	<b>Constraint</b>	<b>Opportunity</b>
Soils	Poor soils limit species choice.	Increase areas of open ground around peat areas.
Windthrow	Soil types and exposure impacting on tree wind firmness [serious wind blow has already occurred in the forest].	Introduce wind firm restructuring compartment boundaries to follow features such as watercourses, dry ridges and roadsides.
Ownership Boundaries	Neighbouring forest Operations.	Add diversity through open ground and broadleaf regeneration to "soften" edges. Consider felling plans of adjacent forests to try and achieve 2 metre height separation between restructuring coupes or consider felling adjacent neighbouring coupes at the same time to remove visually intrusive boundary edges.
Roads	Internal roads will need to be upgraded and extended prior to harvesting.	Upgrading of roads will improve access and efficiency for all forest operations. Use of low impact (TPC fitment) timber wagons to protect both forest and public roads where possible.

##### **3.1.2 Archaeological Impacts**

<b>Factor</b>	<b>Constraint</b>	<b>Opportunity</b>
There are no scheduled monuments within the forest boundary. Numerous unscheduled sites.	Acts as a constraint to harvesting and restocking	An informal archaeological audit will be carried out to identify if any sites not recorded are present. Any sites that are found will be notified to WOSAS. Any existing sites will be protected.
Other Features	New finds may impede operations.	If any archaeological sites are present they will be noted.

### 3.1.3 Visual Impacts

Factor	Constraint	Opportunity
Ownership Boundary	Impact on neighbouring forests and land.	To include edges that will increase habitat and species diversity using FC guidelines. Integration with neighbouring forest and design plans.
Main Road B836 and A886  View point at NR999775 For landscape analysis requested by the Forestry Commission	Potential loss of productive ground.	To improve conditions for LBAP and UKBAP species through open space creation and NBL regeneration.  Landscape analysis and visual impact assessed

### 3.1.4 Ecological Impacts

Factor	Constraint	Opportunity
Importance of water courses for biodiversity	A constraint on forestry operations affecting felling and replanting operations	Forest and Water Guidelines will be followed. Consultation with statutory bodies where required will be undertaken during operations.
Plantings on poor soils/high exposure	Slow tree growth and planting on deep peat.	Develop open ground and associated margins for raptors.
Importance of the forest for LBAP and UKBAP species. Black Grouse Red squirrels Golden eagle Hen Harrier Merlin Peregrine & Short Eared Owl Otter and water vole  Areas of Ancient Semi Natural Woodland (ASNW)	This is a constraint on forestry operations, increasing working costs and affecting felling and replanting operations.	Restructuring will be carried out to improve conditions for LBAP and UKBAP species.  These will be protected during operations and expanded over the lifetime of the plan through natural regeneration within gullies, near the roadside and higher visibility areas. Create more open space around watercourses. Manage Pine and Spruce for long term retention. Improve conditions for LBAP and UKBAP species.
Conservation		Create more open space around watercourses. Manage Pine and Spruce for long term retention. Improve conditions for LBAP and UKBAP species

### 3.1.5 Herbivore Impact

Factor	Constraint	Opportunity
Deer	High resident population and pressure from neighbouring forests.	Develop deer management plan and liaise with neighbours. Introduce more open ground and glades to facilitate deer control

### 3.1.6 Social Impact

Factor	Constraint	Opportunity
Timber Traffic	Increased use of B836 and A886. The potential of timber transport travelling during school hours could lead to constrictions during harvesting operations.	Improve access. Provide anticipated movements to Local Authority to inform their road maintenance programme. Inform local users of peak traffic times to improve general safety.
Public Access	Could cause some restrictions to operations.	Responsible public access is welcomed and it is hoped will bring benefits to the local community.
Water Supplies 2 water supply points	Potential contamination.	Develop sympathetic key catchment areas and protect water supplies during forest operations to maintain water quality. Follow Forest and Water Guidelines.
Employment	Contract labour from outwith the local area.	Encourage utilisation of qualified and competent local operators.

## 3.2 Landscape Analysis

### 3.2.1 Landscape Character Analysis

Limited public views of forest. Short viewpoints from south side of forest which runs adjacent to B836. Short view to the west of the forest from A886.

The immediate edge has been 'softened' with the use of open space, mixed broadleaves, Scots pine and retention of broadleaf and conifer areas.

The far view is of the southern part of the forest from the view point at NR999775. This has been used for the landscape analysis and was requested by the Forestry Commission. The design of the forest will continue to ensure that the coupe shapes conform to the land form and that colour and texture diversity is enhanced using the concept design.

### **3.2.2 Concept Design**

The concept design will follow current guidelines and develop the internal landscape by including the following in the design:

- Open space along watercourses, roads and rides
  - Reduction of straight edges along coupe boundaries
- To achieve the UK Forestry Standard of separation between adjacent crops, adjoining crops should not be felled before the restocking of the first area has reached an average height of at least two metres. This won't be possible due to substantial existing windblow within the forest, narrow existing rides and visually unsympathetic existing coupe layout. The restocking design should ensure that this is possible over the next rotation.



## **4. Management Proposals**

### **4.1 Silvicultural Policy**

The silvicultural policy of the woodlands for the next 20 years will concentrate on the sequential clearfelling of large coupes followed by restocking to break up the even aged structure and to create a more diverse woodland.

### **4.2 Prescriptions**

#### **4.2.1 Felling**

No coupes are expected to exceed 100 hectares in size and the average will be far less than this. The use of greater areas of open ground, broadleaves and natural reserves will also lessen the impact in future rotations.

Current windthrow has reduced the scope for retention of the crops. However, some crops have been retained beyond their predicted Terminal Age to help achieve separation. Other coupe boundaries will have less than full separation during the next rotation because of the need to carry out immediate restocking to maintain site timber productivity. Second rotation coupe shapes will allow better future separation.

#### **Felling phases**

<b>Felling Phases</b>	<b>Area ha</b>	<b>% Area</b>
Phase 1	143.23	23.67%
Phase 2	54.54	9.01%
Phase 3	91.86	15.18%
Phase 4	39.72	6.56%
Long Term Retention	62.17	10.28%
Natural Reserves	48.00	7.93%
No Felling/Open Ground	165.53	27.36%
<b>Grand Total</b>	<b>605.05</b>	<b>100.00%</b>

#### **Production Forecast – see Appendix 1**

#### **4.2.2 Thinning**

Thinning will be considered in areas with lower than WHC 3 status. Best Practice will be followed with typically one semi mechanical thinning to remove one row in 5-7 and selection of poorer trees between the rows. First and second thinning of the woodlands will be carried out where economically and practically feasible during the next rotation. Areas within the Community Managed Area will be thinned by hand to produce usable products especially firewood.

#### **4.2.3 Restructuring**

##### **Restocking Policy**

Felled areas will be restocked depending on site factors and management objectives. These objectives will ensure the development of a more diverse age structure and will create a more financially and environmentally sustainable forest asset. The use of a conifer mix in some stands will offer some protection against single species pests and diseases while ensuring a financial return.

##### **Conifers**

The main species selected for restocking will be Sitka spruce planted as a pure species and mixed with other conifers covering 57% of the overall area by the end of the plan. Due to the ongoing issues with *P. ramorum* in Larch species, no Larch will be planted at Stronafian (See **Plant Health** for more information). Planting will be carried out to achieve a target density of 2500 stems per hectare at year 10.

### **Broadleaves**

Native broadleaves will be used primarily to improve biodiversity and add structural diversity to the landscape. They will be located in the most advantageous positions alongside burns and the new coupe boundaries. Broadleaves will cover >9% of the overall area of Stronafian by the end of the plan period. Native Broadleaves will be encouraged to regenerate adjacent to existing Ancient Semi Natural Woodland (ASNW) areas. This has been very successful in the past with birch especially spreading out from these areas.

### **Plant Health**

*P.ramorum* is a highly infectious pathogen-like fungus which infects and kills various trees and shrubs including Larch species. The Forestry Commission has mapped infected areas and created 'risk zones' across the UK using the current known outbreaks and the risk of infection to neighbouring forestry plantations. As Stronafian is located within zone 1 (highest risk) of the *P.ramorum* risk zone and following recommendations by the Forestry Commission, no Larch will be planted here for the foreseeable future. Current Larch on site will be monitored and managed as per current guidelines. The forest will be monitored as a whole for any other plant health issues arising throughout the plan period and as part of ongoing day to day management.

### **Biodiversity**

Open ground will be used to maintain the riparian zones and establish broad coupe boundaries for the future forest design. It is expected to amount to 27% of the total area by the end of the plan period. Approximately 10% of the total crop area will be retained as Long Term Retentions (LTR) to be managed to retain crop structure. 8% will be managed as Natural Reserves (NR) which will be allowed to develop over time by a process of minimal intervention.

### **Deadwood**

Deadwood habitats will be provided except where they conflict with public or workforce safety and management objectives, in line with the guidance provided in "Life in the Deadwood" Forestry Commission (2002). See Appendix 4

### **Biodiversity by Area**

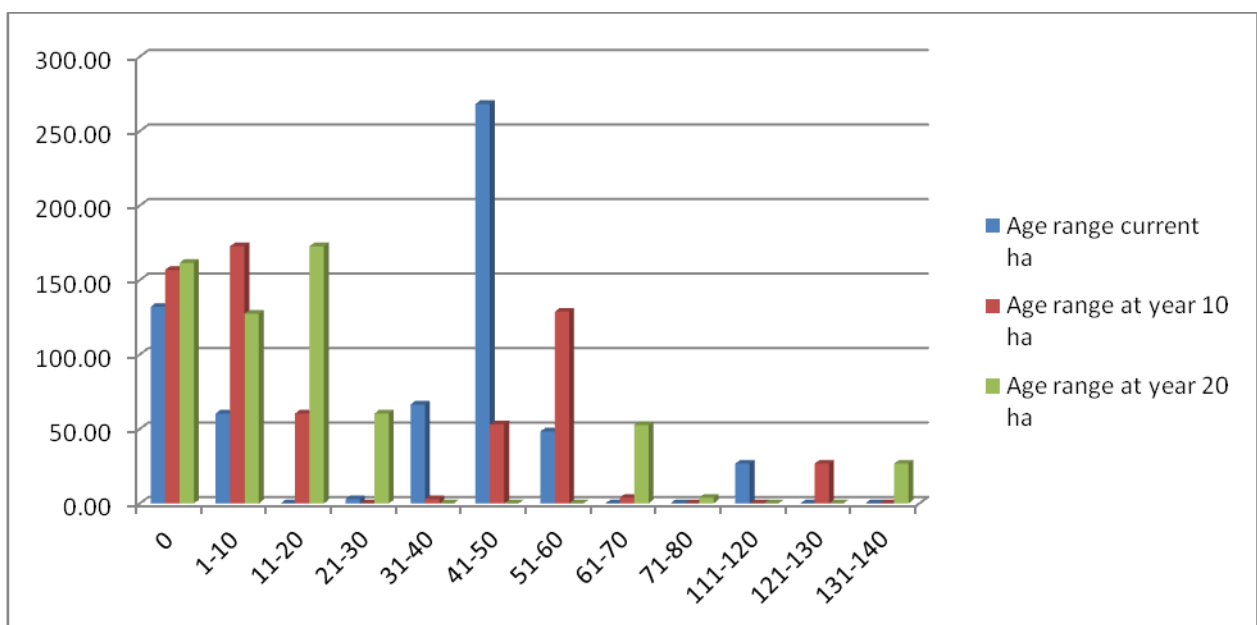
	<b>Standard</b>	<b>Current</b>	<b>Year 10</b>	<b>Final</b>
<b>Primary conifer</b>	<75%	60%	59%	57%
<b>Secondary conifer</b>	0%	9%	9%	8%
<b>Broadleaves</b>	>5%	9%	9%	9%
<b>Open Ground</b>	>10%	22%	24%	27%
<b>Long Term Retentions</b>	>1%	10%	10%	10%
<b>Natural Reserves</b>	>1%	8%	8%	8%
<b>Biodiversity areas</b>	15%	27%	27%	32%

### Species Comparison

Species	Current (ha)	Year 10 (ha)	Final (ha)
SS	363.16	355.45	345.17
HL	15.23	12.12	2.03
MB	48.00	48.00	48.00
MB/MC	9.85	9.85	9.85
MC	23.05	23.05	23.44
NS	3.24	0.82	0.82
SP	10.50	11.56	14.23
OG	99.02	144.19	161.51
Felled	32.99		
<b>Total</b>	<b>605.05</b>	<b>605.05</b>	<b>605.05</b>

### Age Range Comparison

Years	Age range current ha	Age range at year 10 ha	Age range at year 20 ha
0	132.01	156.79	161.51
1-10	60.39	172.64	127.32
11-20	0.00	60.39	172.64
21-30	2.92	0.00	60.39
31-40	66.44	2.92	0.00
41-50	268.22	53.01	0.00
51-60	48.31	128.74	0.00
61-70	0.00	3.81	52.63
71-80	0.00	0.00	3.81
111-120	26.75	0.00	0.00
121-130	0.00	26.75	0.00
131-140	0.00	0.00	26.75



#### **4.2.4 Protection & Maintenance**

##### **Fencing**

Where the forest marches with agricultural land the stock fencing will be monitored and maintained as necessary.

##### **Deer Management**

Red and roe deer pose the main browsing threat and trees will be protected by deer culling according to the property's Deer Management Plan. A Deer Management Plan is included in Appendix 5.

##### **Other Maintenance**

Other maintenance operations will include beating up and spot application of herbicide to control weeds will be used as required.

#### **4.2.5 Public Access**

Public access is currently low key and informal. Over the period of the plan the CGDT is to work with, and for, the community to identify projects and activities which will improve access to, and provision of, facilities, amenities and services for employment, education, health and recreation. The CGDT will do this while maintaining the benefits of living in the area such as safety, tranquillity and community spirit.

#### **4.2.6 Road Operations**

The current road network extends to approximately 4.5km within the forest. A further 5km of roads are expected to have to be built during the lifetime of the plan. Roads will be developed and maintained as required to allow good access for timber traffic. Any new roads will be subject to an EIA Determination.

## Tolerance Table

	<b>Adjustment to felling period*</b>	<b>Adjustment to felling coupe boundaries</b>	<b>Timing of Restocking</b>	<b>Changes to species</b>	<b>Changes to road lines</b>	<b>Designed open space</b>
<b>FC Approval normally not required</b>	Fell date can be moved within 5 year period where separation or other constraints are met.	1.0 ha or 10% of coupe area – whichever is less	Up to 2 planting seasons after felling	Change within species group e.g. evergreen conifers or broadleaves		Location of temporary open space eg deer glades if still within overall Open Space design.  Increase by 0.5 ha or 5% of area - whichever is less.
<b>Approval by exchange of letters and map</b>		1.0 ha to 5 ha or 10% of coupe area – whichever is less.			Additional felling of trees not agreed in plan. Departures of > 60m in either direction from centre line of road	Increase of 0.5 ha to 2 ha or 10%, whichever is less. Any reduction in open space.
<b>Approval by formal plan amendment may be required.</b>	Felling delayed into second or later 5 year Period  Advance felling into current or 2nd 5 year period	> 5 ha or 10% of coupe area	Over 2 planting seasons after felling	Change from specified native species.  Change between species group	As above, depending on sensitivity	More than 2 ha or 10%.  Any reduction in open space in sensitive areas. Colonisation of open areas agreed as critical.

## **Appendices**

### **Appendix 1. Production Forecast**

Basic crop data for Stronafian Forest Plan is supplied via the Forestry Commission Scotland Production Forecast Spreadsheet.



## **Appendix 2. Maps**

- M1. Location Map
- M2. Management Areas Map
- M2a. IACS Map
- M3. Concept Map
- M3a. CGDT Concept Map
- M4. Species Map 2013
- M5. Landscape Analysis Map
- M5a. Landscape Analysis Map Lines of Force Map
- M5b. Landscape Analysis 3D Views
- M6. 10 Year Felling Plan
- M7. Felling Plan
- M8. 10 Year Restructuring Map
- M8a. 10 Year Restructuring map (restocking only)
- M9. Final Design Plan



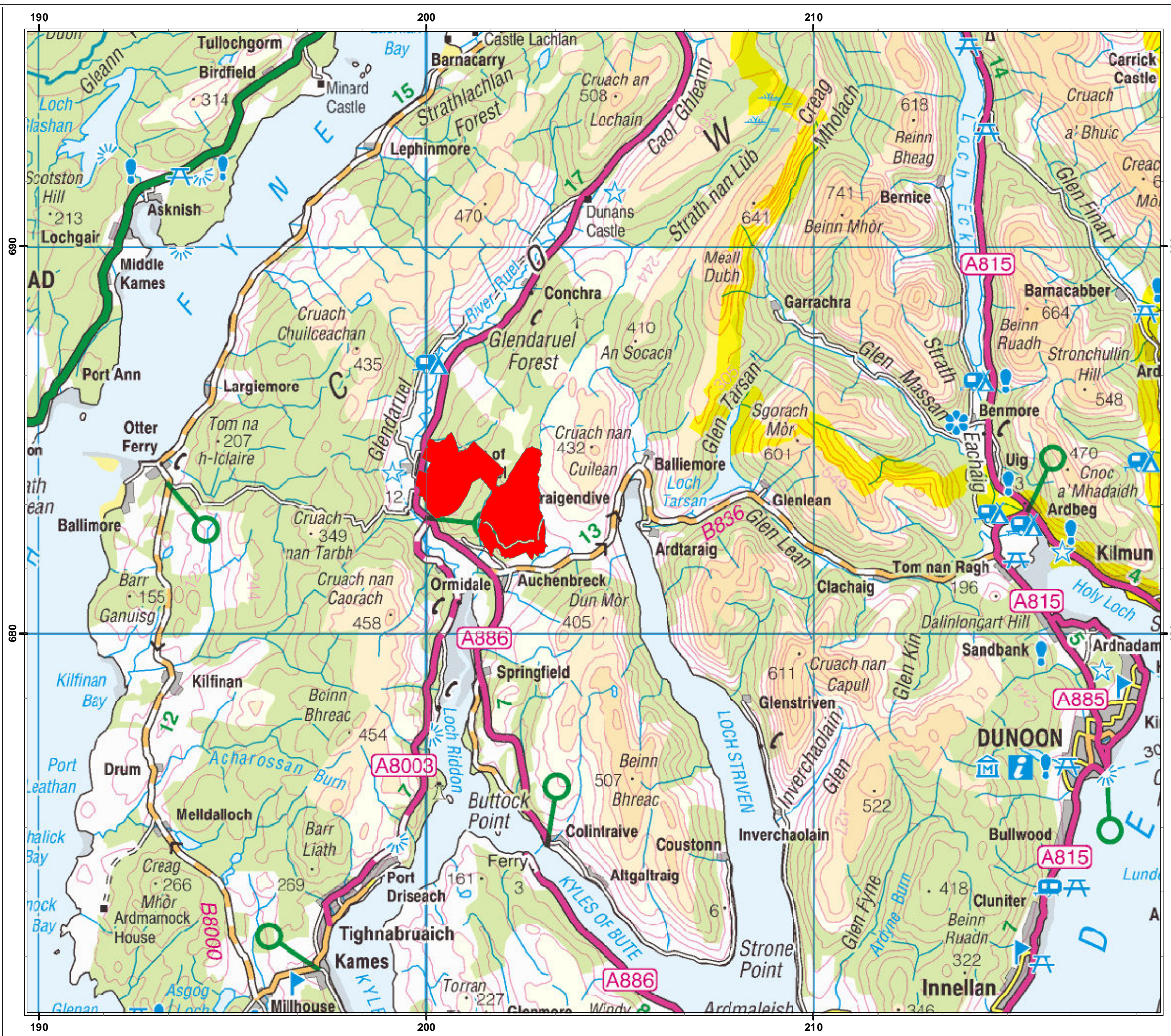
# Stronafian

## Map 1: Location Map

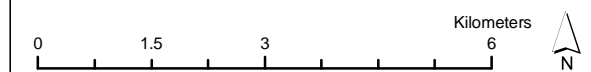
Author: Matthew Giles  
Date: 12/02/2014  
Scale: 1:100,000

### Legend

 Stronafian Boundary



BRN: 167163  
MLC: 770/0037  
Case No: 4889763



DGA Forestry  
Lochanheadwood  
Lochanhead  
Dumfries  
DG2 8JB  
Tel: 01387 730634  
Email: mail@dga-forestry.co.uk



# Stronafian

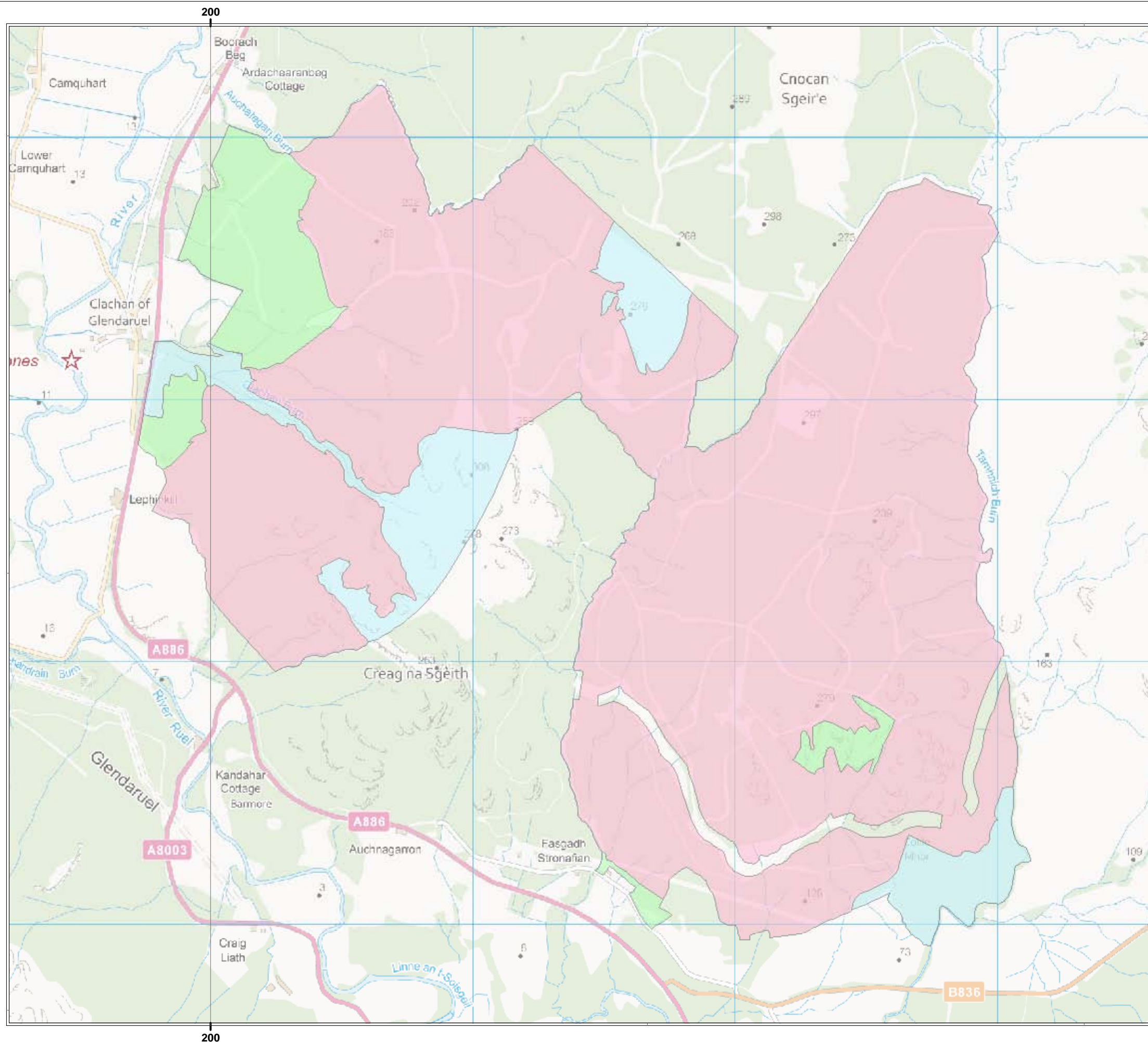
## Map 2: Management Areas

Author: Matthew Giles  
Date: 19/02/2014  
Scale: 1:15,000

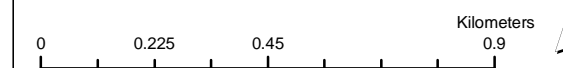
### Legend

#### Management Area

- Community Managed Area
- Community Opportunity Area
- Leased Area



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# Stronafian

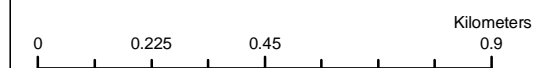
## Map 2a: IACS Areas

Author: Matthew Giles  
Date: 12/02/2014  
Scale: 1:15,000

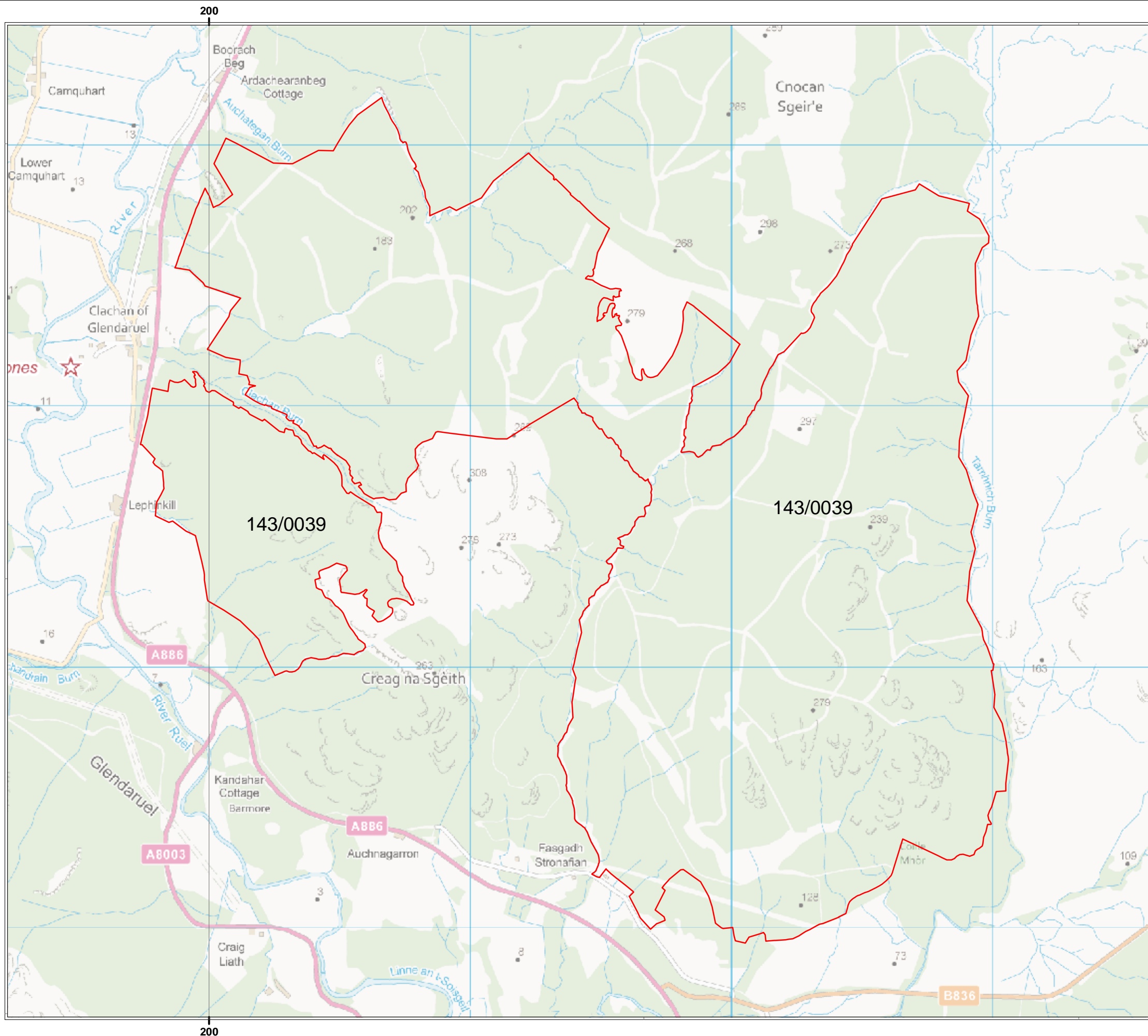
### Legend

 IACS

BRN: 167163  
MLC: 770/0037  
Case No: 4889763



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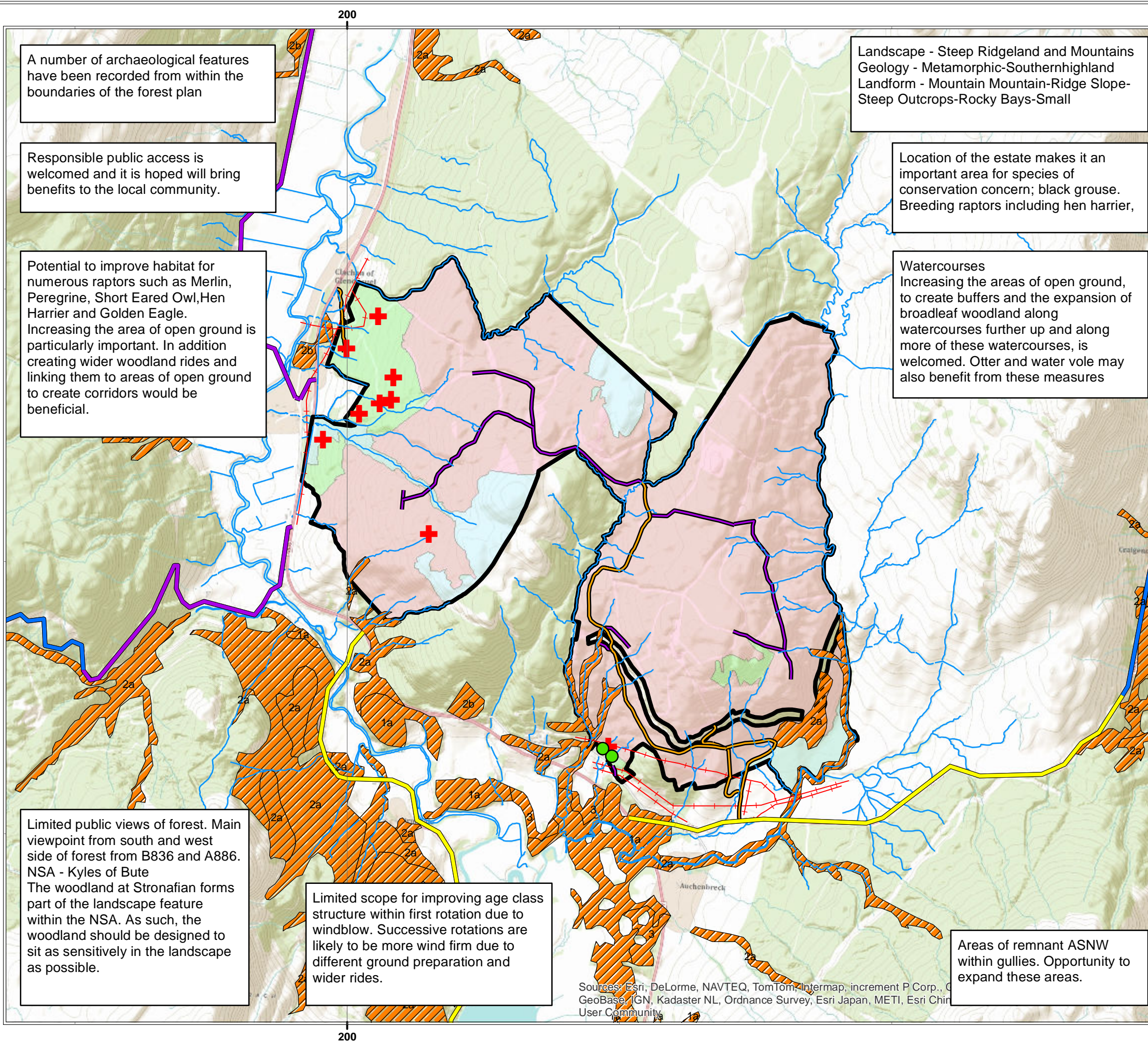
# Stronafian

## Map 3: Concept Map

Author: Matthew Giles  
 Date: 19/02/2014  
 Scale: 1:24,000

### Legend

- Water Supply Point
- + Archaeology
- ROAD\_CLASS**
- Agreed Route
- Consultation Route
- Severely Restricted Route
- Excluded Route
- Water Courses
- Existing Forest Roads
- Proposed Forest Roads
- + Powerlines
- Ancient Semi Natural Woodland
- Stronafian Boundary
- Management Area**
- Community Managed Area
- Community Opportunity Area
- Leased Area



A number of archaeological features have been recorded from within the boundaries of the forest plan

Responsible public access is welcomed and it is hoped will bring benefits to the local community.

Potential to improve habitat for numerous raptors such as Merlin, Peregrine, Short Eared Owl, Hen Harrier and Golden Eagle. Increasing the area of open ground is particularly important. In addition creating wider woodland rides and linking them to areas of open ground to create corridors would be beneficial.

Landscape - Steep Ridgeland and Mountains  
 Geology - Metamorphic-Southernhighland  
 Landform - Mountain Mountain-Ridge Slope-Steep Outcrops-Rocky Bays-Small

Location of the estate makes it an important area for species of conservation concern; black grouse. Breeding raptors including hen harrier,

Watercourses  
 Increasing the areas of open ground, to create buffers and the expansion of broadleaf woodland along watercourses further up and along more of these watercourses, is welcomed. Otter and water vole may also benefit from these measures

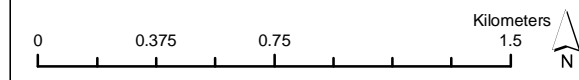
Limited public views of forest. Main viewpoint from south and west side of forest from B836 and A886. NSA - Kyles of Bute  
 The woodland at Stronafian forms part of the landscape feature within the NSA. As such, the woodland should be designed to sit as sensitively in the landscape as possible.

Limited scope for improving age class structure within first rotation due to windblow. Successive rotations are likely to be more wind firm due to different ground preparation and wider rides.

Areas of remnant ASNW within gullies. Opportunity to expand these areas.

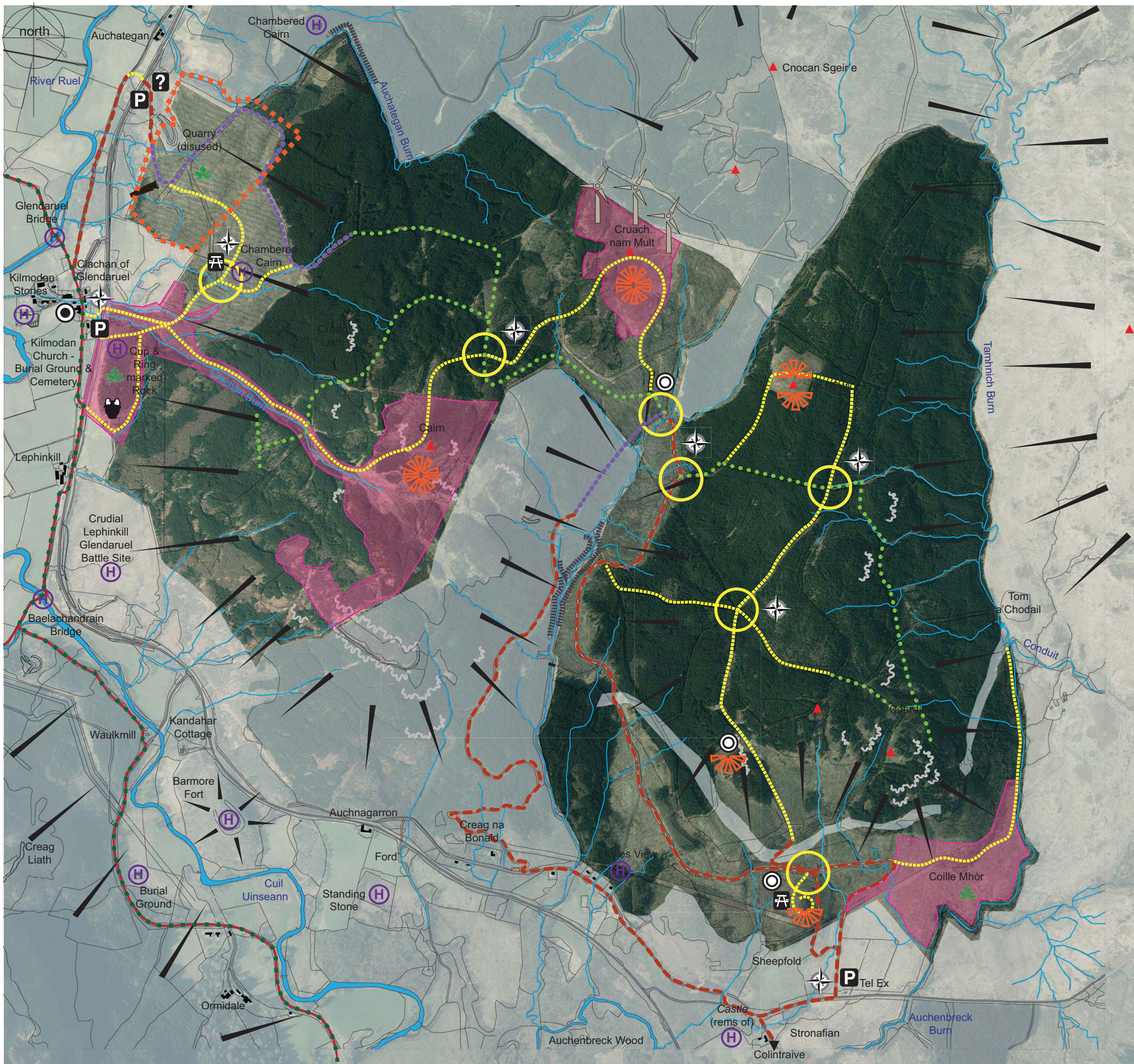
Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China User Community

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**Legend**

- Existing Roads
- Access Network
- Rivers/Burns
- Existing Dam / Waterfall
- Summits
- Argyll & Bute Core Paths
- Panoramic View Point
- Saw Mill
- Historical Feature
- Key Junction & Wayfinding
- Picnic Site
- Interpretation & Orientation Point
- Visitor Centre
- Parking
- Viewing Shelter
- Community Burial Grounds
- Community Wind Turbines Potential Search Area
- Community Owned Woodland
- Slope
- Gorge
- Crags
- Cowal Way Long Distance Route
- Proposed Forestry Extraction Roads
- Aspirational Tracks
- Aspirational Paths
- Woodland Crofts
- Argyll & Bute LDP - Potential Development Area

**Cameron Planning**



7 The Square, 95 Morrison Street, Glasgow G5 8BE  
 Tel: 0141 429 2999 - Fax: 0141 429 0348 / 0169  
 Suite 1, Riverside Centre, Frankland Lane, Durham City DH1 5TA  
 Tel: 0191 383 9605 Fax: 0191 383 9645  
 info@tgp-uk.com / www.tgp-uk.com

Project	CGDT Stornafian Woodland			
Title	Masterplan Feasibility Study			
Date	Scale	Drawn	Checked	
06/11/13	1:5000 @ A0	SW	MB	
Job	Element	No.	Issue	Revision
1742	Ext	L01	Information	p
CDM DRA STAGE:	B/C	D/E	F	K/L

Rev. A 08/11/13 Land use designations omitted.  
 Rev.B 14/11/13 Minor Amendments (Graphics)  
 Rev.C 27/11/13 Ratification post survey; Paths & Features etc. Plan re-scaled.  
 Rev.D 20/01/14 Finalised Plan

DISCLAIMER:  
 Do not scale from this drawing.  
 All dimensions to be verified on site prior to commencement of works.  
 Drawing to be read in conjunction with related TGP drawings, consultants drawings and any other relevant information.  
 This drawing is the copyright of TGP Landscape Architects Ltd. unless otherwise specified.

# Stronafian

## Map 4: Species Map

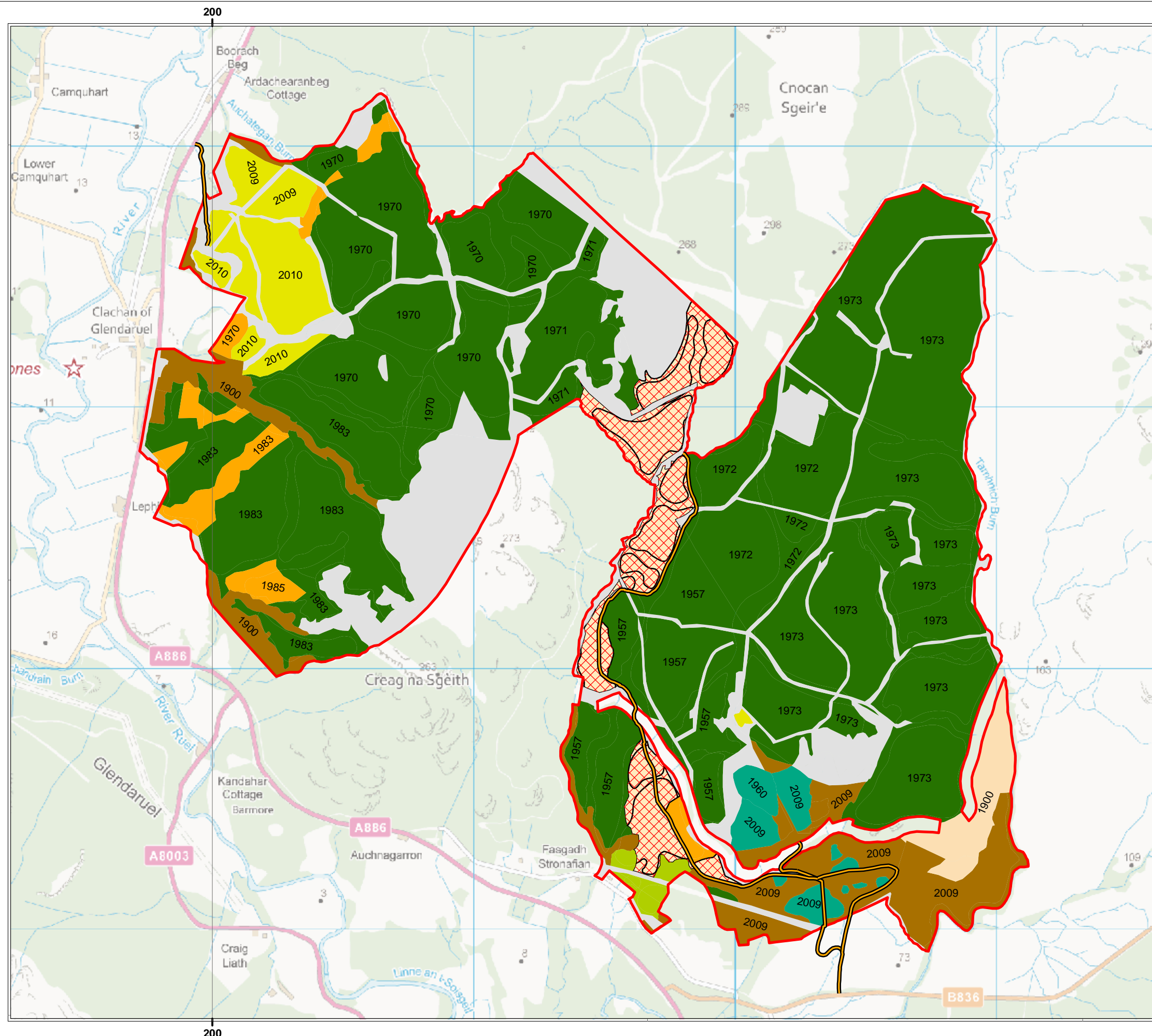
Author: Matthew Giles  
Date: 13/02/2014  
Scale: 1:15,000

### Legend

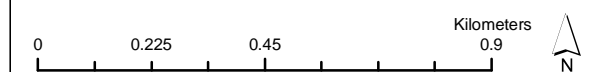
- Forest Road
- Stronafian Boundary

### Species

- SS
- HL
- MB
- MB/MC
- MC
- NS
- SP
- OG
- Felled



BRN: 167163  
MLC: 770/0037  
Case No: 4889763



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# Stronafian

## Map 5a: Landscape Analysis Map Lines of Force

Author: Matthew Giles  
Date: 14/02/2014  
Scale: 1:32,276

### Legend

✕ View Point

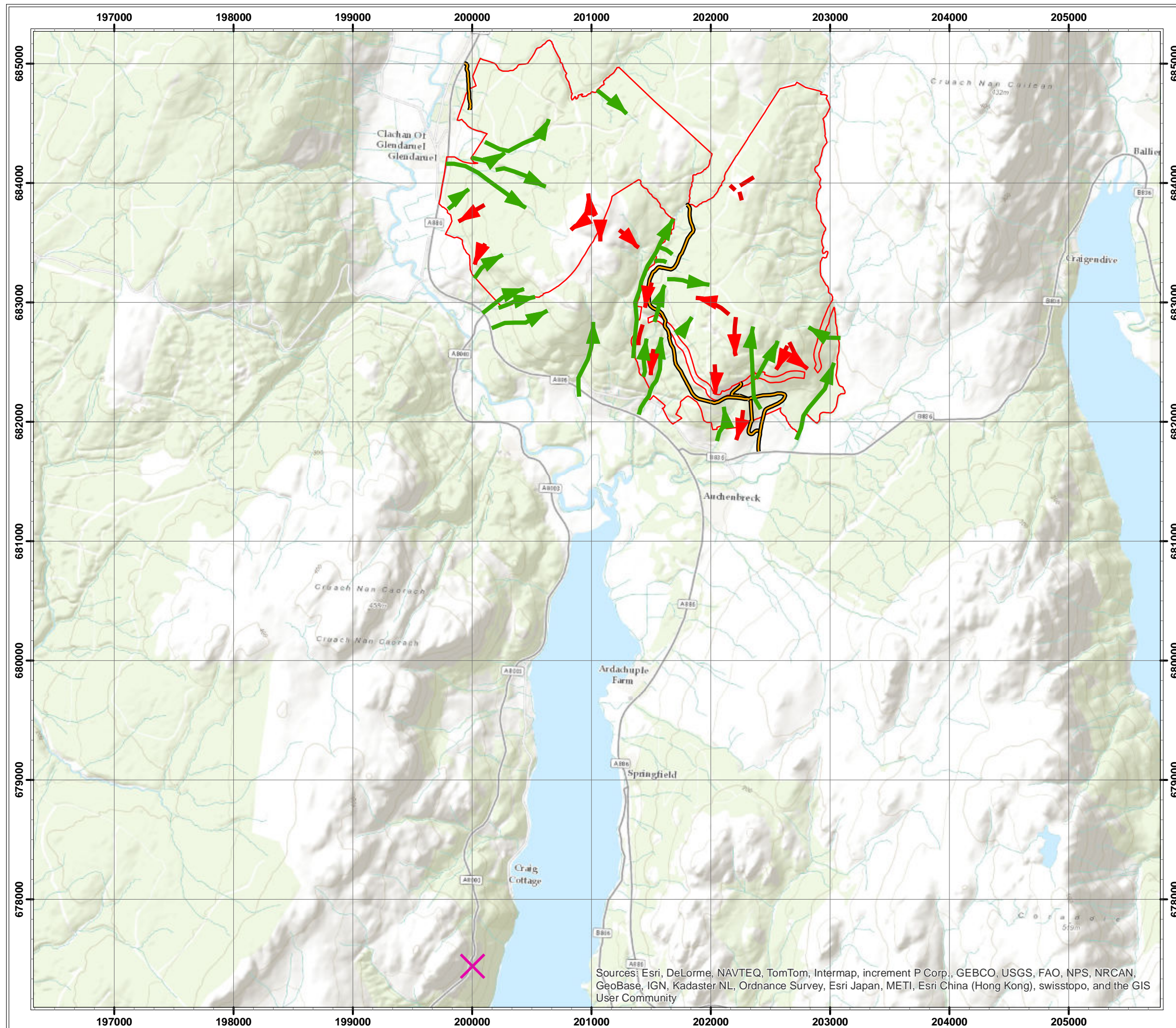
### Lines of Force Direction

▶ Lines of Force Down

▶ Lines of Force Up

— Forest Road

▭ Stronafian Boundary



Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community

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
# Stronafian

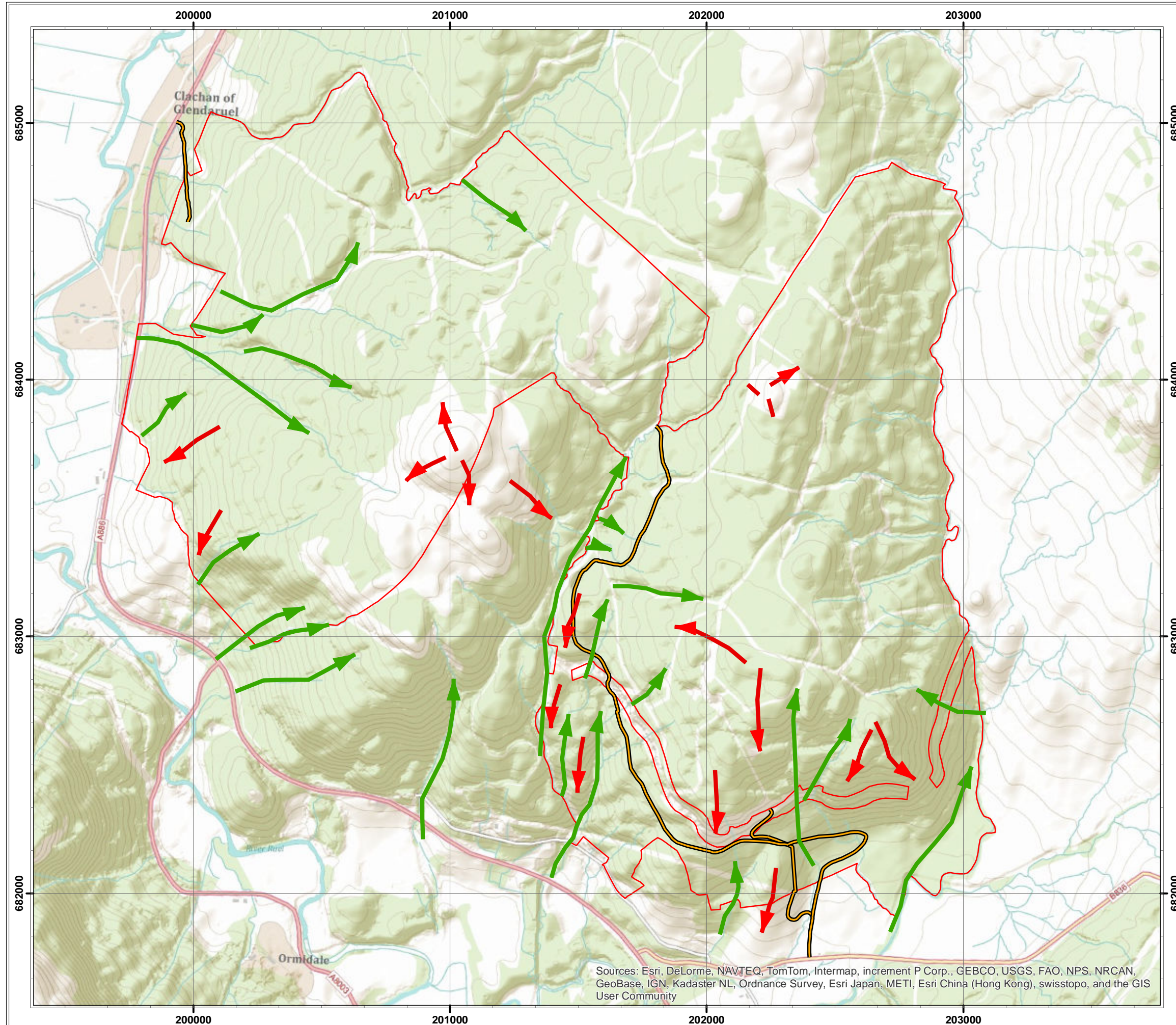
## Map 5a: Landscape Analysis Map Lines of Force

Author: Matthew Giles  
Date: 14/02/2014  
Scale: 1:15,000

### Legend

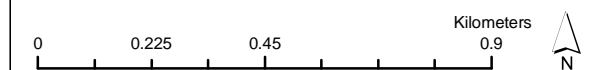
#### Lines of Force Direction

-  Lines of Force Down
-  Lines of Force Up
-  Forest Road
-  Stronafian Boundary



Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community

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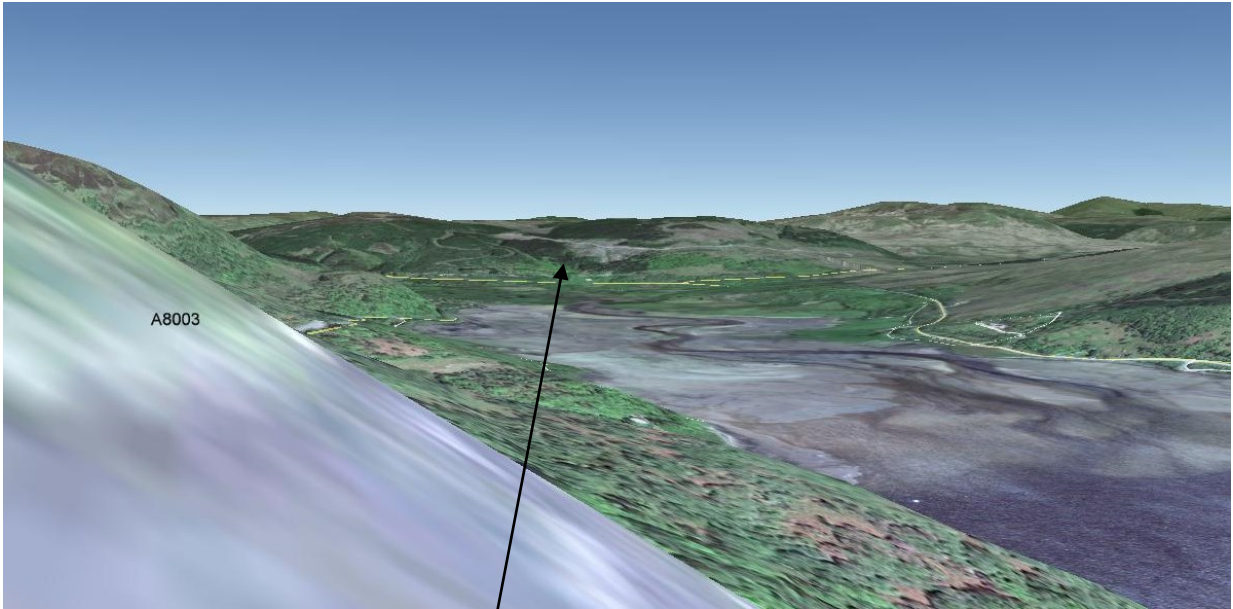






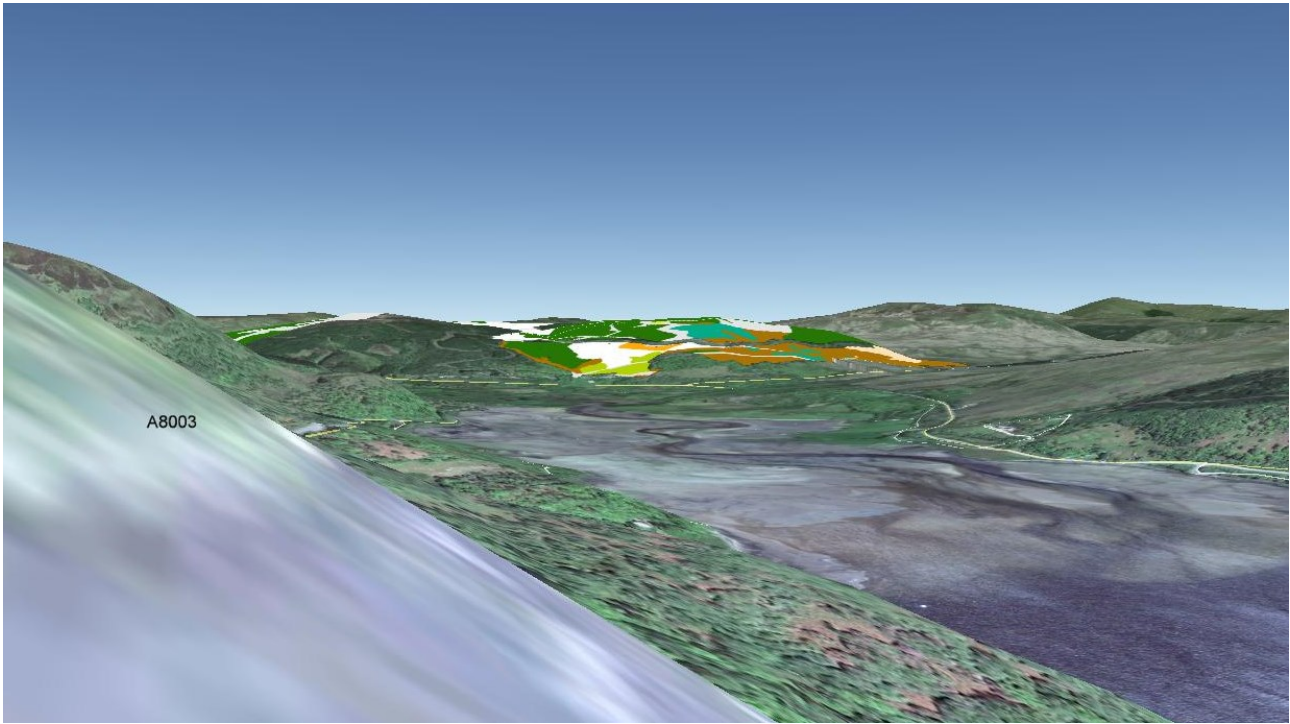
View point 1

Long view from Google Street View with Stronafian in the distance



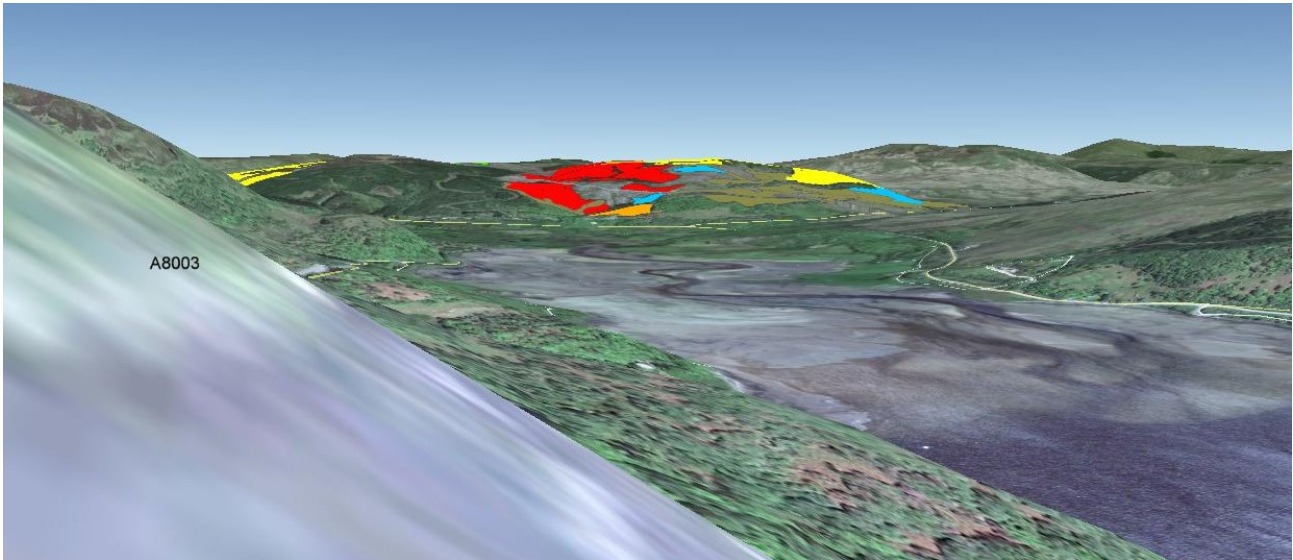
View point 1

Long view from Google Ground View with Stronafian in the distance



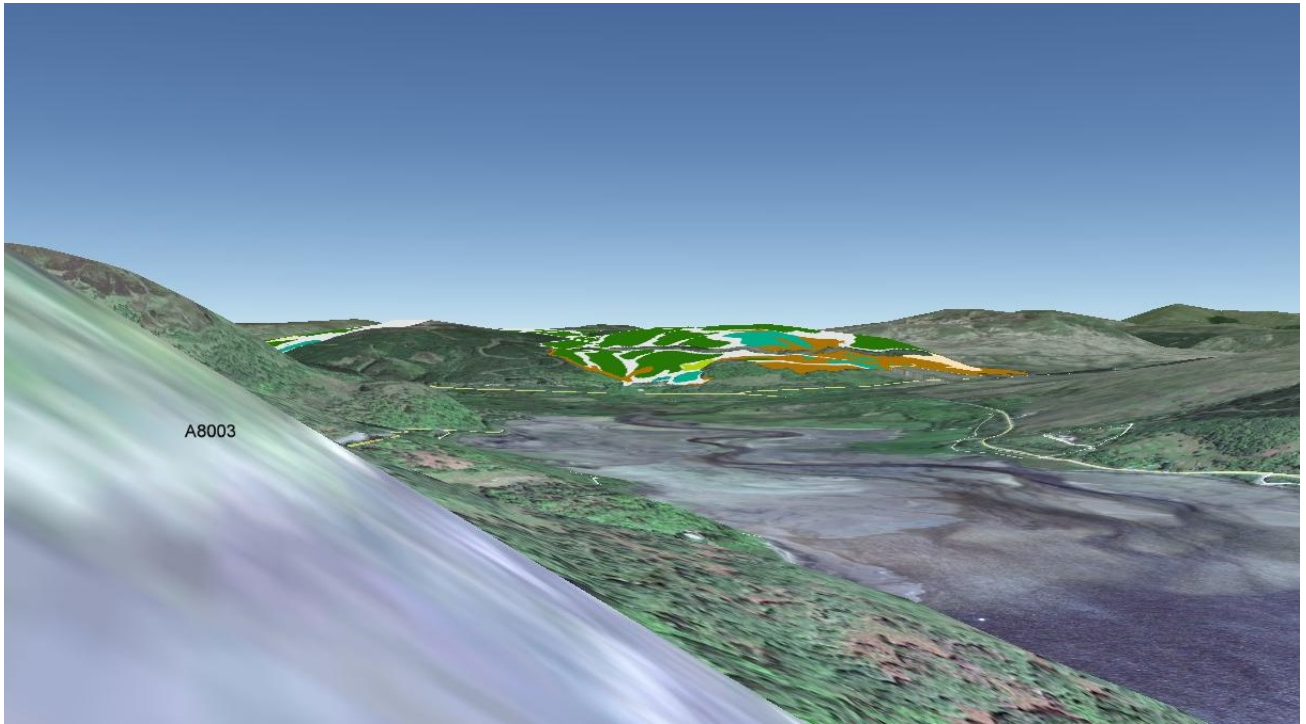
View point 1

Long view from Google Ground View with Stronafian in the distance with current species overlaid



View point 1

Long view from Google Ground View with Stronafian in the distance with felling phases overlaid



View point 1

Long view from Google Ground View with Stronafian in the distance with the final design plan overlaid

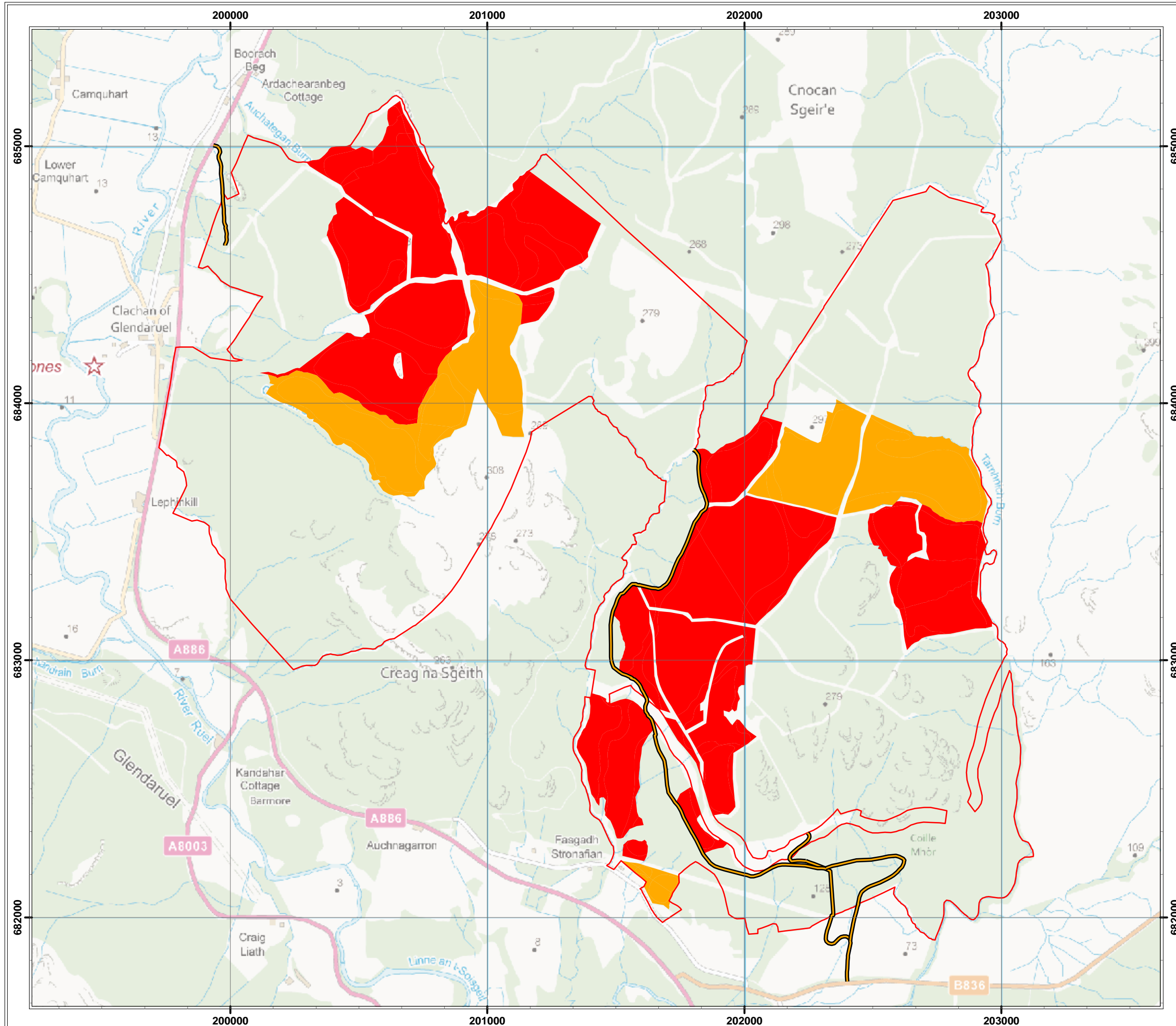
# Stronafian

## Map 6: 10 Year Felling Plan

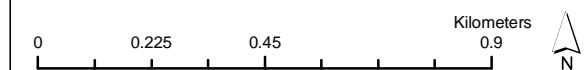
Author: Matthew Giles  
Date: 12/02/2014  
Scale: 1:15,000

### Legend

- Forest Road
- Stronafian Boundary
- Felling Phases**
- 5 year bands**
- Phase 1
- Phase 2



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MLC: 770/0037  
Case No: 4889763



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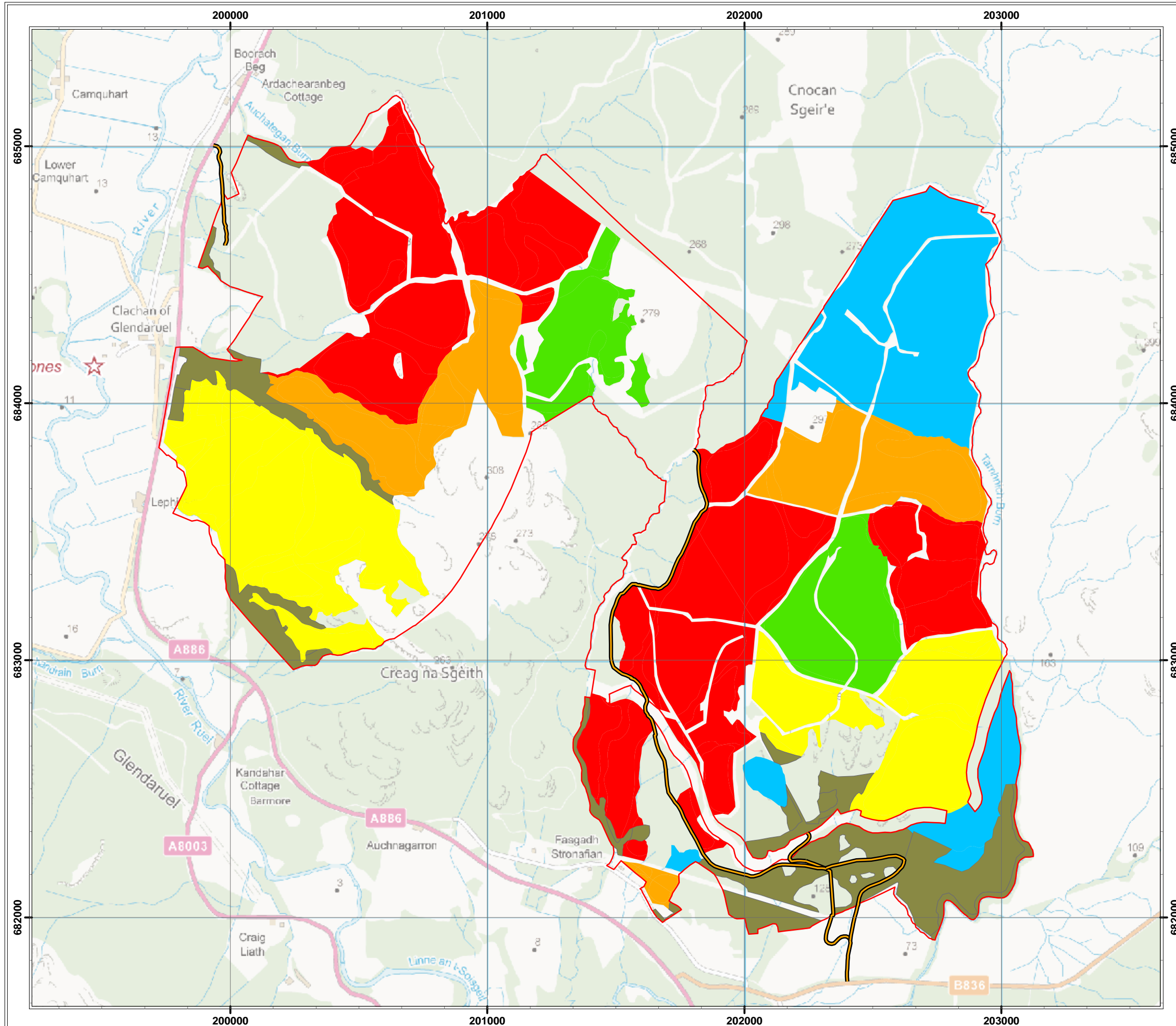
# Stronafian

## Map 7: Felling Plan

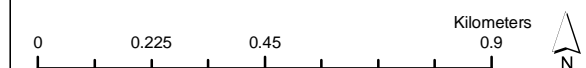
Author: Matthew Giles  
Date: 12/02/2014  
Scale: 1:15,000

### Legend

-  Forest Road
-  Stronafian Boundary
- Felling Phases**
- 5 year bands**
-  Phase 1
-  Phase 2
-  Phase 3
-  Phase 4
-  Long Term Retention (LTR)
-  Natural Reserves (NR)



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Case No: 4889763



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# Stronafian

## Map 8: 10 Year Restructuring Plan









Author: Matthew Giles  
 Date: 13/02/2014  
 Scale: 1:15,000

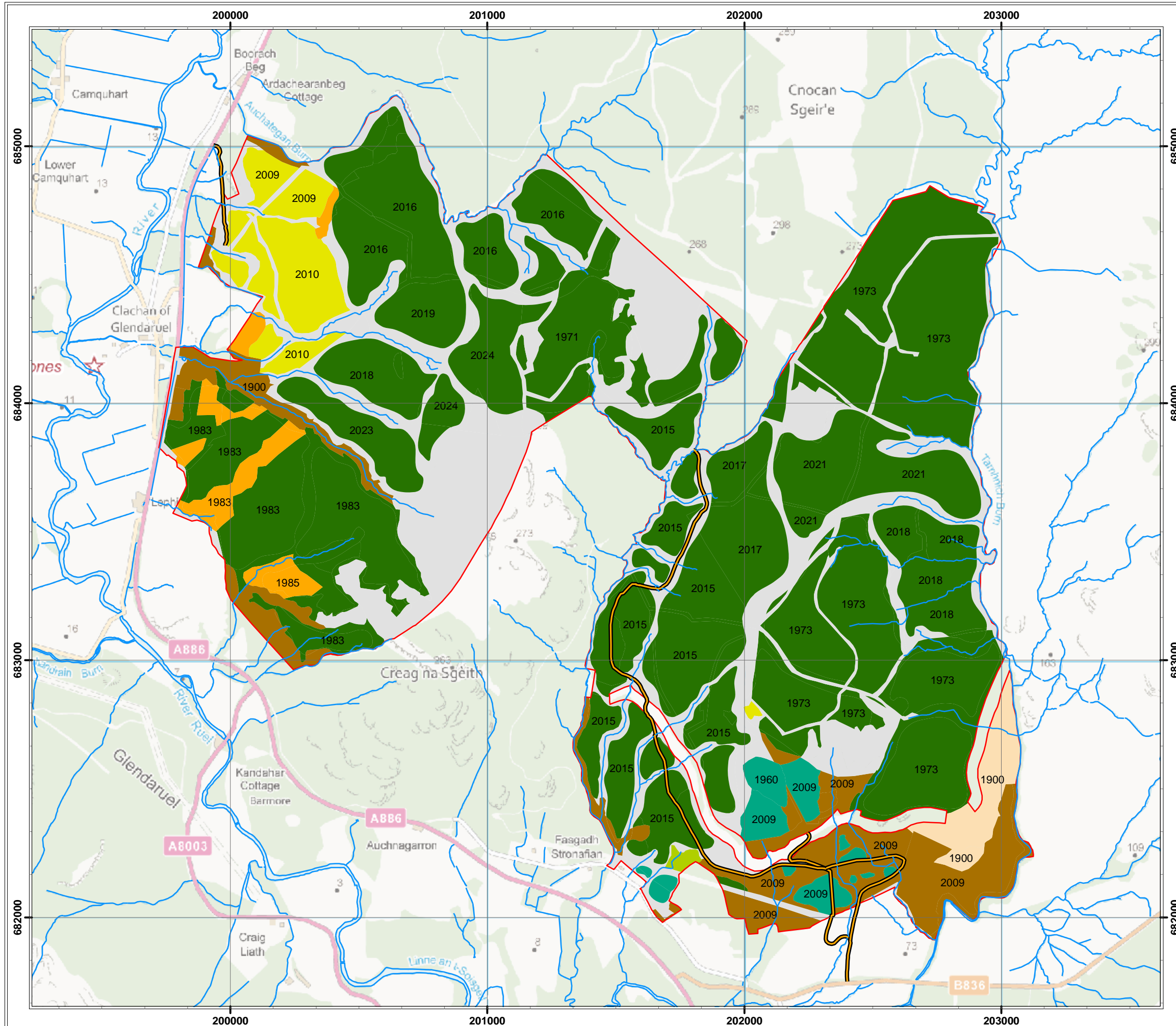
### Legend

-  Water\_Courses
-  Forest Road
-  Stronafian Boundary

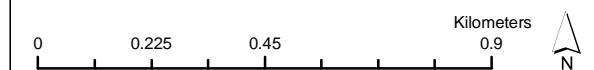
### Species Year 10

#### Species

-  SS
-  HL
-  MB
-  MB/MC
-  MC
-  NS
-  SP
-  OG



BRN: 167163  
 MLC: 770/0037  
 Case No: 4889763



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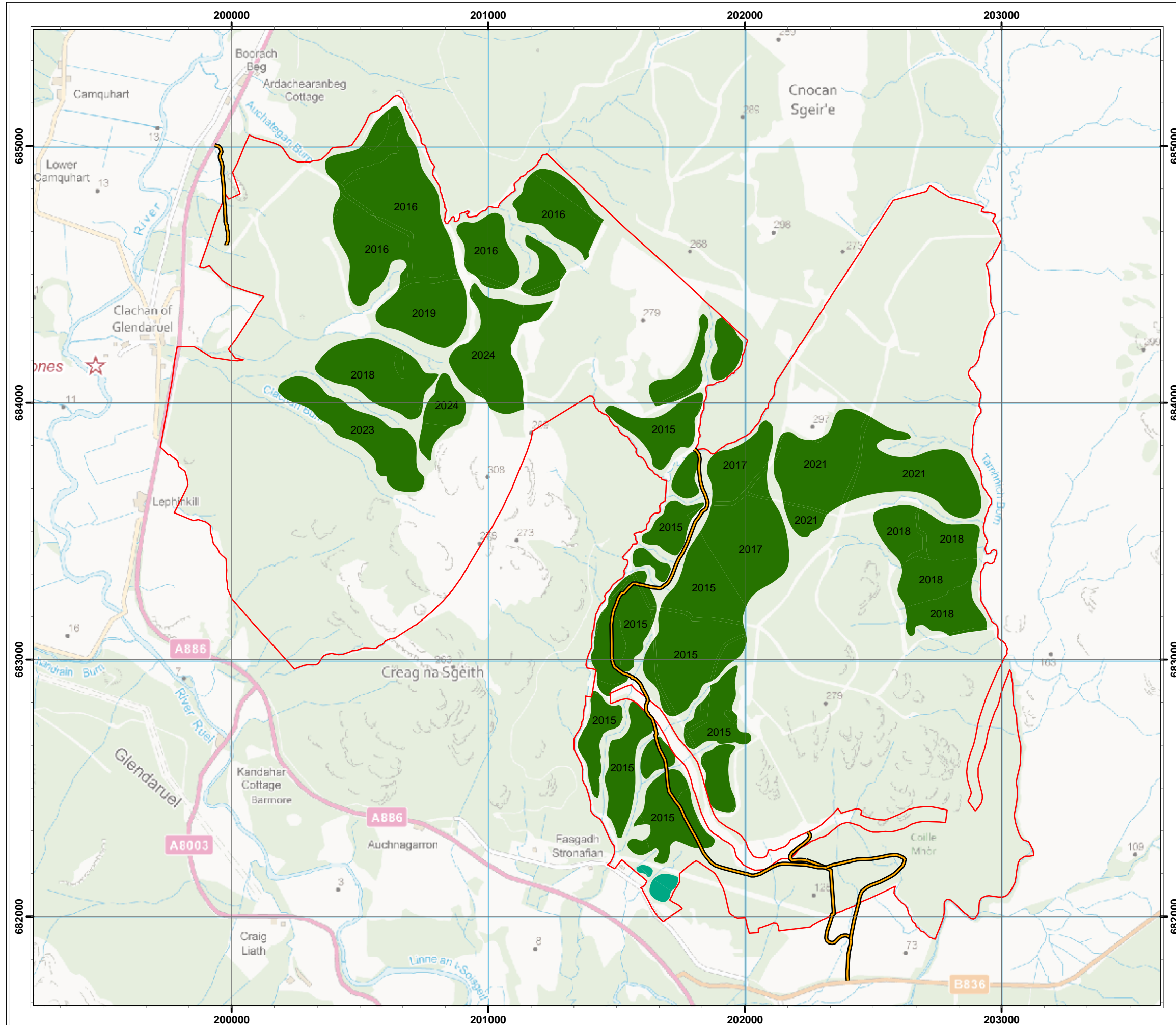


# Stronafian

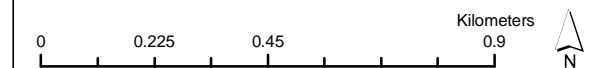
## Map 8a: 10 Year Restructuring Plan (Restocking only)

Author: Matthew Giles  
Date: 13/02/2014  
Scale: 1:15,000

- Legend
- Forest Road
  - Stronafian Boundary
- 10 Year Restocking**
- Species**
- SS
  - SP



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MLC: 770/0037  
Case No: 4889763



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# Stronafian

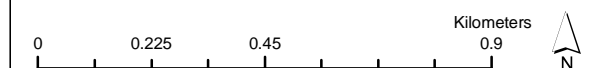
## Map 9: Final Design Plan

Author: Matthew Giles  
Date: 13/02/2014  
Scale: 1:15,000

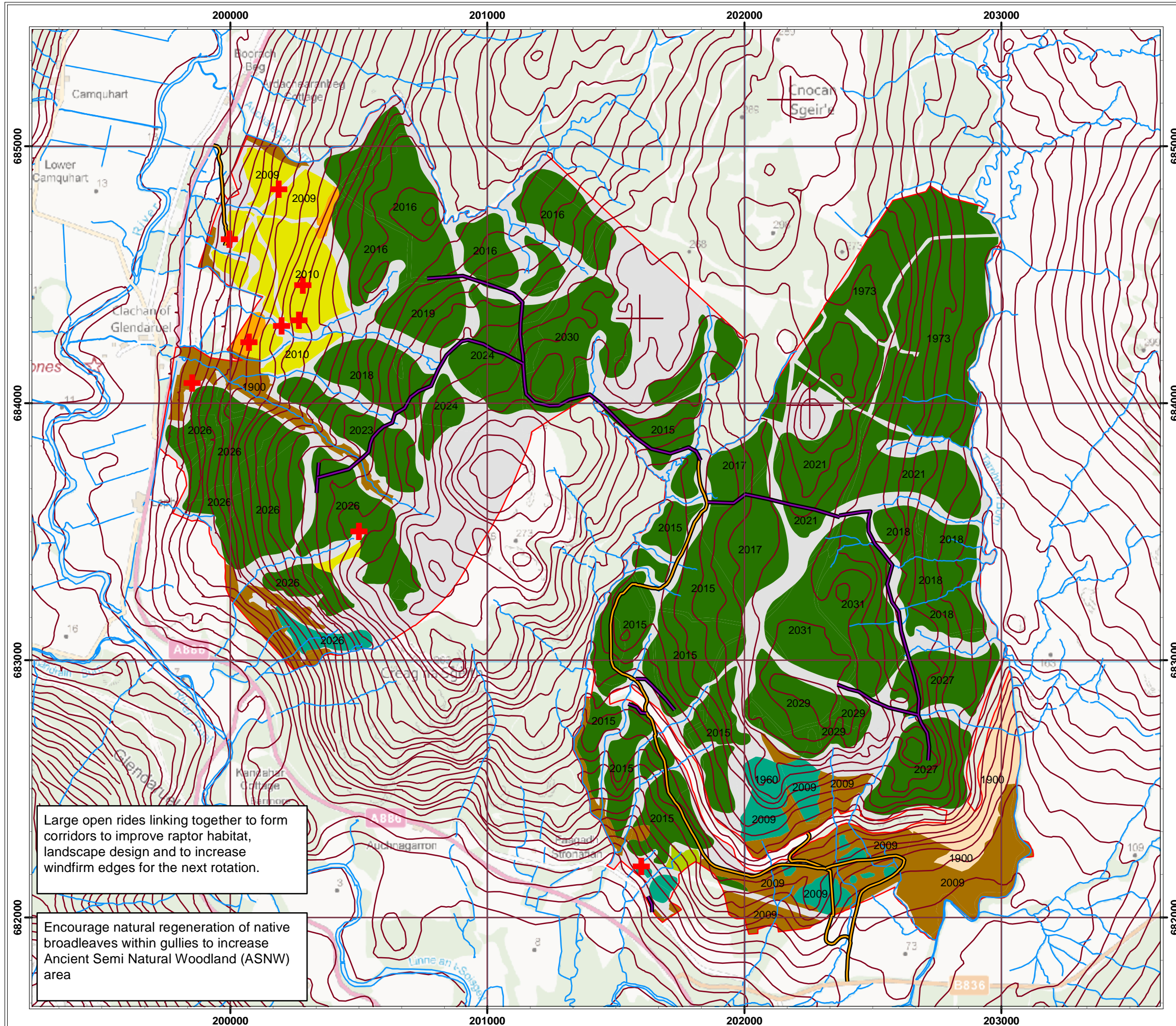
### Legend

-  Archaeology
-  Proposed Roads
-  Forest Road
-  Water Courses
- Contour Data**
-  Contour
-  Contour Data
-  Stronafian Boundary
- Final Species**
- Species**
-  SS
-  HL
-  MB
-  MB/MC
-  MC
-  NS
-  SP
-  OG

BRN: 167163  
MLC: 770/0037  
Case No: 4889763



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## **Appendix 3. Scoping Report Summary**

**Stronafian  
Long Term Forest Plan  
Scoping Report**

Document	Initials	date	<b>DGA Forestry</b> Lochanhead Wood Lochanhead DG2 8JB  Tel: 01387 730 634 e mail: <a href="mailto:mail@dga-forestry.co.uk">mail@dga-forestry.co.uk</a>	 <small>established 1972</small>
Prepared	M.Giles	8.11.13		
Checked				
Approved				

**Stronafian  
Long Term Forest Plan  
Scoping Report**

**1. Introduction**

A long term plan revision is being prepared for Stronafian.

1.1 The total area of the woodland is 610.96 ha.

1.2 Business Name: Stakis Forestry Llp

1.3 RDC proposal number : 4889763

1.4 Business Reference Number: 167163

1.5 Main Location Code: 770/0037

1.6 Forest Plan area for claim: 550.18 ha (Stackis Forestry LLP)

1.7 A scoping report was arranged by email and post and sent out on 02.07.13. A number of organisations, interested bodies and neighbours were invited to respond, submit relevant comments and to assist in the development of the forest plan.

1.8 Any queries or comments regarding the forest plan and this scoping report should be directed to the applicant's forestry consultant:-

M. Giles  
DGA Forestry  
Lochanhead Wood  
Lochanhead  
DG2 8JB

Tel: 01387 730 634  
email: [matthew@dga-forestry.co.uk](mailto:matthew@dga-forestry.co.uk)

**2. The Scoping Process**

2.1 The list of participants invited to assist in the development of the plan was agreed with the Forestry Commission. This list is given in Table 1 below.

2.2 Participants were invited to raise any relevant matters pertaining to the woodlands.

**Table 1**

<b>Organisation</b>	<b>Name</b>	<b>Email</b>	<b>Responded</b>
Forestry Commission		<a href="mailto:panda.cons@forestry.gsi.gov.uk">panda.cons@forestry.gsi.gov.uk</a>	No
Forestry Commission	Tom Davies	<a href="mailto:Tom.Davies@forestry.gsi.gov.uk">Tom.Davies@forestry.gsi.gov.uk</a>	Yes
Argyll and Bute Council	Stewart Clarke	<a href="mailto:stewart.clark@argyll-bute.gov.uk">stewart.clark@argyll-bute.gov.uk</a>	No
Argyll Timber Transport Group	Kirsty Robb	<a href="mailto:kirsty.robb1@gmail.com">kirsty.robb1@gmail.com</a>	No
SEPA		<a href="mailto:planning.aberdeen@sepa.org.uk">planning.aberdeen@sepa.org.uk</a>	Yes
SNH	Hazel White	<a href="mailto:Hazel.White@snh.gov.uk">Hazel.White@snh.gov.uk</a>	Yes
SNH		<a href="mailto:argyll_outerhebrides@snh.gov.uk">argyll_outerhebrides@snh.gov.uk</a>	Yes
RSPB		<a href="mailto:glasgow@rspb.org.uk">glasgow@rspb.org.uk</a>	Yes
RSPB	Shapley Douglas	<a href="mailto:Douglas.Shapley@rspb.org.uk">Douglas.Shapley@rspb.org.uk</a>	Yes
Councillors	Bruce Marshall	<a href="mailto:bruce.marshall@argyll-bute.gov.uk">bruce.marshall@argyll-bute.gov.uk</a>	No
Councillors	Alex McNaughton	<a href="mailto:alex.mcnaughton@argyll-bute.gov.uk">alex.mcnaughton@argyll-bute.gov.uk</a>	No
Councillors	Gordon Blair	<a href="mailto:gordon.blair@argyll-bute.gov.uk">gordon.blair@argyll-bute.gov.uk</a>	No
Colintraive and Glendaruel Community Council		<a href="mailto:rhonasutherland@sky.com">rhonasutherland@sky.com</a>	No
Colintraive and Glendaruel Community Council		<a href="mailto:secretary@colglencommunitycouncil.org.uk">secretary@colglencommunitycouncil.org.uk</a>	No
WOSAS (Archaeology)	Martin O'Hare	<a href="mailto:Martin.O'Hare@wosas.glasgow.gov.uk">Martin.O'Hare@wosas.glasgow.gov.uk</a>	Yes
Scottish Raptor Study Group	Dave Warden	<a href="mailto:warden007@btinternet.com">warden007@btinternet.com</a>	Yes
Historic Scotland		<a href="mailto:hs.heritagemanagement@scotland.gsi.gov.uk">hs.heritagemanagement@scotland.gsi.gov.uk</a>	No
Colintraive and Glendaruel Development Trust	Mark Chambers	<a href="mailto:mark@cgdt.org">mark@cgdt.org</a>	Yes

### 3. Issues Arising

3.1 The issues identified by each participant have been summarised and are shown in the following table, together with the applicant's responses where appropriate.

3.2 From this summary, a list of potential issues and conflicts have been identified. These are summarised in sections 4 and 5, together with the applicant's response.

**Table 2**

Comments	Response
<p><b>Organisation: RSPB</b></p>	
<p>Location of the estate makes it an important area for species of conservation concern; black grouse. Breeding raptors including hen harrier, short eared owl and merlin on the adjacent moorland. It is suggested that Scottish Power Renewables and Argyll Raptor Study Group (ARSG) are contacted for up to date records and the conservation department at FCS should be consulted on considerations for these species. <i>Full letter enclosed in Appendix</i></p>	<p>The Argyll Raptor Study Group is surveying the site and will report their findings.</p>
<p><b>Organisation: SEPA</b></p>	
<p>River Basin Management Planning Planting and felling proposals New supporting infrastructure Potential impacts on peatland and wetlands Use of waste on site, including felling waste Pollution prevention and environmental management Protected sites and species Regulatory requirements <i>Full letter enclosed in Appendix</i></p>	<p>The UK Forestry Standard will be followed when restructuring Stronafian. Water quality, riparian zones and biodiversity will all be improved following Forestry &amp; Water Guidelines.</p> <p>Any works carried out will follow all current legislation and guidelines.</p> <p>All new forest drains on restock sites will be GPS'd [Global Positioning System]. This information will be entered and records updated assisting in future management.</p> <p>Riparian zones will be restructured to include native broadleaves and open ground in varying densities.</p>
<p><b>Organisation: Argyll Raptor Study Group</b></p>	
	<p>The Argyll Raptor Study Group is surveying the site and will report their findings.</p>

<p><b>Organisation: SNH</b></p>	
<p><b>Background</b>  Stronafian Forest is a community-owned forested property situated at the head of Loch Riddon on the A886 on the west coast of the Cowal peninsula, Argyll. The forest contains areas of Ancient Woodland of both plantation and semi-natural origin and blocks of commercial plantation, mostly planted in the 1970s.</p> <p><b>Designated sites</b>  This forestry site lies outwith any European designated SAC or SPA, but does lie within the Kyles of Bute National Scenic Area (NSA).  Stronafian also lies within 200m of Ruel Estuary Site of Special Scientific Interest (SSSI) and runoff flows from the forest into the SSSI.</p> <p>The plan should consider impacts on these areas and put any appropriate mitigation in place in the plan. There are also non-statutory designations worth noting: The forest contains Red Squirrel Priority Woodland areas and Ancient Woodland of both plantation and semi-natural origin.</p> <p><b>European protected species (EPS)</b>  Creation of a forest habitat network would deliver significant benefits in terms of landscape impact and provide an improved habitat for a number of key species including bats, otter and wildcat. If any protected species are found to be present on site, surveys may be required to establish their use of the site prior to felling works. Other non-EPS mammal species including pine marten, badger and water vole may also be found. Red squirrels may benefit from the long-term retention of species such as any lodgepole pine and we recommend that this be considered as a conservation measure for this Local Biodiversity Action Plan (BAP) species.</p> <p><b>2.3 Ornithology</b>  Black grouse are recorded locally. They are a UKBAP Priority Species and the species is also on the Scottish Biodiversity List. Therefore, it is important that any planting carried out is designed with this species in mind. Key points to consider for black grouse are species composition, density and design of planting, amount of open space, deer fencing proposals and the future management of the woodland. For further advice we recommend you contact the RSPB Black Grouse Officer, Douglas Shapley at <a href="mailto:douglas.shapley@rspb.org.uk">douglas.shapley@rspb.org.uk</a>. Golden eagle are an Annex 1 species under the Birds Directive (EC Directive on the conservation of wild birds 79/409/EEC). We would advise that consideration be given to enhancing the habitat for golden eagle by extending the areas of open ground within the forest and scalloping and reducing the density on upper forest edges to provide increased foraging opportunities for this species. In the areas to be left unplanted, any conifer regeneration should be removed.</p> <p>The timing of any forestry works, including planting, tree felling or clearance work should avoid disturbance to breeding birds. All breeding birds are protected under the Wildlife and Countryside Act 1981 which prevents the destruction or disturbance of any breeding birds and their nests. For more on protected bird species see: Key to the</p>	<p>The land is owned by Stronafian Community Council. The timber is owned on a 99 year lease by Stakis Forestry LLP  Areas of ASNW will be extended during the lifetime of the plan.</p> <p>Riparian zones will be restructured to include native broadleaves and open ground in varying densities. The UK Forestry Standard will be followed when restructuring Stronafian. Water quality, riparian zones and biodiversity will all be improved following Forestry &amp; Water Guidelines.</p> <p>Any works carried out will follow all current legislation and guidelines.</p>

success of achieving the management objectives in this area will be working in a collaborative manner with surrounding landowners and we would expect to see evidence of this included within the DMP. See the Code of Practice on Deer Management:

<http://www.snh.gov.uk/land-and-sea/managing-wildlife/managing-deer/code-of-deer-management/>

If deer fencing is to be considered, you should take into account Joint Agency fencing guidance at

<http://www.snh.gov.uk/land-and-sea/managing-wildlife/managing-deer/sites/fencing/>.

The SNH Wildlife Operations Unit will be happy to provide any further advice required on creating this plan and any issues that should be addressed in the plan.

### **2.7 Watercourses**

Increasing the areas of open ground, to create buffers and the expansion of broadleaf woodland along watercourses further up and along more of these watercourses, is welcomed. Otter and water vole may also benefit from these measures which should be employed wherever opportunities arise throughout the woodland, providing connectivity of habitat between upper and lower reaches of these watercourses and areas of open hill.

The potential implications of harvesting operations and access road construction upon water quality, any fish species (or fresh water pearl mussels) and the SSSI features should be addressed by the plan through a robust sediment management regime which should be developed in conjunction with the Forest & Water guidelines.

### **2.8 Landscape & Visual**

The woodland at Stronafian forms part of the landscape feature within the NSA. As such, the woodland should be designed to sit as sensitively in the landscape as possible. The Forestry Commission has produced guidelines on landscape which provide 'best practice' information (FC Landscape Design Guidelines <http://www.forestry.gov.uk/forestry/INFD-8BVF7A>).

We would advise that successful woodland landscape design depends on the creation of naturalistic shapes, with the inclusion of a diverse range of species in the restocking proposals. Felling regimes should consider asymmetric felling coupes, which reflect the scale of the landscape. Broadleaf planting is usually concentrated on the margins and along water courses; however, we would encourage this to also be opened into pockets to reinforce the broadleaf pattern throughout the forest.

Open space should form an integrated network throughout the forest and where feasible, forest roads should follow landform, thereby reducing their visual impact. Any fencing should be kept away from skylines.

### **2.9 Access and Recreation**

In line with access legislation, and where practicable to do so, it would be good to look at opening the woodland up to as wide a range of users as possible.

We hope these comments are useful in informing the plan. We do not currently require a meeting regarding this plan, thanks you. Please let us know if you require any further information or advice from SNH.

<http://snhwebsite:8090/protecting-scotlands->

Large areas of the forest that are visible from public roads have already been landscape designed by the previous owners (Forestry Enterprise) with a mixture of Scots pine, native broadleaf woodland and open ground.

Responsible public access is welcomed.

nature/protected-species/which-and-how/birds/

#### **2.4 Native woodland, invasive species and bryophytes**

We welcome any proposals to restore and expand this habitat. In the long term the naturalisation of parts of the woodland will benefit a huge range of wildlife however the impacts of felling and restructuring works have to be considered before the long terms gains can be made. Measures should also be introduced to control the spread of any invasive non-native species particularly within the broadleaf woodland, particularly *Rhododendron ponticum*.

*Rhododendron* can be very damaging for bryophyte habitats. Auchategan Burn to the north of the site is a Category D watercourse (i.e. it has potential to have important bryophytes along its banks but has not been fully surveyed). Auchenbreck Burn, to the south east has had some surveys undertaken and is Category C. Kylesview Burn has no species of interest recorded and is Category E. The latter two are of low concern for bryophytes.

See Scottish Natural Heritage Commissioned Report No. 449b Bryological assessment for hydroelectric schemes in the West Highlands (2nd edition) for assessment of bryophyte interests.

#### **2.5 Standing deadwood**

We recommend the retention of some standing deadwood (where safe) and fallen deadwood to enhance the biodiversity interest of the site.

Forestry Commission Practice Guide – 2012 - Managing Deadwood in Forests and Woodlands advises: Create snags and fallen deadwood where insufficient exists (i.e. <10%). On clear fells, group deadwood in association with live stems, native trees and shrubs, and other semi natural vegetation or wet flushes – rather than distributing uniformly across the coupe.

See

[www.forestry.gov.uk/pdf/FCPG020.pdf/\\$file/FCPG020.pdf](http://www.forestry.gov.uk/pdf/FCPG020.pdf/$file/FCPG020.pdf)

#### **2.6 Deer Management**

We recommend that a competent Deer Management Plan (DMP) be compiled as part of the Long Term Forest Plan. All issues involving deer should be covered by Best Practice which can be found at:

<http://www.bestpracticeguides.org.uk>

Very little *Rhododendron* is present within the woodland.

Deadwood will be retained where appropriate and concentrated within areas of highest conservation values such a riparian zones.

A deer management plan will be produced as part of the Longterm plan.



Organisation: WOSAS	
<p>I have compared the proposal against information contained in the Historic Environment Record (HER) and with available cartographic sources, and would like to make the following comments.</p> <p>A number of archaeological features have been recorded from within the boundaries of the forest plan.</p> <p><i>WoSAS Pin 5121 / NMRS No NS08SW7 Loch Riddon / Kyles View – Bloomery NGR 201610, 682200</i></p> <p><i>Iron slag was found around 1969 above the head of Loch Riddon, in the vicinity of the grid reference quoted above. This could suggest the presence of a bloomery, associated with the early production of iron, somewhere in the area. Staff from the Ordnance Survey were unable to locate any evidence for such a feature when they visited the area in 1972, suggesting that the grid reference provided by the original reporter is likely to be approximate. However, it remains possible that material of this type may be present in the wider area, and could be encountered during forestry operations.</i></p> <p><i>WoSAS Pin 5123 / NMRS No NS08SW9 Glendaruel – Natural Feature NGR 200190, 684830</i></p> <p><i>This feature is recorded in the HER database as it was originally identified as a cairn. However, the site was visited by staff from the Ordnance Survey in 1972, who suggest that a protruding rock outcrop overgrown with heather may have been mistaken for a cairn.</i></p> <p><i>WoSAS Pin 58004 Clachan of Glendaruel – Farmstead NGR 200023, 684675</i></p> <p><i>This feature was reported to us in 2007 by staff from the Forestry Commission. It comprises a large earth and stone dyke which forms a pronounced “D” shaped enclosure in plan where the remains are centred. The dyke runs further through the forest and was not traced. Within the enclosure so formed are the remains of two probable structures/buildings now represented only by concentrations of loose stone. The site is not marked on Ordnance Survey first edition maps dated c.1870 and is earlier than this date in its period of occupation. The entire site had been ploughed prior to tree planting, and this is likely to have had a detrimental effect on its level of survival. There may be some potential to improve its situation in subsequent phases of the forest plan through maintaining it in unplanted open ground. If trees have been planted across the site, any felling should be limited to ground level, as grubbing out any stumps would be likely to remove the various features present.</i></p> <p><i>WoSAS Pin 5114 / NMRS No NS08SW2 St Modan’s Well – Holy Well NGR 200270, 684460</i></p>	<p>An informal archaeological audit will be carried out to identify if any sites not recorded are present. Any sites that are found will be notified to WOSAS. Any existing sites will be protected. Forestry &amp; Archaeology Guidelines will be followed.</p>

*This feature was named as St Modan's Well on the 1st edition Ordnance Survey map of 1868.*

*The OS Object Name Book of the same year described it as a spring of 'ordinary appearance'.*

*Members of the Cowal Archaeological Society visited the feature in 1967, and described the spring as being backed by fairly large stones, while noting that 20 or 30 quartz pebbles were found. However, staff from the Ordnance Survey were unable to find any trace of the spring when they visited the area in 1972. They noted that the streams in this area had all become part of an extensive drainage system associated with new forestry plantation, and the*

*suggestion is that the site may have been destroyed by the cutting of forest drains. It remains possible, however, that some element could still be identifiable on the ground*

*WoSAS Pin 19362 / NMRS No NS08SW23*

*Auchategan – Stone Axes*

*NGR 200250, 684350*

*Two stone axe fragments are recorded as having been found in this area. It is unclear how accurately the reported grid reference matches the actual position at which these artefacts were found, though their identification in relatively close proximity to the nearby chambered cairn does serve to highlight the potential for additional evidence for prehistoric occupation to be present in the area*

*WoSAS Pin 5118 / NMRS No NS08SW4*

*Lephinkill / Chapel – Chambered Cairn*

*NGR 200270, 684330*

*This chambered cairn is situated 600m E of Clachan of Glendaruel in a clearing within a forestry plantation; its position above the valley floor of Glendaruel at a height of 140m OD, is similar to that of the chambered cairn at Ardachearanbeag, about 900m to the north. The cairn appears as an irregular heather-clad mound of stones measuring about 25m by 11m and 2m in height; it has been disturbed and robbed to provide material for several sheep-shelters, one of which survives almost intact on the mound itself. The chamber is at the north end and is entered through a concave facade, now partly hidden by blocking material; the eastern portal stone, measuring 1.0m by 0.25m, still protrudes about 0.5m above the surface of the mound. A small earthfast stone situated behind the east portal and set parallel to it, which might indicate a double portal, could not be identified. The western portal stone does not survive, but a small supporting stone behind its likely position can still be seen; measuring only 0.4m by 0.15m and protruding 0.3m, it is not itself a likely partner for the east portal.*

*Two displaced side-slabs of the chamber are still visible, both over 0.6m in height. An excavated hollow on the line of the continuation of the chamber suggests that it was originally*

*between 3m and 4m long overall. Parts of what are probably corbel stones can be seen overlying the fallen side-slab on the eastern side of the chamber. In 2012, we received a report from a member of the public stating that recent tree felling in the vicinity of this cairn have improved views out from the monument, and there is the possibility that the forest plan could improve its setting further. It should be stressed, however, that ground disturbance in the vicinity of the cairn should be restricted; for example, trees should be felled to ground level but the stumps should be left in situ, as grubbing them out would run the risk of removing associated buried deposits that may be present in the surrounding area.*

*It should also be noted that the area was annotated as 'St Modan's Chapel' on the 1st edition Ordnance Survey map. No physical evidence for a chapel having stood in the area has been identified, and it is possible that the name may have been attached to the cairn at some point in the past. However, the proximity of the holy well described above would be typical of an early Christian foundation.*

*WoSAS Pin 5116 / NMRS No NS08SW21  
NGR 200200, 684300*

*A leaf-shaped flint arrowhead was found in the plough furrows near Lephinkill chambered cairn. As with the axe fragments noted above, it is not certain how accurately the reported grid reference reflects the actual find-spot. Again, however, the identification of this artefact highlights the potential of the area to produce buried sub-surface deposits. It is notable that the arrowhead was found in a plough furrow; this could suggest that ground preparation in advance of tree-planting may already have disturbed a previously-unrecorded settlement or flint-working site.*

*WoSAS Pin 5119 / NMRS No NS08SW5  
Auchategan – Settlement  
NGR 200060, 684240*

*Excavations were undertaken between 1967 and 1970 on a terrace on the E side of the valley of the River Ruel at a point 380m east of Glendaruel Hotel, in order to examine a site thought to be St Modan's Chapel; the chapel was not discovered, but the work revealed a series of occupation deposits from Neolithic to recent times, and the following account is a summary of the published report (Marshall 1980). Only the early levels will be described here (Periods 1-4), because the later levels -Period 5 (a rectangular stone house), Period 6 (a complex of shieling-huts), and Hut 4 - fall beyond the chronological span of the Argyll Inventory, Volume 6 (RCAHMS 1988). Only the outline of one of the later rectangular structures can still be detected within a forestry plantation.*

*Two phases of Neolithic occupation were discovered*

*(Period 1), the earlier represented by traces of two ill-defined huts, which were identified as cleared areas on the rock surface, with hearths and post-holes. In the second phase there was a series of well-built hearths, associated with further post-holes and an extensive collection of Neolithic artefacts (pottery, flint, pitchstone, 'pot-lids' and a greystone axe). Charcoal from a hearth belonging to the second Neolithic horizon provided a radiocarbon determination of 2300bc +/- 110 (I-4705). The flint artefacts included knives, scrapers and arrowheads in distinctive Neolithic forms; sherds of about sixty vessels were represented, notably carinated and open bowls in Grimston style.*

*Period 2 remains comprised a hearth, a structure resembling a cist and an unusual semicircular cairn measuring about 4.5m by 2.8m, which contained a second cist-like feature. The body of the cairn consisted of stones, sand and occupation debris from the Neolithic horizon, and the perimeter had been carefully constructed of long slabs. The cist, which lay near the centre of the straight side, was aligned NW and SE and measured about 0.55m by 0.45m and about 0.45m in depth; it contained earth, flecks of charcoal and one tiny sherd of pottery, with stones laid out on top of the fill. The second cist, situated about 4.4m to the ESE, was aligned N and S, and measured about 0.35m by 0.3m internally. Both cists were of unusual construction in that one end was composed of several stones and was lower than the other three sides; in neither case was there a capstone. Fragments of burnt were discovered both above and below the stones which covered the earthy fill-material.*

*Period 3 was represented by a series of post-holes up to 0.47m deep and packed with long narrow stones, defining a structure which measured about 5.5m by 4.3m; the timber superstructure was evidently clad with panels of wattle and daub. The only finds were two discs of schist, perhaps 'pot-lids', and two rubbing-stones. The radiocarbon determination for the hearth was later than Period 3 but earlier than the rectangular stone house of Period 5, is ad 660 +/- 100 (GaK -2768).*

*Period 4 was represented by the debris of an iron-working site, the main focus of which was uncertain, but it was stratigraphically earlier than the rectangular stone house of Period 5. It is clear that this represents an important multi-phase settlement, though it is likely that much of the physical evidence associated with it would have been removed during the various seasons of excavation. However, the fact that the report states that 'only the outline of one of the later rectangular structures can still be detected within a forestry plantation' suggests that*

*it was not wholly removed, meaning that other related material may still be present below ground level. This is likely to have been affected to some degree by ground preparation in advance of forestry planting, and by the action of growing tree roots, but it is nevertheless the case that future forestry operations in this area would have the potential to encounter and disturb important buried archaeological material.*

*WoSAS Pin 4545 / NMRS No NR98SE3*

*Clachan of Glendarvel – Cup and Ring Markings*

*NGR 199855, 684085*

*This decorated boulder is situated in a deciduous plantation 100m SE of the road bridge over the Clachan Burn. Its upper surface bears ten cupmarks, one of which is surrounded by a*

*single ring and another by a keyhole-shaped ring.*

Taken together, it is apparent that the forest plan encompasses an area that is particularly rich in material relating to occupation in the prehistoric and early medieval periods. It is important to be aware that the recorded features are unlikely to represent the totality of archaeological material present, as the majority of the area does not appear to have been subject to previous archaeological survey, meaning that additional unrecorded features may also survive. This potential is further enhanced when looking at sites recorded from just beyond the boundaries of the forest plan, such as the chambered cairn and bloomery mound at Ardachearanbeg, just beyond the north-western boundary

of the forest, or the standing stone at Auchnagarran, to the south of it. It is also apparent from the various records that several of the recorded sites have already undergone a degree of disturbance resulting from forestry operations, and the aim of the forest plan currently in development should be to ensure that the condition of these sites does not get any worse.

It is also important to be aware that many of the features will have a physical extent beyond the simple 'dot on the map' represented by the recorded grid reference, and that any management proposal should relate to the full size of the site on the ground, to ensure that all elements of it are protected from further damage resulting from forestry operations. In relation to this, it is likely to be necessary to undertake measures to attempt to identify the various recorded sites on the ground, to verify the accuracy of the grid references and to ensure that a planting scheme can be designed that allows sufficient open space to protect all elements of them.

#### 4. Impact Assessment

4.1 The impact various issues may have on the management of the woodlands and the plan preparation has been assessed. Any areas of conflict have been highlighted. Proposals are made for minimising impacts and resolving conflicts. Generally there are few issues which impact on management objectives and preparation of the plan. These are all summarised in the following table.

**Table 3**

<b>Issue</b>	<b>Impact</b>	<b>Proposals</b>
<b>Landscape</b>		
No major issues. Treatment of internal and external edges to be considered as ways of improving habitat. Limited public views of forest. Short viewpoints from south side of forest which runs adjacent to B836. Short view to the west of the forest from A886.	Opportunity to improve the landscape and biodiversity value of the woodland.	Restocking design will be as per FC guidelines. Majority of the areas that can be seen from these view points have been felled and restocked already.
Species composition design and layout of forest	Opportunity to improve the visual and conservation value of the woodlands. Increased open ground and broadleaves may reduce the productive potential of the woodland.	The opportunity will be taken to improve species composition and conservation value of the woodland.
Location of open ground	Opportunity to improve conservation value by linking open agricultural land to riparian zones.	
<b>Roads</b>		
Consultation route from southern access of forest Rd_Number B836 ROAD_NAME ROAD_CLASS Consultation Route TTG_GROUP Argyll TTG COUNCIL ARGYLL & BUTE	This acts as an operational constraint on harvesting operations.	No alternative route is available for timber coming from this access.
<b>Conservation</b>		
Importance of the forest for LBAP and UKBAP species. Black Grouse Red squirrels  Areas of Ancient Semi Natural Woodland (ASNW)	This is a constraint on forestry operations, increasing working costs and affecting felling and replanting operations.	Restructuring will be carried out to improve conditions for LBAP and UKBAP species.  These will be protected during operations and expanded over the lifetime of the plan.
<b>Water</b>		
Importance of lochs and burns for biodiversity	A constraint on forestry operations affecting felling and replanting operations	Forest and Water Guidelines will be followed. Consultation with statutory bodies where required will be undertaken during operations.
<b>Access</b>		
Public access.	Public access acts as a constraint on forestry operations. There is an opportunity to improve the recreational value of the woodlands	Responsible public access is welcomed and it is hoped will bring benefits to the local community.
<b>Deer Management</b>		
	Deer management essential to successful restocking	Include a deer management strategy

<b>Archaeology</b>		
<p>There are no scheduled monuments within the forest boundary. Numerous unscheduled sites. If any archaeological sites are present they will be noted.</p>	<p>Acts as a constraint to harvesting and restocking</p>	<p>An informal archaeological audit will be carried out to identify if any sites not recorded are present. Any sites that are found will be notified to WOSAS. Any existing sites will be protected. Forestry &amp; Archaeology Guidelines will be followed.</p>

## 5. Proposed Planning Action

5.1 The Estate has to achieve a balance between the various management objectives, in particular between timber production and the non-financial objectives of landscape, conservation and heritage.

The purpose of the CGDT is to work with, and for, the community to identify projects and activities which will improve access to, and provision of, facilities, amenities and services for employment, education, health and recreation. The CGDT will do this while maintaining the benefits of living in the area such as safety, tranquillity and community spirit.

5.2 The Estate has already recognised the importance of many of the issues raised. They will be incorporated within the management objectives and the Forest Plan process.

5.3 No major conflicts have been identified.

5.4 The Estate already has comprehensive management information, therefore only a limited amount of further information is required. As part of the planning process the Estate will update existing records as follows:-

- Up-date aerial photographs
- Up-date any archaeological information.

### APPENDIX 1

#### Concept Map

Please see Map provided as a separate attachment

### APPENDIX 2

#### Written Responses During Scoping Process

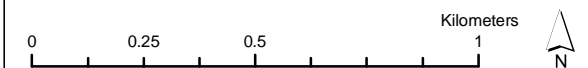


# Stronafian - Concept Map

Author: Matthew Giles  
 Date: 08/11/2013  
 Scale: 1:16,938

## Legend

- ROAD\_CLASS**
- Consultation Route
  - Severely Restricted Route
  - Rough Proposed Roadlines (1st choice SR)
- Forest Road Class**
- A
  - B
  - C
- hs\_scheduled\_monume...
- Stronafian\_Boundary
- National\_Scenic\_Areas
- Ancient Woodland Inventory
- Stronafian**
- OG/Felled
- PRI\_SPCODE**
- BI
  - DF
  - HL
  - JL
  - LP
  - MB
  - MC
  - NF
  - NS
  - OK
  - SP
  - SS
  - WH
  - XB



DGA Forestry  
 Lochanheadwood  
 Lochanhead  
 Dumfries  
 DG2 8JB  
 Tel: 01387 730634  
 Email: mail@dga-forestry.co.uk



Archaeology  
 No scheduled monuments within forest  
 Numerous unscheduled sites

Landscape - Steep Ridgeland and Mountains  
 Geology - Metamorphic-Southernhighland  
 Landform - Mountain Mountain-Ridge  
 Slope-Steep Outcrops-Rocky Bays-Small

Consultation route from southern access of forest  
 Rd\_NumberB836  
 ROAD\_NAME  
 ROAD\_CLASSConsultation Route  
 TTG\_GROUPArgyll TTG  
 COUNCIL ARGYLL & BUTE

Location of the estate makes it an important area for species of conservation concern; black grouse. Breeding raptors including hen harrier, short eared owl and merlin on the adjacent moorland.

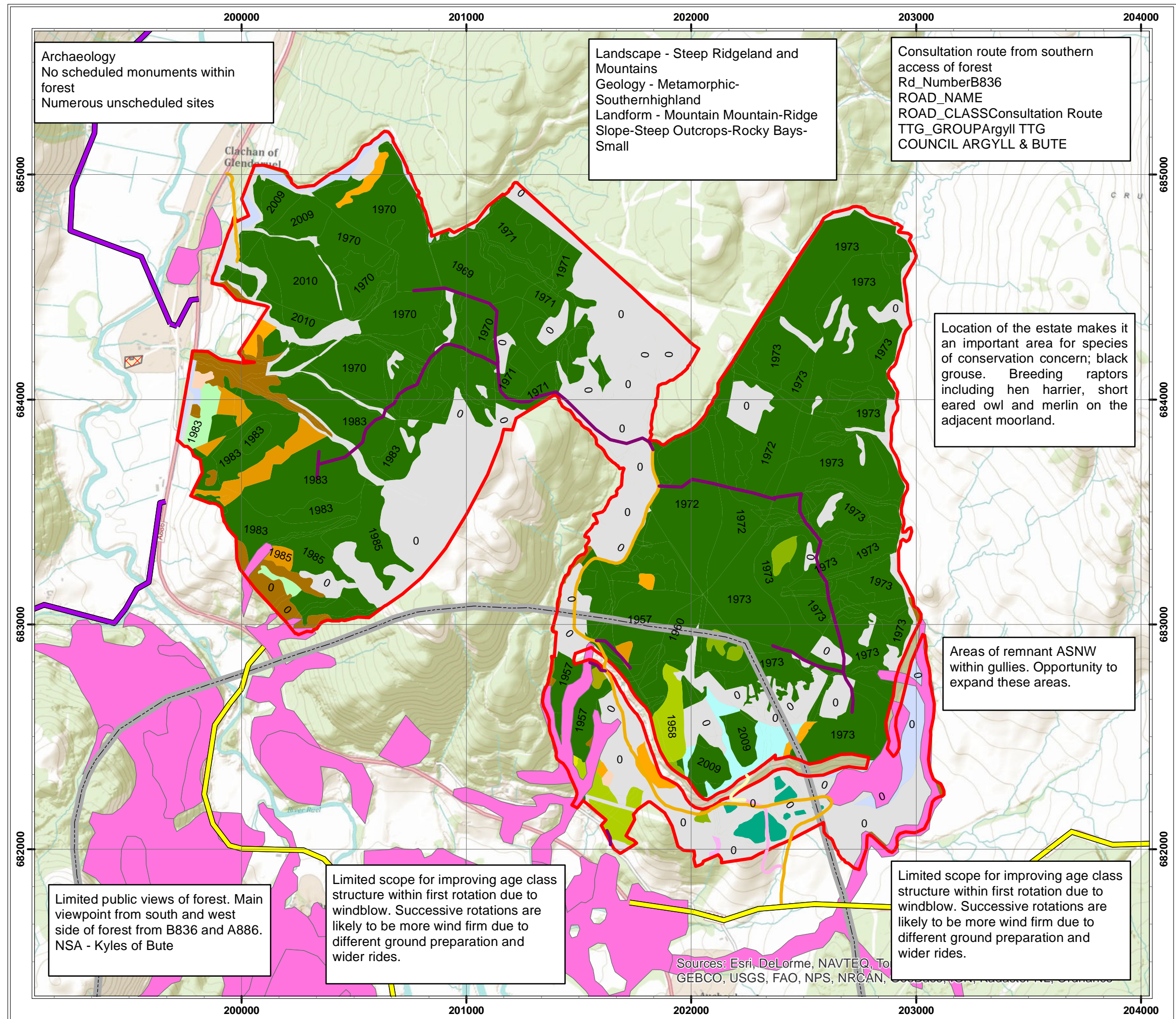
Areas of remnant ASNW within gullies. Opportunity to expand these areas.

Limited public views of forest. Main viewpoint from south and west side of forest from B836 and A886. NSA - Kyles of Bute

Limited scope for improving age class structure within first rotation due to windblow. Successive rotations are likely to be more wind firm due to different ground preparation and wider rides.

Limited scope for improving age class structure within first rotation due to windblow. Successive rotations are likely to be more wind firm due to different ground preparation and wider rides.

Sources: Esri, DeLorme, NAVTEQ, To GEBCO, USGS, FAO, NPS, NRCAN,





**Scottish Natural Heritage**  
**Dualchas Nàdair na h-Alba**

All of nature for all of Scotland  
Nàdar air fad airson Alba air fad

Year of Natural  
Scotland 2013 

**Matthew Giles**  
**DGA Forestry**  
**Lochanhead Wood**  
**Lochanhead**  
**Dumfries**  
**DG2 8JB**

**by email only to [matthew@dga-forestry.co.uk](mailto:matthew@dga-forestry.co.uk)**

16 October 2013  
Our ref: A1088719

Dear Mr Giles,

### **Stronafian Long Term Forest Plan - Scoping exercise**

Thank you for your email of 11 September 2013, inviting Scottish Natural Heritage (SNH) to participate in the scoping exercise for the above Long Term Forest Plan.

#### **1. Background**

Stronafian Forest is a community-owned forested property situated at the head of Loch Riddon on the A886 on the west coast of the Cowal peninsula, Argyll. The forest contains areas of Ancient Woodland of both plantation and semi-natural origin and blocks of commercial plantation, mostly planted in the 1970s.

#### **2. Subjects to be scoped in to the plan**

##### **2.1 Designated sites**

This forestry site lies outwith any European designated SAC or SPA, but does lie within the Kyles of Bute National Scenic Area (NSA). [http://gateway.snh.gov.uk/sitelink/siteinfo.jsp?pa\\_code=9134](http://gateway.snh.gov.uk/sitelink/siteinfo.jsp?pa_code=9134) shows associated documents for this site. Stronafian also lies within 200m of Ruel Estuary Site of Special Scientific Interest (SSSI) [http://gateway.snh.gov.uk/sitelink/siteinfo.jsp?pa\\_code=1395](http://gateway.snh.gov.uk/sitelink/siteinfo.jsp?pa_code=1395) and runoff flows from the forest into the SSSI.

The plan should consider impacts on these areas and put any appropriate mitigation in place in the plan. There are also non-statutory designations worth noting: The forest contains Red Squirrel Priority Woodland areas and Ancient Woodland of both plantation and semi-natural origin. For management of ancient woodland, see documents linked in <http://snhwebsite:8090/land-and-sea/managing-the-land/forestry-and-woodlands/history/>.

##### **2.2 European protected species (EPS)**

Creation of a forest habitat network would deliver significant benefits in terms of landscape impact and provide an improved habitat for a number of key species including bats, otter and wildcat. If any protected species are found to be present on site, surveys may be required to establish their use of the site prior to felling works.

Further details on the legal protection afforded to EPS can be found at:-

<http://www.snh.gov.uk/protecting-scotlands-nature/protected-species/legal-framework/habitats-directive/euro/>.

<http://www.snh.gov.uk/protecting-scotlands-nature/protected-species/which-and-how/>



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Other non-EPS mammal species including pine marten, badger and water vole may also be found. Red squirrels may benefit from the long-term retention of species such as any lodgepole pine and we recommend that this be considered as a conservation measure for this Local Biodiversity Action Plan (BAP) species.

### **2.3 Ornithology**

Black grouse are recorded locally. They are a UKBAP Priority Species and the species is also on the Scottish Biodiversity List. Therefore, it is important that any planting carried out is designed with this species in mind. Key points to consider for black grouse are species composition, density and design of planting, amount of open space, deer fencing proposals and the future management of the woodland. For further advice we recommend you contact the RSPB Black Grouse Officer, Douglas Shapley at [douglas.shapley@rspb.org.uk](mailto:douglas.shapley@rspb.org.uk).

Golden eagle are an Annex 1 species under the Birds Directive (EC Directive on the conservation of wild birds 79/409/EEC). We would advise that consideration be given to enhancing the habitat for golden eagle by extending the areas of open ground within the forest and scalloping and reducing the density on upper forest edges to provide increased foraging opportunities for this species. In the areas to be left unplanted, any conifer regeneration should be removed.

The timing of any forestry works, including planting, tree felling or clearance work should avoid disturbance to breeding birds. All breeding birds are protected under the Wildlife and Countryside Act 1981 which prevents the destruction or disturbance of any breeding birds and their nests. For more on protected bird species see:

<http://snhwebsite:8090/protecting-scotlands-nature/protected-species/which-and-how/birds/>

### **2.4 Native woodland, invasive species and bryophytes**

We welcome any proposals to restore and expand this habitat. In the long term the naturalisation of parts of the woodland will benefit a huge range of wildlife however the impacts of felling and restructuring works have to be considered before the long term gains can be made.

Measures should also be introduced to control the spread of any invasive non-native species particularly within the broadleaf woodland, particularly *Rhododendron ponticum*.

*Rhododendron* can be very damaging for bryophyte habitats. Auchategan Burn to the north of the site is a Category D watercourse (i.e. it has potential to have important bryophytes along its banks but has not been fully surveyed). Auchenbreck Burn, to the south east has had some surveys undertaken and is Category C. Kylesview Burn has no species of interest recorded and is Category E. The latter two are of low concern for bryophytes.

See [Scottish Natural Heritage Commissioned Report No. 449b Bryological assessment for hydroelectric schemes in the West Highlands \(2nd edition\)](#) for assessment of bryophyte interests.

### **2.5 Standing deadwood**

We recommend the retention of some standing deadwood (where safe) and fallen deadwood to enhance the biodiversity interest of the site.

Forestry Commission Practice Guide – 2012 - Managing Deadwood in Forests and Woodlands advises: Create snags and fallen deadwood where insufficient exists (i.e. <10%). On clear fells, group deadwood in association with live stems, native trees and shrubs, and other semi natural vegetation or wet flushes – rather than distributing uniformly across the coupe.

See [www.forestry.gov.uk/pdf/FCPG020.pdf/\\$file/FCPG020.pdf](http://www.forestry.gov.uk/pdf/FCPG020.pdf/$file/FCPG020.pdf)

### **2.6 Deer Management**

We recommend that a competent Deer Management Plan (DMP) be compiled as part of the Long Term Forest Plan. All issues involving deer should be covered by Best Practice which can be found at: <http://www.bestpracticeguides.org.uk>

Key to the success of achieving the management objectives in this area will be working in a collaborative manner with surrounding landowners and we would expect to see evidence of this included within the DMP. See the Code of Practice on Deer Management:

<http://www.snh.gov.uk/land-and-sea/managing-wildlife/managing-deer/code-of-deer-management/>

If deer fencing is to be considered, you should take into account Joint Agency fencing guidance at <http://www.snh.gov.uk/land-and-sea/managing-wildlife/managing-deer/sites/fencing/>.

The SNH Wildlife Operations Unit will be happy to provide any further advice required on creating this plan and any issues that should be addressed in the plan.

## **2.7 Watercourses**

Increasing the areas of open ground, to create buffers and the expansion of broadleaf woodland along watercourses further up and along more of these watercourses, is welcomed. Otter and water vole may also benefit from these measures which should be employed wherever opportunities arise throughout the woodland, providing connectivity of habitat between upper and lower reaches of these watercourses and areas of open hill.

The potential implications of harvesting operations and access road construction upon water quality, any fish species (or fresh water pearl mussels) and the SSSI features should be addressed by the plan through a robust sediment management regime which should be developed in conjunction with the Forest & Water guidelines.

## **2.8 Landscape & Visual**

The woodland at Stronafian forms part of the landscape feature within the NSA. As such, the woodland should be designed to sit as sensitively in the landscape as possible. The Forestry Commission has produced guidelines on landscape which provide 'best practice' information (FC Landscape Design Guidelines <http://www.forestry.gov.uk/forestry/INFD-8BVF7A>).

We would advise that successful woodland landscape design depends on the creation of naturalistic shapes, with the inclusion of a diverse range of species in the restocking proposals. Felling regimes should consider asymmetric felling coupes, which reflect the scale of the landscape. Broadleaf planting is usually concentrated on the margins and along water courses; however, we would encourage this to also be opened into pockets to reinforce the broadleaf pattern throughout the forest. Open space should form an integrated network throughout the forest and where feasible, forest roads should follow landform, thereby reducing their visual impact. Any fencing should be kept away from skylines.

## **2.9 Access and Recreation**

In line with access legislation, and where practicable to do so, it would be good to look at opening the woodland up to as wide a range of users as possible.

We hope these comments are useful in informing the plan. We do not currently require a meeting regarding this plan, thanks you. Please let us know if you require any further information or advice from SNH.

Yours sincerely



### **Hazel White**

Operations Officer

Argyll & Outer Hebrides

[hazel.white@snh.gov.uk](mailto:hazel.white@snh.gov.uk)

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Our ref: PCS/128914  
Your ref: 4889763

Matthew Giles  
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If telephoning ask for:  
Alison Wilson

25 September 2013

By email only to: [matthew@dga-forestry.co.uk](mailto:matthew@dga-forestry.co.uk)

Dear Mr Giles

## **Stronafian Long Term Forest Plan Case Number: 4889763**

Thank you for consulting SEPA for scoping advice for the above forest proposal by way of your e-mail which we received on 11 September 2013, enclosing a location plan, a concept map and brief description of the proposals for the Long Term Forest Plan for Stronafian. We welcome this opportunity to provide comments which may be helpful in your preparation of this Forest Plan (hereby just referred to as "the Plan") and are of the view that good Forest Plans can assist in facilitating the delivery of multiple benefits for people, the environment and the Scottish economy.

We refer you to our [Planning and Forestry webpage](#) which provides detailed background information on the ways that forestry can affect and be affected by our interests (for example in relation to the River Basin Management Plan), regulatory advice and links to best practice guidance.

We would like to specifically see the issues outlined below addressed in the Plan.

### **1. River Basin Management Planning**

- 1.1 The UK Forest Standard identifies that forest management should contribute towards achieving the objectives of the River Basin Management Plan and ensure that forestry pressures on the aquatic environment are addressed.
- 1.2 We consider that there are three significant ways that the Plan can help meet this requirement:
  - By addressing any existing local water body problems or deteriorations within the Plan area;
  - By designing new proposals so that they will not result in deterioration of any local water body status. We consider that this can be demonstrated if the Plan is designed following



Chairman  
David Sigsworth  
  
Chief Executive  
James Curran

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recognised best practice such as the Forest and Water Guideline and follows the requirements outlined in sections 2 to 5 of this letter;

- By ensuring forest activities are managed in such a way as to ensure that they do not cause pollution. We have provided advice on this in section 6 of this letter.

- 1.3 We consider that the above can be achieved by following the advice in this letter, recognised best practice guidance, such as the Forest and Water Guidelines and the regulatory advice provided on our Planning and Forestry webpage.
- 1.4 Information in relation to baseline water bodies within or adjacent to the Plan area is available within the River Basin Management Plan with specific water body data sheets for rivers with a catchment area of more than 10 km<sup>2</sup> and lochs which have a surface area of more than 0.5 km<sup>2</sup>.
- 1.5 These data sheets give information about an individual water body's ecological status in 2008 (currently the most recent published water body classification information is available in a spreadsheet format from [http://www.sepa.org.uk/water/river\\_basin\\_planning/classification\\_results\\_2010.aspx](http://www.sepa.org.uk/water/river_basin_planning/classification_results_2010.aspx) and the datasheets will be updated shortly), details of any pressures upon the water body, measures being taken to resolve any issues and targets for any improvement needed. Individual data sheet have not been prepared for smaller (non-baseline) water bodies, however, small water bodies are still protected under the Water Framework Directive and should be considered within the Plan.
- 1.6 We have checked the above records and can confirm that there are two downgraded waterbody present in plan area. Waterbody id 10196 Tamhnic Burn and waterbody id 10194 River Ruel - both are designated as highly modified water bodies due to hydro pressures not forestry pressures. As such there are no specific improvement measures we would wish the Plan to address in relation to the water environment. Nevertheless, best practice guidance should be followed to ensure that forestry activities do not lead to deterioration of any water bodies in or adjacent to the Plan area.
- 1.7 Even when a water body is not downgraded opportunities still exist to deliver environmental improvement. The Plan should identify the location of any inappropriately designed or redundant structures which could be removed or improved, for example, the upgrading of a culvert to allow fish passage or removal of a redundant weir. Opportunities for morphological improvements should also be considered. For example, the re-meandering of artificially straightened watercourses.
- 1.8 The Plan should confirm whether there are any invasive non native plant species, such as Japanese Knotweed, Giant Hogweed and Himalayan Balsam present in the Plan area. They are recognised as a significant risk to the water environment in the River Basin Management Plan. If there are we ask that the Plan includes proposals for control and removal. Given the likelihood of contamination of riparian invasive non native species from upstream populations, any control efforts should be undertaken with this in mind, and it is recommended that links are made with existing projects such as the biosecurity plans which are being produced by the Rivers and Fisheries Trusts Scotland. It would also be useful if the Plan included an outline re-planting strategy following successful eradication. Bare banks can be more susceptible to erosion and re-colonisation by opportunistic invasive species and therefore Plans should include details of re-planting with appropriate bankside vegetation as part of habitat restoration.

- 1.9 We bring your attention to the Forest Research guidance entitled *Woodland for Water: Woodland measures for meeting Water Framework Directive Objectives* (available from [www.forestry.gov.uk/pdf/FRMG004\\_Woodland4Water.pdf/\\$FILE/FRMG004\\_Woodland4Water.pdf](http://www.forestry.gov.uk/pdf/FRMG004_Woodland4Water.pdf/$FILE/FRMG004_Woodland4Water.pdf)) which highlights how careful siting and design of woodland can benefit the water environment.

## **2. Planting and felling proposals**

- 2.1 The Plan should include details of new planting and felling which should follow the advice in the Guidelines. We are especially interested in the best practice advice in the Soils, Water and Climate Change Guidelines.
- 2.2 Reference is made in the covering letter to the practice of sound silviculture. We would be supportive of any Low Impact Silvicultural System or Continuous Cover management proposals which will reduce extraction damage to soils and the likelihood of resulting impacts on the water environment.
- 2.3 All planting should include the minimum buffer widths from forest edge to water body or abstraction as outlined in Table 5.1 of the Forest Standard. We would obviously welcome larger buffers if this is possible.

## **3. New supporting infrastructure**

- 3.1 We note from the concept map the approximate location of a proposed new road network. The Plan and environmental impacts map should include information on any infrastructure which may be required to facilitate plan proposals. For example details should be provided of any new or upgraded tracks and new lay-down areas, borrow pits or temporary welfare facilities or new infrastructure to facilitate public access to the area.
- 3.2 It would appear from the location of the proposed new road network, shown on the concept map, that some new watercourse crossings will be required. Developments should be designed to avoid engineering activities in the water environment wherever possible. We require it to be demonstrated that every effort has been made to leave the water environment in its natural state. Engineering activities such as culverts, watercourse diversions, bank modifications or dams should be avoided unless there is no practicable alternative. Where a watercourse crossing cannot be avoided, bridging solutions or bottomless or arched culverts which do not affect the bed and banks of the watercourse should be used.
- 3.3 All watercourses and water bodies, including large scale drainage ditches within planted areas, should be considered as sensitive to effects from forestry activities and identified on the constraints map. The constraints map should also include the location of all proposed engineering activities in the water environment. A systematic table detailing the justification for the activity and how any adverse impact will be mitigated should also usefully be included in the Plan. Any engineering activities in or adjacent to the water environment will need authorisation under the Water Environment (Controlled Activities) (Scotland) Regulations (CAR) and should follow the related elements of the Forests and Water Guidelines.

## **4. Potential impacts on peatland and wetlands**

- 4.1 SEPA and the Forestry Commission have a duty to protect wetlands, especially types of wetlands which are groundwater dependant terrestrial ecosystems. These types of wetland

are protected under the Water Framework Directive. Some of these types of wetland habitats are very common in peatland areas where both native woodland and commercial forest projects are often located.

- 4.2 The Forest Guidelines state that managers should "Avoid establishing new forests on soils with peat exceeding 50 cm depth and on sites that would compromise the hydrology of adjacent bog habitats." If any of the Plan area is peatland then information should be presented which demonstrates how impacts on peatland have been minimised. A detailed map of peat depths (this must be to full depth) should be submitted. The map should demonstrate that new planting has avoided peat exceeding 50 cm depth and on sites that would compromise the hydrology of adjacent bog habitats, as is recommended in the Forests and Soil Guideline. We also ask that the Plan includes preventative/mitigation measures to avoid significant drying or oxidation of peat through, for example, the construction of access tracks, drainage channels or the storage and re-use of excavated peat.
- 4.3 By adopting an approach of minimising disruption to peatland, the volume of excavated peat can also be minimised and the commonly experienced difficulties in dealing with surplus peat reduced. The generation of surplus peat is a difficult area which needs to be addressed from the outset given the limited scope for re-use. There are important waste management implications of measures to deal with surplus peat as set out within our Regulatory Position Statement – Developments on Peat. If peatland is likely to be disturbed by infrastructure then the Plan should detail the volumes of surplus peat that will be generated, including quantification of catotelmic and acrotelmic peat, and the principles of how the surplus peat will be reused or disposed of.
- 4.4 The Forest Guidelines also specifically identify the need to consider the effects new woodlands can have on wetlands. It states "Where new woodlands are proposed, the sensitivity of downstream water bodies and wetlands to a reduction in water quantity should be considered; where this is an issue, advice should be sought from the water regulatory authority and conservation agency" and that managers should avoid establishing new forests "on sites that would compromise the hydrology of adjacent bog habitats."
- 4.5 If new supporting infrastructure or new commercial planting (i.e not native species regeneration and not replanting of previously felled areas) is proposed on peatland areas then a Phase 1 habitat survey should be carried out on these areas and the guidance A Functional Wetland Typology for Scotland should be used to help identify all wetland areas. National Vegetation Classification should be completed for any wetlands identified. Results of these findings should be submitted, including a map with all the proposed infrastructure and new planting overlain on the vegetation maps to clearly show which areas will be impacted and avoided. The results of the National Vegetation Classification survey and Appendix 2 (which is also applicable to other types of developments) of our Planning guidance on windfarm developments should be used to identify if wetlands are groundwater dependent terrestrial ecosystems. We consider that groundwater dependant terrestrial ecosystems are environmental constraints which should be highlighted in the Plan.
- 4.6 Our preference is that new commercial planting areas and new infrastructure (which includes any new significant drainage channels) avoids direct impacts on groundwater dependant terrestrial ecosystems wherever possible. If any groundwater dependent terrestrial ecosystems are located where new planting is proposed or within a radius of (i) 100 m from new roads, tracks and trenches or (ii) 250 m from new borrow pits, the likely impact of these features will require further assessment. This assessment should be carried out whether or not the features in (i) and (ii) occur within or outwith the site boundary in



order that the full impacts on the proposals are assessed. The results of this assessment and proposed mitigation measures should be included in the Plan. This should include preventative/mitigation measures to avoid significant drying or oxidation of peat through, for example, the construction of access tracks, dewatering, excavations, drainage channels, or the storage and re-use of excavated peat.

## **5. Use of waste on site, including felling waste**

- 5.1 The UK Forest Standard requires us to be consulted on any proposals to apply waste to forest soils. We therefore request that the Plan includes information on this if it is proposed.
- 5.2 We would be especially interested in and are likely to have significant concerns relating to any proposals to fell to waste where the waste generated by the process will be managed by techniques such as chipping, mulching or spreading. This is because where material is classed as waste then the various waste management options require consideration and, where appropriate, adoption. In such cases we would wish the Plan to include information which explains how the waste hierarchy has been applied in a way which delivers the best overall environmental outcome and if this is not demonstrated we are likely to object to the Plan.

## **6. Pollution prevention and environmental management**

- 6.1 We expect forest activities to be carried out following the best practice guidance outlined in the Forest Standard Guidelines and other relevant best practice guidance.
- 6.2 We also bring your attention to our Pollution Prevention and Environmental Management webpage ([www.sepa.org.uk/planning/construction\\_and\\_pollution.aspx](http://www.sepa.org.uk/planning/construction_and_pollution.aspx)) which provides advice on the measures that should be taken to protect the environment when constructing infrastructure. If significant infrastructure is required we ask that the Plan includes the commitment to produce a construction environmental management plan for the works.

## **7. Protected sites and species**

- 7.1 We recommend that Scottish Natural Heritage (SNH) should be consulted if it is thought that the proposal will affect a protected site or protected species.
- 7.2 We will apply the principles outlined in *Responding to Planning Consultations: Improved working between SEPA and SNH to deliver a high quality service*, to ensure that, where necessary, we work with SNH to provide you with a consistent response on issues where we have an overlapping interest.

## **8. Regulatory and best practice advice for the applicant**

- 8.1 The applicant should ensure adherence to the diffuse pollution General Binding Rules under the CAR legislation (refer [Controlled Activities Regulations: A Practical Guide](#)) and to UKFS Guidelines. In particular, issues that should be addressed include buffer zones for land cultivation and planting around watercourses, wetlands and water supplies; fertiliser or pesticide application; protection for springs and flushes; avoidance of planting on peat; and, if access track improvements are planned then we would be interested in any watercourse crossings and buffer distances to Ground Water Dependent Terrestrial Ecosystems relevant to infrastructure construction.

8.2 Details of regulatory requirements and good practice advice for the applicant can be found on our website at [www.sepa.org.uk/planning.aspx](http://www.sepa.org.uk/planning.aspx). If you are unable to find the advice you need for a specific regulatory matter, please contact a member of the operations team in your local SEPA office at:

Kilbrandon House, Manse Brae, Lochgilphead, PA31 8QX, tel. no. 01546 602876

If you have any queries relating to this letter, please contact me by telephone on 01224 266656 or e-mail at [planning.aberdeen@sepa.org.uk](mailto:planning.aberdeen@sepa.org.uk).

Yours sincerely

Alison Wilson  
Senior Planning Officer  
Planning Service

*Disclaimer*

*This advice is given without prejudice to any decision made on elements of the proposal regulated by us, as such a decision may take into account factors not considered at this stage. We prefer all the technical information required for any SEPA consents to be submitted at the same time as other applications. However, we consider it to be at the applicant's commercial risk if any significant changes required during the regulatory stage necessitate a further application and/or neighbour notification or advertising. We have relied on the accuracy and completeness of the information supplied to us in providing the above advice and can take no responsibility for incorrect data or interpretation, or omissions, in such information. If we have not referred to a particular issue in our response, it should not be assumed that there is no impact associated with that issue.*

Mr Matthew Giles  
DGA Forestry  
Lochanheadwood  
Lochanhead  
Dumfries, DG2 8JB

13- September- 2013

**RE: SCOPING EXERCISE STRONAFIAN LTFP (CASE NUMBER 4889763)**

Dear Mr Giles,

Thank you for sending support materials and allowing RSPB opportunity to comment on the LTFP for Stronafian. RSPB would like to outline a number of ways in which the forest plan can provide benefits to local biodiversity.

Black grouse have been recorded within the local area surrounding Stronafian. Black grouse are a red listed, UKBAP species, which has undergone significant declines in South West Scotland. Cowal is an important area for this species as it provides a connection between isolated populations in Argyll to populations in central Scotland. There are multiple records of priority lek sites on the adjacent moorland that are within 1.5km (the average core range of black grouse) of Stronafian woodland. RSPB has provided management recommendations to the adjacent forestry in the south and has also been involved with advising on the habitat management area within the Cruach Mhor windfarm boundary. Therefore, the LTFP should consider providing suitable habitat for this priority species.

RSPB has information regarding records of breeding raptors including hen harrier, short eared owl and merlin on the adjacent moorland. It is suggested that Scottish Power Renewables and Argyll Raptor Study Group (ARSG) are contacted for up to date records and the conservation department at FCS should be consulted on considerations for these species.

RSPB would encourage the increase in the cover of native broadleaf tree species. This would be particularly beneficial in, or along the edges of, compartments adjacent to open ground, particularly along the eastern boundary of the woodland. Expanding the existing native species patches and connecting to the habitat management area on the windfarm would also be beneficial. Enhancing the native broadleaf woodland would provide benefits for numerous bird species by providing foraging and nesting habitat. Native species including oak, birch, willow, rowan, juniper, hazel and alder have the potential to provide for a range of bird species, including resident and migrant songbirds and black grouse. Planting these species in accessible areas along the eastern boundary close to lek sites would provide most benefit.

Another opportunity to improve habitat for black grouse would come through increasing the area, and improving the connectivity, of open ground within the compartments labelled 0. Increasing open ground would provide foraging, nesting and brood-rearing opportunities for black grouse. Providing open 'corridors', or connecting existing rides, between the open ground and adjacent moorland would improve the accessibility of this habitat for black grouse. The open ground should be managed so that a diversity of ground flora can flourish. Allowing bilberry, heather and grass species to regenerate will provide feeding and nesting opportunities. Optimum nest sites are within heather dominated areas with a vegetation height of approximately 40cm. Other important habitats are wet flushes and areas of bog myrtle, as these invertebrate rich areas provide important foraging habitat for black grouse chicks. Blocking redundant drains would help to encourage these areas.

New conifer plantations can remain suitable habitat for black grouse for up to 10-15 years after planting. Therefore, creating a diverse age class structure in the plantation would increase the amount of suitable habitat available. The long term forest plan should consider its planting rotation so that an area of young forest (pre-thicket) is continuously available, particularly along the boundary with open ground. Allowing a fallow period before restocking also has the potential to provide habitat as this gives important ground vegetation the opportunity to recover after felling.

With Argyll remaining an important area for black grouse, any opportunity to provide for this BAP species is encouraged. As Stronafian is within close proximity to a number of priority lek sites, this LTFP is well placed to provide for this species. The best opportunity comes through providing suitable habitat by maximising and improving open ground and increasing native tree species cover. Improving these habitats will help to improve connectivity between populations and help maintain the present species range. We look forward to providing more detailed input to management around this site as the LTFP is developed. Should you have any queries regarding any of the suggested recommendations then please don't hesitate to contact me.

Yours Sincerely,



Doug Shapley  
RSPB Black Grouse Project Officer

**South and West Scotland  
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10 Park Quadrant  
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G3 6BS

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Our ref: 8/2/3/Cons 28853  
Your ref: 167163  
WoSASdoc: Stronafian Cons 28853.doc  
Date: 20 September 2013  
Contact: Martin O'Hare  
Direct dial: 0141 287 8333

# WEST of SCOTLAND ARCHAEOLOGY SERVICE



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Dear Mr Giles,

## Re: Stronafian Long Term Forest Plan

I refer to your letter of the 6<sup>th</sup> of September, requesting comments on the scoping report prepared in relation to the above long-term forest plan. I have compared the proposal against information contained in the Historic Environment Record (HER) and with available cartographic sources, and would like to make the following comments.

A number of archaeological features have been recorded from within the boundaries of the forest plan. These are as follows:

*WoSAS Pin 5121 / NMRS No NS08SW7  
Loch Riddon / Kyles View – Bloomery  
NGR 201610, 682200*

*Iron slag was found around 1969 above the head of Loch Riddon, in the vicinity of the grid reference quoted above. This could suggest the presence of a bloomery, associated with the early production of iron, somewhere in the area. Staff from the Ordnance Survey were unable to locate any evidence for such a feature when they visited the area in 1972, suggesting that the grid reference provided by the original reporter is likely to be approximate. However, it remains possible that material of this type may be present in the wider area, and could be encountered during forestry operations.*

*WoSAS Pin 5123 / NMRS No NS08SW9  
Glendaruel – Natural Feature  
NGR 200190, 684830*

*This feature is recorded in the HER database as it was originally identified as a cairn. However, the site was visited by staff from the Ordnance Survey in 1972, who suggest that a protruding rock outcrop overgrown with heather may have been mistaken for a cairn.*

*WoSAS Pin 58004  
Clachan of Glendaruel – Farmstead  
NGR 200023, 684675*

*This feature was reported to us in 2007 by staff from the Forestry Commission. It comprises a large earth and stone dyke which forms a pronounced “D” shaped enclosure in plan where the remains are centred. The dyke runs further through the forest and was not traced. Within the enclosure so formed are the remains of two probable structures/buildings now represented only by concentrations of loose stone. The site is not marked on Ordnance Survey first edition maps dated c.1870 and is earlier than this date in its period of occupation. The entire site had been ploughed prior to tree planting, and this is likely to have had a detrimental effect on its level of survival. There may be some potential to improve its situation in subsequent phases of the forest plan through maintaining it in unplanted open ground. If trees have been planted across the site, any felling should be limited to ground level, as grubbing out any stumps would be likely to remove the various features present.*

WoSAS Pin 5114 / NMRS No NS08SW2

*St Modan's Well – Holy Well*

NGR 200270, 684460

*This feature was named as St Modan's Well on the 1<sup>st</sup> edition Ordnance Survey map of 1868. The OS Object Name Book of the same year described it as a spring of 'ordinary appearance'. Members of the Cowal Archaeological Society visited the feature in 1967, and described the spring as being backed by fairly large stones, while noting that 20 or 30 quartz pebbles were found. However, staff from the Ordnance Survey were unable to find any trace of the spring when they visited the area in 1972. They noted that the streams in this area had all become part of an extensive drainage system associated with new forestry plantation, and the suggestion is that the site may have been destroyed by the cutting of forest drains. It remains possible, however, that some element could still be identifiable on the ground*

WoSAS Pin 19362 / NMRS No NS08SW23

*Auchategan – Stone Axes*

NGR 200250, 684350

*Two stone axe fragments are recorded as having been found in this area. It is unclear how accurately the reported grid reference matches the actual position at which these artefacts were found, though their identification in relatively close proximity to the nearby chambered cairn does serve to highlight the potential for additional evidence for prehistoric occupation to be present in the area*

WoSAS Pin 5118 / NMRS No NS08SW4

*Lephinkill / Chapel – Chambered Cairn*

NGR 200270, 684330

*This chambered cairn is situated 600m E of Clachan of Glendaruel in a clearing within a forestry plantation; its position above the valley floor of Glendaruel at a height of 140m OD, is similar to that of the chambered cairn at Ardachearanbeag, about 900m to the north. The cairn appears as an irregular heather-clad mound of stones measuring about 25m by 11m and 2m in height; it has been disturbed and robbed to provide material for several sheep-shelters, one of which survives almost intact on the mound itself.*

*The chamber is at the north end and is entered through a concave facade, now partly hidden by blocking material; the eastern portal stone, measuring 1.0m by 0.25m, still protrudes about 0.5m above the surface of the mound. A small earthfast stone situated behind the east portal and set parallel to it, which might indicate a double portal, could not be identified. The western portal stone does not survive, but a small supporting stone behind its likely position can still be seen; measuring only 0.4m by 0.15m and protruding 0.3m, it is not itself a likely partner for the east portal.*

*Two displaced side-slabs of the chamber are still visible, both over 0.6m in height. An excavated hollow on the line of the continuation of the chamber suggests that it was originally between 3m and 4m long overall. Parts of what are probably corbel stones can be seen overlying the fallen side-slab on the eastern side of the chamber. In 2012, we received a report from a member of the public stating that recent tree felling in the vicinity of this cairn have improved views out from the monument, and there is the possibility that the forest plan could improve its setting further. It should be stressed, however, that ground disturbance in the vicinity of the cairn should be restricted; for example, trees should be felled to ground level but the stumps should be left in situ, as grubbing them out would run the risk of removing associated buried deposits that may be present in the surrounding area.*

*It should also be noted that the area was annotated as 'St Modan's Chapel' on the 1<sup>st</sup> edition Ordnance Survey map. No physical evidence for a chapel having stood in the area has been identified, and it is possible that the name may have been attached to the cairn at some point in the past. However, the proximity of the holy well described above would be typical of an early Christian foundation.*

WoSAS Pin 5116 / NMRS No NS08SW21

*Lephinkill – Flint Arrowhead*

NGR 200200, 684300

*A leaf-shaped flint arrowhead was found in the plough furrows near Lephinkill chambered cairn. As with the axe fragments noted above, it is not certain how accurately the reported grid reference reflects the actual find-spot. Again, however, the identification of this artefact highlights the potential of the area to produce buried sub-surface deposits. It is notable that the arrowhead was found in a plough furrow; this could suggest that ground preparation in advance of tree-planting may already have disturbed a previously-unrecorded settlement or flint-working site.*

WoSAS Pin 5119 / NMRS No NS08SW5

*Auchategan – Settlement*

NGR 200060, 684240

*Excavations were undertaken between 1967 and 1970 on a terrace on the E side of the valley of the River Ruel at a point 380m east of Glendaruel Hotel, in order to examine a site thought to be St Modan's Chapel; the chapel was not discovered, but the work revealed a series of occupation deposits from Neolithic to recent times, and the following account is a summary of the published report (Marshall 1980). Only the early levels will be described here (Periods 1-4), because the later levels -Period 5 (a rectangular stone house), Period 6 (a complex of shieling-huts), and Hut 4 - fall beyond the chronological span of the Argyll Inventory, Volume 6 (RCAHMS 1988). Only the outline of one of the later rectangular structures can still be detected within a forestry plantation.*

*Two phases of Neolithic occupation were discovered (Period 1), the earlier represented by traces of two ill-defined huts, which were identified as cleared areas on the rock surface, with hearths and post-holes. In the second phase there was a series of well-built hearths, associated with further post-holes and an extensive collection of Neolithic artefacts (pottery, flint, pitchstone, 'pot-lids' and a greestone axe). Charcoal from a hearth belonging to the second Neolithic horizon provided a radiocarbon determination of 2300bc +/- 110 (I-4705). The flint artefacts included knives, scrapers and arrowheads in distinctive Neolithic forms; sherds of about sixty vessels were represented, notably carinated and open bowls in Grimston style.*

*Period 2 remains comprised a hearth, a structure resembling a cist and an unusual semicircular cairn measuring about 4.5m by 2.8m, which contained a second cist-like feature. The body of the cairn consisted of stones, sand and occupation debris from the Neolithic horizon, and the perimeter had been carefully constructed of long slabs. The cist, which lay near the centre of the straight side, was aligned NW and SE and measured about 0.55m by 0.45m and about 0.45m in depth; it contained earth, flecks of charcoal and one tiny sherd of pottery, with stones laid out on top of the fill. The second cist, situated about 4.4m to the ESE, was aligned N and S, and measured about 0.35m by 0.3m internally. Both cists were of unusual construction in that one end was composed of several stones and was lower than the other three sides; in neither case was there a capstone. Fragments of burnt were discovered both above and below the stones which covered the earthy fill-material.*

*Period 3 was represented by a series of post-holes up to 0.47m deep and packed with long narrow stones, defining a structure which measured about 5.5m by 4.3m; the timber superstructure was evidently clad with panels of wattle and daub. The only finds were two discs of schist, perhaps 'pot-lids', and two rubbing-stones. The radiocarbon determination for the hearth was later than Period 3 but earlier than the rectangular stone house of Period 5, is ad 660 +/- 100 (GaK -2768).*

*Period 4 was represented by the debris of an iron-working site, the main focus of which was uncertain, but it was stratigraphically earlier than the rectangular stone house of Period 5.*

*It is clear that this represents an important multi-phase settlement, though it is likely that much of the physical evidence associated with it would have been removed during the various seasons of excavation. However, the fact that the report states that 'only the outline of one of the later rectangular structures can still be detected within a forestry plantation' suggests that it was not wholly removed, meaning that other related material may still be present below*

*ground level. This is likely to have been affected to some degree by ground preparation in advance of forestry planting, and by the action of growing tree roots, but it is nevertheless the case that future forestry operations in this area would have the potential to encounter and disturb important buried archaeological material.*

*WoSAS Pin 4545 / NMRS No NR98SE3*

*Clachan of Glendarvel – Cup and Ring Markings*

*NGR 199855, 684085*

*This decorated boulder is situated in a deciduous plantation 100m SE of the road bridge over the Clachan Burn. Its upper surface bears ten cupmarks, one of which is surrounded by a single ring and another by a keyhole-shaped ring.*

Taken together, it is apparent that the forest plan encompasses an area that is particularly rich in material relating to occupation in the prehistoric and early medieval periods. It is important to be aware that the recorded features are unlikely to represent the totality of archaeological material present, as the majority of the area does not appear to have been subject to previous archaeological survey, meaning that additional unrecorded features may also survive. This potential is further enhanced when looking at sites recorded from just beyond the boundaries of the forest plan, such as the chambered cairn and bloomery mound at Ardachearanbeg, just beyond the north-western boundary of the forest, or the standing stone at Auchnagarran, to the south of it. It is also apparent from the various records that several of the recorded sites have already undergone a degree of disturbance resulting from forestry operations, and the aim of the forest plan currently in development should be to ensure that the condition of these sites does not get any worse.

It is also important to be aware that many of the features will have a physical extent beyond the simple 'dot on the map' represented by the recorded grid reference, and that any management proposal should relate to the full size of the site on the ground, to ensure that all elements of it are protected from further damage resulting from forestry operations. In relation to this, it is likely to be necessary to undertake measures to attempt to identify the various recorded sites on the ground, to verify the accuracy of the grid references and to ensure that a planting scheme can be designed that allows sufficient open space to protect all elements of them.

Yours faithfully

West of Scotland Archaeology Service



## **Appendix 4**

### **Deadwood Management Policy**

#### **Overview**

This policy has been developed to optimise the provision of deadwood over and above the targets set by UKWAS and to stay within the constraints met by the need to avoid landscape issues and to enhance the economic value of the crop. The target is to accumulate standing or fallen deadwood at a proportion of 20m<sup>3</sup>/Ha or 5-10% of the average stand volume across the whole woodland area.

#### **Constraints**

- The ability to provide deadwood in suitable locations and quantities
- The conflict with safety with the public and forestry workers, all who may be within the vicinity of standing deadwood and windblow
- The increase of disease risk through the abundance of dead material in which to establish

#### **Procedures and Policies**

Deadwood provision will be matched to the site and targeted at areas of greatest ecological value. These areas will have the greatest requirement for deadwood and will offer the best opportunities to provide a varied and diverse habitat.

Optimal areas for deadwood:

- Long Term Retentions and Natural Reserves
- Existing Ancient and Semi-natural woodland areas
- Riparian Woodland
- Windblow and Felling coupes

All standing dead trees, veterans and snags will be retained except where they conflict with the constraints as detailed above. Where requirements have been met surplus deadwood may be harvested for biomass production where this meets the estate objectives.

#### **Safety**

Deadwood will be managed for safety reasons in all public areas of the woodland such as footpaths and roads; this may involve the felling and removal of standing deadwood, windblown timber and overhanging branches.

#### **Windblow**

Windblown stems will not be harvested except in the following circumstances:

- Where blown timber exceeds 3m<sup>3</sup>/Ha
- High value blown timber
- Where it is not required to contribute to the accumulation of deadwood
- Where it represents a danger to the public and forestry workers
- Where it conflicts with the management objectives and/or impedes normal estate management.

#### **Implementation**

Deadwood provision will be included in all estate management work where relevant and an initial map of priority deadwood areas will be produced.

## **Appendix 5.** **Deer Management Plan**

### **1. Introduction**

This plan refers to the management of wild deer within Stronafian forest as part of the Long Term Forest Plan and the impact the deer will have on restocking proposals and success. The plan covers an area of forest owned by the community represented by Colintrave and Glendaruel Community Trust and subject to a timber lease. Three small areas fall outwith the timber lease (see LTFFP map).

### **2. Objectives**

The primary objectives of deer control are:

- to ensure that deer are controlled within the forest to enable restocking to proceed successfully on the leased area
- to allow the potential for some income generation for the community (CGCT) therefore meeting the timber owner's and leaseholder's objectives
- To comply with the requirements of any grant schemes

### **3. Period of the Plan**

The plan will cover the 10 years of the Forest Plan.

### **4. Assessment of Risk**

The risk of damage to the restocking is assessed as very high if no deer management is undertaken within the forest. Initial assessments show deer numbers are very high at present indicated by the level of browsing on the young restocked areas. With the commencement of felling and restocking the habitat is expected to improve for Red and Roe deer and the risk of damage will increase. The exact deer population is challenging to assess due to the contiguous nature of the forest (with neighbouring woodland) and the mobility of populations together with the mature nature of much of the crop (providing cover).

### **5. Control Principles**

- The reduction of risk and damage will be based on shooting and population management rather than exclusion by deer fencing which would potentially restrict access.
- Roe deer & Red deer will be rigorously controlled to prevent damage.
- Sika deer will not be allowed to establish in the forest.
- Control will be exercised in co-operation with adjoining forests.
- Shooting will be carried out under a formal lease naming the authorised controllers. All controllers will hold current firearms certificates and have rifles of sufficient calibre to meet legal requirements.
- All controllers will be expected to hold DMQ Level 2.
- If necessary out of season authorisation and night shooting permits will be obtained to help meet the plan objectives.
- The authorised controller will be required to submit annual cull returns.
- Deer numbers and damage will be monitored and remedial action implemented if required.
- Open ground and broadleaf areas have been incorporated into the plan to act as deer glades for control purposes.
- No specific cull targets will be set but control requirements will be assessed based upon damage levels.
- Access will be via the forest road network and deer extraction to the road will be by quad.

### **6. Coordination**

Any deer control on the areas outwith the lease will be managed by the CGCT but will only be undertaken in coordination with the leaseholder to ensure there can be no operational conflict.

### **7. Plan Revision**

An interim assessment and plan revision will be completed at year 2 by which time it is anticipated that recorded cull figures will inform practice for the following period an numbers will be maintained at a level that is consistent with <5% leader damage on restock sites.. There will be a major assessment and revision at year 10 together with the revision of the main forest plan.