Forestry Commission Scotland
Coimisean na Coilltearachd Alba

Scottish Lowlands FD

Benarty, Cardenden & Cullaloe

Initial Design Concept - Overview

Scale 1:27,500 @ A2

0 487.5 975 1,950 Metres

Sep 2014

N W E S

The existing mature mixed woodlands found on all three sites are generally quite visible within the local landscape. Where possible Continuous Cover Forestry (CCF) systems will be used in preference to a standard Clearfell approach in order to reduce the impact of future management operations on the landscape.

The main focus for biodiversity is the woodland potential as red squirrel habitat, and the adoption where possible of good management practices which will encourage them in preference to greys - for example through favouring species such as Norway spruce, Douglas fir or small seeded broadleaves (e.g. birch, rowan or aspen). The use of thinning, CCF systems, and the retention of some mature 'specimen' trees in perpetuity will also enhance the overall biodiversity value of the woodlands.

All three sites benefit from generally good quality soils and a warm, moist climate which together offers the potential to grow a wide range of species.

Future species choice will be driven by management objectives (including timber production, biodiversity and recreation), and will also need to take into account the expected future impact of climate change.

Long history of managed woodland across all three sites, with the majority of the woodland designated as LEPO (Long Established of Plantation Origin). Use of thinning + CCF systems will assist in the maintenance of native woodland vegetation.

The woods are located within a relatively densely populated area, and both Benarty and Cardenden are partially designated as WIAT (Woodland In and Around Town) woods.

Public access for recreation and the impact of minor antisocial aspects (e.g. Fly tipping, Poaching, Drinking dens, Fire setting, Illegal Motorbike use) are thus important considerations, and the needs and wishes of the local Communities will help influence the woodland design.

Of the three main diseases impacting on the National Forest Estate currently (*Phytophthora ramorum* on Larch, *Chalara fraxinea* on Ash, and Dothistroma Needle Blight (DNB) on Pine), only the latter is known to be present across the three sites.

Corsican pine has been most heavily impacted by DNB, and the existing stock will be felled (or thinned out of mixed stands). To date the existing Scots pine stands have been less badly affected, although they remain at risk.

Legend

FC Blocks

- Benarty
- Cullaloe
- Cardenden

Existing Woodland

- Mainly Broadleaves
- Mainly Conifers

Sheep incursions onto site are common due to poor condition of stock fence on top edge

Ensure all fences are stockproof prior to commencement of restocking with 'softer' species

Sitka and Larch stands had initial extraction racks cut several years ago

Follow up with matrix thin to develop crop. Leave unthinned buffer at edges of stand to maintain windfirm stand

Current crops planted hard up to watercourses

Develop riparian woodland along burnsides when restocking

Several open bracken-covered areas across the site.

Clear bracken and restock with suitable species

Corsican pine heavily infected with Dothistroma Needle Blight

Clearfell dead + dying trees and restock with suitable species

Previously windblown areas clearfelled

Restock with appropriate productive species

Sitka spruce ready for 1st thinning

Cut access racks + thin matrix, focusing on removal of poor quality trees

Attractive stand of mature larch

Lightly thin and retain as Long Term Retention

Open area west of burn provides good location for deer control

Manage open ground as deer glade to allow appropriate control of deer numbers

Some windblow present in mature crop

Clearfell small areas of Scots pine and Sitka spruce, restocking to include windfirm species on exposed edge

Douglas fir + Sitka spruce ready for thinning

Lightly thin, focusing on removal of poor quality trees

Mixture of Sitka spruce and mature broadleaves in small area south of road. Gas pipeline makes access difficult for commercial operations.

Selectively remove Sitka spruce and restock with native broadleaves to maximise biodiversity value

Mature Sitka spruce stand between road and field boundary

Remove SS to open out views from path.

Mature Sitka spruce stand between road and field boundary

Fell SS east of field boundary and restock with productive crop

Extensive Sitka spruce regeneration present within Mixed Broadleaf areas

Undertake thinning/group felling of areas of poor quality spruce and restock with suitable species to improve biodiversity and visual amenity

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Initial Design Concept - Benarty

Scale 1:6,000 @ A3

0 70 140 280 Metres

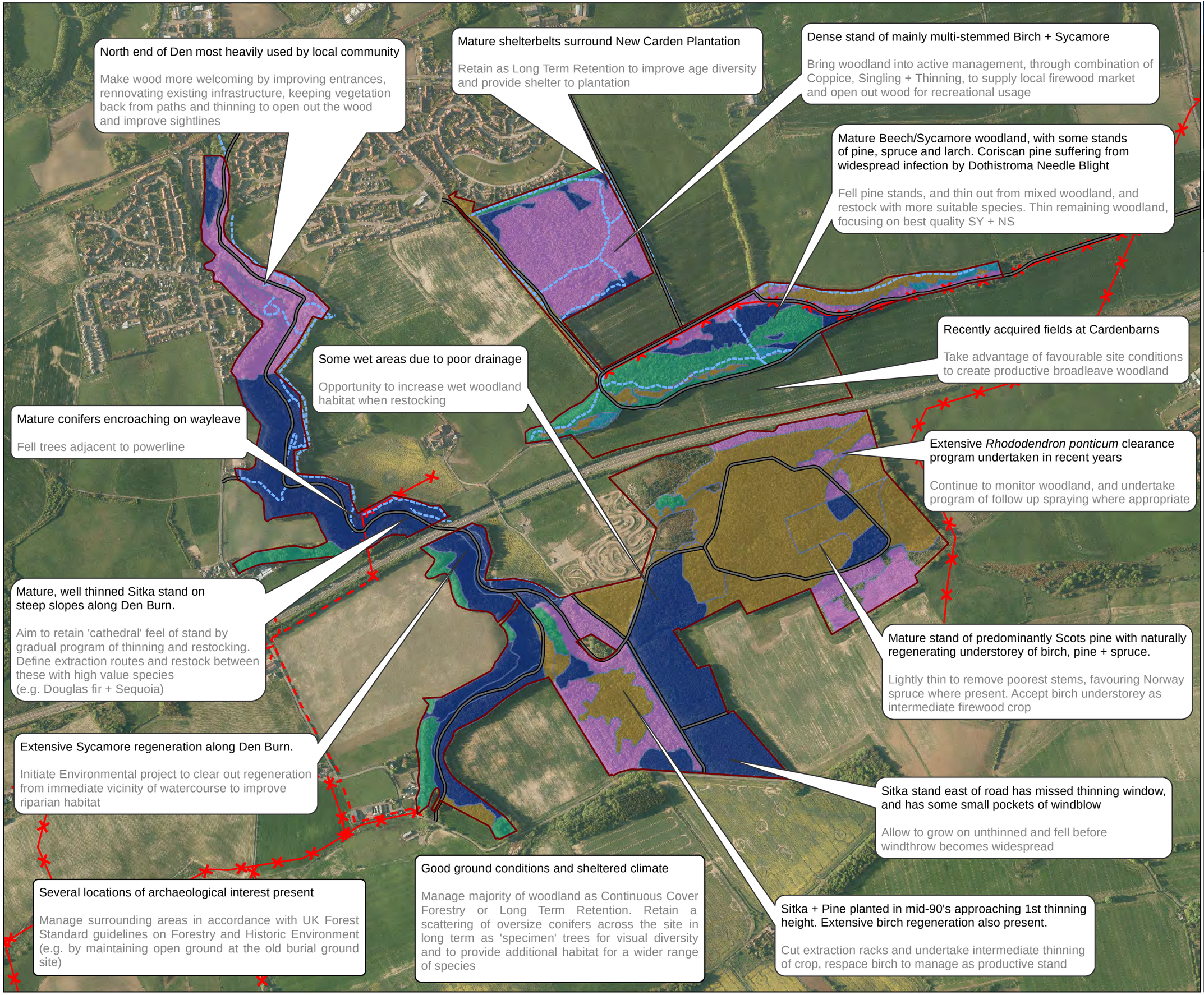
Sep 2014

N W E S

Analysis + Concept

Legend

- Benarty
- Pines
- Spruces
- Larches
- Other Conifer
- Mixed Broadleaves
- FC Road
- Tracks & Paths
- Watercourse
- Gas pipeline



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Scottish Lowlands FD

Benarty, Cardenden & Cullaloe

Initial Design Concept - Cardenden

Scale 1:10,000 @ A3

0 100 200 400 Metres

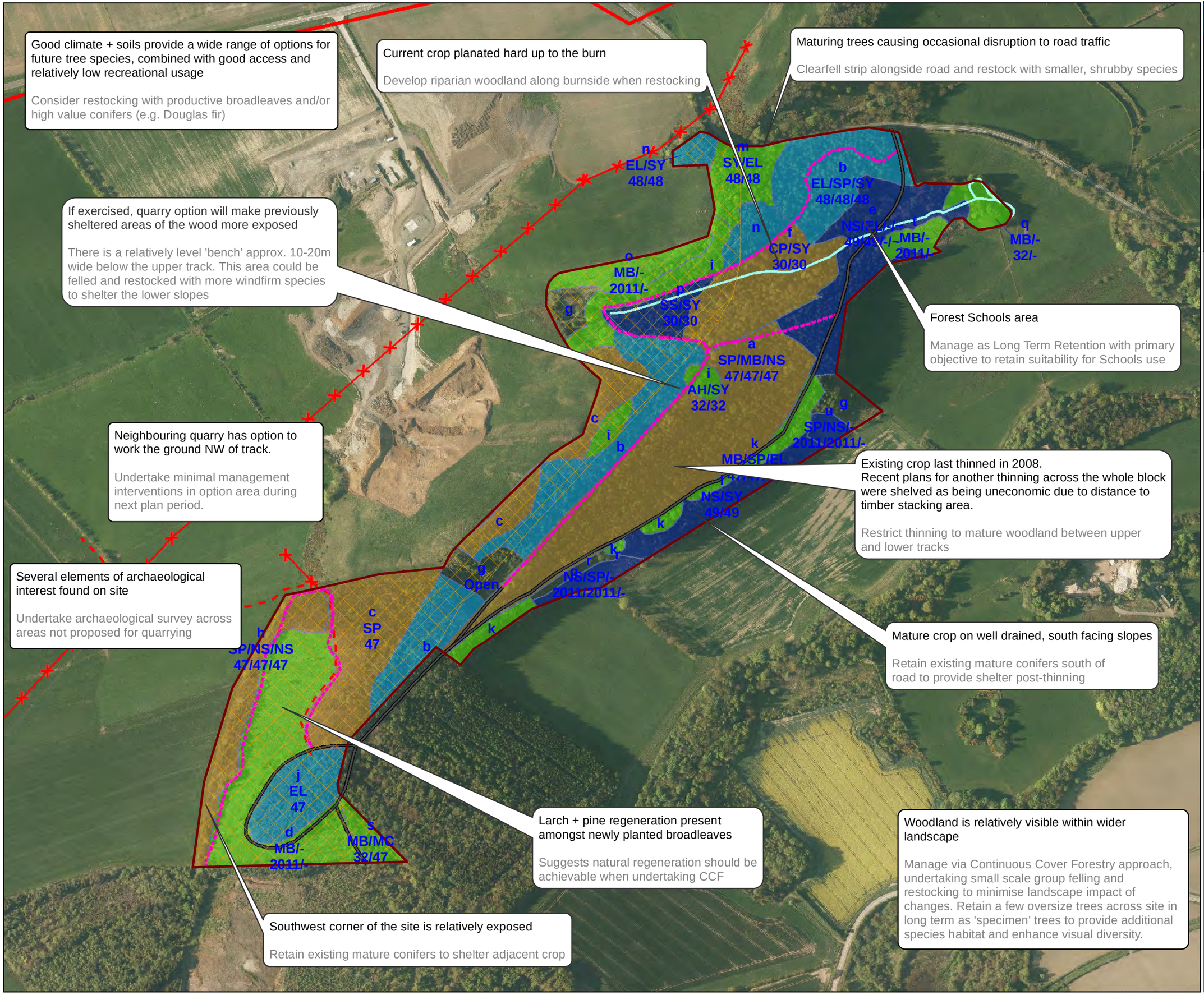
Sep 2014

N
W E
S

Analysis + Concept

Legend

- Cardenden
- Pines
- Spruces
- Larches
- Other Conifer
- Oak
- Beech
- Other Broadleaves
- FC Road
- Tracks & Paths
- Overhead powerline
- Underground powerline



Good climate + soils provide a wide range of options for future tree species, combined with good access and relatively low recreational usage

Consider restocking with productive broadleaves and/or high value conifers (e.g. Douglas fir)

Current crop planated hard up to the burn

Develop riparian woodland along burnside when restocking

Maturing trees causing occasional disruption to road traffic

Clearfell strip alongside road and restock with smaller, shrubby species

If exercised, quarry option will make previously sheltered areas of the wood more exposed

There is a relatively level 'bench' approx. 10-20m wide below the upper track. This area could be felled and restocked with more windfirm species to shelter the lower slopes

Forest Schools area

Manage as Long Term Retention with primary objective to retain suitability for Schools use

Neighbouring quarry has option to work the ground NW of track.

Undertake minimal management interventions in option area during next plan period.

Existing crop last thinned in 2008.
Recent plans for another thinning across the whole block were shelved as being uneconomic due to distance to timber stacking area.

Restrict thinning to mature woodland between upper and lower tracks

Several elements of archaeological interest found on site

Undertake archaeological survey across areas not proposed for quarrying

Mature crop on well drained, south facing slopes

Retain existing mature conifers south of road to provide shelter post-thinning

Larch + pine regeneration present amongst newly planted broadleaves

Suggests natural regeneration should be achievable when undertaking CCF

Woodland is relatively visible within wider landscape

Manage via Continuous Cover Forestry approach, undertaking small scale group felling and restocking to minimise landscape impact of changes. Retain a few oversize trees across site in long term as 'specimen' trees to provide additional species habitat and enhance visual diversity.

Southwest corner of the site is relatively exposed

Retain existing mature conifers to shelter adjacent crop

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Initial Design Concept - Cullaloe

Scale 1:5,000 @ A3

0 50 100 200 Metres

Sep 2014

N
W E
S

Analysis + Concept

Legend

- Cullaloe
- Pines
- Spruces
- Larches
- Mixed Broadleaves
- Quarry option
- FC Road
- Tracks & Paths
- Overhead powerlime
- Underground powerline
- Gas pipeline
- Watercourse