



Forestry and  
Land Scotland  
Coilltearachd agus  
Fearann Alba

# Ledmore Seed Orchard Land Management Plan

Duration of plan – 2021-2040



# Ledmore Seed Orchard

## Land Management Plan

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We manage Scotland's National Forest Estate to the United Kingdom Woodland Assurance Standard – the standard endorsed in the UK by the international Forest Stewardship Council® and the Programme for the Endorsement of Forest Certification. We are independently audited.

Our land management plans bring together key information, enable us to evaluate options and plan responsibly for the future. We welcome comments on these plans at any time.



The mark of  
responsible forestry



# Ledmore Seed Orchard

## Land Management Plan

### 1. Introduction

#### 1.1. Setting and Context

The Ledmore seed orchard is located approximately 3 km west of the A9 between Perth and Dunkeld in Perth & Kinross. See map below for details.



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Ledmore LMP  
Location

Author: U320933  
Scale: 1:50,000  
Date: 19/11/2019



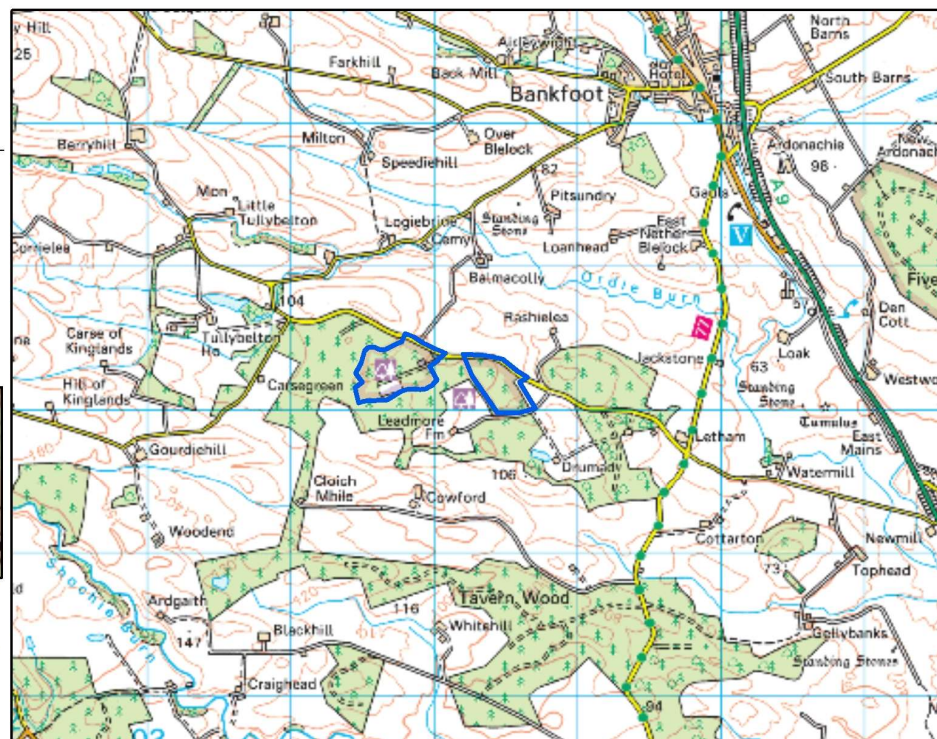
#### Legend

 Ledmore



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Scotland's National  
Forest Estate is  
responsibly  
managed to the  
UK Woodland  
Assurance Standard.



#### 1.2. The Site

The land for the seed orchard was purchased by the Forestry Commission in 1950 and for most of its working life has been managed by Forest Research and then by the Plant and Seed Supply Branch (PSS). In 2019 the block came under the jurisdiction of Forestry and Land Scotland (FLS), requiring the production of a management plan to cover any ongoing forestry operations.

The site was originally used as a nursery and then as a seed orchard for Scot's pine (*Pinus sylvestris*) and Douglas fir (*Pseudotsuga menziesii*) from 1956-82. The primary purpose of the forest now is the production of Sitka spruce (*Picea sitchensis*) seed from two orchards as well as housing a number of experimental sites and demonstration plots. The site also houses a Sitka spruce clone bank which acts as a safeguard against the loss of genetic information if a candidate breeding tree is lost (e.g. due to windblow).

## 2. Background Information

Refer to map 2 – Key Features.

### 2.1. Physical Site Factors

The site sits within a relatively flat, agricultural landscape of interlocking field systems and forestry plantations. To the west sits a recently constructed poultry farm shed. The nearest settlement, Bankfoot is approximately 3 km to the east.

Local climate is described as cool, moist with low exposure risk due to the sites low-lying position, approximately 100m above sea level.

Soils are basic brown earth with some areas showing characteristics of surface water gleying. The site is bounded by a deer fence to the north along the public road and stock fencing along the fields to the south. The fence is in poor condition and deer are known to be present in the block, although this is of little concern as there is no new planting to protect. A gas pipeline runs through the west block from north east to south west. There is also a water pipeline running along the southern boundary of the east block.

### 2.2. Biodiversity and Environmental Designations

There are no biodiversity or environmental designations in place in the plan area. The site is surrounded by forested areas of Long-established Plantation Origin (LEPO) but the plan area itself is not covered by this designation.

### 2.3. The Existing Forest

The forest is comprised of two blocks which, when combined, cover approximately 30 ha. The eastern block contains the Sitka spruce seed orchard and a small provenance trial of Noble fir (*Abies procera*). The seed orchard is deemed to be out with the scope of UKFS guidance, as such it is not counted when tallying species and land use data for the plan area. The western block comprises the Sitka spruce clone bank and provenance trials for a range of different species. The block also contains some small buildings used by nursery staff for storing equipment.

### 2.4. Social Factors

There are no recreation, community or heritage features in the plan area.



### 3. Land Management Plan Proposals

#### 3.1. Seed stand management

The entire plan area is designated as a long term retention due to the fact that there is currently no intention to clearfell any of the trees on site. Operations relating to seed collection will continue as and when the trees are bearing cones. Possible forestry works include the occasional pruning and topping of trees and the collection and chipping of brash on site.

The removal of individual trees at the discretion of nursery and Forest Research staff will be carried out under allowable tolerances or by agreement with Scottish Forestry under exceptional circumstances.

#### 3.2. Future Habitats and Species

The current forest structure will be maintained for the duration of this plan period. In addition it is intended to establish one or two (space permitting) provenance trials for montane willow. These will comprise of 40 clones laid out in a grid at 2 meter spacing (approximately 15m<sup>2</sup>, or 0.0015 ha). Trees will be protected in small exclosures from browsing. Spacing between trial sites must be a minimum of 500 metres.

Table 3.2.1. Current and future species composition

| Species           | Area (ha) 2020 | % Cover 2020 | Area (ha) 2025 | % Cover 2025 | Area (ha) 2030 | % Cover 2030 | Area (ha) 2040 | % Cover 2040 |
|-------------------|----------------|--------------|----------------|--------------|----------------|--------------|----------------|--------------|
| Sitka Spruce      | 10.89          | 52           | 10.89          | 52           | 10.89          | 52           | 10.89          | 52           |
| Other Conifers    | 1.48           | 7            | 1.48           | 7            | 1.48           | 7            | 1.48           | 7            |
| Mixed Broadleaves | 2.21           | 11           | 2.22           | 11           | 2.22           | 11           | 2.22           | 11           |
| Open              | 6.15           | 30           | 6.14           | 30           | 6.14           | 30           | 6.14           | 30           |
| <b>Total*</b>     | <b>20.73</b>   | <b>100</b>   | <b>20.73</b>   | <b>100</b>   | <b>20.73</b>   | <b>100</b>   | <b>20.73</b>   | <b>100</b>   |

\*Total site area excluding seed orchard which is not covered by the scope of UKFS guidance.

# Ledmore Seed Orchard

## Land Management Plan

### 3.3. Management for Pests and Disease

#### Phytophthora ramorum

*P. ramorum* is a fungus-like plant pathogen which attacks a wide range of tree and shrub species. Although European and hybrid larch are also susceptible to *P. ramorum*, current evidence indicates that the impact of the disease is greatest on Japanese larch which can die within one to two seasons, with consequential economic, environmental and amenity impacts. Ledmore sits within the current *P. ramorum* control zone, requiring mature crops of larch to be brought to market where possible. Due to the research based nature of the site there will be no felling of larch carried out, except in the instance of a Statutory Plant Health Notification (SPHN) being served.

### 3.4. Schedule of Works

| Coupe Reference | Management Division | Operation  | Programme Year | Area (ha) |
|-----------------|---------------------|--|----------------|-----------|
| 61051           | FM                  | Clear brash from seed orchard and chip on site.                          | 2020/21        | 11.83     |
| 61051           | FM                  | Plant montane willow provenance trial in suitable location within coupe. | 2020/21        | 0.0015    |
| 61051           | FM                  | Patch boundary fence.  | 2020/21        | -         |
| 61050           | FM                  | Patch boundary fence.  | 2020/21        | -         |

### Appendix I – Links to Policy and Guidance Documents

For further information and documents relating to Scottish forestry policies and guidance please follow the link below:

**<https://forestryandland.gov.scot/what-we-do/planning/links>**

# Ledmore Seed Orchard

## Land Management Plan

### Appendix II – Tolerance Table

|   | Adjustment to Felling Coupe Boundaries   | Timing of Restocking   | Change to Species  | Windthrow Response                        |
|---|--|--|--|---|
| FC Approval Not Normally Required         | 0.5 ha or 5% of coupe – whichever is less  | Planting up to 5 seasons after felling (allowing for fallow periods for Hylobius). For natural regeneration up to 10 planting seasons after felling. | Change within species group, e.g. conifers: native broadleaves                                   |   |
| Approval by Exchange of Email and Map     | 0.5 ha to 2.0 ha or 10% of coupe – whichever is first  |  | Greater than 15% species change  | Up to 5.0 ha – if mainly windblown trees. |
| Approval by Formal Plan Amendment         | Greater than 2.0 ha or 10% of coupe  | Delay in excess of that described above.   | Increased native woodland component.<br>Increase in native broadleaves and open/bog restoration. | Greater than 5.0 ha                       |
| Tree Felling in Exceptional Circumstances | <p>FLS will normally seek to map and identify all planned tree felling in advance through the LMP Process. However there are some circumstances requiring small scale tree felling where this may not be possible and where it may be impractical to apply for separate felling permission due to the risks or impacts of delaying felling.</p> <p>Felling permission is therefore sought for the LMP approval period to cover the following circumstances: Individual, rows or small groups of trees that are impacting on important infrastructure (i.e. Forest roads, footpaths, access routes (vehicular, cycle, equestrian or pedestrian), Buildings, Utilities and services and drains) either because they are now encroaching on or have been destabilised or made unsafe by wind, physical damage or impede drainage.</p> <p>The maximum volume of felling in exceptional circumstances covered by this approval is 40 m<sup>3</sup> per Land Management Plan per calendar year.</p> <p>A record of the volume felled in this manner will be maintained and will be considered during the five year LMP review.</p> |  |  |   |



# Ledmore Seed Orchard








## Land Management Plan





### Appendix III – Record of Statutory Consultation

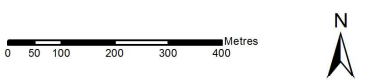
| Statutory Consultee            | Date Contacted | Date response received | Issues raised   | Forest District response  |
|--------------------------------|----------------|------------------------|---|---|
| SNH                            | 15/08/2019     | 16/08/2019             | The Ledmore Land Management Plan area is adjacent to the Ordie Burn which forms part of the River Tay Special Area of Conservation (SAC). In our view, adherence to Forestry and Water Guidelines during forestry operations should be sufficient to avoid a likely significant effect on the SAC.  | The most recent forestry and water guidelines will be adhered to in the creation of this management plan. |
| Perth & Kinross Council        | 15/08/2019     | 02/09/2019             | Thank you for your consultation request for Ledmore. I have checked the attached map and it recognises all key features and issues in relation to access and biodiversity. The antiquity matches our mapping system and I have no further comments to add. For information, we hold species records of red squirrels, barn owl and brown hare in the vicinity and a recent planning application was granted for the erection of a poultry shed to the south-west in Tullybelton Wood (Ref: 19/00534/FLL). | No response required  |
| Auchtergaven Community Council | 15/08/2019     | 28/08/2019             | [I would] like to see broadleaves planted along the road to disguise the Sitka within. [...there have been sightings of] Pine Martin and Red Squirrel in the vicinity. There has also been dumping going on nearby over the years, so beware of the gates / entrances being used for this.  | No response required  |
| Lohmann Tierzucht Poultry farm | 22/08/2019     |                        | No response received  |   |
| Ledmore Farm                   | 19/08/2019     |                        | No response received  |   |

**Ledmore LMP  
Features**

Author: U320933  
Scale @ A3: 1:10,000  
Date: 06/08/2019

- Legend**
-  Blocks
  -  Core Paths
  -  Forest Roads
  -  Gas Pipelines
  -  Water Pipelines
  -  Water Courses
  -  Broadleaves

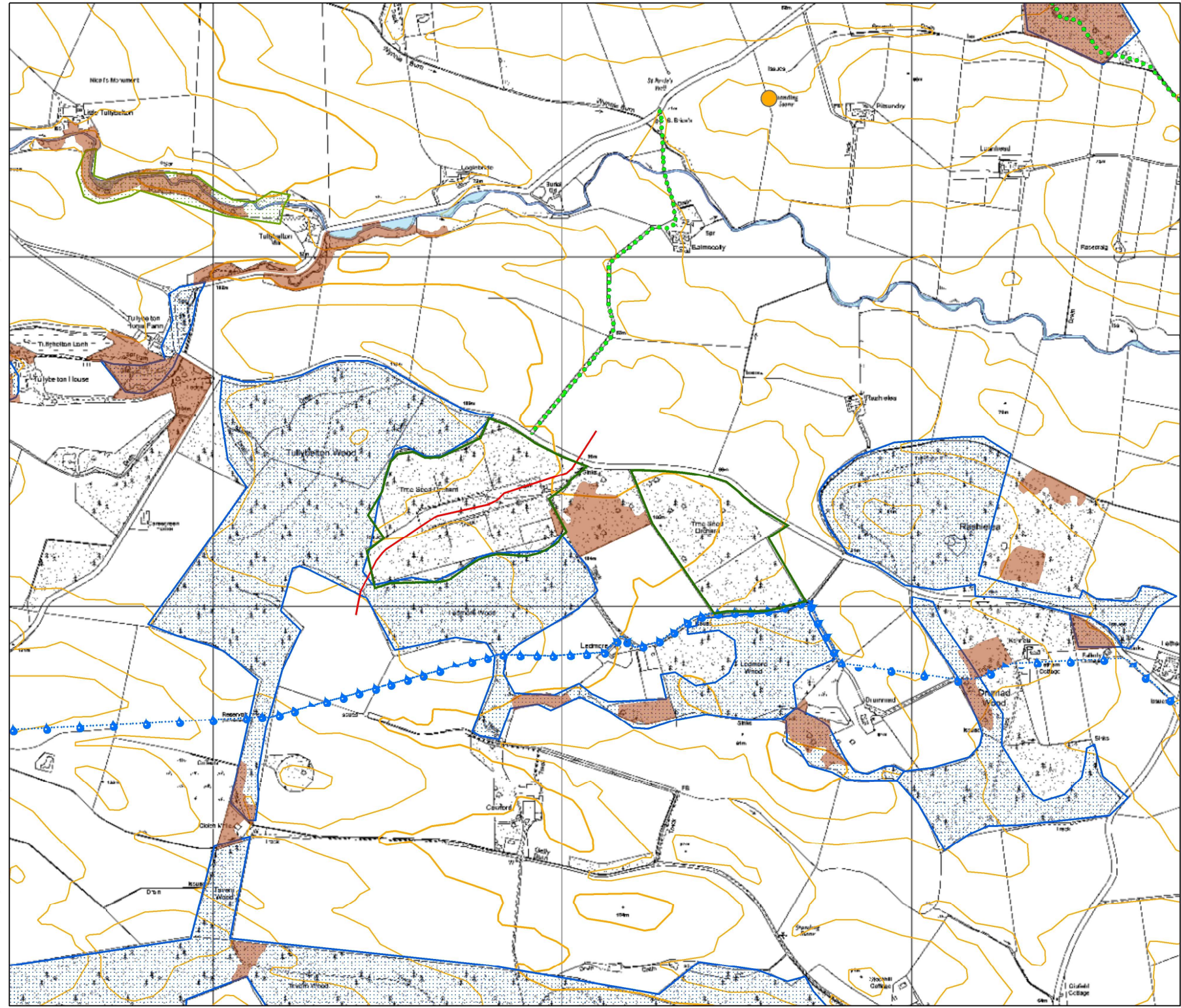
- Ancient Woodland**
- ANTIQUITY**
-  Ancient (of semi-natural origin)
  -  Long-Established (of plantation origin)
  -  Other (on Roy map)
  -  SAC



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**Ledmore LMP  
Management Coupes**

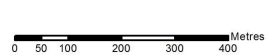
Author: U320933

Scale @ A3: 1:10,000

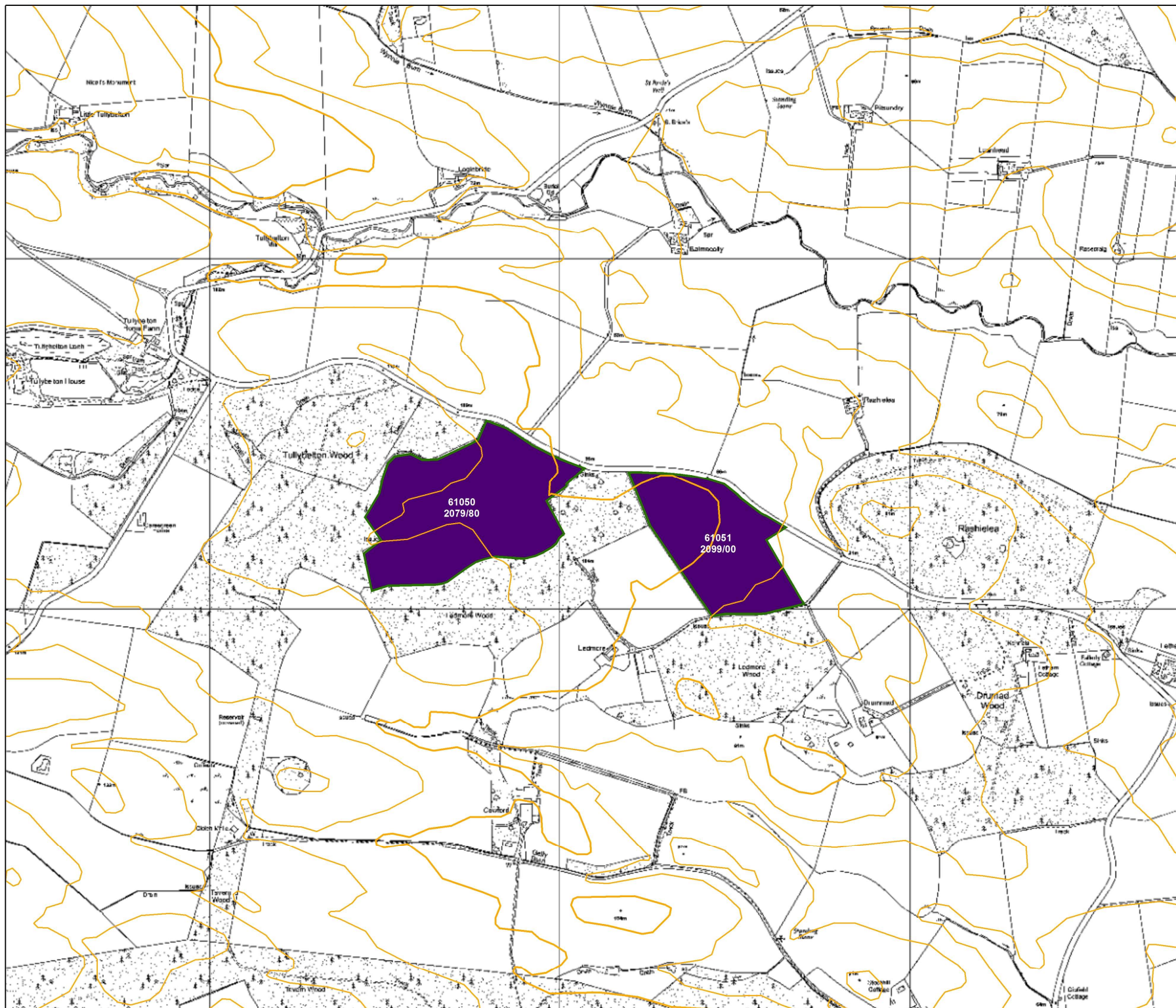
Date: 25/11/2020

**Legend**

-  Felled or fell year requires review (2011 - 2019)
-  Phase 1 felling (2020 - 2024)
-  Phase 2 felling (2025 - 2029)
-  Phase 3 felling (2030 - 2034)
-  Phase 4 felling (2035 - 2039)
-  Phase 5 felling (2040 - 2044)
-  Phase 6 felling (2045 - 2049)
-  Phase 7 felling (2050 - 2054)
-  After 2054
-  Long Term Retention (Fell after Phase 3)
-  Natural Reserve
-  Minimum Intervention
-  Coppice
-  Low Impact Silviculture
-  Open
-  Missing Data
-  Blocks



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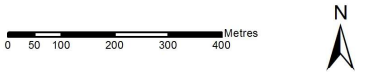


**Ledmore LMP  
Future Species**

Author: U320933  
Scale @ A3: 1:10,000  
Date: 25/11/2020

**Legend**

-  Blocks
-  Sitka Spruce
-  Norway Spruce
-  Douglas Fir
-  Larch
-  Scots Pine
-  Lodgepole Pine
-  Other Conifers
-  Sitka Spruce Seed Orchard
-  Oak
-  Beech
-  Birch
-  Ash
-  Other Broadleaves
-  Open



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