



National
Qualifications
2024

X826/76/11

**Environmental Science
Paper 1 — Supplementary source booklet**

FRIDAY, 26 APRIL

9:00 AM – 9:45 AM

Supplementary sources of information

Source A is a sketch map showing the main habitat types present on the country park estate.

Source B is the findings from a habitat survey.

Source C is the plan for felling and restocking operations in selected areas of the estate.

Source D gives information about some UK tree species susceptible to Ramorum disease.

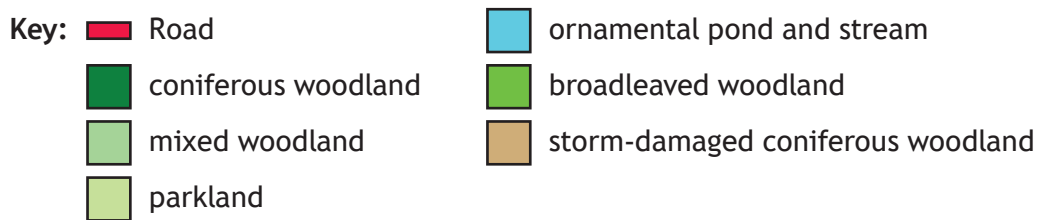
Source E lists some factors affecting sawmill prices for timber.

Source F is an extract from Scotland's Forestry Strategy 2019–2029.



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Source A Sketch map showing the main habitat types present on the country park estate



Source B Findings from a habitat survey

A Local Biodiversity Action Plan (LBAP) for the estate was prepared in 2013, following an extensive habitat assessment. An LBAP is designed to protect, restore, and enhance priority habitats and species within a given area.

Surveyors found the estate:

- includes a diverse range of habitats, including species-rich grassland, mixed woodland, parkland (open grassy land with scattered trees), wetland, and scrub (dominated by shrubs)
- has an abundance of wildlife, including many species of UK importance
- is a popular local visitor attraction.

Source C Plan for felling and restocking operations in selected areas of the estate

Site	Felling operations				Restocking operations		
	Species to be felled	Area (ha)	No. of trees	Timber volume (m ³)	Species to be planted	Area (ha)	Planting density (stems per ha)
A	Sitka spruce	7.50	6750	6822	Sitka spruce Douglas fir Mixed broadleaves	2.90 2.90 0.60	2500 2500 1600
B	European larch	2.10	1680	1439	Norway spruce	3.00	2500
C	Norway spruce	0.80	920	763	Silver birch Pedunculate oak Alder Aspen Rowan	0.30 0.30 0.20 0.10 0.10	1600 1600 1600 1600 1600
D	Norway spruce	1.75	1255	1934	To be decided		
E	Scots pine	0.25	200	168	Silver birch Pedunculate oak Aspen Rowan Mixed conifers	0.08 0.08 0.03 0.03 0.05	1600 1600 1600 1600 2500

Source D Information about some UK tree species susceptible to Ramorum disease

Tree species	Hardwood/ softwood	UK native species	Value in the UK	
			Wildlife	Commercial
Beech (<i>Fagus sylvatica</i>)	hardwood	✓	✓	✓
Pedunculate oak (<i>Quercus robur</i>)	hardwood	✓	✓	✓
Rowan (<i>Sorbus aucuparia</i>)	hardwood	✓	✓	
Silver birch (<i>Betula pendula</i>)	hardwood	✓	✓	
Douglas fir (<i>Pseudotsuga menziesii</i>)	softwood		✓	✓
European larch (<i>Larix decidua</i>)	softwood		✓	✓
Sitka spruce (<i>Picea sitchensis</i>)	softwood		✓	✓

[Turn over

Source E Some factors affecting sawmill prices for timber

- Current demand for wood and wood products
- Current availability of harvested timber
- Timber harvesting costs
- Quality of harvested timber
- Timber transportation costs
- Increased cost for timber produced under an accreditation scheme linked to sustainable forest management

Source F Extract from Scotland's Forestry Strategy 2019–2029

The UK imports around 60% of its wood and wood products and this has been predicted to rise to 78% by 2040. At the same time, demand for wood fibre is predicted to rise globally.

Scotland has good growing conditions for timber species, and a highly efficient timber-processing sector. The main timber produced in Scotland for processing and manufacturing is softwood from fast-growing, highly productive conifers. An increasing proportion of this is being harvested from privately owned forests and woodland. Forecasts for 2030–2050 predict there will be a decline in softwood availability within Scotland, because areas of woodland are being lost due to development.

Productive hardwood from Scotland's forests and woodlands is produced in much smaller volumes than softwood. It provides an important resource for the fuelwood market and high value craft and construction sector products. There are opportunities to expand these markets, and more sustainably managed forests and woodlands will improve the supply and quality of hardwood timber.

Understanding and responding to the balance of supply and demand for Scottish timber and products is fundamental to achieving sustainable economic growth in the sector. It is also important for delivery of the Scottish Government's Energy Strategy.

[END OF SUPPLEMENTARY SOURCE BOOKLET]

Acknowledgement of copyright

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