



Scots Pine Resource: Current Management and Utilisation

Scots Pine Timber Quality in North
Scotland

2nd October 2009

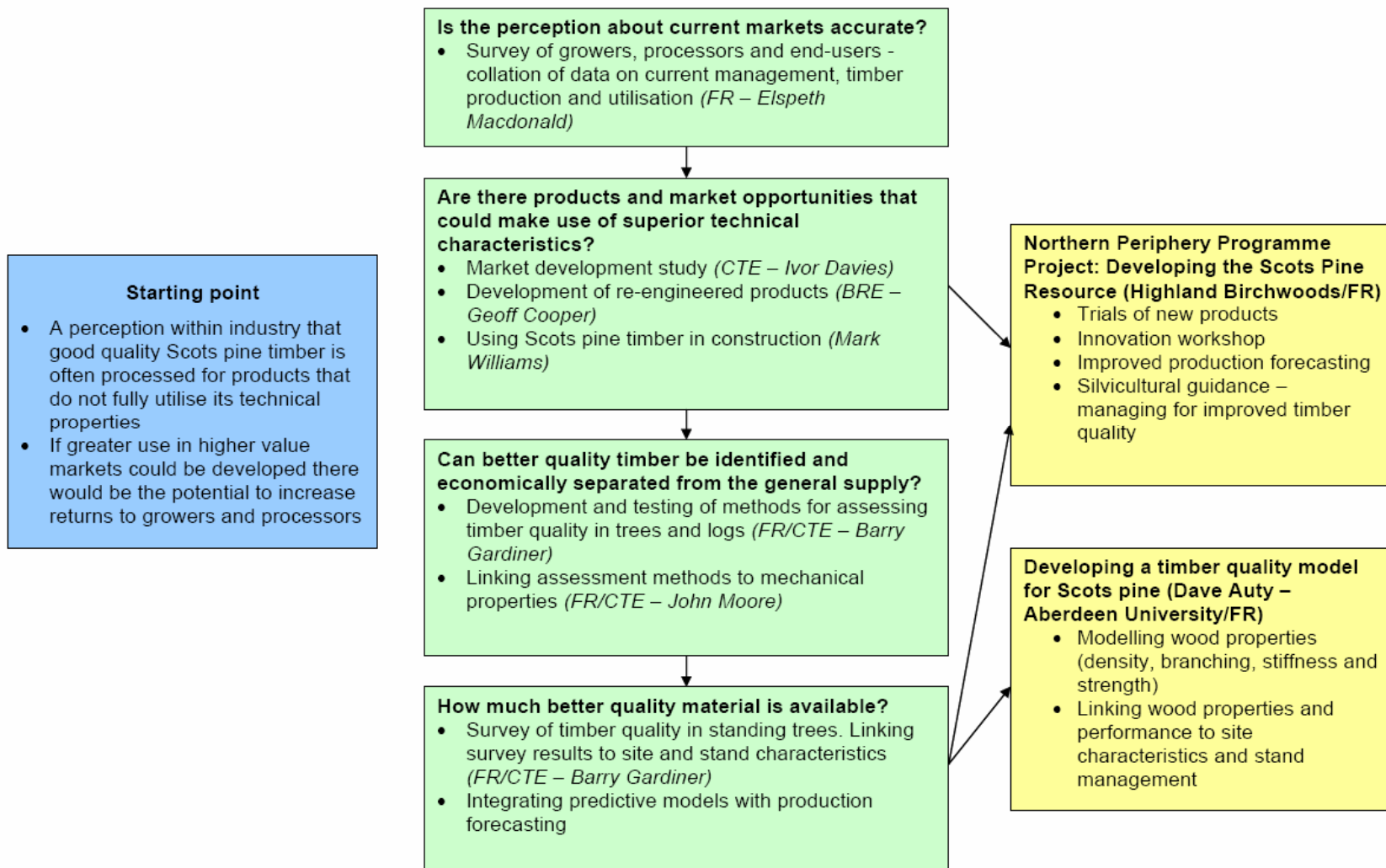
Elsbeth Macdonald

Timber Properties Research Programme

Outline

- Scots pine timber quality research - overview
- Scots pine resource and timber availability
- Survey of management and utilisation:
 - Silviculture
 - Timber production
 - Timber processing
 - Industry views on Scots pine timber quality

SCOTS PINE TIMBER QUALITY RESEARCH – OVERVIEW

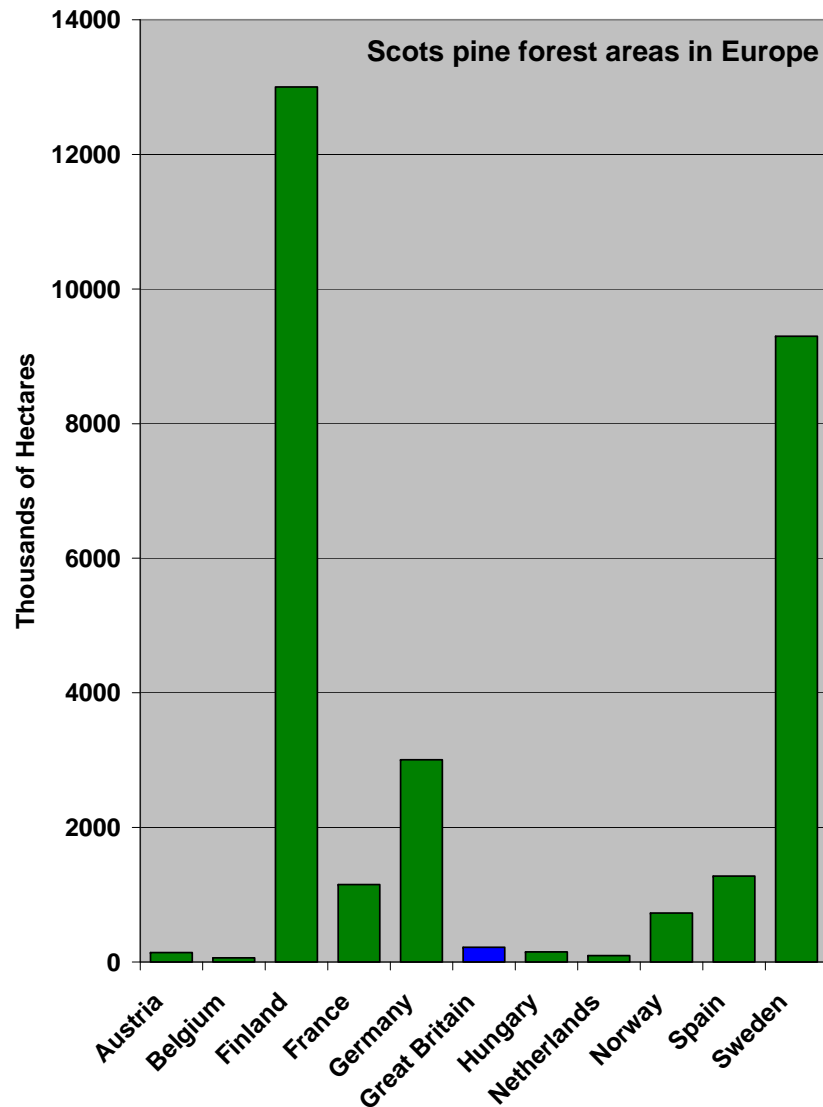


Completed or nearing completion

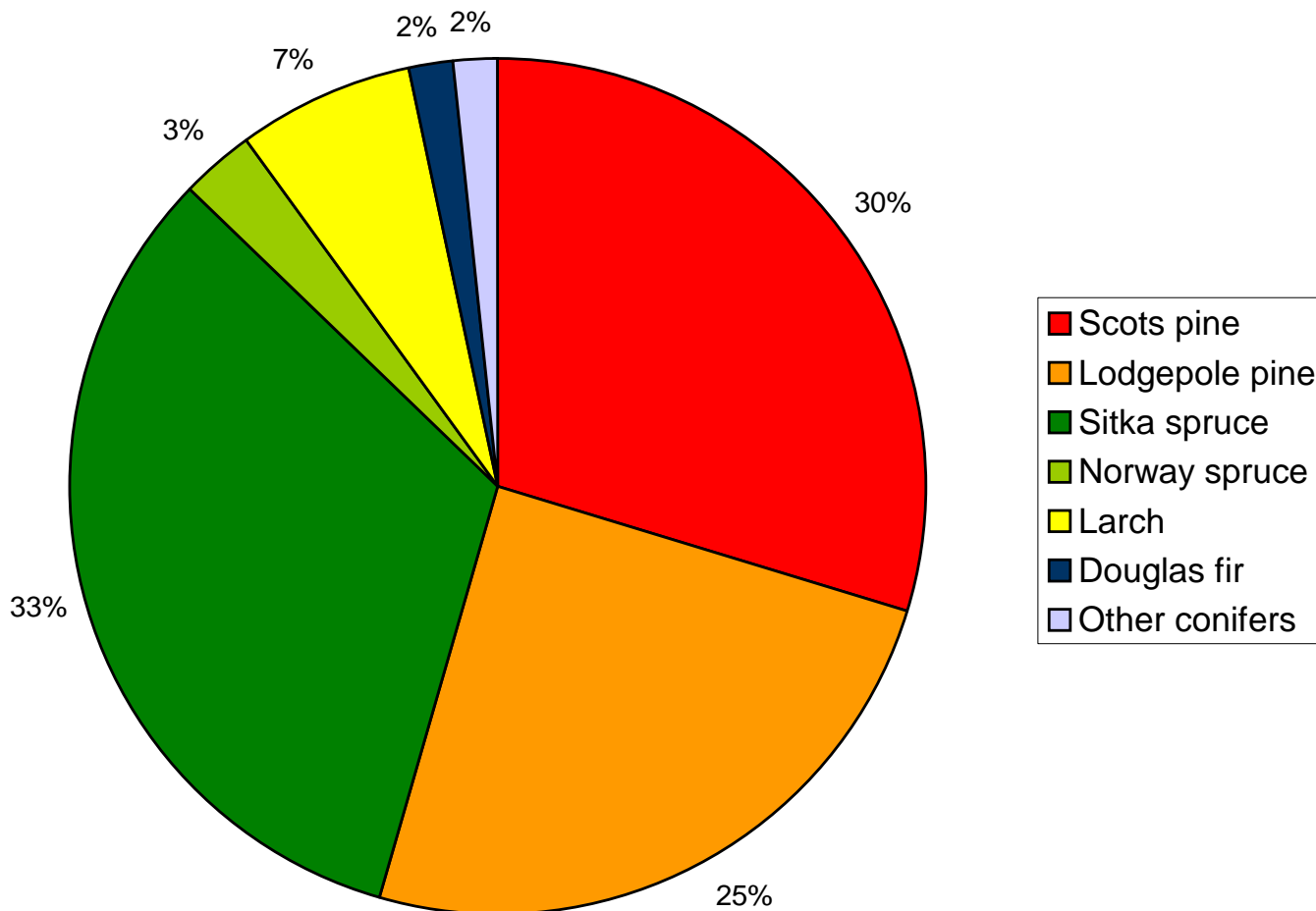
Ongoing until 2010/11

The extent of the Scots pine resource

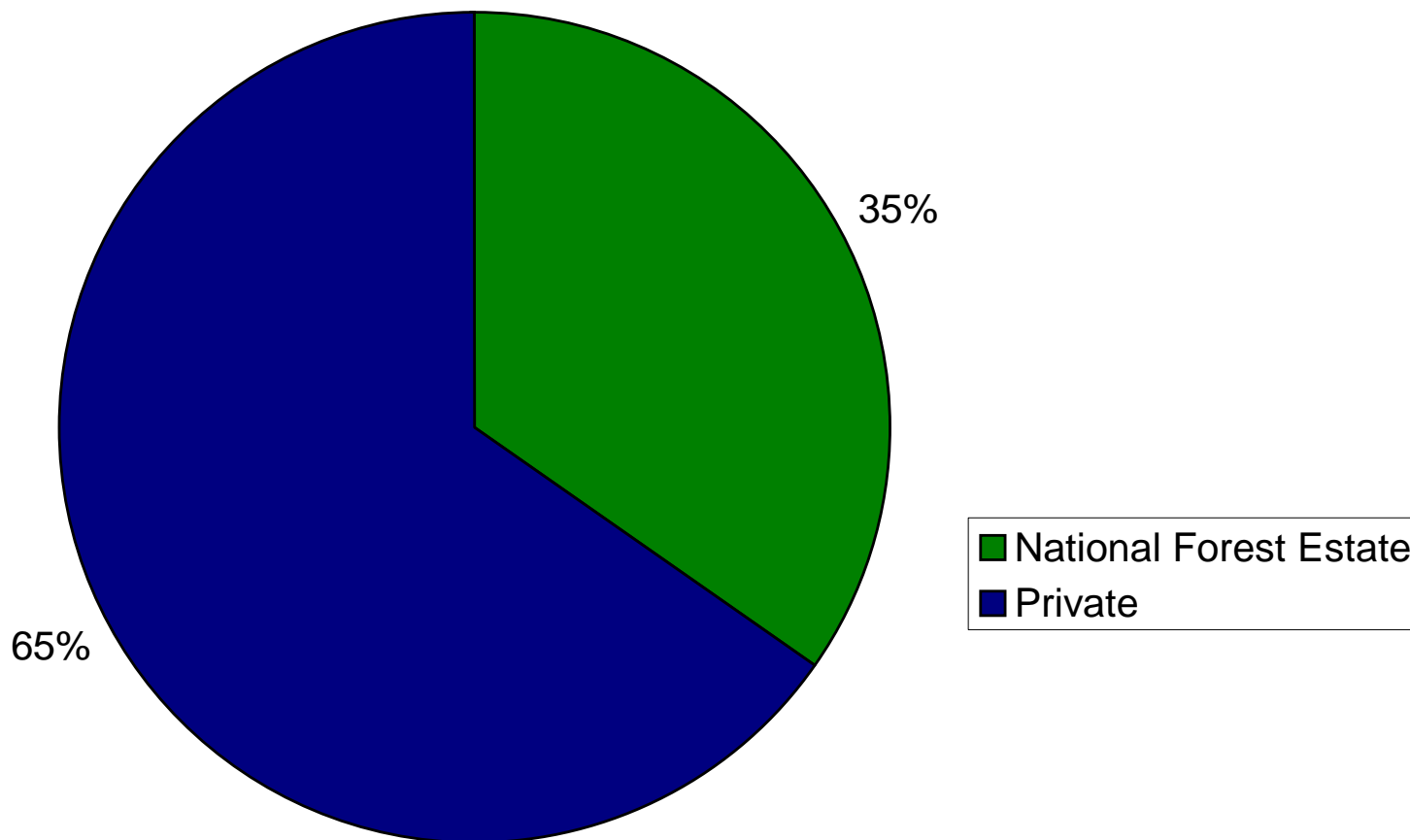
- 220k ha Scots pine high forest in Britain ~ 16% of conifer area
- Almost half is in Grampian and Highland
- Interest likely to increase across Britain:
 - Climate change
 - Red band needle blight



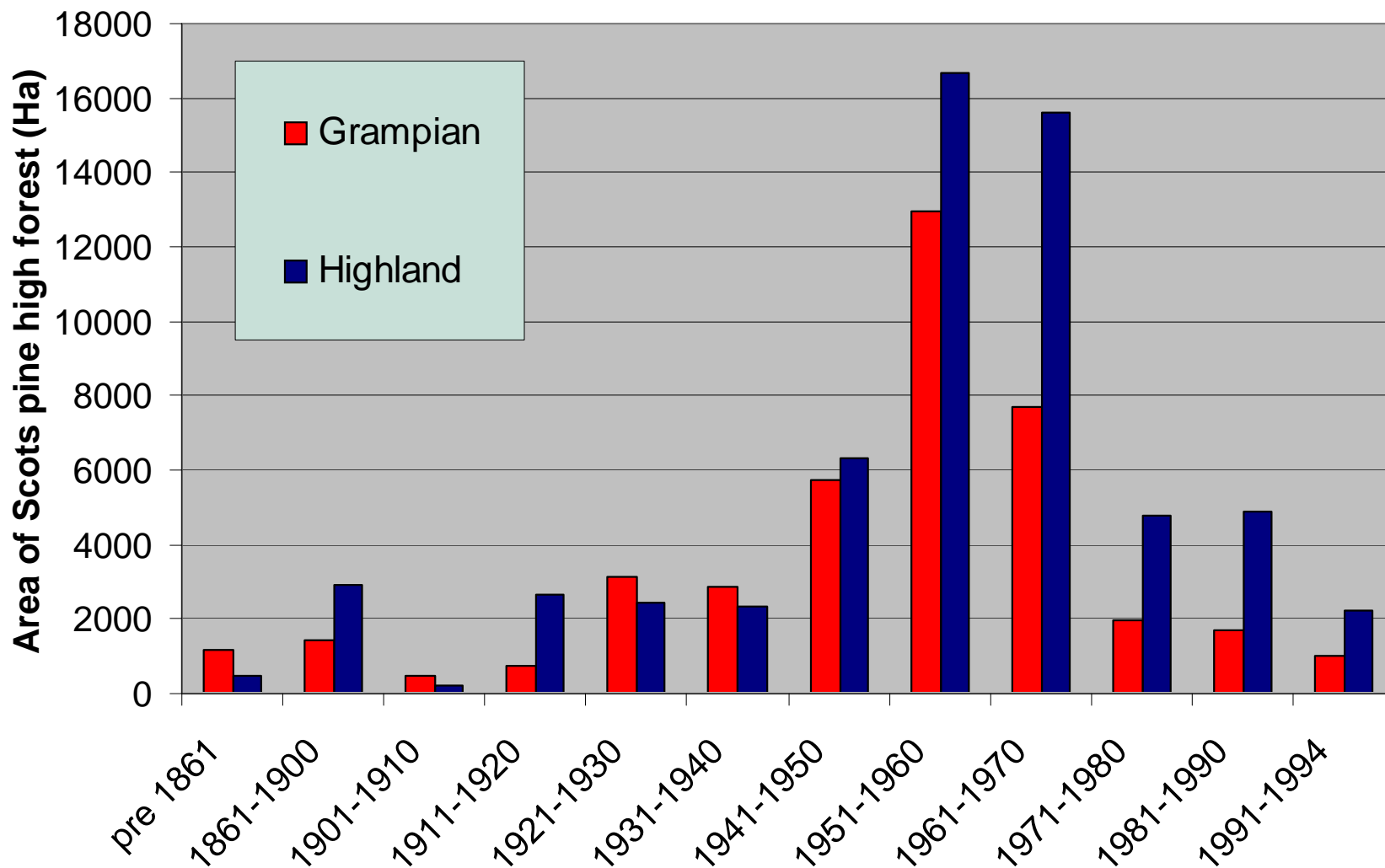
Northern Scotland – species breakdown by area



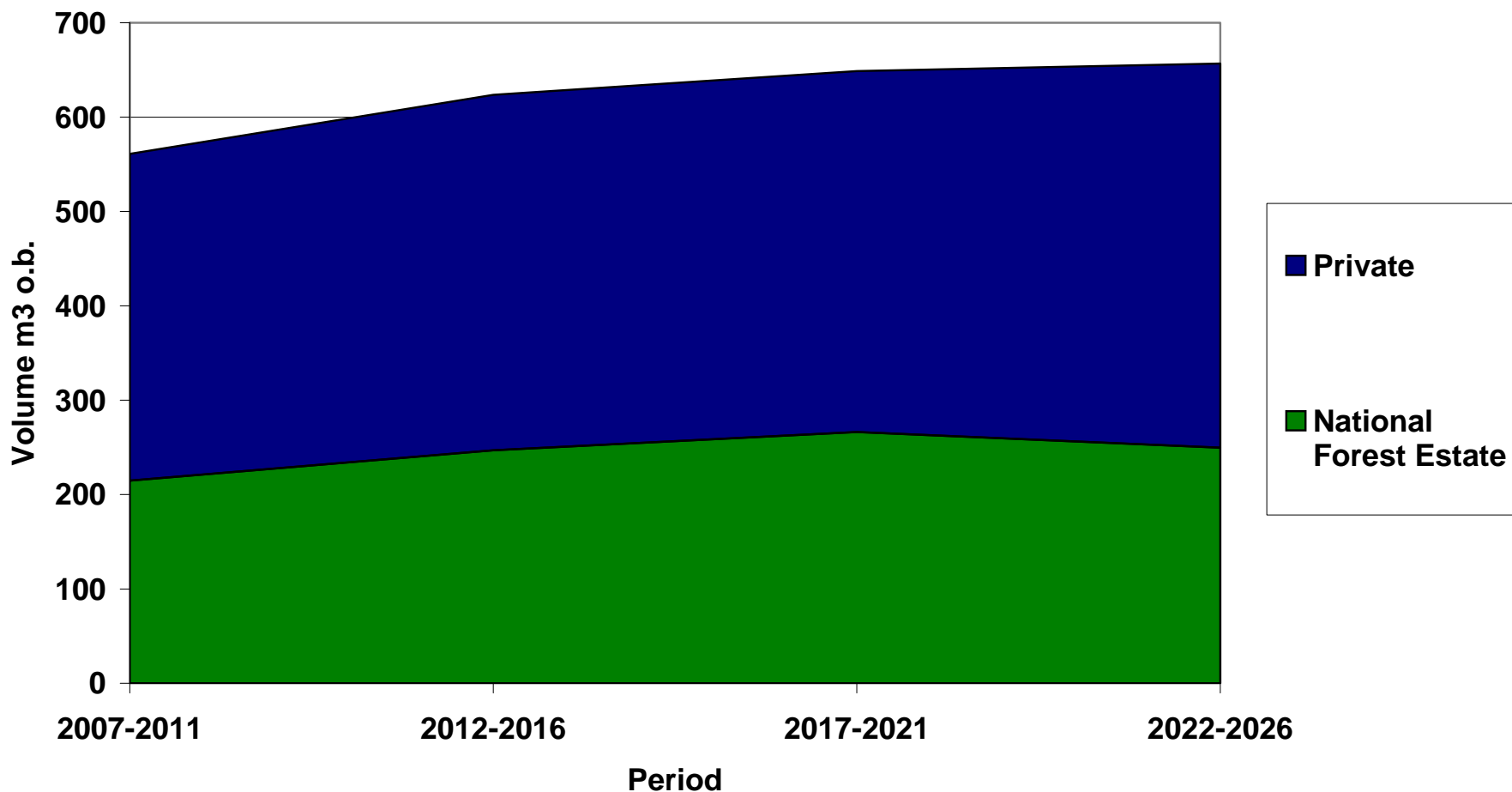
Scots pine in northern Scotland - ownership



Scots pine age class distribution



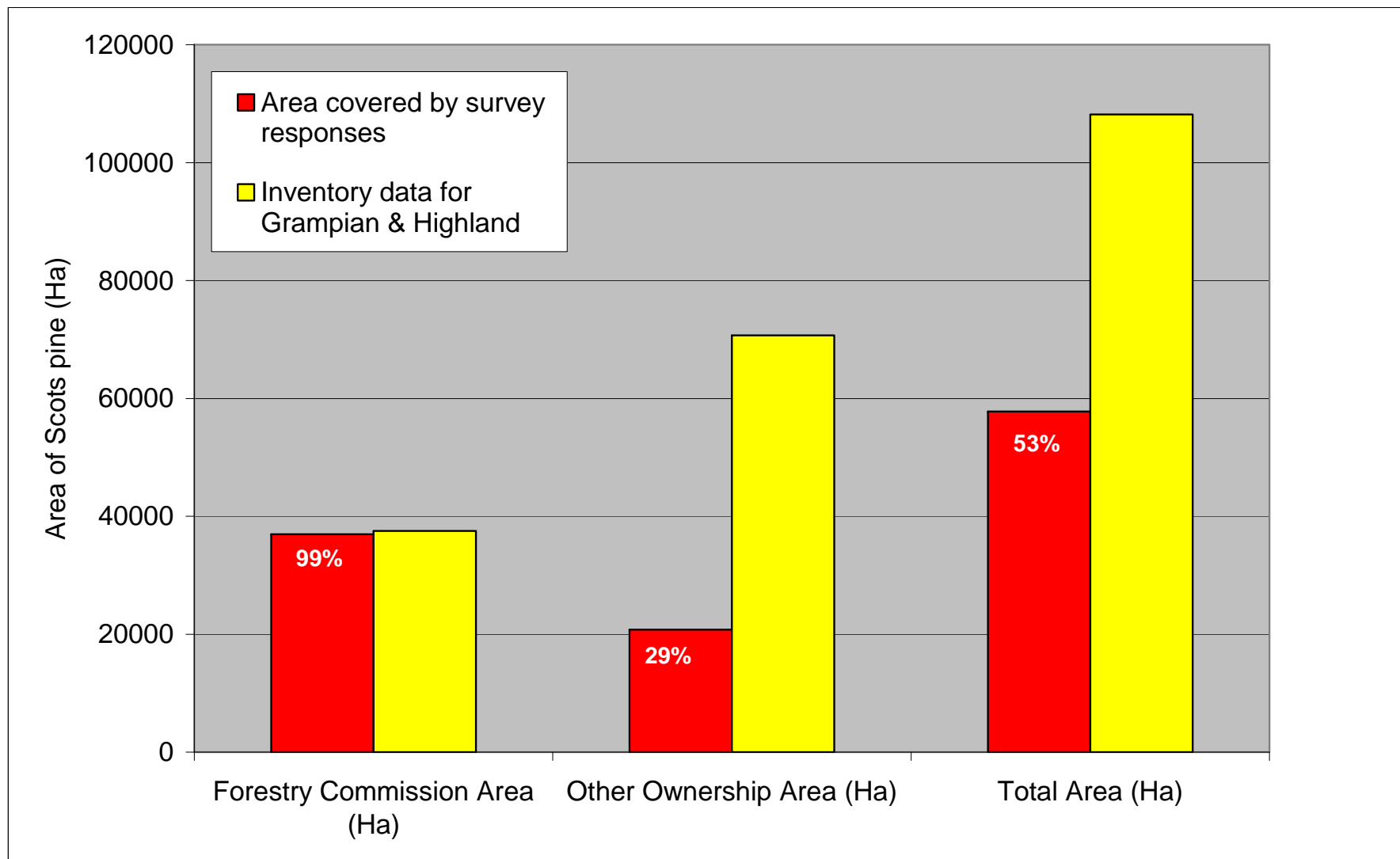
Forecast Scots pine timber availability (N. Scotland)



Survey of management and utilisation

- Questionnaires sent to:
 - Forest owners and managers
 - Wood processors
 - Product manufacturers
- Information collected about:
 - Scots pine silviculture and timber production
 - Intake of roundwood and conversion to products
 - Market breakdown
 - Quality criteria for standing Scots pine, logs and sawn timber

Growers responses: Scots pine area



Silviculture

- Proportion of SP designated no-thin: 21%
- Average age of first thinning: 30 (20 – 43)
- Thinning criteria:
 - Basal area
 - Age
 - Top height
 - Roding
 - Economic, i.e. when big enough to make return

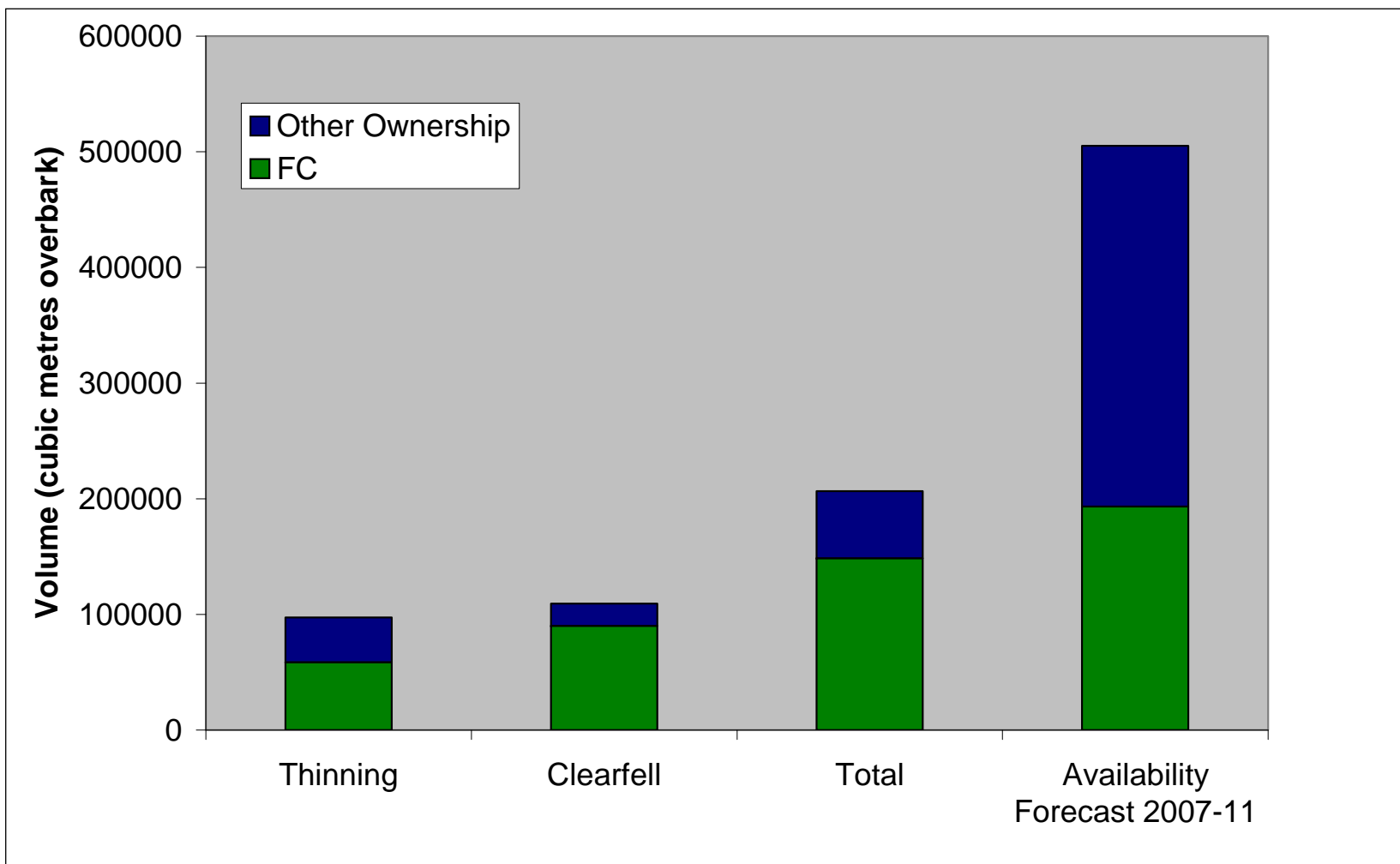
Silviculture (cont'd)

- Silvicultural systems (% of area):
 - Clearfell 52% (Non-FC 32%)
 - Continuous cover systems 48% (Non-FC 68%)
- Age at clearfell:
 - Average: 62 years (FC – 57, Non-FC – 74)
 - Minimum: 53 years
 - Maximum: 110 years
- Expected oldest trees in CCF: 128 years

Felling period

- Proportion of harvesting that takes place all year round:
 - 73% of thinning
 - 100% of clearfelling
 - 86% of total production
- Reasons for restrictions on felling period:
 - Winter production to minimise bluestain
 - Avoiding spring for Capercaillie
 - Concentrating on summer/autumn to minimise damage to roads and meet demand

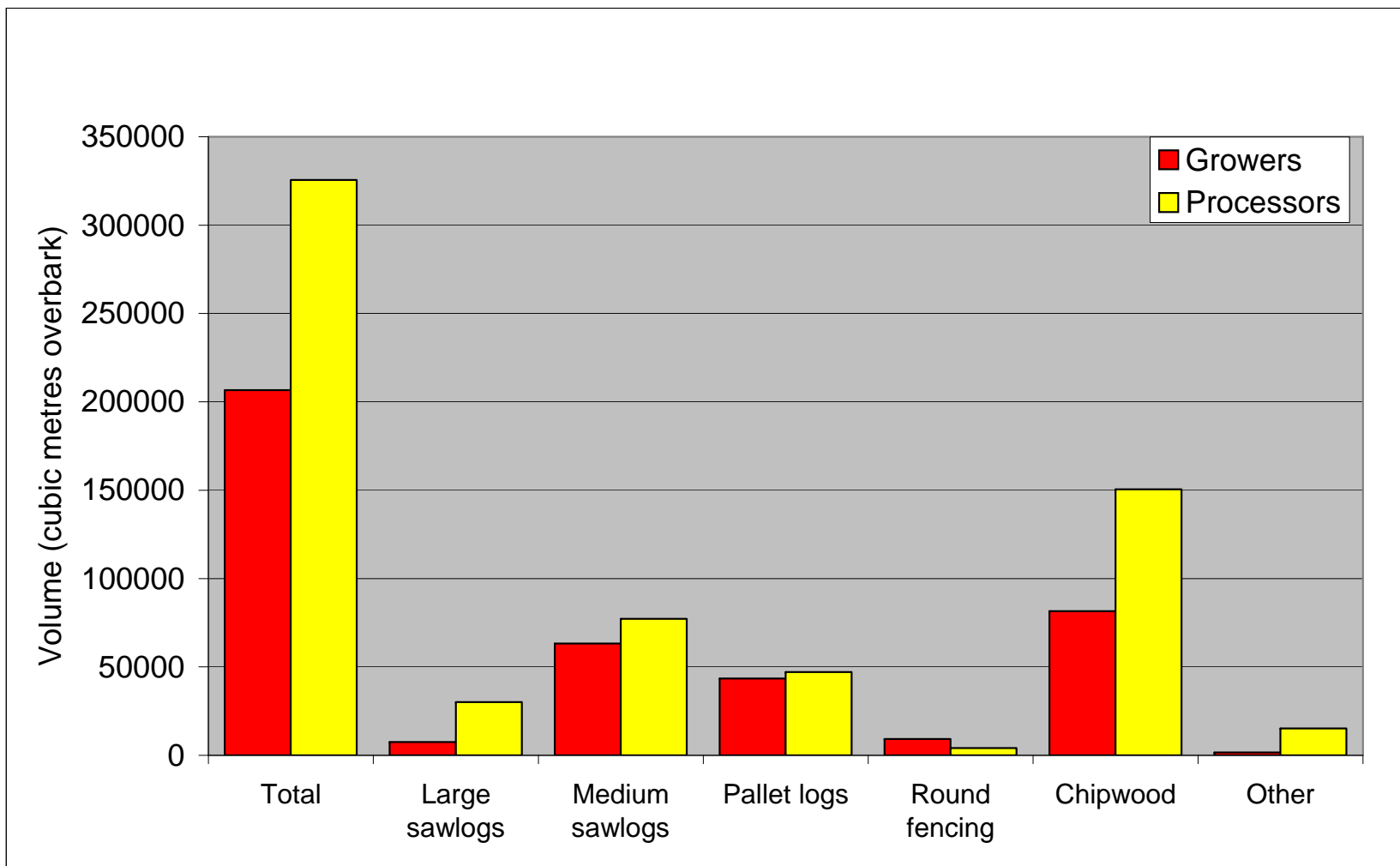
Scots pine harvested (Total 207 000 m³)



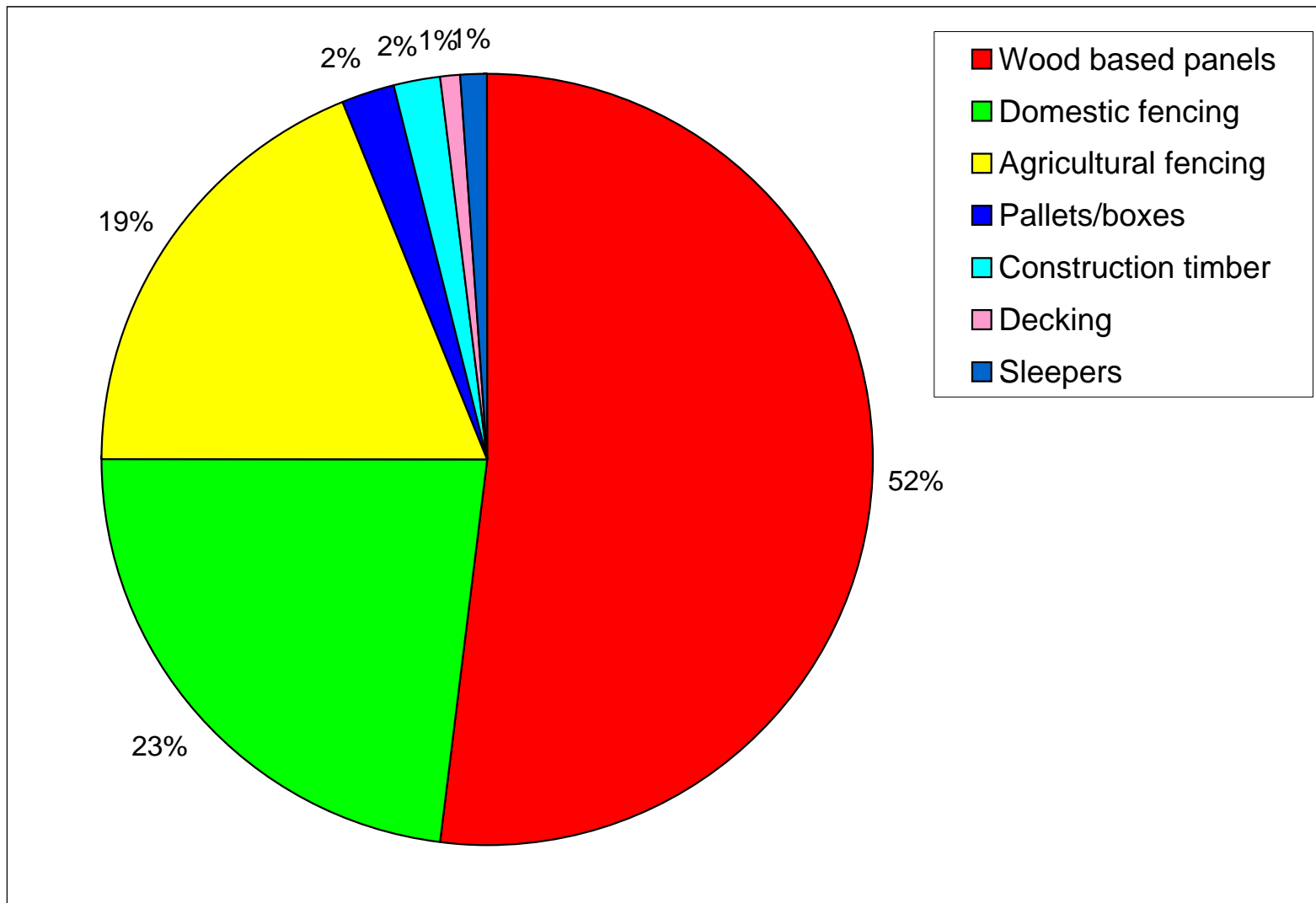
- Method of sale:
 - Standing sales: 69%
 - Roadside sales: 15%
 - Delivered: 16%

- Transport distances:
 - < 50 miles: 89%
 - 50 – 100 miles: 10%
 - 100 – 150 miles: 1%

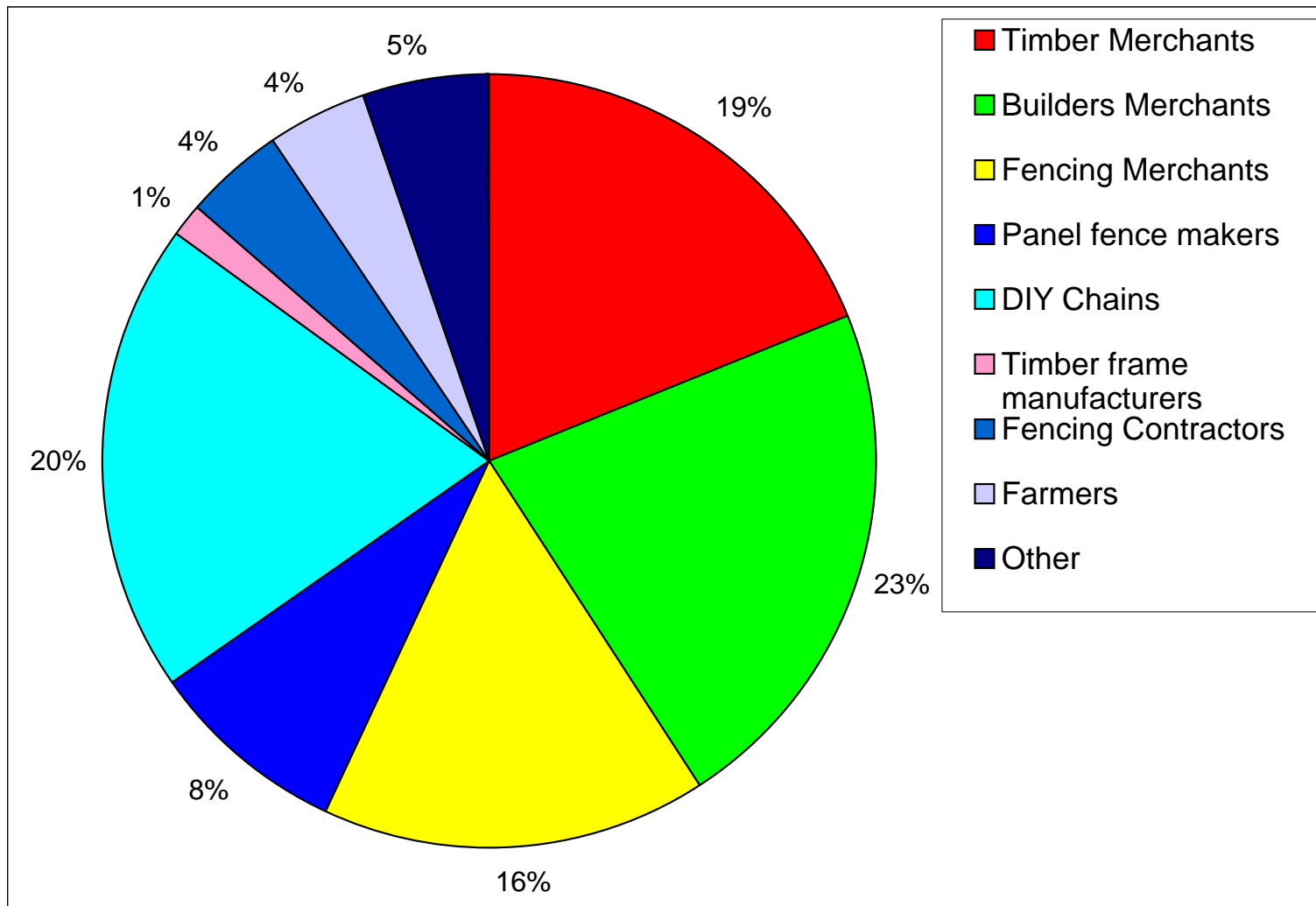
Total volume processed - 326 000 m³



Scots pine processed: timber & products



Scots pine processed: market sectors



End product manufacturers

- Only 6 questionnaires returned – one timber frame company, three joinery/specialist companies, two nil returns:
 - Total quantity of timber used: 4200 m³
 - Total quantity of Scots pine: 650 m³
 - Home grown Scots pine: 50 m³
 - Origin of other SP supply: Latvia (1 user)

Key timber quality criteria (industry views)

- Most important factors:
 - Straightness
 - Absence of bluestain
 - Knottiness (number, size and condition of knots)
 - Log dimensions.
- Other significant factors: ovality, taper, black knots and crop uniformity.
- Variability in quality a key issue







Comments from growers

- Scots pine increasingly managed for biodiversity and landscape reasons;
- Increase in area managed under CCF systems:
 - May reduce overall availability
 - May increase availability of larger diameter material
- Quality mixed and difficult to predict from appearance;
- Little demand for better quality logs and no premium - penalty on logs 40cm+ top diameter;
- Bluestain causes problems;
- Pricing/economics a barrier, especially high transport costs.

Comments from processors

- Quality varies from good to poor, often within the same stand;
- Difficult to obtain a consistent supply of quality material;
- Black knots the biggest problem: “*Scottish pine has black knots full of decayed branches fit only for woodpeckers and weevils!*”



Comments from end-product manufacturers

- Timber-frame manufacturer – *“would like to use more home-grown Scots pine timber but cannot get consistent supply of product at a competitive price”*
- Window-door manufacturer – considered use of home grown but *“the gulf in quality and the lack of infrastructure to process and improve the raw material means that our needs can only be met by importing from Germany and Scandinavia”*
- Some potential for pre-coated cladding

Conclusions from survey

- Scots pine timber resource is regionally significant;
- Predominant end-uses are currently wood-based panels and fencing;
- At present there is only a limited market for better quality material;
- Concerns about timber quality focused on variability and inability to predict internal characteristics;
- Black knots are a major defect.

Addressing the challenge:

- Integrate timber quality evaluation with inventory, pre-harvest and sawmill assessments → opportunity for segregation of better material;
- Develop added value products that use the existing resource;
- Promote appropriate silviculture and active management of Scots pine forests → deliver improved timber quality in the future.

Acknowledgements

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Altyre Estate, Alvie & Dalraddy Estates, Anagach Woods Trust, Balmoral Estates, Ben Newe Estate, Bidwells, Blelack Estate, Bowlts Chartered Surveyors, BSW Timber, Candacraig Estate, Cawdor Estate, Darnaway Estate, Deeside Timberframe Ltd, Duthil Estate, Edinburgh Napier University Centre for Timber Engineering, Forestry Commission Scotland, Glen Tanar Estate, Inchmarnoch Estate, Invercauld Estate, James Jones & Sons Ltd, John Gordon & Son Ltd, MacRobert Trust, Munro Sawmills Ltd, Netherton and Conval Woodlands, Norbord Ltd, Norbuild Timber Fabrication & Fine Carpentry Ltd, Northwoods Construction Ltd, Pluscarden Estate, Rothiemurchus Estate, Royal Society for the Protection of Birds, Russwood Ltd, Scottish Woodlands Ltd, Scotwood, Seafield Estate, Sourden Wood, Strathconon Estate, Sutherland Estate, The Ross Partnership, Treecraft Woodwork Ltd, Woodschool Ltd.

- FC Statistics Branch for advice on compiling the questionnaires.



More information: www.forestresearch.gov.uk