

# Scots Pine Timber Quality in North Scotland

Steering Group Meeting – 22<sup>nd</sup> January 2009

Task 3: Survey of Scots pine timber quality –  
progress and preliminary results

## Objective

- To undertake a strategic assessment of the end-use properties of the standing Scots pine resource in North Scotland, using the assessment methods developed in Task 2



# Approach

1. Survey of Scots pine stands in Grampian and Highland, targeted on stands likely to be harvested before 2030
2. Acoustic assessment of logs from across north Scotland – mapping mechanical properties of the resource

# 1. Survey

- Will provide assessment of timber quality of Scots pine likely to be marketed in next 20 years – linked to GIS
- Data will be analysed to quantify effects of site conditions and silviculture on timber quality
- With results of SFT funded PhD → increased understanding of factors controlling Scots pine timber quality
- Improved guidance for Scots pine management

# Survey sample stands

- Sample selected from stands planted up to 1970
- Weighted to reflect pattern of age class, ownership and geographical distribution :

Planting Year	Number of sample stands				TOTAL
	Grampian		Highland		
	Private	FC	Private	FC	
1921-50	10	5	9	5	29
1951-60	12	6	14	8	40
1961-70	7	3	13	8	31
<b>TOTAL</b>	<b>29</b>	<b>14</b>	<b>36</b>	<b>21</b>	<b>100</b>

- Area of sample stands is 1.7% of area of Scots pine in this age class in National Inventory (or 1 sample stand for every 750 ha of Scots pine)

# Sample stand locations

- FC stands:
  - Dornoch (2)
  - Inverness (18)
  - Moray (9)
  - Aberdeenshire (5)
  - Lochaber (1)
- Private sector – 21 estates, including:
  - Cawdor - 12
  - Seafield - 18
  - Rothiemurchus, Darnaway, Ballogie, Alvie, Candacraig, Altyre...

# Assessments

- Location
- Planting year
- Standing tree timber quality assessment (ST300 acoustic, stem straightness, height of lowest dead branch)
- Yield class
- DBH
- Stocking density
- Thin/no thin
- Elevation
- Exposure (DAMS score)
- Basic soil quality assessment

# Progress

- ~ 20% of sites completed
- Still need to obtain some maps for private sector sites
- Plan to complete majority of survey by end of March
- Some delays due to equipment breakdown (ST300 acoustic tool)

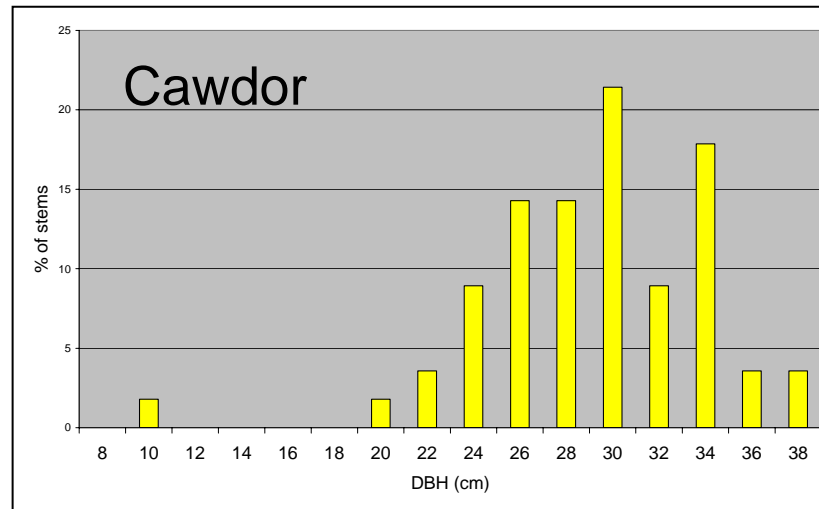
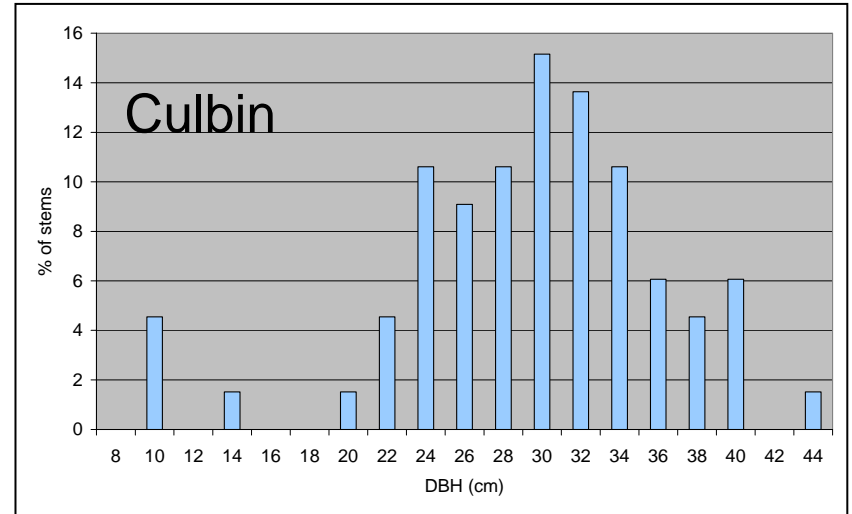
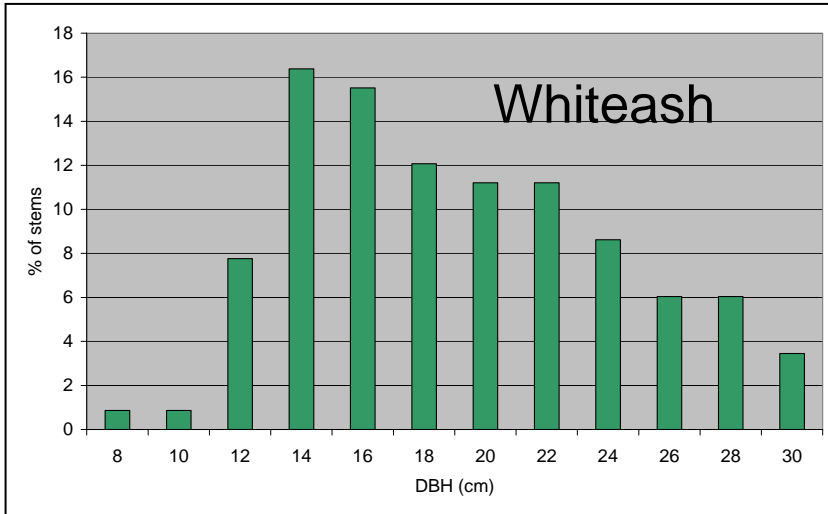


## Examples of survey data

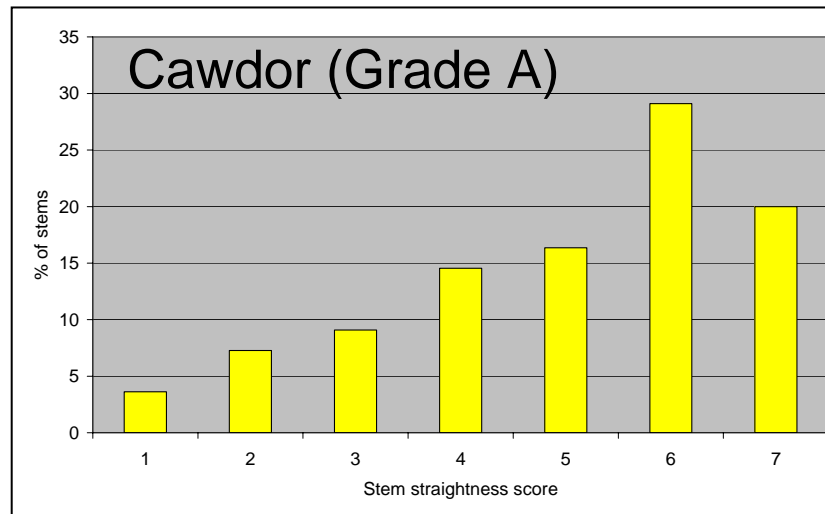
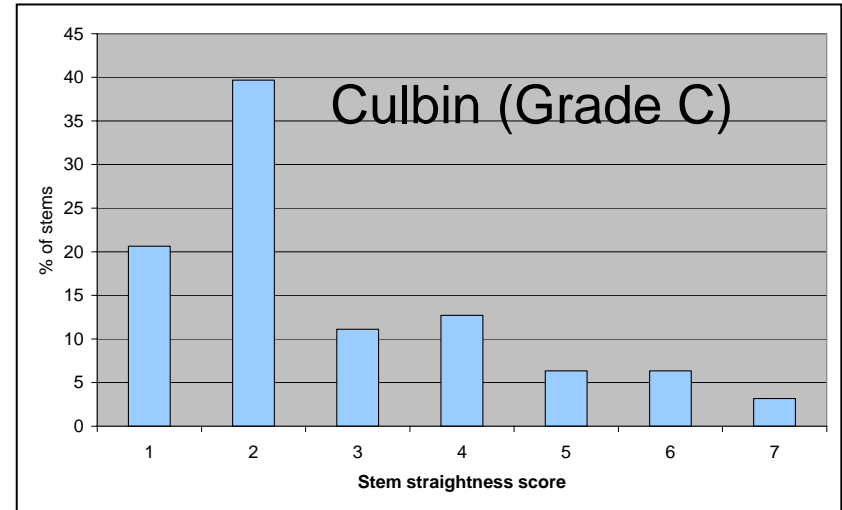
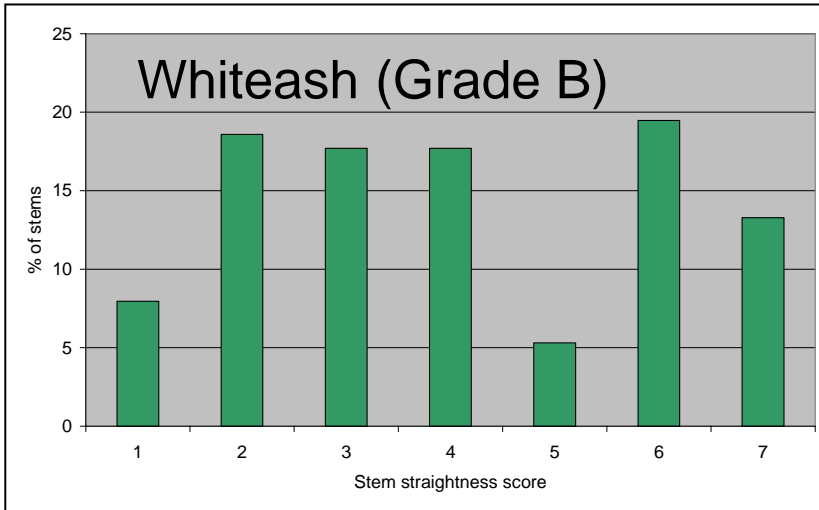
- Compare three stands of similar age, but different growth rates
- All stands have been thinned

Stand	Age	Area (Ha.)	Stocking density (No/ha)	Mean DBH (cm)	GYC	Mean stem straightness score	Mean HLDB (m)	Mean ST300	Mean Soil Nutrient Regime
Moray FD - Whiteash	52	5.58	1160	18.8	6	4.1	0.8	4.4	5.3
Moray FD - Culbin	52	9.51	413	29.3	10	2.8	1.4	4.7	5.5
Cawdor Estate	59	4.71	350	28.5	8	5	2.4	5	4.1

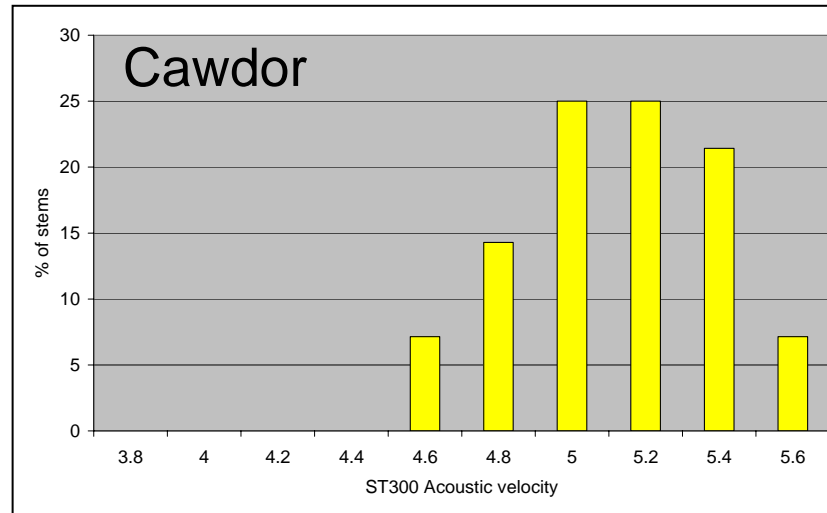
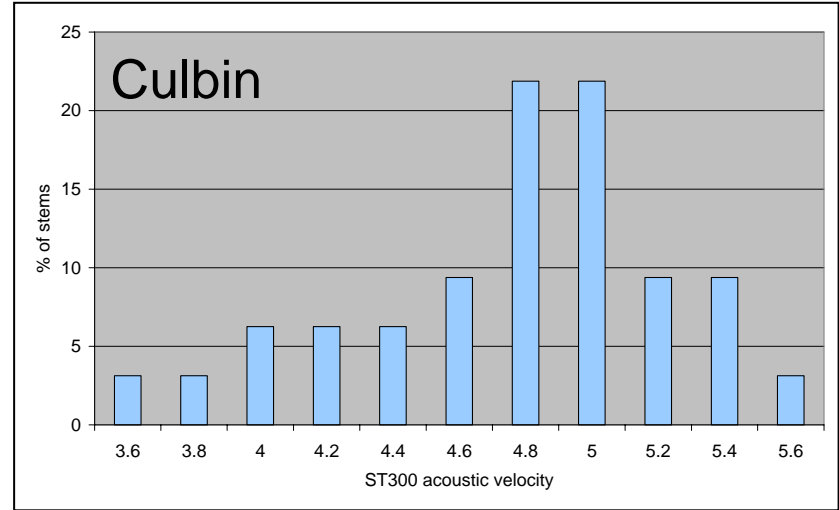
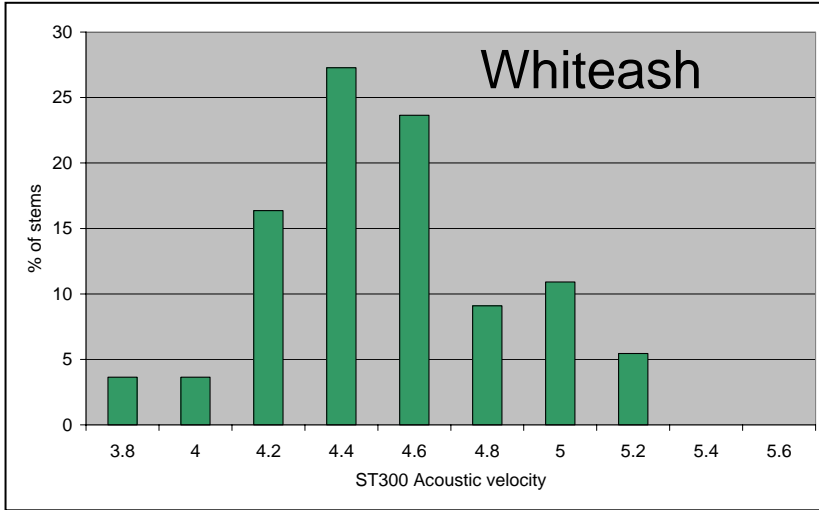
## Diameter distribution



## Stem straightness score distribution



## ST300 acoustic velocity distribution



## 2. Acoustic assessment of logs

- Aim to collect log acoustic data from Scots pine logs delivered to sawmill
- Analyse variation in log acoustic values





- Map and link to site and stand characteristics
- Starting at Gordon's in Nairn next week – pilot study
- Plan to assess 25-35 logs from each load of Scots pine
- Number of days loads assessed will depend on mill logistics

