



Short Rotation Forestry (SRF) spacing trials

SHORTFOR Meeting

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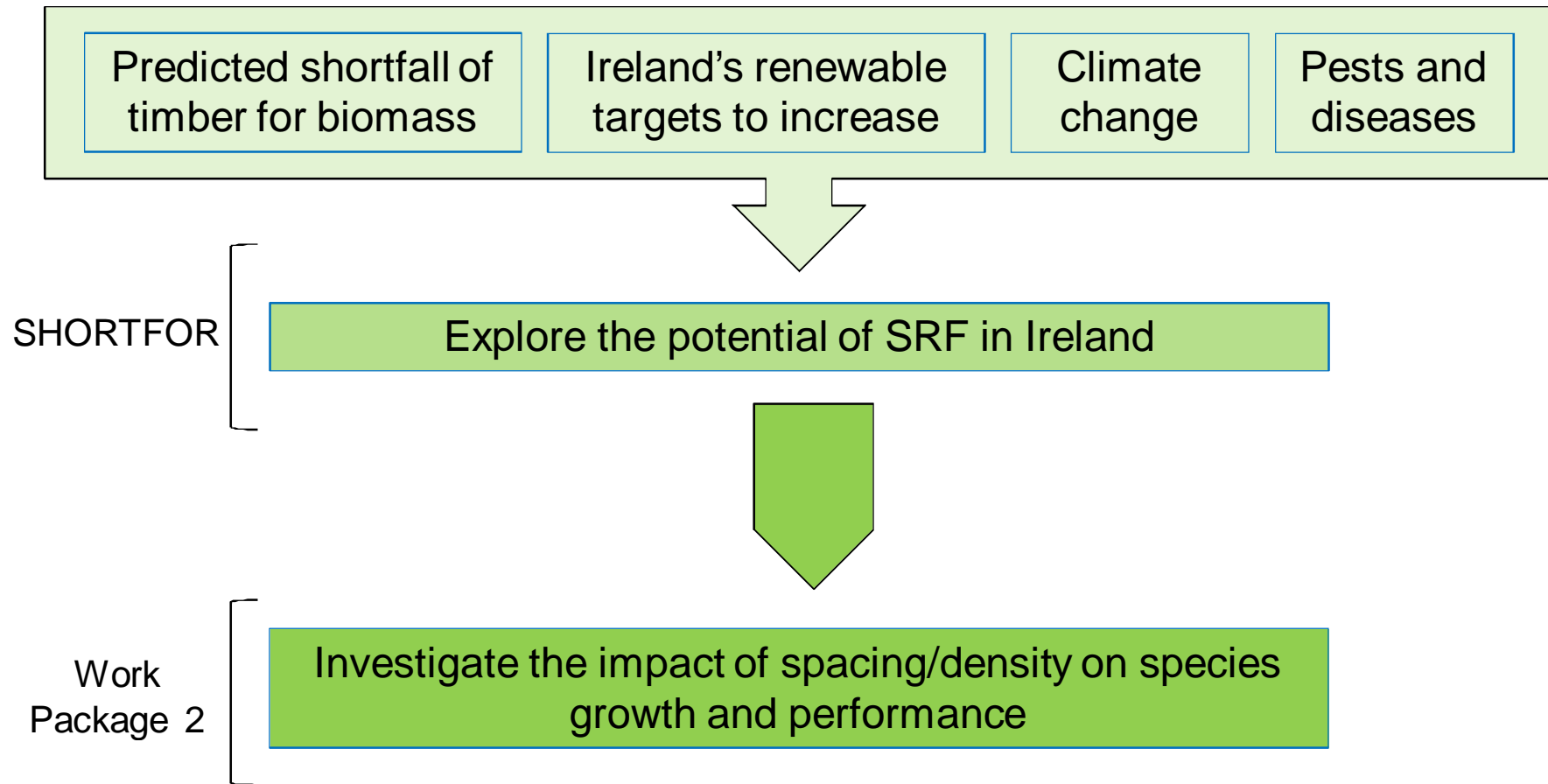


The Irish Agriculture and Food Development Authority

Outline

- Objectives
- SHORTFOR trials to date
- Brownswood trial
- Mountain West trial
- Recording
- Preliminary results from Brownswood trial
- Conclusions

Objectives



Short Rotation Forestry (SRF)

- Single stemmed trees of fast-growing species
- Reduced rotation length (< 20 years)
- Niche between short rotation coppice and conventional forestry

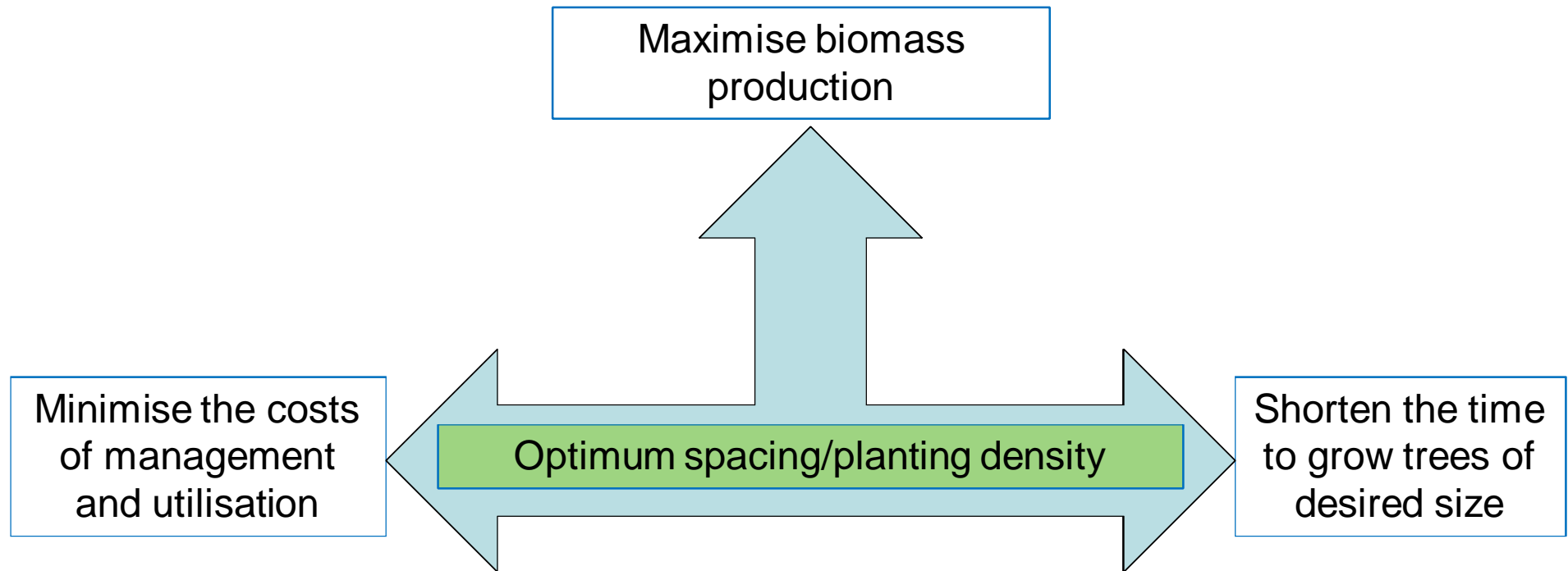


Spacing/Planting density

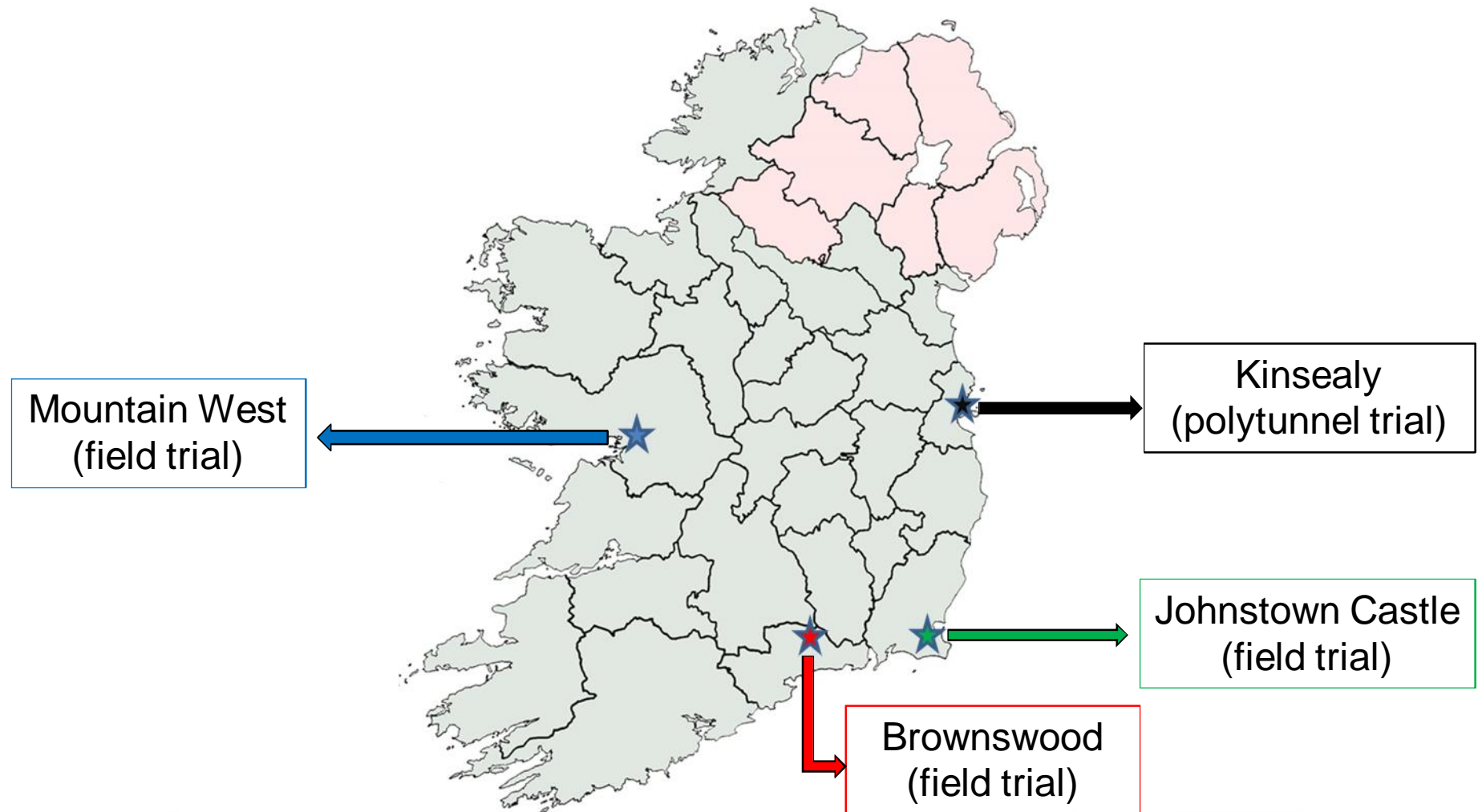
- Effects on
 - Individual tree growth
 - Stand productivity
 - Management costs
- Dense spacing/high planting density
 - Early capture of the site: maximum productivity earlier
 - Reduction in juvenile wood: higher wood density
 - Earlier weed suppression
 - Decrease in individual tree growth rate
 - Increase in planting and harvesting costs
 - Possible increase in tree health risks



Spacing/Planting density

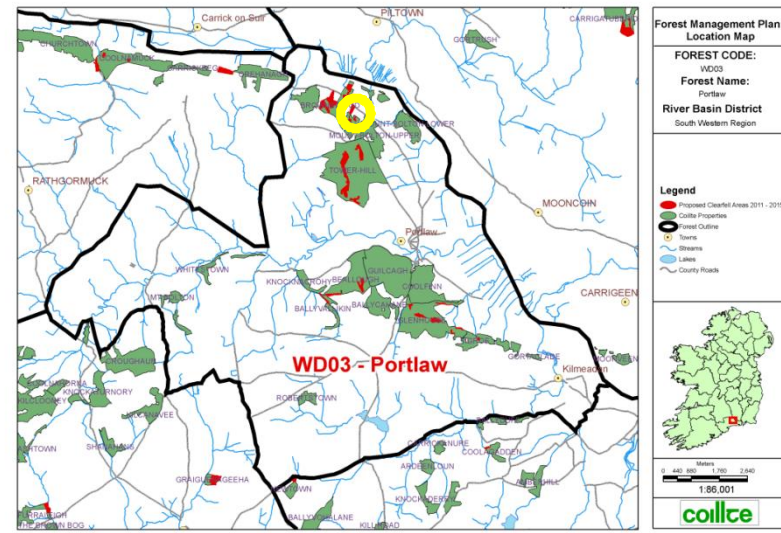


SHORTFOR trials to date









Brownswood trial

- Location: Portlaw forest (Co. Waterford)
- Year established: 2015
- Coillte reforestation site
- Soil: acid brown earth/brown podzolics (acid deep well drained mineral)
- Altitude: 140m ASL
- Coast distance: 25km
- Annual rainfall: 1037mm
- Mean temperature: 10.6°C

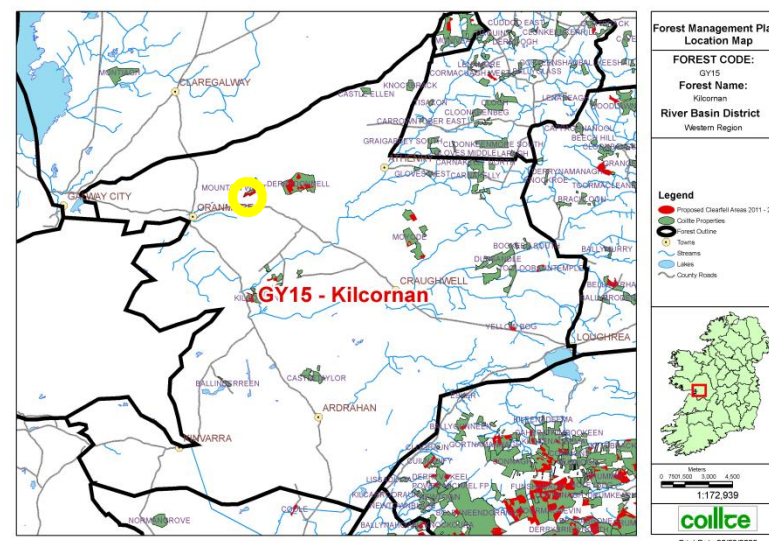


Brownswood trial design







Species	Planting density (trees/ha)	Spacing (m)	Growing area per tree (m ²)	Replications
Sitka spruce Oregon (<i>Picea sitchensis</i>)	10000	1x1 	1	3
	5000	1x2 	2	3
Grand fir (<i>Abies grandis</i>)	2500	2x2 	4	3
Shining gum (<i>Eucalyptus nitens</i>)	5000	1x2 	2	3
	2500	2x2 	4	3
Italian alder (<i>Alnus cordata</i>)	1333	2.5x3 	7.5	3

Mountain West trial

- Location: Mountain West forest (Co. Galway)
- Year established: 2016
- Coillte reforestation site
- Soil: grey brown podzolics/brown earth (basic deep well drained mineral)
- Altitude: 23m ASL
- Coast distance: 13km
- Annual rainfall: 1313mm
- Mean temperature: 9.7°C



Mountain West trial design

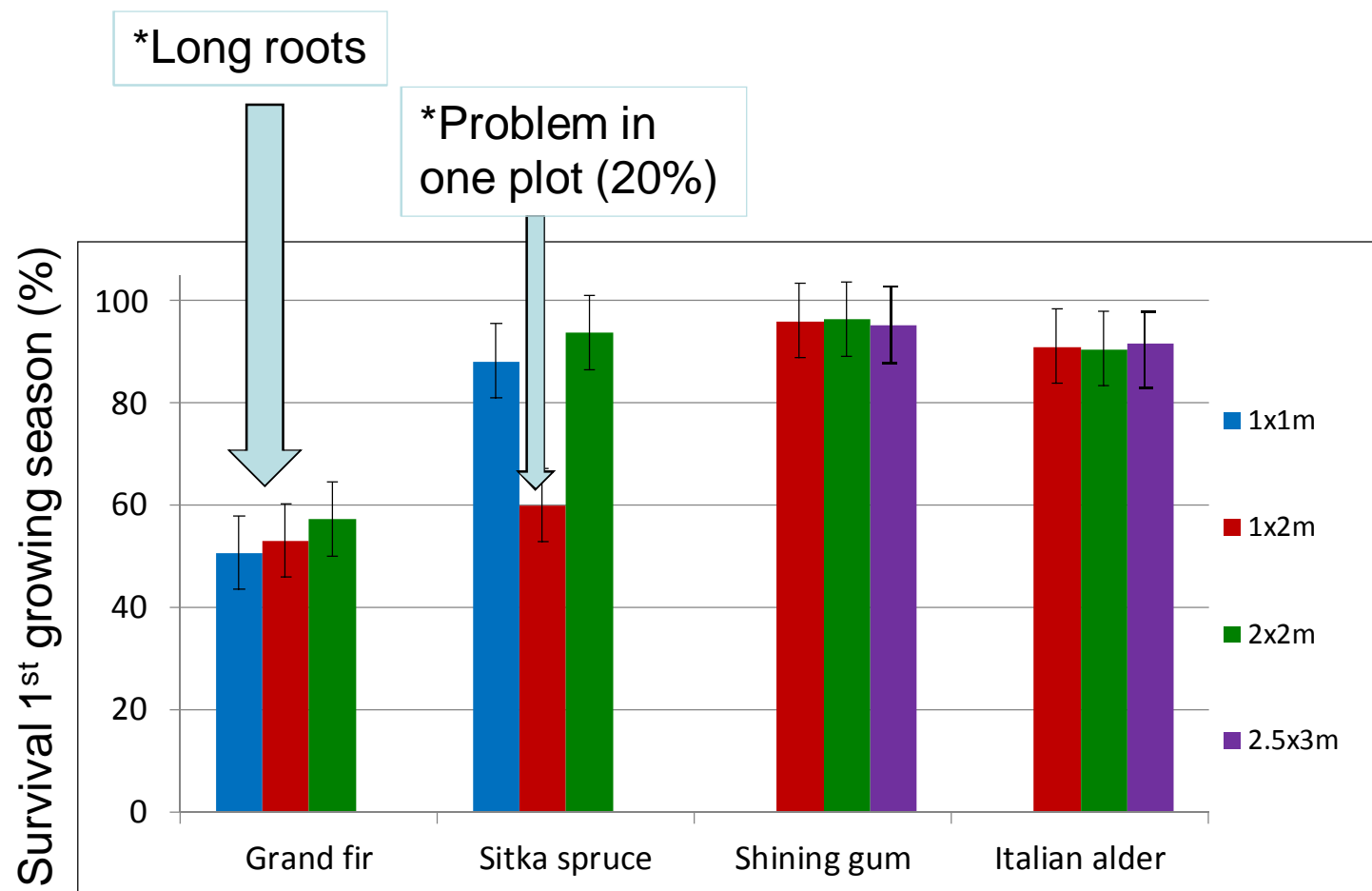
Species	Planting density (trees/ha)	Spacing (m)	Growing area per tree (m ²)	Replications
Sitka spruce Oregon (<i>Picea sitchensis</i>)	10000	1x1 	1	3
	5000	1x2 	2	3
Coast redwood (<i>Sequoia sempervirens</i>)	2500	2x2 	4	3
Shining gum (<i>Eucalyptus nitens</i>)	5000	1x2 	2	3
Swamp peppermint (<i>Eucalyptus rodwayi</i>)	2500	2x2 	4	3
Italian alder (<i>Alnus cordata</i>)	1333	2.5x3 	7.5	3

Recording

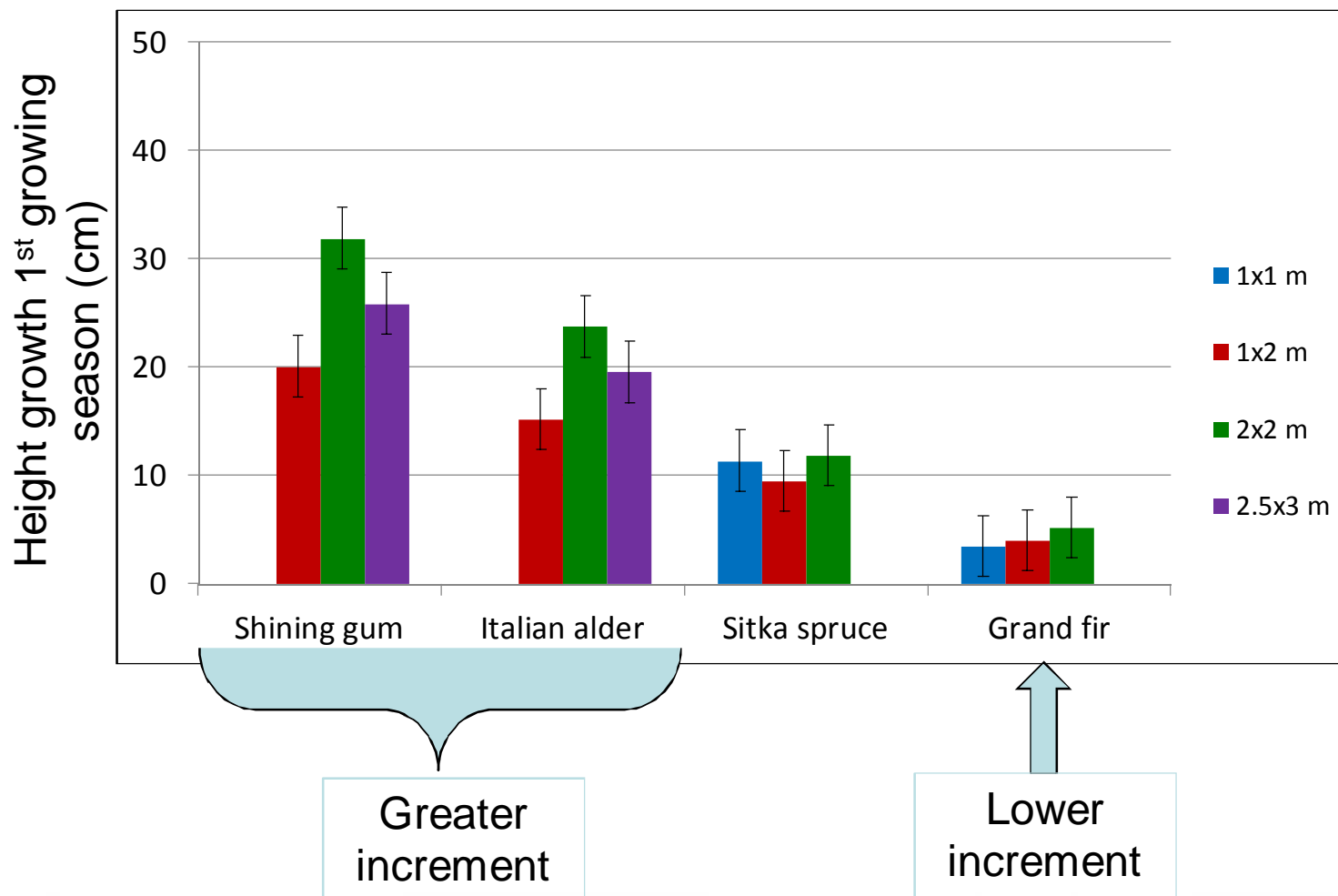
- Survival
- Height
- Stem diameter at 3 cm above ground
- Tree damage
 - Shoot/branch death
 - Multiple leaders
 - Animal damage
 - Physical damage



Preliminary results from Brownswood trial



Preliminary results from Brownswood trial



Conclusions

- 3 SHORTFOR spacing trials established
- Brownswood-1st growing season
 - Good survival rates except for grand fir
 - Greater height increment: *Eucalyptus nitens* and *Alnus cordata*
- Continuous monitoring of SRF trials
 - Silvicultural practices (spacing and rotation) that optimise returns

Thank you

