

A detailed topographic map of a forested area. The map features brown contour lines indicating elevation, with labels such as 410, 380, 350, 280, 250, 228, 496, 490, 494, 470, 450, 493, 526, 500, 417, 400, 360, 300, 250, 200, 150, 100, and 0. Several streams are shown in blue, including White Horse Burn, Lacha Sike, Ringle Burn, Gilbert Gill, Theobald Sike, Black Grain, Swin Gill, Jack's Hope Burn, and St. Martin's Sike. A network of roads is depicted with dashed lines, and various land parcels are outlined with solid lines. The terrain is densely forested, indicated by green tree symbols.

Green Gold





Tim Liddon Conifer Breeding Co-operative

@forestsandwood



Confor
Promoting forestry and wood



CONIFER BREEDING
CO-OPERATIVE

Getting You More Value

Tim Liddon – Director, Conifer Breeding Co-operative

Royal Welsh Show

24th July 2018



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The Conifer Breeding Co-operative

Objectives:

- To ensure that there is an adequate supply of improved vegetatively propagated Sitka Spruce resource for growers.
- Take forward the breeding programme for Sitka Spruce and the following important commercial conifers:
 - Douglas Fir
 - Norway Spruce
 - Western Red Cedar
 - Western Hemlock

Sitka Spruce Tree Breeding



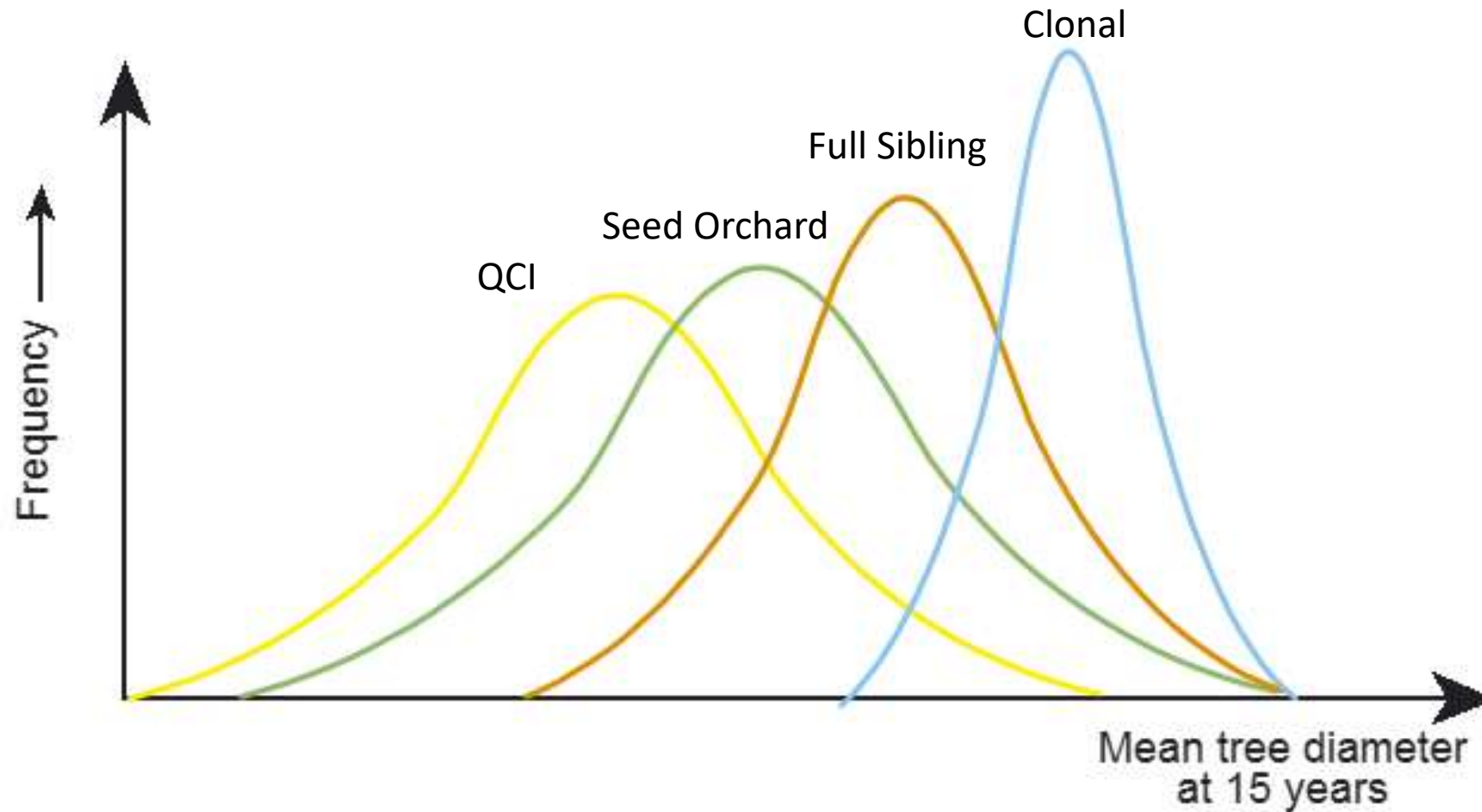
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- Tree breeding in Sitka Spruce started in the 1960's
- It is well advanced of alternative species
- Some 1700 plus trees have led to seed orchards
- More latterly controlled pollination has led to Full siblings
- There are some demonstration clonal plots but as yet no commercial plantings
- First gains were from increased growth as seen in seed orchard material
- Now more quality traits have and are being pursued.

Quality Improvement



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Enhancing the Crown Jewels

- Better material with significant gains in key traits is now available

Seed orchard material

FC ID No	Stem Diam	Density	Straightness	Branching
NT11	18	-10	9	
A12	19	-11	8	
A13	21	-12	9	
A14	21	-8	5	

Full sibling material

ID No.	Diameter	Density	Straightness	Branching	Acoustic Value
psiPF65TE	7	4	30	12	-
psiPF66TE	12	0	16	0	-
psiPF69TE	17	-9	34	19	4
psiPF75TE	17	-9	34	19	4
psiPF79TE	3	11	16	8	-
psiPF80TE	16	1	36	14	3
psiPF81TE	10	3	25	12	0

The figures relate to the percentage gain or loss compared to unimproved QCI

Enhancing the Crown Jewels



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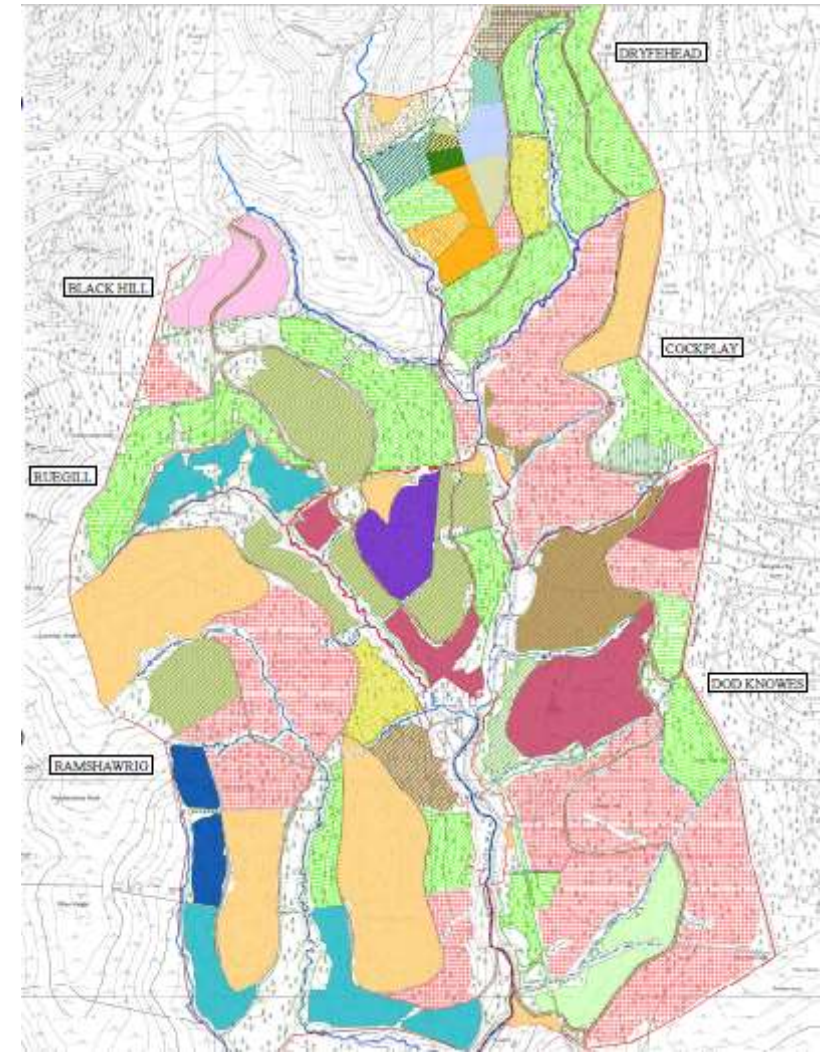
Genetic Diversity:

An interesting debate!

- QCI seed was often collected from a narrow base
- Often the easiest trees to collect from – but not always the best trees

Vs

- The plus trees were collected from a wide geographical area
- Use them wisely to give genetic variation over the forest.





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Understanding the Crown Jewels

DNA fingerprinting using micro-satellite technology

- Allows us and you to know what you are getting

Acoustic Velocity

- Allows us to look at stiffness and thus an important quality trait

Genomics

- ‘Sitka Spruced’ - the industry and Conifer Co-op sponsored research project involving Oxford and Edinburgh Universities
- Looking to develop Genomic Prediction (GP) for Sitka
- GP can be used to predict traits such as productivity, resistance to insect pests and tolerance to climate change.



Extending the Crown Jewels



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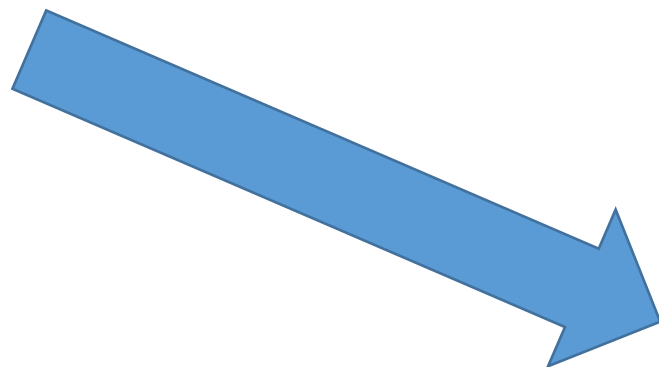
Having started on Sitka the Co-op is now working on:

- Norway Spruce
 - Western Red Cedar
 - Western Hemlock
 - Douglas fir
- The Co-op is looking for plus trees for all of the species to set up seed orchards and clone banks
 - The landrace plus trees will be compared to alternatives such as seed orchard material from Europe and Scandinavia
 - The aim is to deliver improvements in quality and productivity faster than they have been able to do for Sitka.

What does all this mean?



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What does all this mean?

- Timber value enhanced
 - Chipwood/fuelwood value compared to Sawlogs is a £30-£40/t deficit
 - So, grow trees that can maximise sawlog content
- Stronger resilience
 - Better understanding of genetics
 - Shorter rotations available
 - Better timber from alternative species on the right site.

Contact Us



CONIFER BREEDING
CO-OPERATIVE

info@conifercoop.co.uk

www.coniferbreedingcoop.co.uk

Full Members are:

- Maelor Forest Nurseries
- Tilhill Forestry
- Forestry Commission
- Forestart
- Scottish Woodlands Ltd
- Alba Trees plc
- Christie Elite Nursery

Remember:

Good quality is always required

Key attributes are:

- **Straightness of stem**
- **Small Knots and Horizontal Branching**
- **Stiffness**



Paul Mclean Forest Research

@forestsandwood



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Quality and Quantity

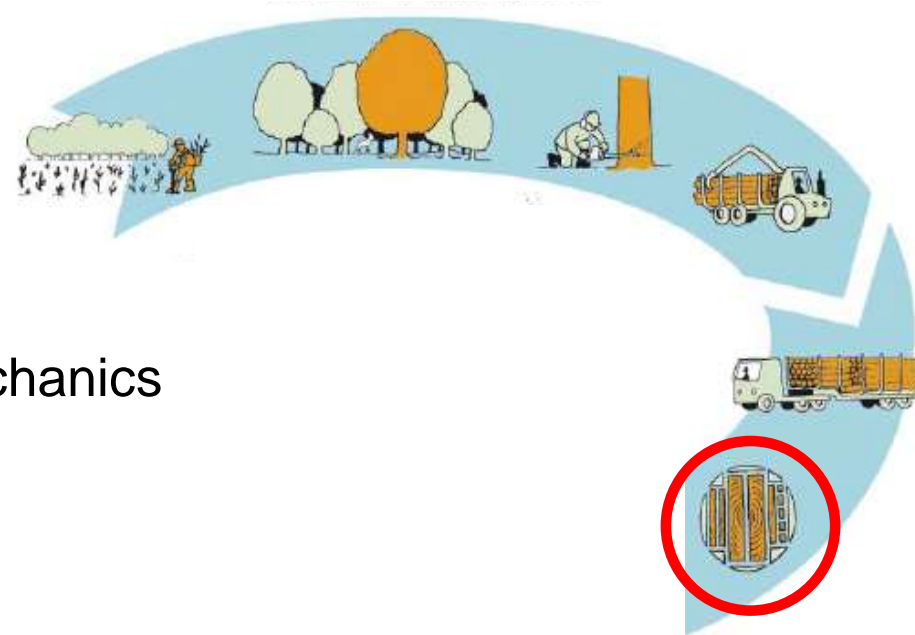
Paul McLean

Confor Stage
Royal Welsh Show
24th July 2018

www.forestry.gov.uk/fr/timberproperties

Growing forest products

- Silviculture
- Environment
- Genetics
- Tree physiology & biomechanics
- Raw material segregation
- Economics



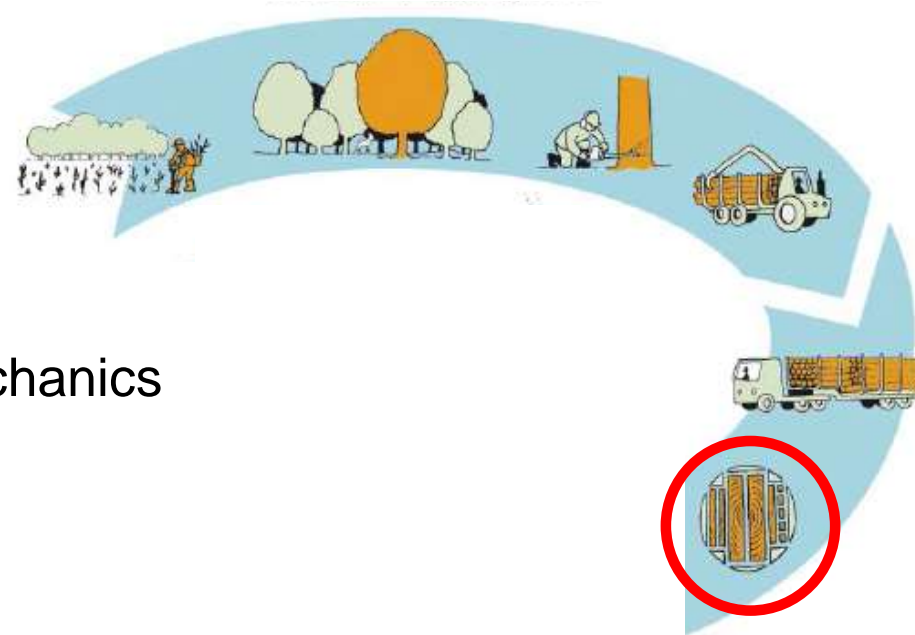
Providing Decision Support: Primary processors, Forest owners, Researchers



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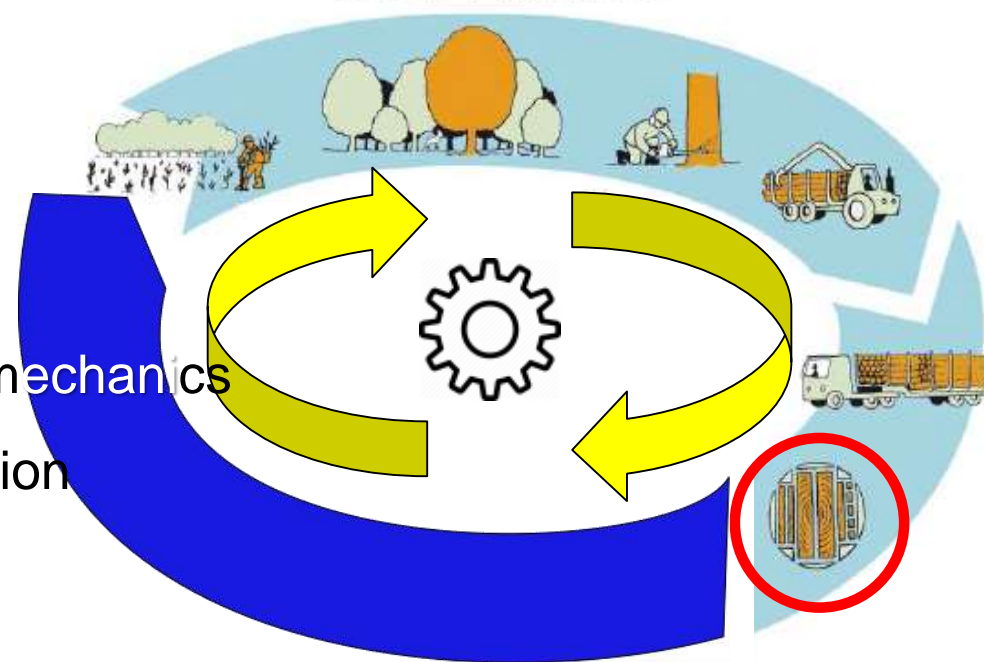
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Providing Decision Support: Primary processors, Forest owners, Researchers





Timber properties of noble fir, Norway spruce, western red cedar and western hemlock grown in Great Britain

David Gil-Moreno, Dan Ridley-Ellis and Paul McLean

December 2016

The softwood processing sector in Great Britain has been built around the use of a very small number of timber-producing species - predominantly Sitka spruce. The recent increase in outbreaks of host-specific tree pests and diseases has led to an interest in diversification, through planting a wider range of tree species, to mitigate any risk to the softwood resource. However, there is a lack of evidence about how this diversification will impact on the future merchantability of timber. This Research Note investigates the structural timber properties of noble fir, Norway spruce, western red cedar and western hemlock grown in Great Britain and compares the results with published values for British-grown Sitka spruce. The study was carried out using timber from even-aged plantations growing in a range of latitudes representative of productive conifer forests. Twenty-seven trees per species were felled, processed into structural-sized battens, kiln dried and destructively tested in a laboratory according to current European standards. Characteristic values of mechanical properties and density were determined and indicative yields for different strength classes were calculated. The results showed that all of the species investigated can produce structural timber, but that western red cedar has the least desirable properties for this purpose. Some further work is under way in order to investigate the effect of rotation length on the timber properties of these species.

FCRN026

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- What wood properties are important for sawn timber?
- Are we concerned about trees growing faster?

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- Are we concerned about trees growing faster?

This is the bit where I'll talk about Llangoed

Quality

**Properties important
for sawn timber**

Bending strength

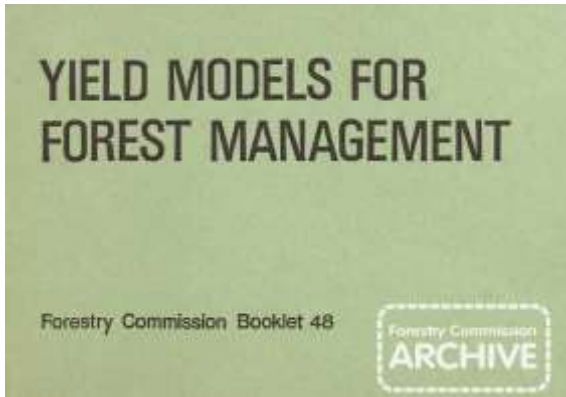
Bending stiffness

Wood density

Knots

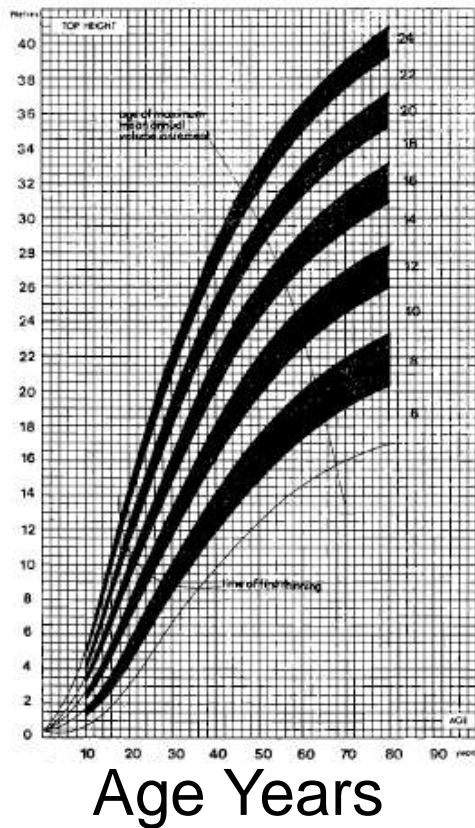
Quantity

VOLUME



YC = Yield Class

Top Height m



YC 24

YC 6



BRITISH STANDARD

BS EN 338:2009

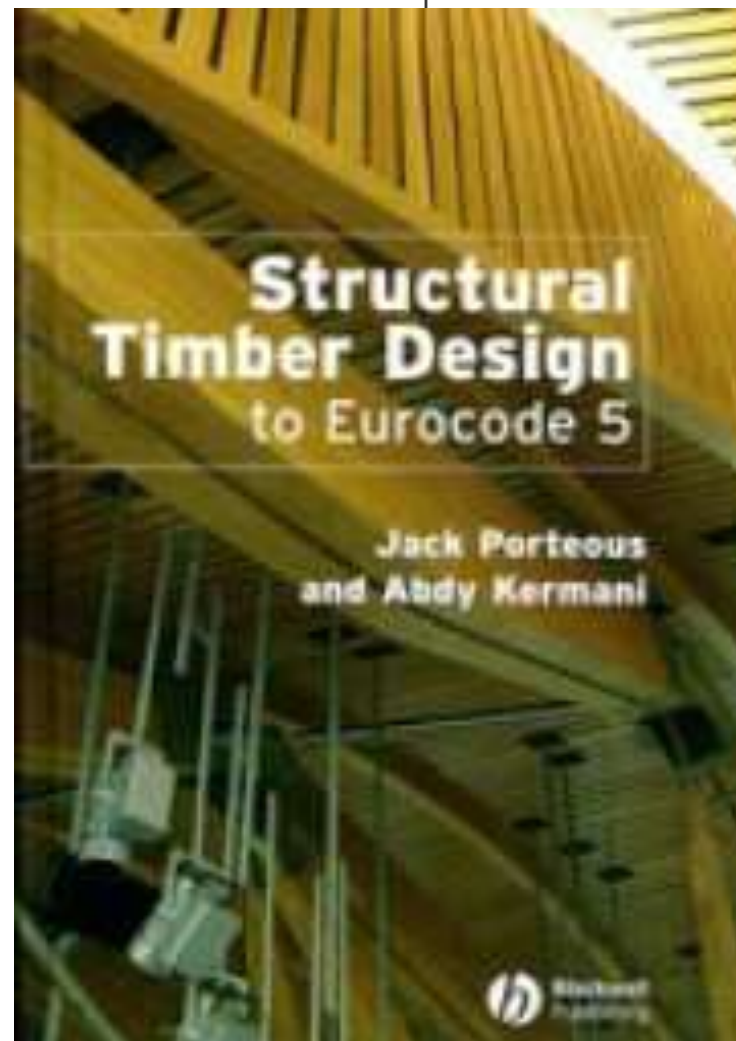
Strength

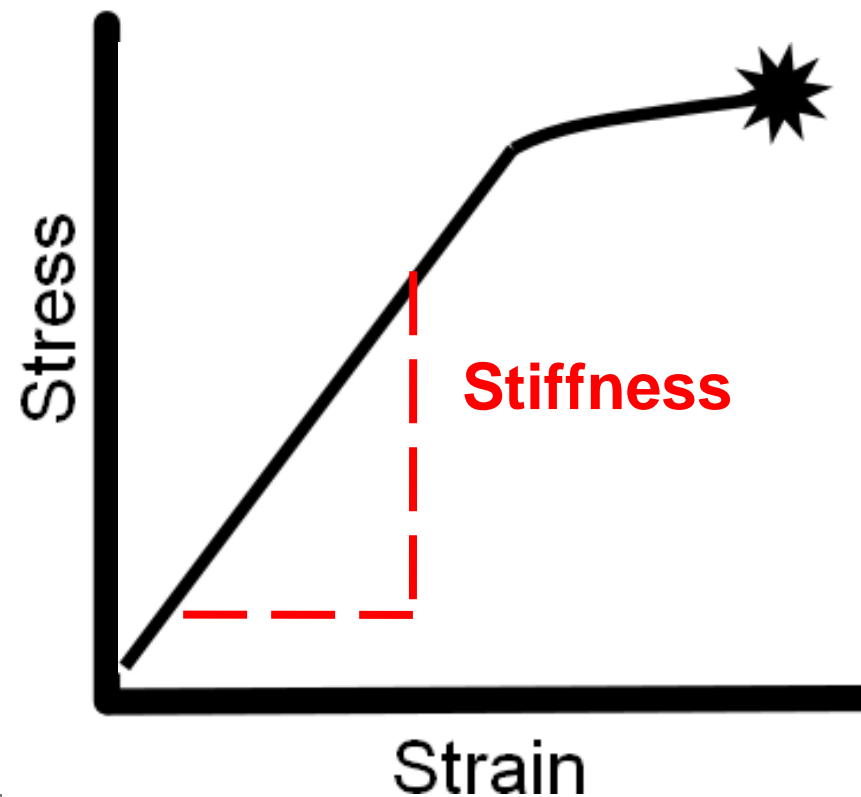


Stiffness



Density







<http://www.stevespanglerscience.com/lab/experiments/density-tower-magic-with-science>


BRITISH STANDARD
BS EN 338:2009

Structural timber — Strength classes

		Softwood species											
		C14	C16	C18	C20	C22	C24	C27	C30	C35	C40	C45	C50
Strength properties (in N/mm²)													
Bending	$f_{b,k}$	14	16	18	20	22	24	27	30	35	40	45	50
Tension parallel	$f_{t,0,k}$	8	10	11	12	13	14	16	18	21	24	27	30
Tension perpendicular	$f_{t,90,k}$	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4
Compression parallel	$f_{c,0,k}$	16	17	18	19	20	21	22	23	25	26	27	29
Compression perpendicular	$f_{c,90,k}$	2,0	2,2	2,2	2,3	2,4	2,5	2,6	2,7	2,8	2,9	3,1	3,2
Shear	$f_{v,k}$	3,0	3,2	3,4	3,6	3,8	4,0	4,0	4,0	4,0	4,0	4,0	4,0
Stiffness properties (in kN/mm²)													
Mean modulus of elasticity parallel	$E_{0,mean}$	7	8	9	9,5	10	11	11,5	12	13	14	15	16
5 % modulus of elasticity parallel	$E_{0,05}$	4,7	5,4	6,0	6,4	6,7	7,4	7,7	8,0	8,7	9,4	10,0	10,7
Mean modulus of elasticity perpendicular	$E_{90,mean}$	0,23	0,27	0,30	0,32	0,33	0,37	0,38	0,40	0,43	0,47	0,50	0,53
Mean shear modulus	G_{mean}	0,44	0,5	0,56	0,59	0,63	0,69	0,72	0,75	0,81	0,88	0,94	1,00
Density (in kg/m³)													
Density	ρ_k	290	310	320	330	340	350	370	380	400	420	440	460
Mean density	ρ_{mean}	350	370	380	390	410	420	450	460	480	500	520	550



BRITISH STANDARD

BS EN 338:2009

Structural timber — Strength classes



Wood property	Characteristic value					
	C14	C16	C18	C20	C22	C24
Strength	14	16	18	20	22	24
Stiffness	7	8	9	9.5	10	11
Density	290	310	320	330	340	350



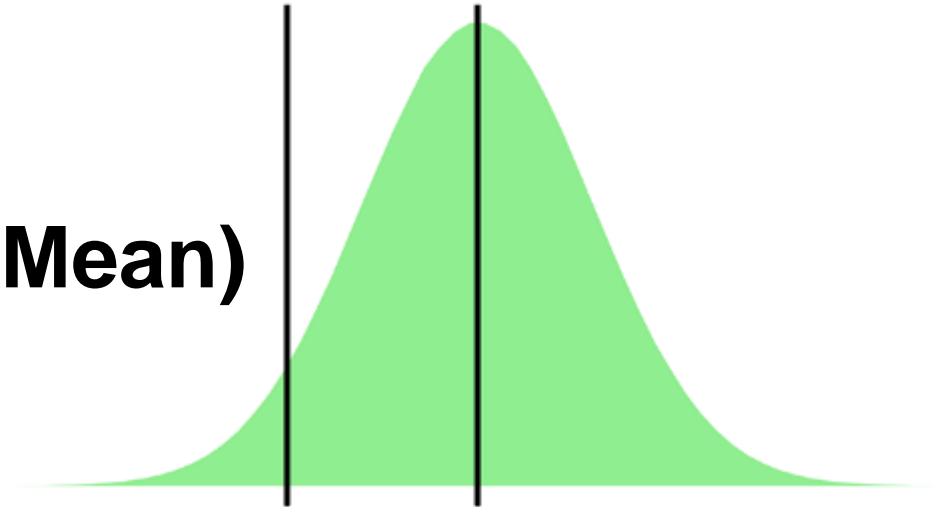
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Strength (5th Percentile)



Stiffness (Mean)



Density (5th Percentile)



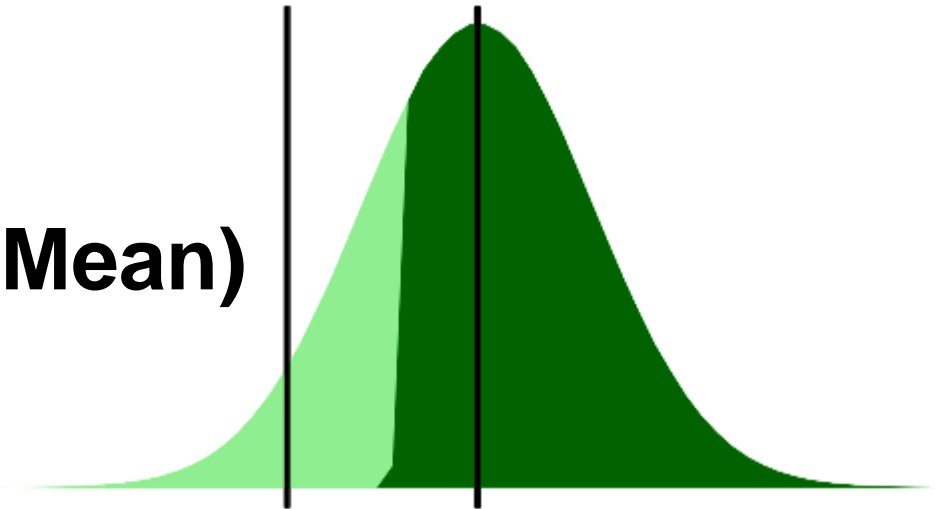
BRITISH STANDARD

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Strength (5th Percentile)

Stiffness (Mean)

Density (5th Percentile)





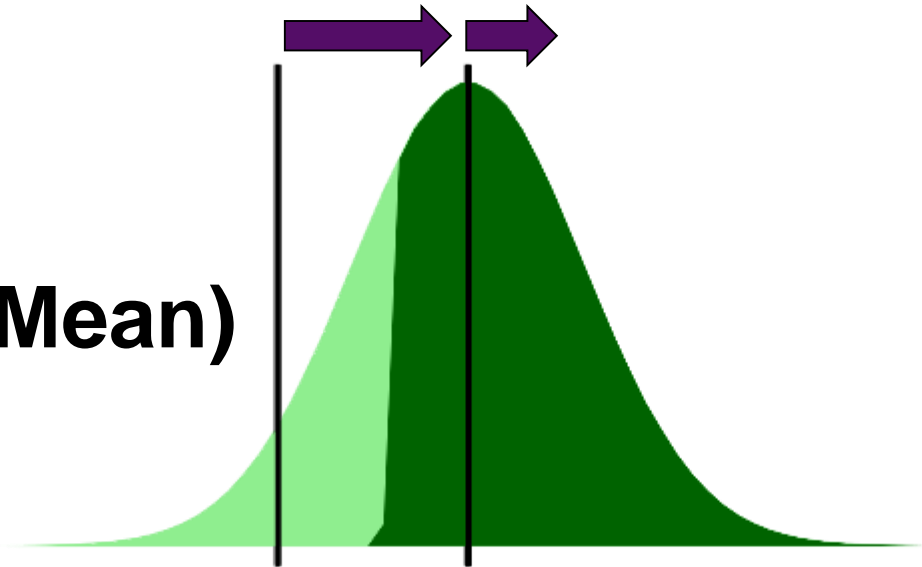
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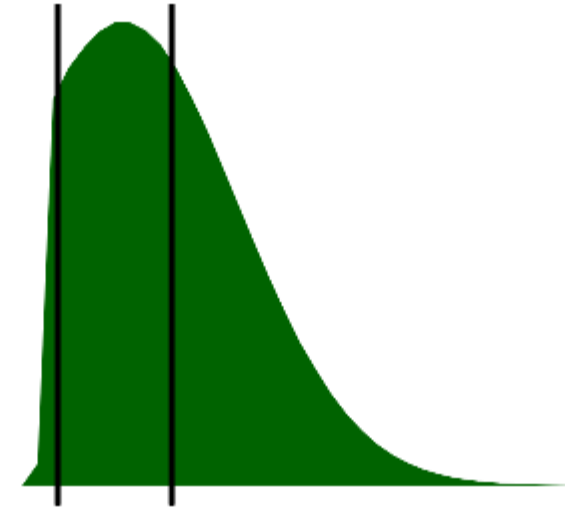
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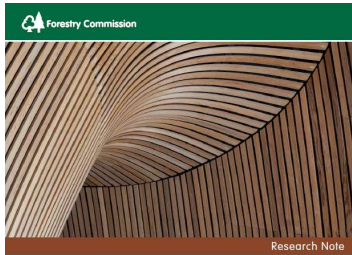
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Timber properties of noble fir, Norway spruce, western red cedar and western hemlock grown in Great Britain

David Gill-Moreno, Dan Rafter, Ella and Paul McKean December 2016

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FCEN026 1

	Sitka spruce	Norway spruce	Western hemlock	Noble fir	Western red cedar
Number of pieces	955	128	138	126	115
Means age of sample (years)	Not known	19.3 (8.4)	18.6 (9.4)	15.0 (8.4)	19.0 (9.4)
Mean stiffness (kN mm ⁻²)	8.30 C16	8.55 (1.68) C18	8.33 (2.04) C16	7.71 (2.27) C16	7.44 (1.66) C14
Mean density (kg m ⁻³)	387	378 (37)	444 (39)	358 (37)	365 (30)
5th percentile density (kg m ⁻³)	330 C20	345 C22	385 C30	324 C18	318 C16
Mean strength (N mm ⁻²)	32.7	31.1 (9.0)	34.5 (10.7)	31.1 (13.1)	30.1 (8.0)
5th percentile strength (N mm ⁻²)	19.6 C18	19.1 C18	18.2 C18	14.8 C14	16.3 C16
Strength class	C16	C18	C16	C14	C14

	C14	C16	C18	C20	C22	C24
Sitka spruce	100%	100%	92%	75%	58%	30%
Norway spruce	100%	100%	100%	81%	62%	30%
Western hemlock	100%	100%	95%	81%	67%	40%
Noble fir	100%	96%	77%	62%	49%	30%
Western red cedar	100%	94%	56%	38%	25%	11%

- What you need to know:
 - We are obviously interested in volume
 - The main wood property that will affect **current** value is stiffness
 - Density is not the same thing as stiffness
 - Single values do not mean much, we work with populations





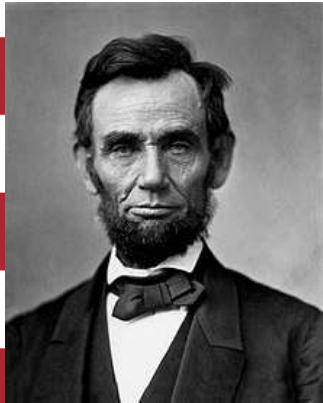
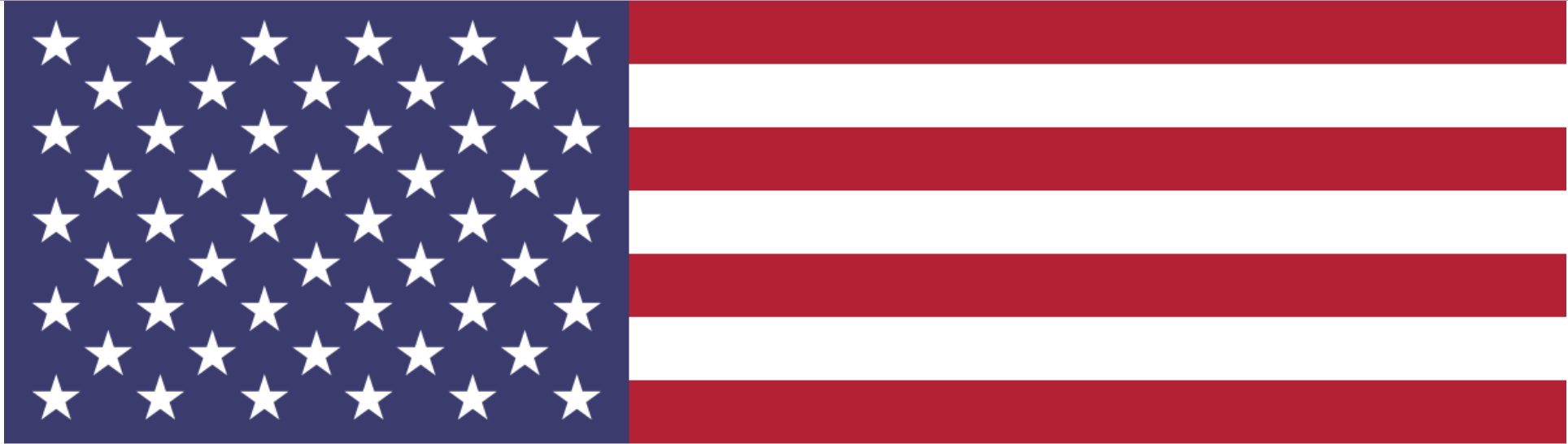
325 million people



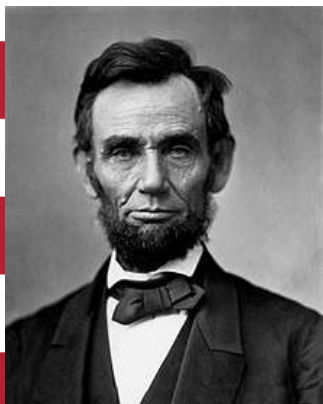
= 325 million people?



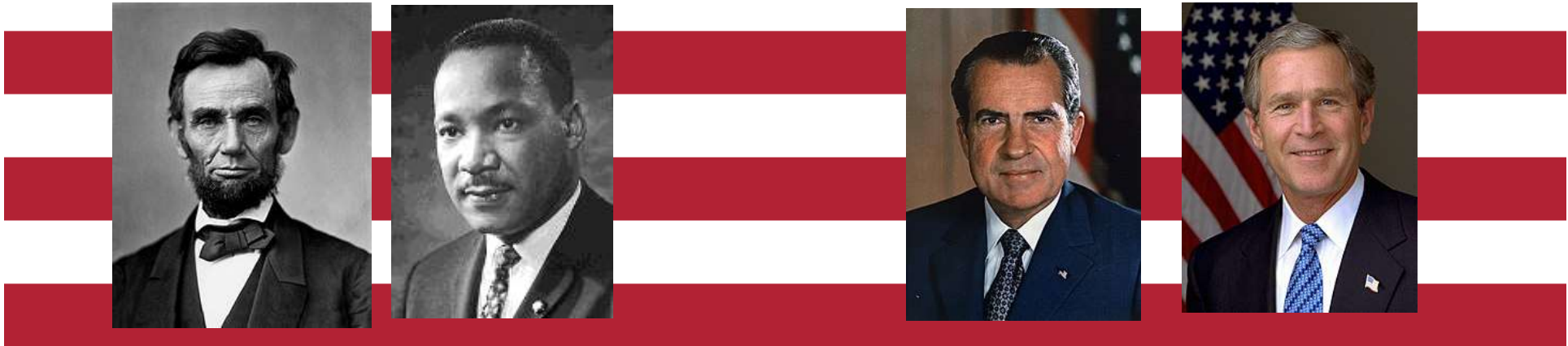
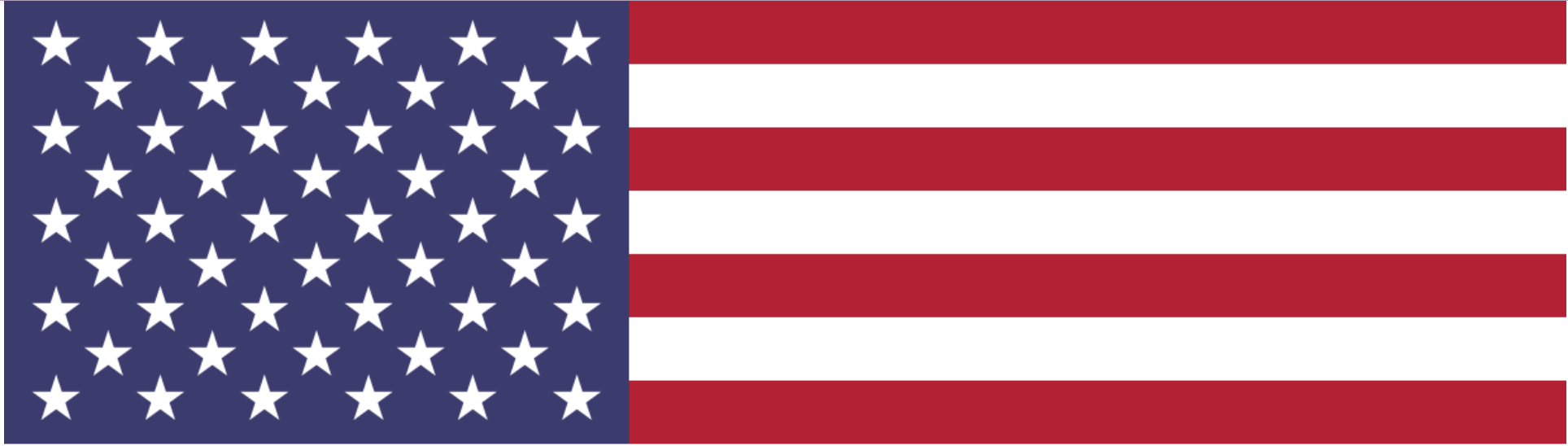
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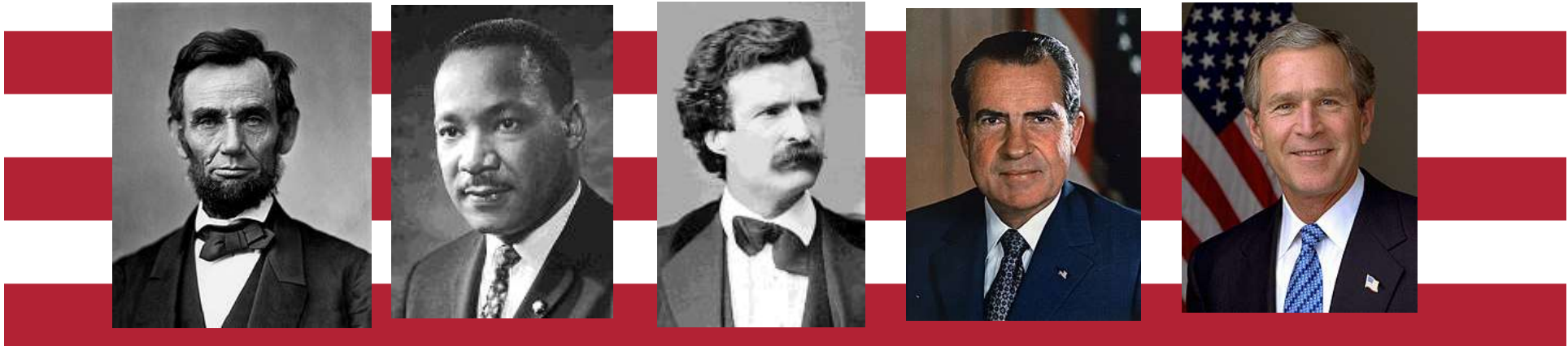
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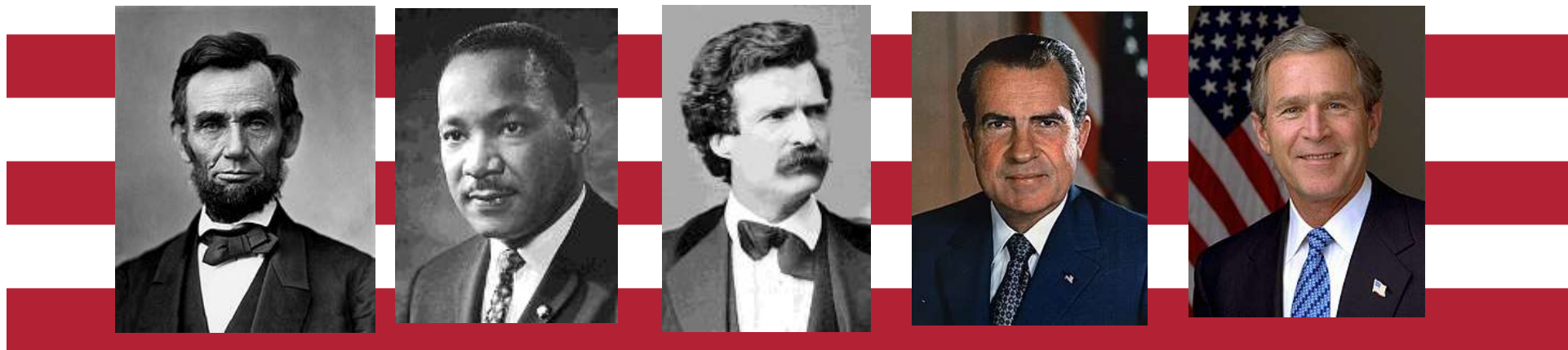
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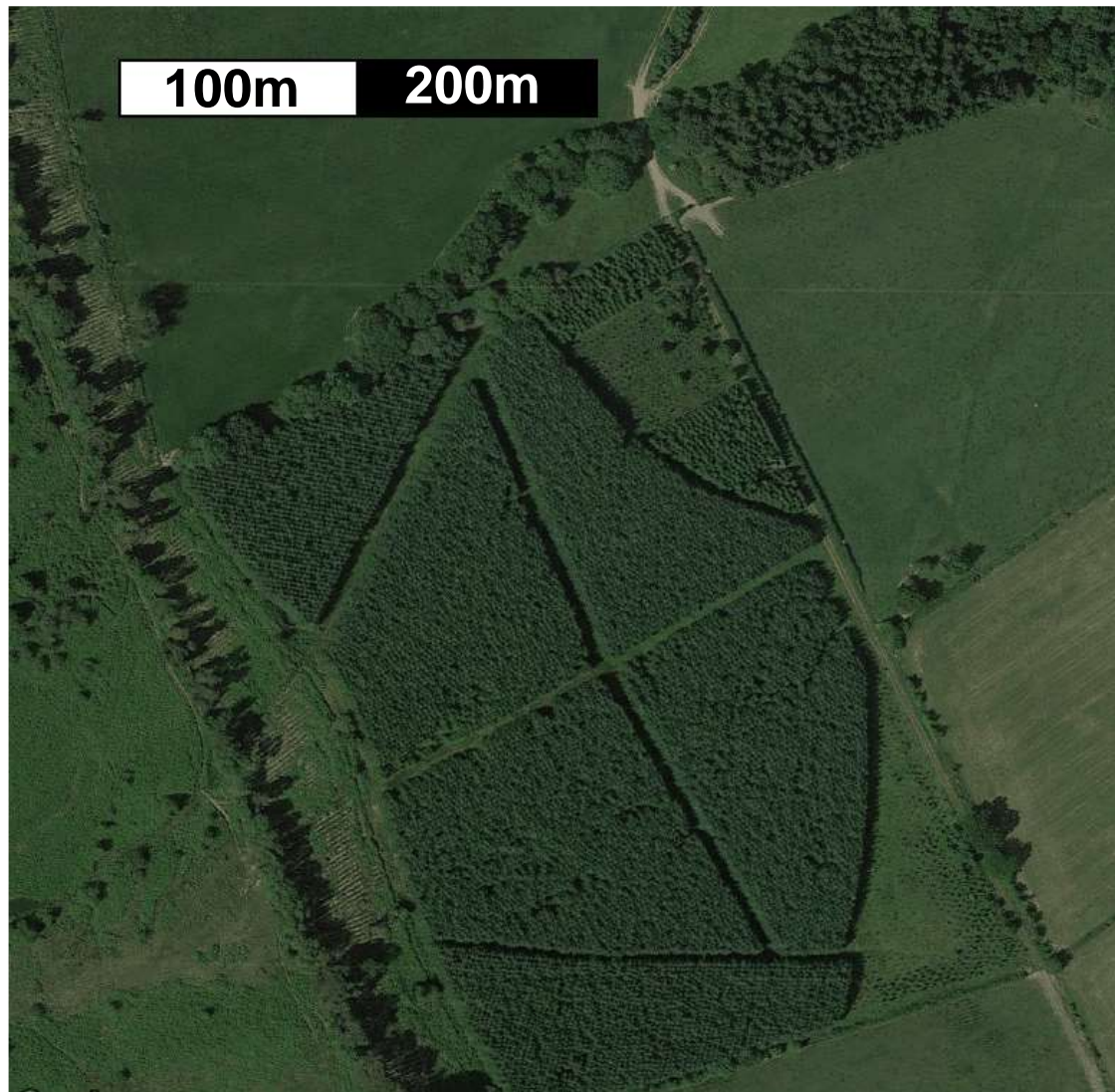
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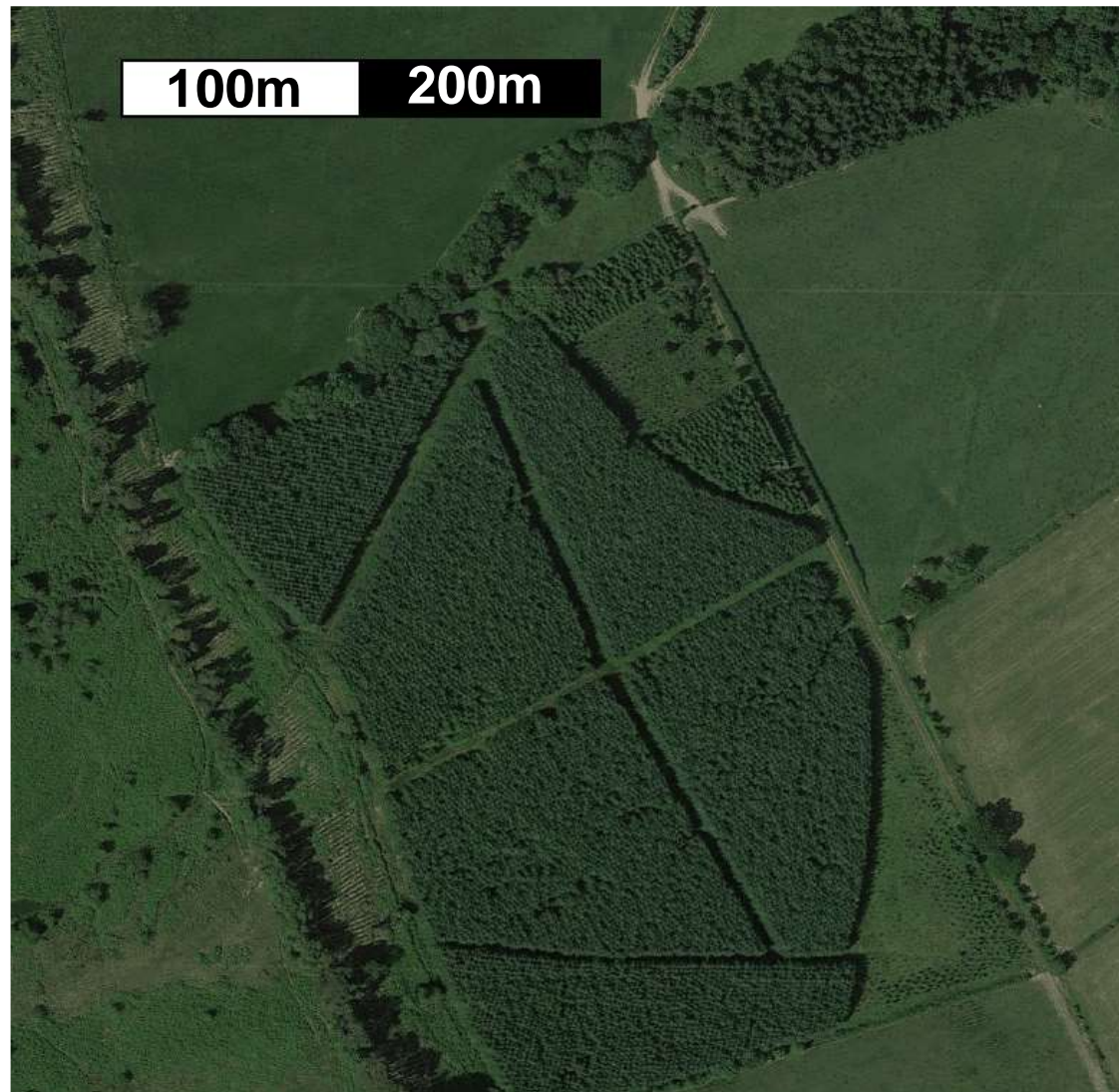
= 325 million people?



Elevation 300m

Planted 2002

Seed orchard material



Elevation 300m

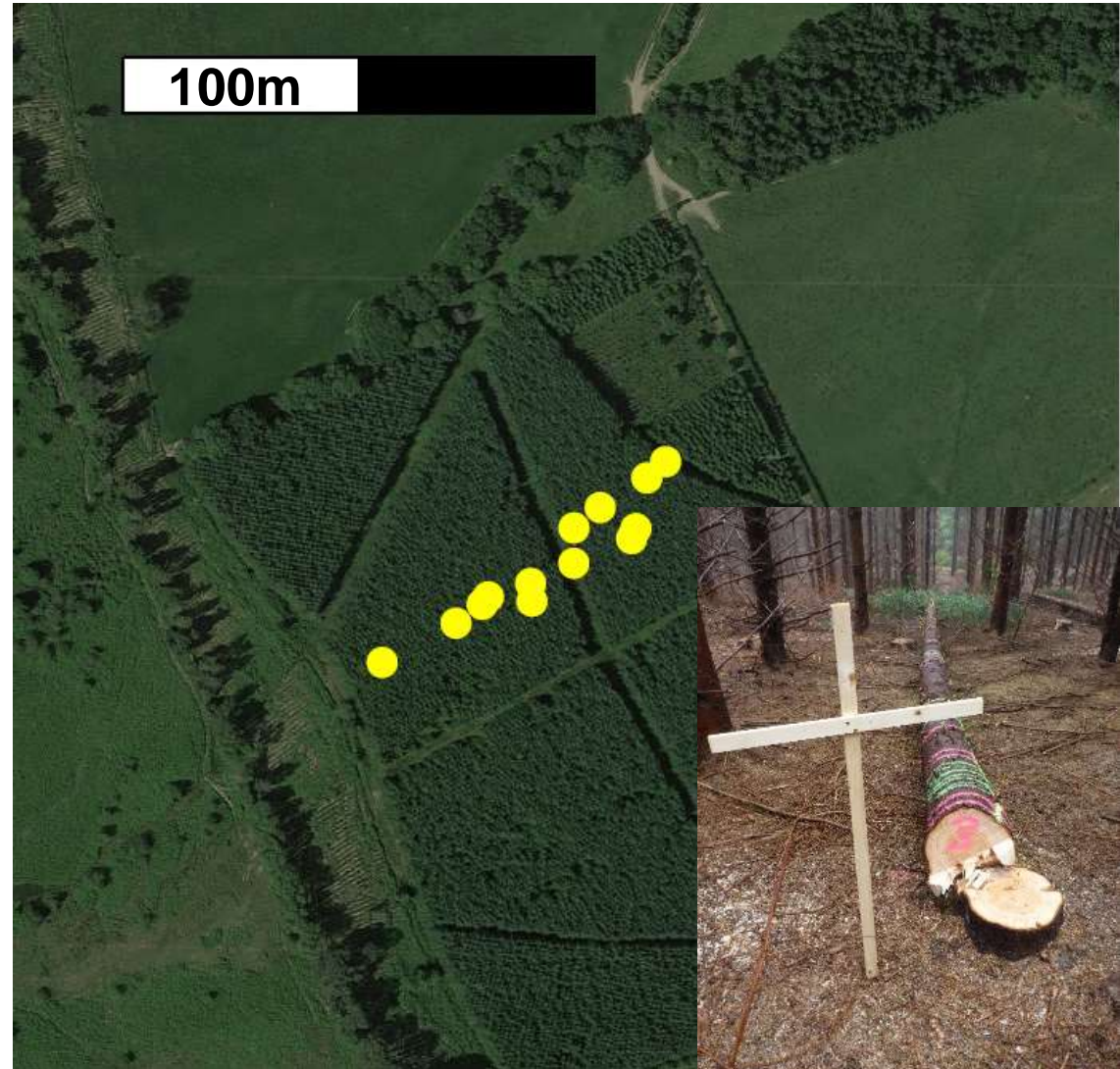
Planted 2002

Seed orchard material

13 stems sampled

Growth measured

Mechanical properties tested



13 Trees ≠ 1.7 Billion Trees



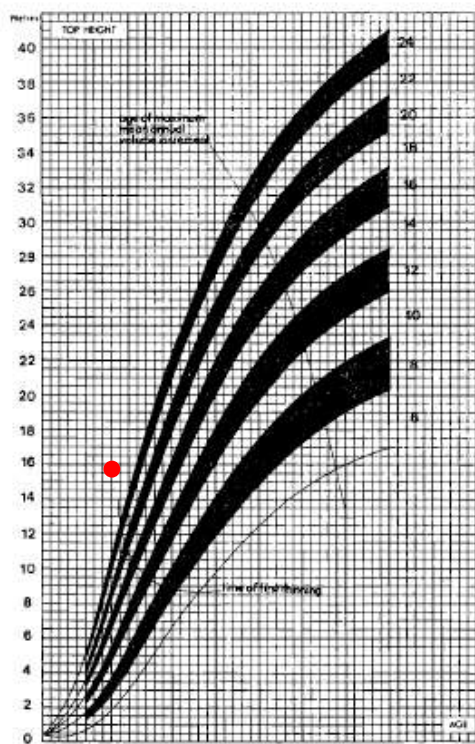
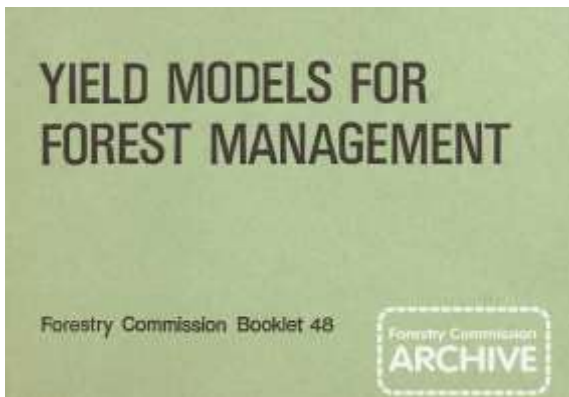


FIGURE 5 General Yield Class Curves for Sitka Spruce

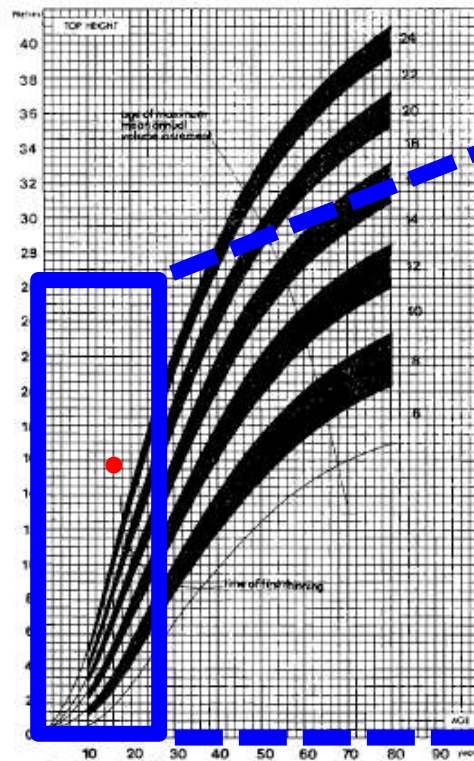
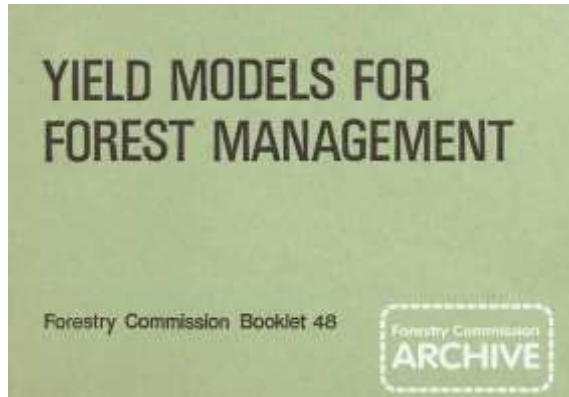
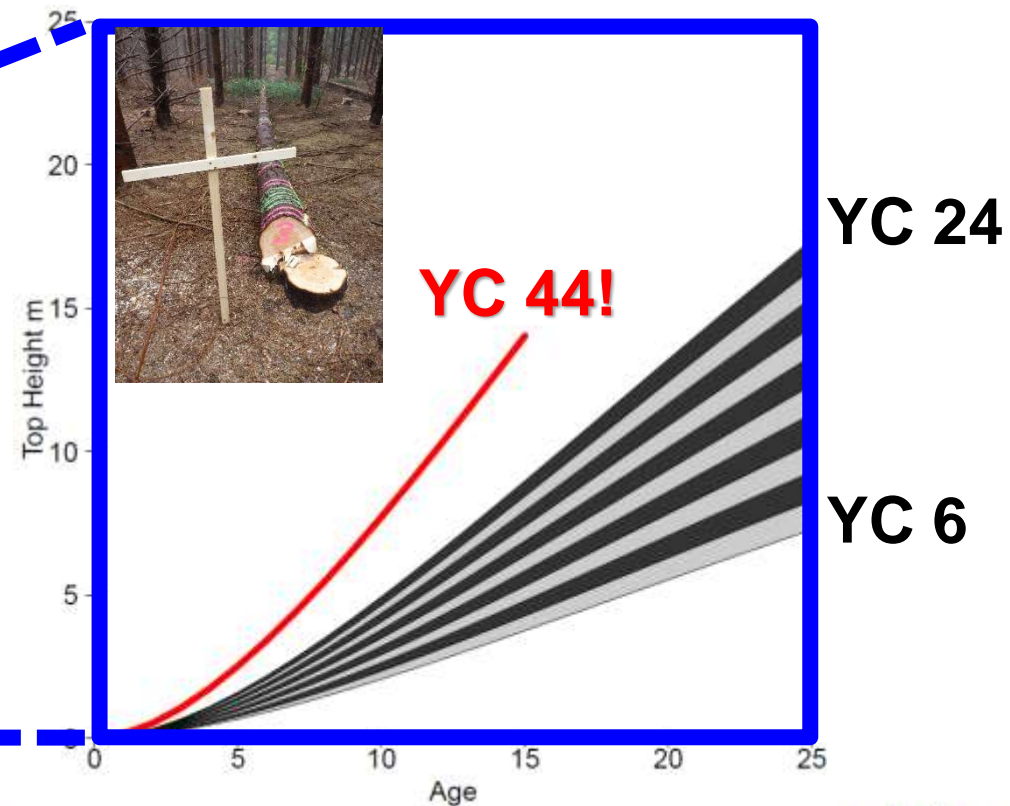
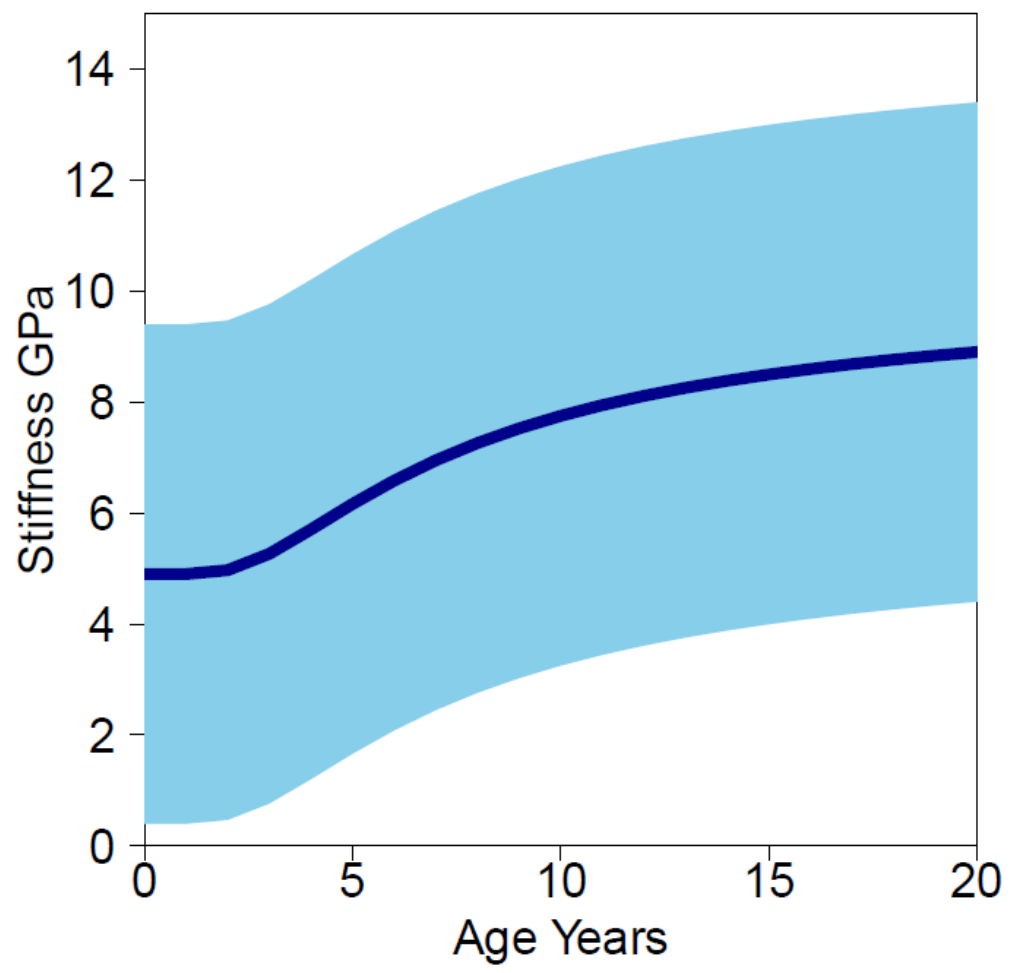
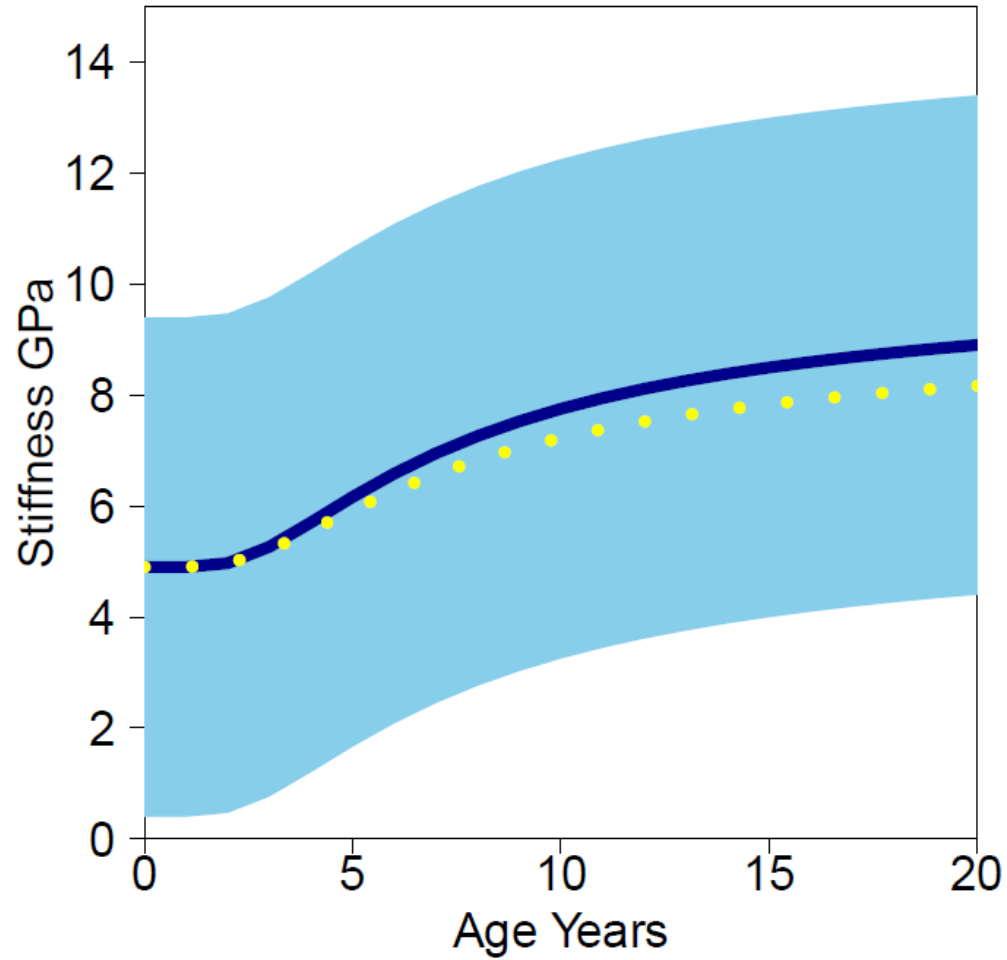
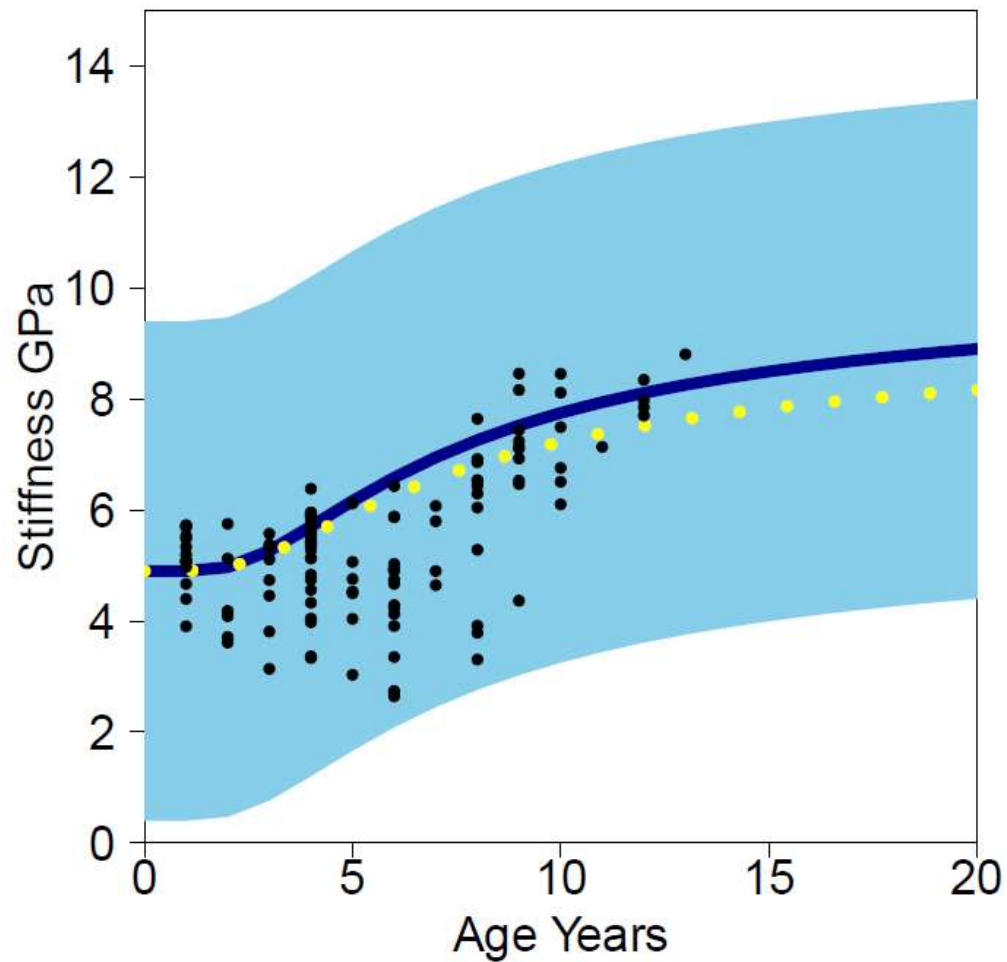


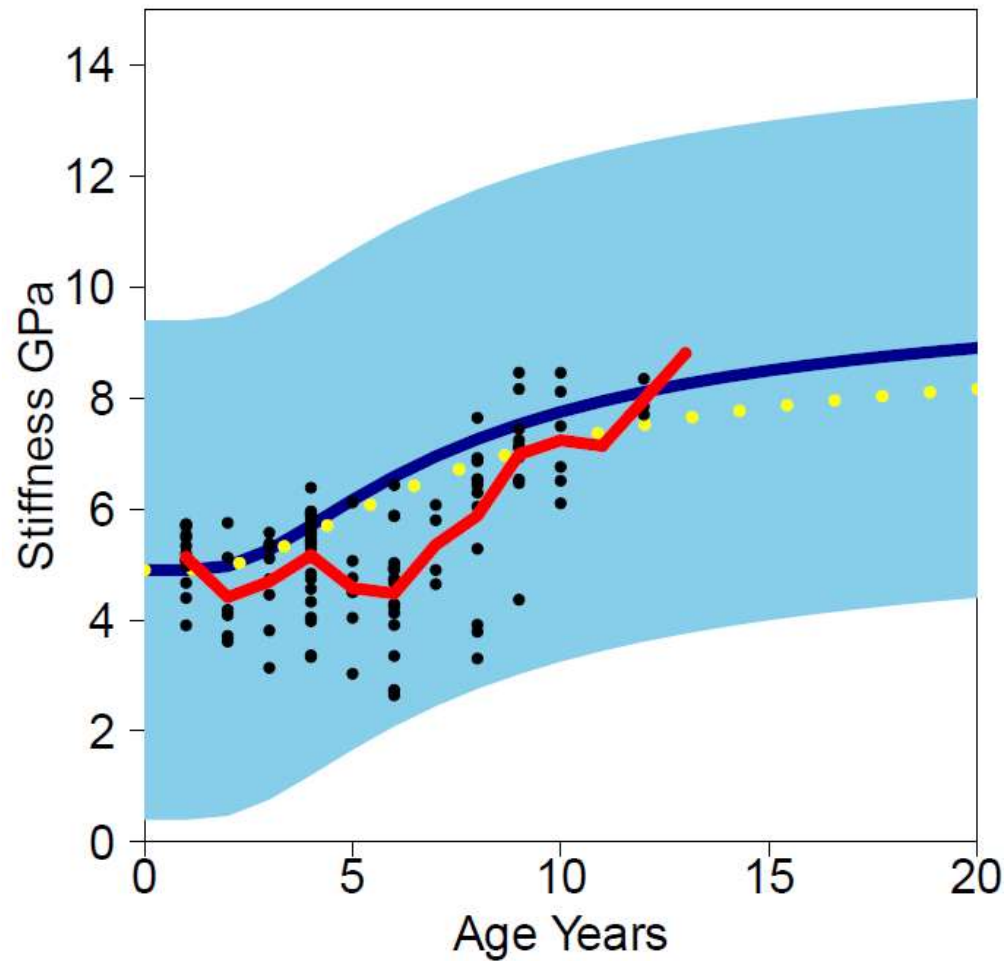
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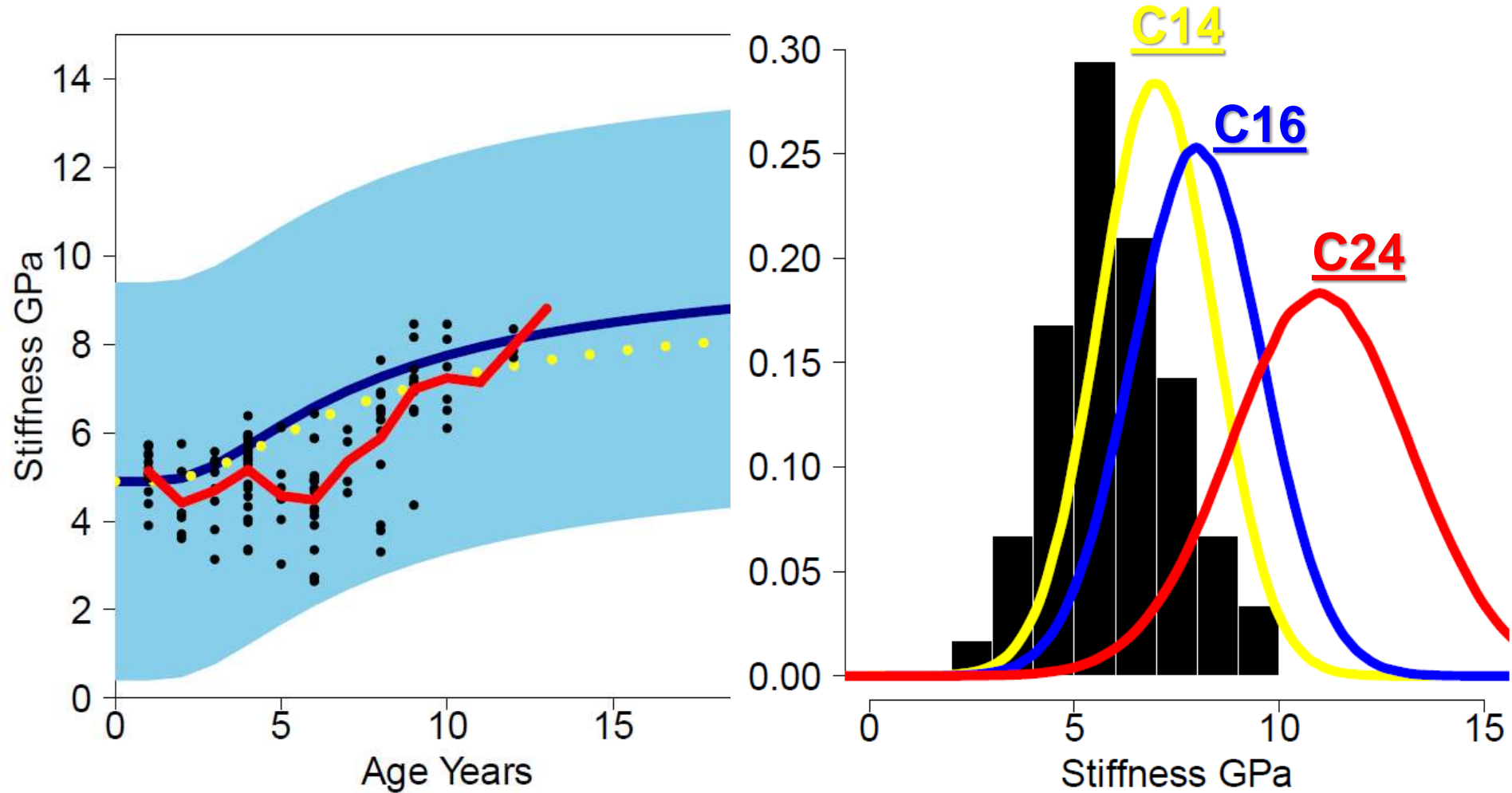










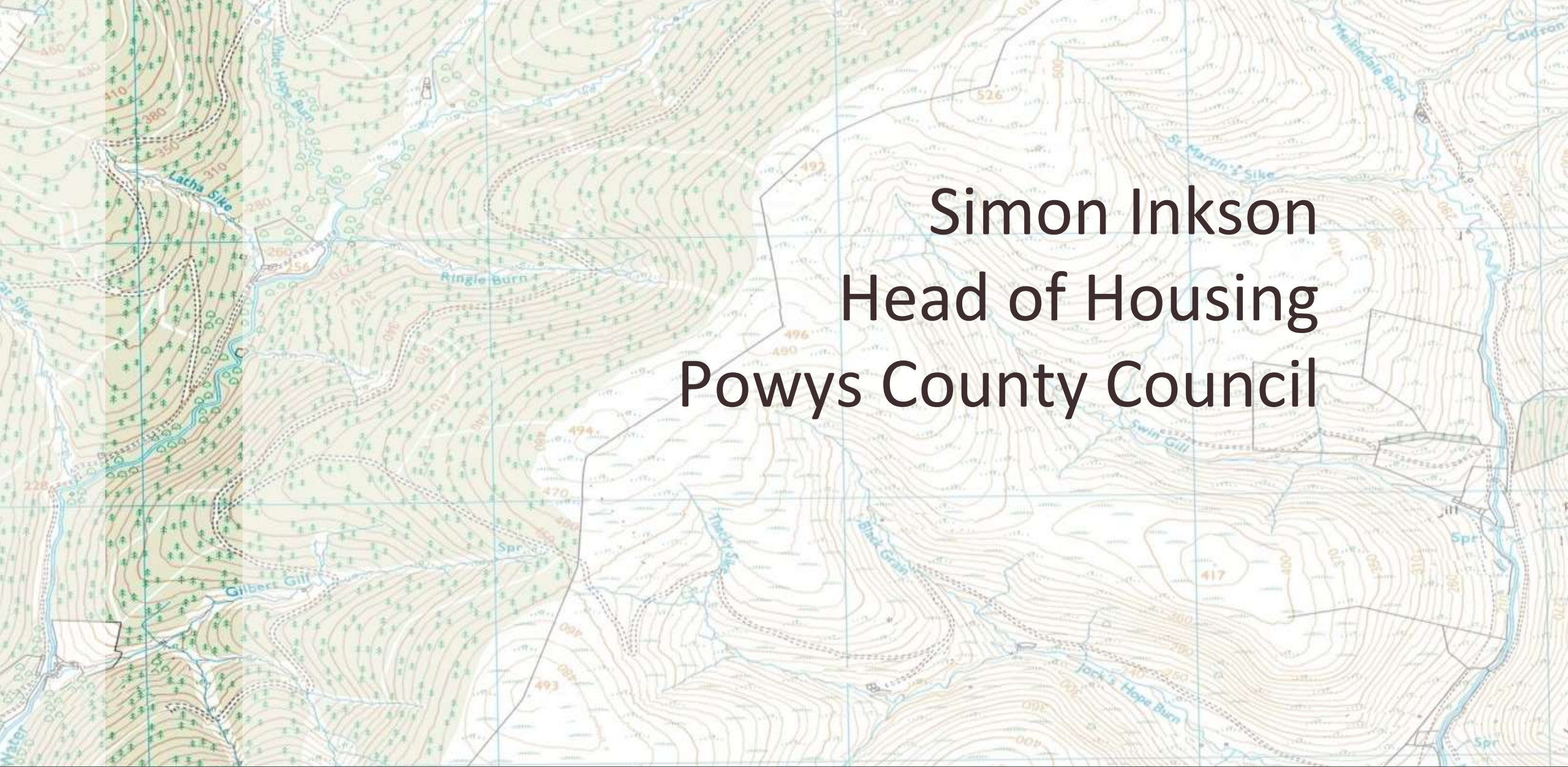


- Quantity is up – double YC 24
- Quality – needs compared to a control **on site**
 - Within range, bit lower than average
 - More time required
 - More sites required
 - 13 Trees ≠ 1.7 Billion Trees



<https://www.forestry.gov.uk/fr/sitkaspruced>





Simon Inkson
Head of Housing
Powys County Council

@forestsandwood



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Yn agored a blaengar - Open and enterprising

Prosiect Tai o Bren Cynhenid

The Home-Grown Homes Project



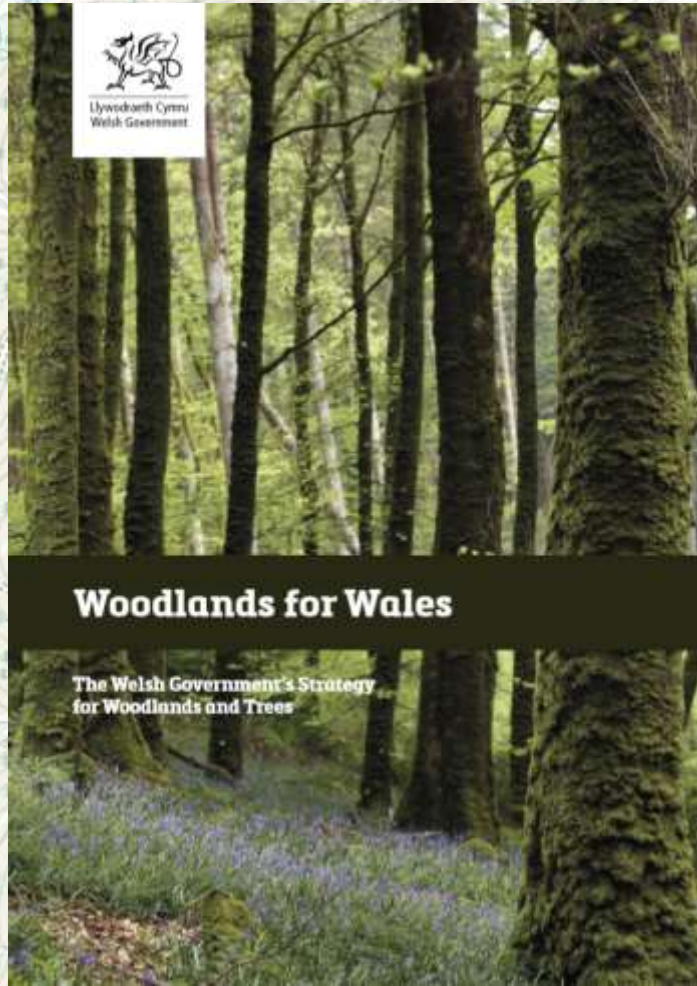


Stuart Goodall
CEO Confor

Green Gold: The Policy Context
Royal Welsh Show
Forestry Day

- 
- A detailed topographic map of a forested area, likely in Wales. The map features brown contour lines indicating elevation, with labels such as 410, 380, 350, 280, 250, 193, 470, 494, 497, 526, 417, 310, 300, 280, 250, 200, 150, 100, and 50. Blue lines represent water features, including rivers and burns, with labels like 'Lacha Sike', 'White Horse C.', 'Ringle Burn', 'Gilbert Gill', 'Throcky Sike', 'Bink Green', 'Swin Gill', 'Jack's Hope Burn', 'St Martin's Sike', 'The Hensale Burn', and 'Caldron'. A grid of blue lines is overlaid on the map. The text '1. Policy context', '2. Confor's Planting in Wales Campaign', and '3. Over to you...' is overlaid on the map in a large, black, sans-serif font.
1. Policy context
 2. Confor's Planting in Wales Campaign
 3. Over to you...

Woodland for Wales Strategy



- Welcome commitment to planting 2000ha/year by 2020
- Welcome inclusion of dedicated chapter 5 on timber
- Overall, too many aims, too few targets

Climate change



- Target: 4000ha new woodland per year
- Actual: substantially less than 1000ha per year since 1989

Climate change

Policy Context

Reducing UK emissions
2018 Progress Report to Parliament
Committee on Climate Change
June 2018

Support the simple, low-cost options

Onshore wind and Solar are likely to be **25% cheaper** than new gas plants by the 2020s

Efficiency in buildings is an obvious practical step. But insulation rates in homes are **95% lower** than they were in 2012

Tree planting rates are **two-thirds lower** than they need to be

Recycling food waste reduces emissions. By 2025 all food waste should be recycled

Failure to pursue these options increases energy bills and adds to the cost of decarbonisation

Four messages to Government to put emissions reduction on track

End the chopping and changing of policy

Recent policies to reduce emissions have been cancelled...

Zero-carbon homes, Carbon Capture and Storage, Feed-in Tariffs, Efficiency measures in buildings

Programme towards targets

Resulting in: Lower standards making country uncompetitive, Higher future costs of decarbonising, 50% fall in renewable investment between 2016-17, 20,000 jobs lost in energy efficiency

Consistent policies drive investment, cut bills and help to build UK business

Act now to keep long-term options open

Infrastructure requires long-term investment

Carbon Capture and Storage (CCS) 2030s

Now

CCS could reduce the cost of decarbonising the UK by 50%

Floating offshore wind 2030s

Now

Floating offshore wind exemplifies an emerging low-carbon technology that could require support

Heat pumps 2030s

Now

Heat pumps could be crucial to decarbonising heat in UK buildings

Further delays will increase costs and reduce options

Climate change

Policy Context

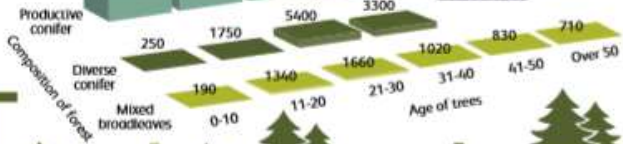
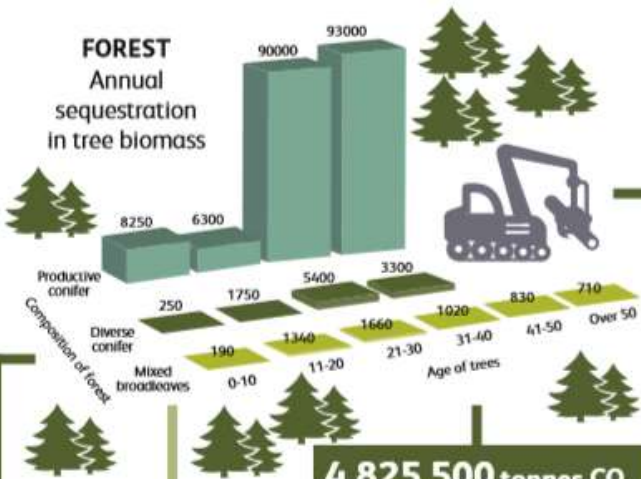


Eskdalemuir

carbon benefit from forestry and timber



FOREST Annual sequestration in tree biomass



4,825,500 tonnes CO₂
Carbon stored in tree biomass

Broadleaves are not harvested but remain as standing timber and subsequently deadwood

Total carbon stored in forest soils, litter and deadwood: 27,736,000 tonnes CO₂. However, it is not clear that this changes over time.

SOIL, LITTER & DEADWOOD

0
Carbon in soil, litter and deadwood: no change

Leaf litter: 56 tonnes CO₂ per hectare

Soil: peaty gley and peaty podzols: 1,329 tonnes CO₂ per hectare

Deadwood: 20m³ per hectare is left to enhance biodiversity, making 1,329 tonnes CO₂ per hectare.

Sawmilling, including kiln drying, has been measured at around 180kg CO₂ per m³.

FORESTRY OPERATIONS

-1,192,000 tonnes CO₂
Carbon emitted through forestry operations

Forest management, timber harvesting and transport has been measured at 18kg per cubic metre harvested.

Harvested conifers are processed into various materials, which are manufactured into a range of products.

EACH YEAR'S HARVEST
35.7ha productive conifer producing 450m³ timber per hectare
25ha diverse conifer producing 350m³ timber per hectare

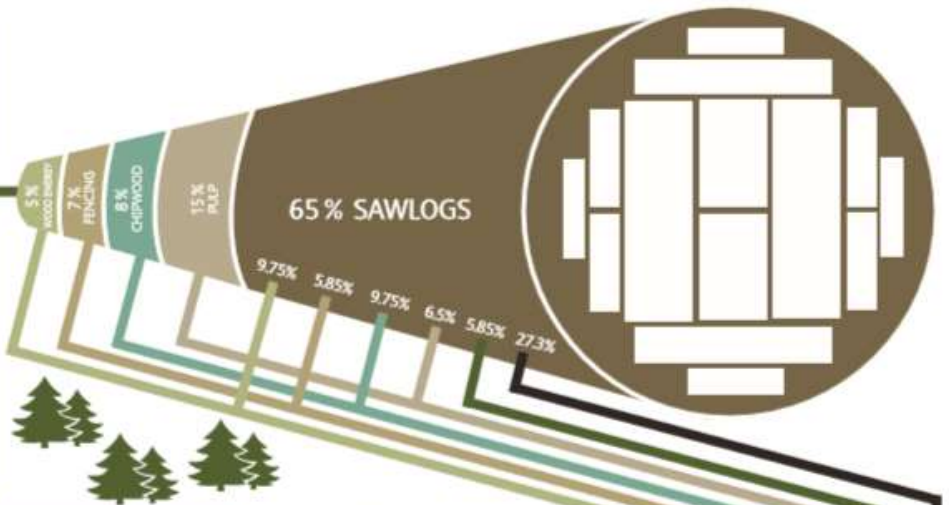
Over 100 years of sustainable management, the carbon benefit from the 20,000ha Eskdalemuir forest is estimated at 14,612,880 tonnes – 7.3 per hectare per year.

ESKDALEMUIR
carbon benefit from forestry and timber is
7.3
tonnes CO₂ per hectare per year.
This means each hectare provides benefit similar to the carbon emissions of one person in a year.

MATERIAL SUBSTITUTION
6,300,000 tonnes CO₂
Carbon saved through substitution of mineral materials

1m³ of UK conifer used in construction displaces 1.3 tonnes of CO₂, which construction with other materials would have emitted.

Only about 20% of UK houses are built from wood, so there is great potential for more material substitution.



WOODFUEL

1,296,000 tonnes CO₂
Carbon saved in substitution of fossil fuels

Conifer wood at 27% moisture content is estimated to produce 1.39MWh per m³

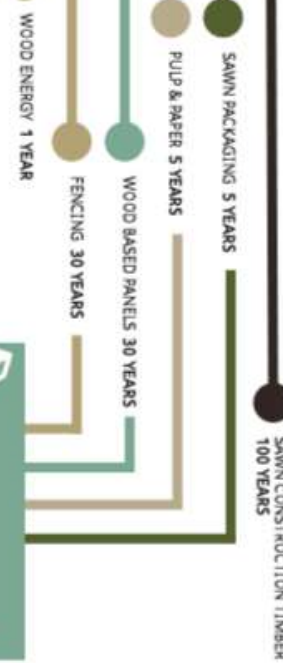
1m³ of wood used as fuel saves 495kg of CO₂



HARVESTED WOOD PRODUCTS

3,383,380 tonnes CO₂
Carbon stored as harvested wood products

The products store the carbon and then decay over different lengths of time.



Brexit



- Welcome 'Land use' not 'farm' policy
- Welcome recognition of timber as a crop
- Concern that 'additionality' will prevent productive forestry being funded



Planting in Wales Campaign

- Raising the presence of forestry in the media
- Assisting applicants to plant trees to reduce opposition through proactive engagement
- Removing barriers to planting

Forestry in the media

Planting in Wales Campaign

4
COUNTRY & FARMING

More trees are needed to save Wales' woodlands

into the woods
 Martin Bishop

More focus on forestry sector needed to show farmers the long-term benefits

THE forestry and timber industry employs more than 10,000 people in Wales annually. The sector is a major contributor to the Welsh economy, with far lower environmental standards than other sectors. Increasing reports of sustainable forestry, coupled with environmental concerns relating to pesticide use, has led to a decline in the number of people entering the industry. Farming is one of the most diverse and rewarding careers a young person can go into, but in a world where the financial models tend to produce the returns on the forest. The decision on whether to go for timber and increase the non-commercial area should be the owner's choice and, as such, would have to be funded by the choice and would not be subject to the whims of any politician or EU officials (as some seem to think we may still end up being beholden to).

While forest seems to throw up new doubts of uncertainty on an almost daily basis, there are a few things we can be sure of, writes Martin Bishop, Confor manager for Wales. Public financial support for the forestry sector will change, but it will change in less certain, but it will change in the off-quoted theme of public funding for public goods, which opens even more uncertainty. What we are certain of is that rural forestry can return a profit. The UK forestry market reports demonstrate the financial income possible from forests. With many reports showing the demand for forest products worldwide is rising continually, we can safely assume a long term market in the UK for the products.

And rising demand means profitability. So let's do it. Well, that is easier said than done. First we have to persuade the owners of land, the farming sector, that we can offer a long-term profitable future. We also have to persuade them that the offer is more certain than the future alternatives, which should be not difficult given the conversations I hear almost daily from the Welsh Government. Secondly, we have to look at short-term funding to provide an income for farmers and landowners. Long-term funding is all very nice but every one needs bread on the table today. This is where the public funding for public goods comes in. We know the benefits woodlands and forests provide - clean air, water management, recreation, biodiversity, etc - and these could form the basis of funding in the short term. However, measuring these benefits is difficult and we certainly do not want to have hundreds of officials trawling the countryside measuring the immeasurable. Simply accepting the benefits and funding them for a short period would bridge the income gap. The resource would very soon start to generate its own income, after which public funding could stop (which is a huge benefit for the public purse). Woodlands and farms designed under the UK Forestry Standard have to incorporate at least 25% non-commercial areas and that is included in the financial models used to produce the returns on the forest. The decision on whether to go for timber and increase the non-commercial area should be the owner's choice and, as such, would have to be funded by the choice and would not be subject to the whims of any politician or EU officials (as some seem to think we may still end up being beholden to).

The third thing we have to do is get the regulatory system in Wales to allow farmers to plant forests. Now that seems mad, but it is a reality and obstacles will need to be overcome. Public perception is key among these and farmers and landowners, as part of rural communities, should be well-placed to allow public information and we can easily provide that to help them. Wales has a huge area of less favourable land that is currently used to keep sheep. It is land that has little other uses and is not the high environmental land like the uplands, so has less constraints. The Welsh Government needs to understand there is a viable alternative to agriculture. If they put just a fraction of the effort into understanding and enabling the woodlands and forestry sectors that they put into agriculture, then woodlands and forestry could be a much larger part of the Welsh landscape.

Planting in Wales Campaign

Stakeholder engagement

GUIDANCE NOTE

Confor
Promoting forestry and wood

Stakeholder engagement

Stakeholder Engagement: the process of involving people in the decisions that affect them.
Consult: To have regard for a person's feelings or interests in making plans or decisions.

WHEN?	WHY?	HOW?
<p>Planning or developing activities e.g. new planting, revision of management plans, significant felling.</p>	<ul style="list-style-type: none"> • Neighbours • Community (community council, development trust, user groups) • Clients / agents • Legal interests e.g. wayleaves • Special interest groups • NRW & statutory consultees • National NGOs • Vocal/nuisance detractors 	<ul style="list-style-type: none"> • Site visits • Small informal / formal meetings with key stakeholders • Telephone contact with key stakeholders • Attend meetings of relevant local groups • Website • Advertisements / articles in local press • Interactive workshop / event • Leaflet drop to all households
<p>Management of existing activities e.g. access and forest management interactions.</p>	<ul style="list-style-type: none"> • Neighbours • Community (community council, development trust, user groups, local schools) • Clients / agents • Legal interests e.g. wayleaves • Special interest groups 	<ul style="list-style-type: none"> • Establish a forestry contact with Community council or similar • Advisory committee • Attendance at suitable local events e.g. shows, gigs, etc. • Newsletters • Annual surgery • Annual meeting with key stakeholders • Notice board at forest gate • Website
<p>Tackling problems e.g. timber transport disruption, fly tipping, unauthorised mountain bike trails.</p>	<ul style="list-style-type: none"> • Neighbours • Community (community council, development trust, user groups) • Local authority • Local councillors, AM's, MPs 	<ul style="list-style-type: none"> • Site visits • Small informal / formal meetings with key stakeholders • Awareness raising via local press • Attend meetings of relevant local groups

LESSONS LEARNT

- One size does not fit all – it's about the right thing at the right time. Knowing what works takes time.
- Speaking to people in advance of an activity rather than after can identify issues before they arise.
- Style and tone are as important as what is said / done.
- Make yourself known and available to stakeholders / communities as this can help avoid problems escalating.
- Listening skills are essential. Often foresters want to solve problems and take action, when just listening works.
- Take time to understand the problem. It may not be what you first think.
- Face-to-face always works better in difficult situations.
- Avoid 'town hall' style public meetings.
- Visual aids (but not just maps) and 'active' feedback sessions work well.
- Admit mistakes, rectify and move on.

HELPFUL RESOURCES

- NRW webpage on site felling activities www.nrwa.gov.uk/forestry-and-woodland-use/forestry-and-woodland-regulation/forestry
- WJG access pages www.wales.gov.uk/forestry
- Forest Research <http://www.forestresearch.gov.uk/>
- The Timber Transport Forum <http://www.timbertransportforum.org.uk/>
- Confor helpline <http://www.confor.org.uk/contact-us/helpline>
- Great Woodland Creation Opportunities Map <http://www.confor.org.uk/forestry-and-woodland-regulation/great-woodland-creation-opportunities-map>
- Ancient Woodland Inventory <http://www.ancientwoodland.co.uk/>
- Woodland Access Register <http://www.ancientwoodland.co.uk/woodland-access-register/>

Stakeholder engagement

Planting in Wales Campaign



Planting in Wales Campaign

Removing barriers to planting



1. Timber production missing from Glastir scoring
2. Large areas under designations assumed unavailable
3. Lack of public funding
4. Slow and inefficient process to confirm permission to plant

Working together – Confor and you

Royal Welsh Show 23 – 26 July 2018
RWAS Forestry Committee's
School Photographic Competition

'Woodland Seasons - Spring'

Welsh Mountain Bike XC Series
Round 1
Coed Llandegla
Sunday 13 March 2016

Presented by  

2016 Welsh Mountain Bike XC Series, Round 1 at Coed Llandegla
Open to all with races from Under 8s through to Grand Veterans

Visit us on Facebook - **Round 1 WMBs XC 2016**
Find us at - **Coed Llandegla, Wrexham LL11 3AA**

From 8.30am:
Adults Book and Ride - £9 (Includes 1.20 On the Day)
Adult Book and Ride 1 - £20 (Includes 1.20 On the Day)
Youth Book and Ride 1 - £10 (Includes 1.10 On the Day)
Star Medal Fee: None | 1.10 (Includes 1.10 On the Day)
Family (Adult + 2 Child) - £35 (Includes 1.20 On the Day)
Senior (Senior + Child) - £25 (Includes 1.20 On the Day)
Senior (Senior + Senior) - £40 (Includes 1.20 On the Day)

From 9.30am:
Adults Book and Ride - £15 (Includes 1.20 On the Day)
Youth Book and Ride 1 - £10 (Includes 1.10 On the Day)
Star Medal Fee: None | 1.10 (Includes 1.10 On the Day)
Family (Adult + 2 Child) - £30 (Includes 1.20 On the Day)
Senior (Senior + Child) - £20 (Includes 1.20 On the Day)
Senior (Senior + Senior) - £35 (Includes 1.20 On the Day)

Enter online at welshcycling.co.uk

Tilhill Forestry @TilhillForestry · Jul 10
"When I re-emerged with wellies, hard hat, hi-vis and a hand saw his face was a picture." Hannah Richardson talks being a female assistant forest manager at Tilhill Forestry [burby.com](https://www.burby.com)

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