C. Toby Hindson 2011

The Ancient Veteran and Notable Protocol system for classifying old yews (Taxus baccata L.)

A presentation for The Ancient Tree Forum

10th of June 2011

Apologies

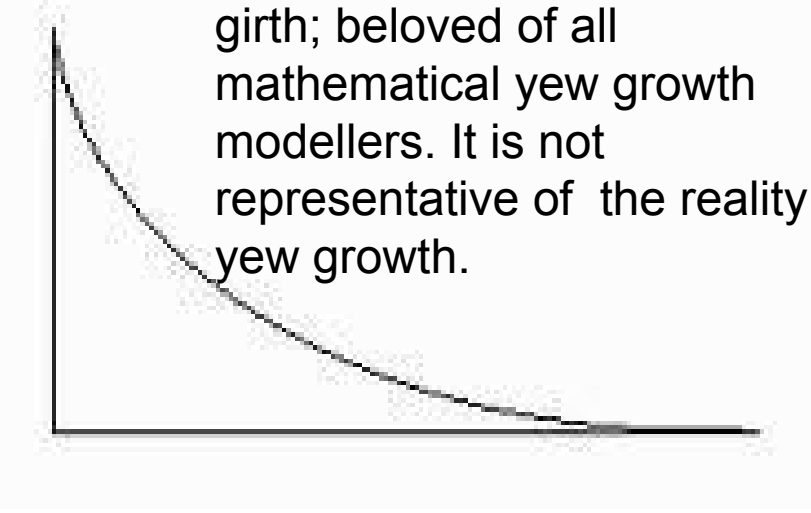
- I am extremely sorry that I can’t be with you today, I was very much looking forward to joining you; but circumstances dictated.
- I do hope you find the material interesting. Supporting evidence, this presentation in PDF format, the full Protocols text and more are available at: www.ancient-yew.org

The need for a system

- Cherkley Court, Surrey- this 600 year old yew (ring counted) should have received a TPO.
- The absence of a firm method of recognition for yews like this has allowed the felling of a large number of very old individuals.

Aging the yew- 180 years of research

- Many researchers have attempted to create yew aging systems:
- Augustine de Candolle
- John Lowe
- Dr. L. Prothero
- Alan Mitchell
- Allan Meredith
- Tabbush and White
- Stephen Dennis



Pictured: The negative exponential curve often used to represent declining annual ring width deposit with increasing girth; beloved of all mathematical yew growth modellers. It is not representative of the reality of yew growth.

No aging method has been universally adopted-

- -Because the result of the interminable aging debate has been confusion and apathy on the part of legislators involved in natural heritage.
- Alan Mitchell, who abandoned his attempt at yew aging, was correct in the belief that accurate aging is currently impossible.
- The Ancient Yew group have now put a working system in place for the recognition and protection of old yews.

The mechanism for creating our watershed girths and ages- illustrated on the next few slides

- 1 Decide on age categories.
- 2 Find empirically generated mean girths for the age categories.
- 3 Look at the spread of girths for each age.
- 4 Find the girth in the upper part of the spread at which almost all yews must be of the watershed age.
- 5 Allow for the many exceptions and variants.

Instead of accurate aging

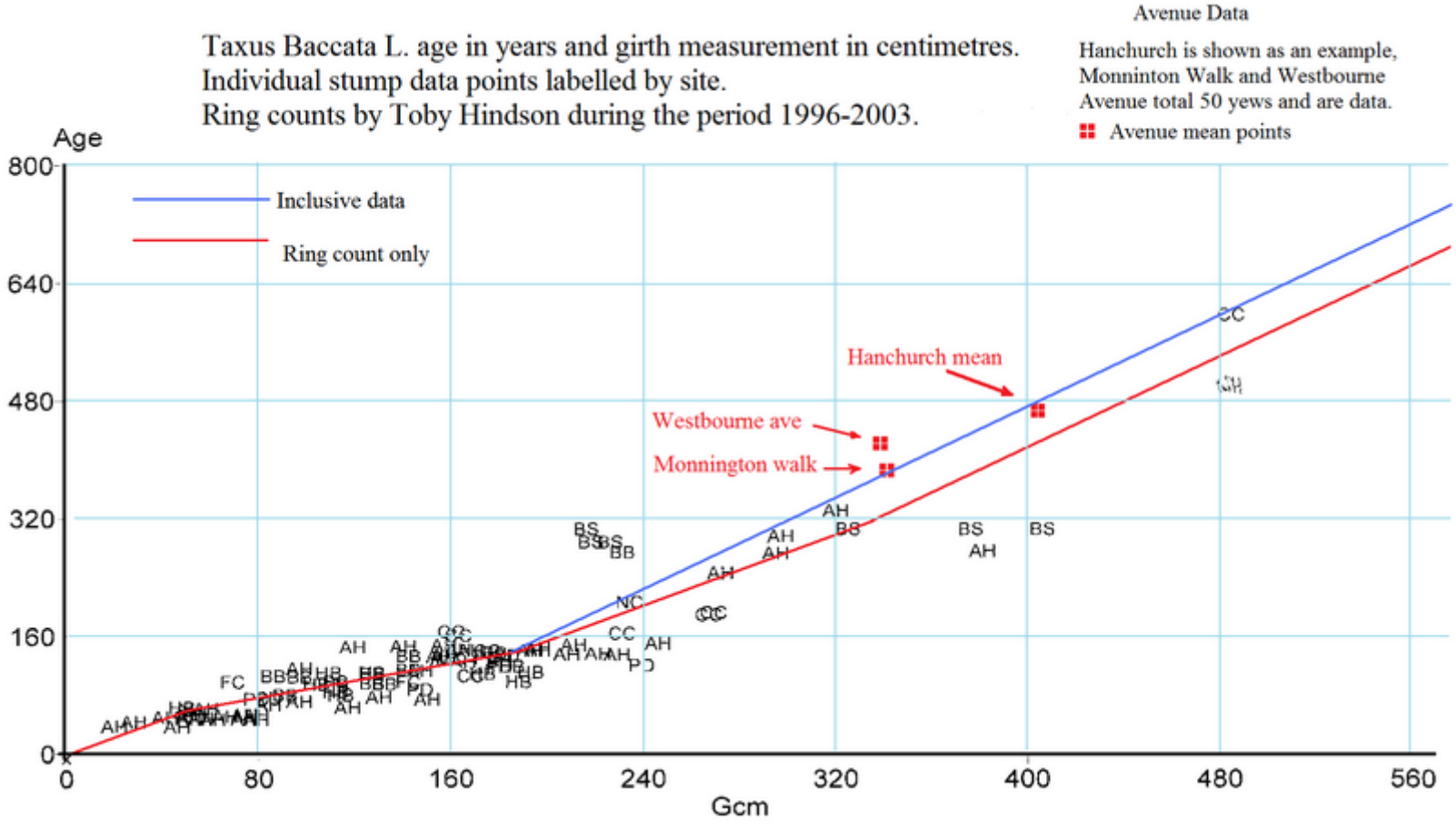
we have created accurately defined categories

- We find mean girths at :

- 300 years old – minimum for Notable
- 500 years old – minimum for Veteran
- 800 years old – minimum for Ancient

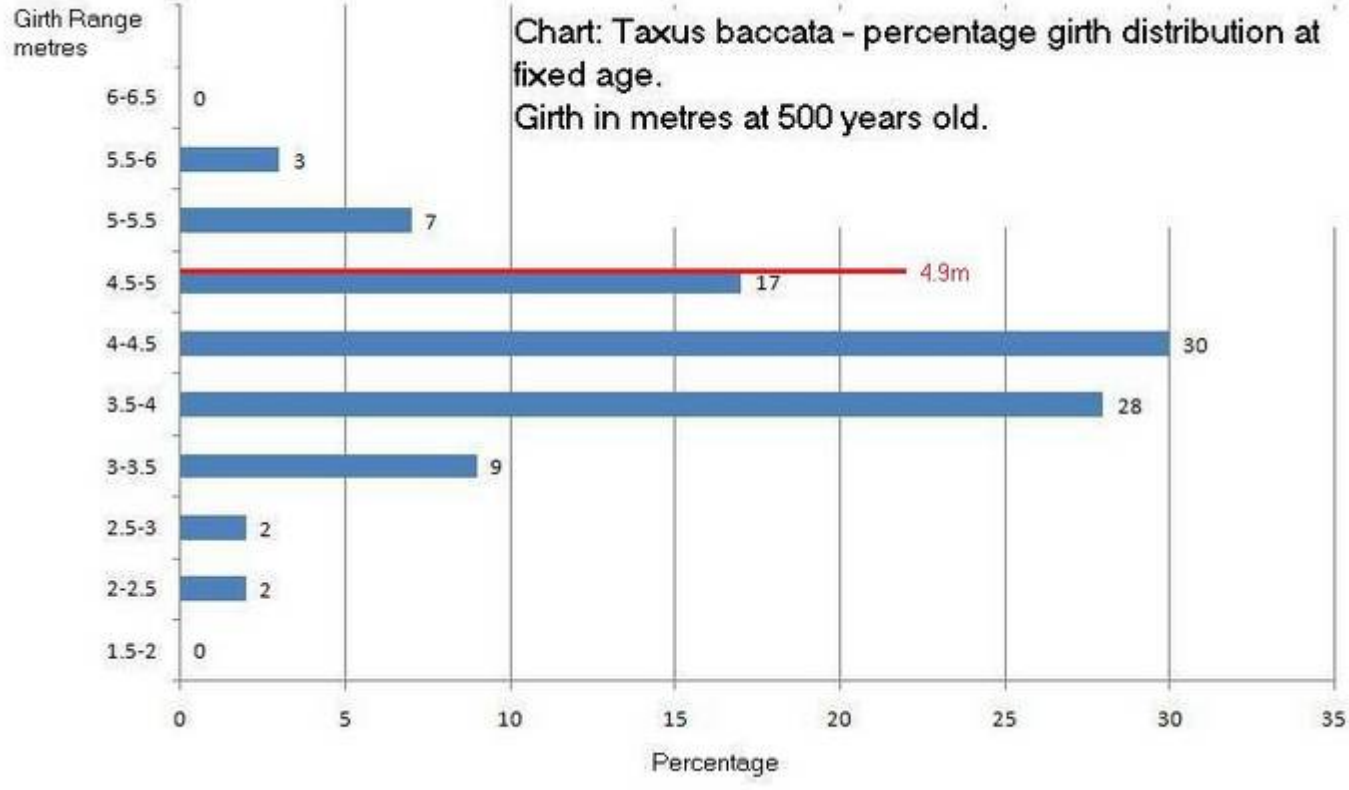
Data collection for a mean baseline:

Yews girthed and ring counted 1996-2004.



Looking at the spread of growth rates in a yew avenue

An Example: Finding the watershed for Veteran. How much higher than the mean shown on the age/girth graph does a girth watershed have to be to ensure that most yews at that circumference or above are old enough for the category?



Result: The Critical Girth Chart

This summary chart shows the girth in metres at which a yew (Taxus baccata L.) can be said to be over the target age for each category.

Churchyard (90%)	Wild (90%)	Ancient (800+)	Veteran (500-1,200)	Notable (300-700)
Girth -g		7.00	4.90	3.70
Altitude -alt		6.30	4.40	3.33
Urn shape -urn		5.45	4.05	-
			V-wild (50%)	
	Girth -g	7.00	4.25	3.70
	Altitude -alt	6.30	3.80	3.33
	Urn shape -urn	5.45	3.40	-

The Churchyard and Wild percentages shown in the table headings and in the chart represent the proportion of yews that will have reached or exceeded the target age at the given critical girths. The table should be used in conjunction with the full Protocols text, the above only covers a few common protocols.

Undersized individuals

A very large number of yews which are Ancient Veteran or Notable by virtue of age will fall below the critical girths for their correct category.

Pictured: AH335a, a felled yew found in 1996 which girthed only 320 cm at base, less than any critical girth - yet was 340 years old, and therefore classifiable as Notable.

Alice Holt 1996

Resulting coverage

Although unrecognised small yews remain to be found, all yews currently known to be important are covered by the Protocol system in some way.

The existence of very old low girth unrecognised Ancient Veteran and Notable yews is highlighted by the protocol system .

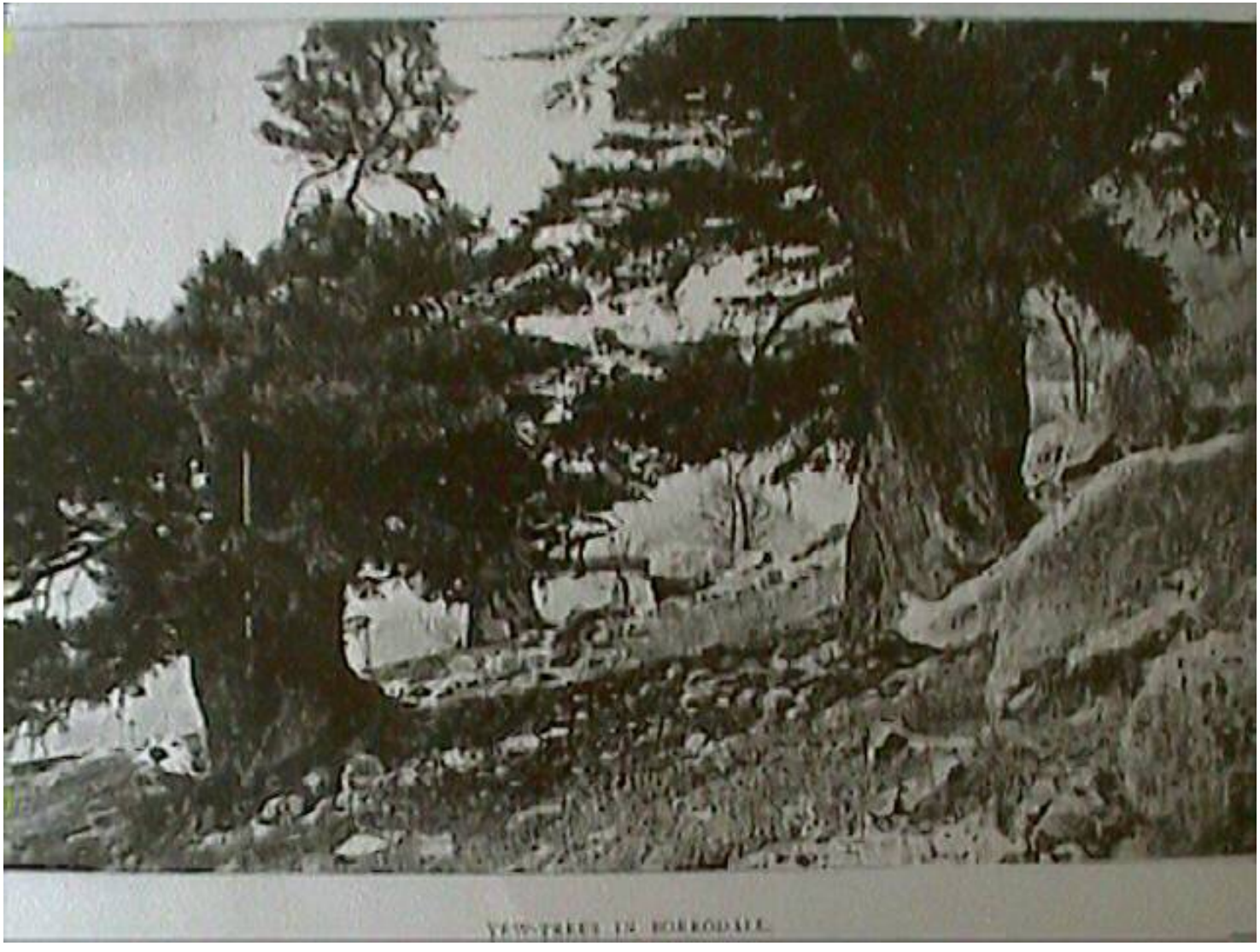
A glance at some of the variants covered by the system

Adjustments to critical girths are needed because of things like:

- Reduced growth rate due to altitude and exposure
- Distortion on the bole: hourglass and urn form
- Fragmentation of the bole

Altitude and exposure

Growth rates (girth increase) are found to be reduced by over 10%

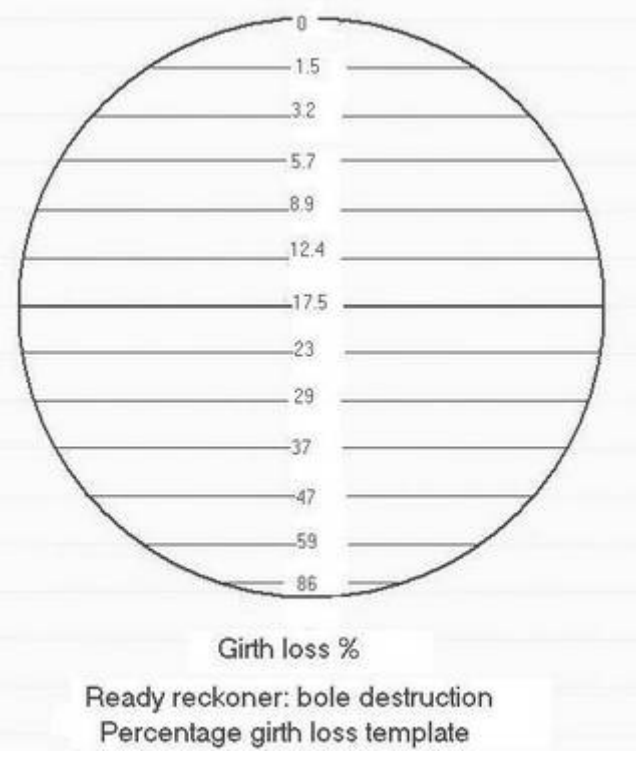


Urn shape, also including the “hourglass” form

Left, the pinched waist or hourglass. Below the true “Urn”. Both are measured at minimum girth to apply the “–urn” Protocol.

Fragments-multiple

- Fragmentation is the commonest factor that needs adjusting for.



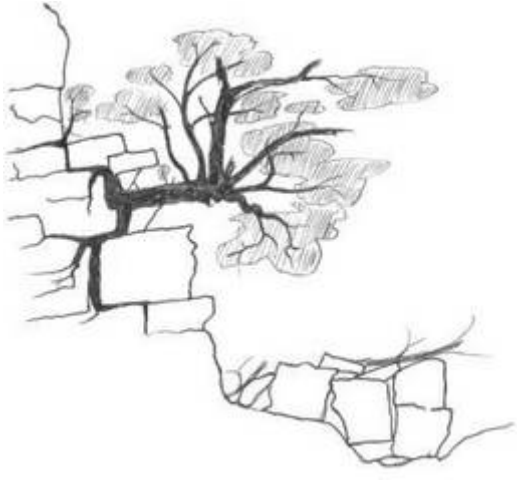
The girth loss ready- reckoner

- Less girth is lost when a yew loses part of its bole than one might often imagine
- The ready reckoner is a relatively crude but effective field template that shows what percentage of circumference is lost when a given proportion of a bole is missing.
- It is used by imagining that the tree is a cut stump at the measure height and the template can be laid flat on the stump surface.

Single Fragments- the hardest to age. This one is confirmed at approximately 800 years old. The girth is immaterial.

And More

- There are numerous age and critical girth modifying factors included in the Protocols system, some of which can be applied together.
- The full system must be understood to apply the Protocols effectively.



Index of Protocols

The full list of sources of variability found and quantified or described so far.

Ancient Yew Group

I am sure that questions will have arisen, I will be happy to answer any E-mails on the subjects raised here:

E-mail toby.hindson@sky.com