



**Arboricultural Association 2019
Crown & Canopy Management
Conference**

Phenology and Pruning Times
for Tree Species

Tony Kirkham

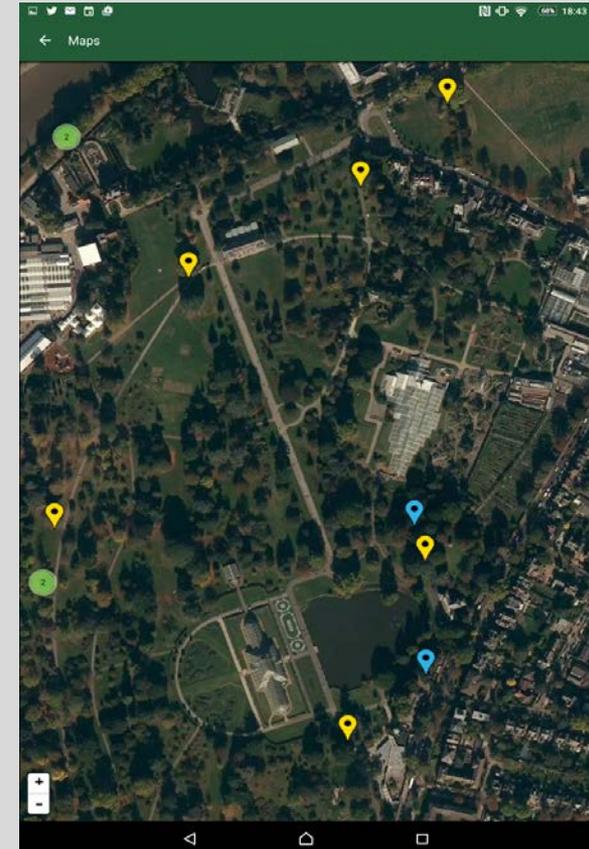
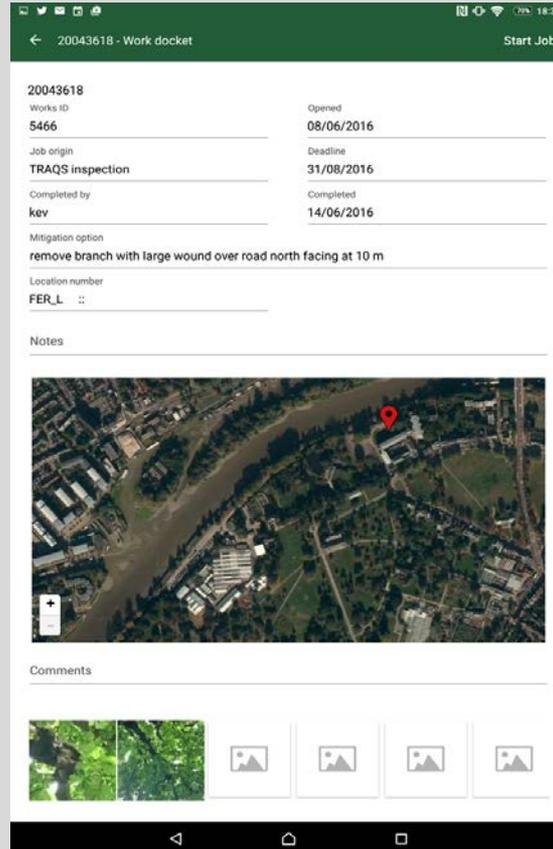
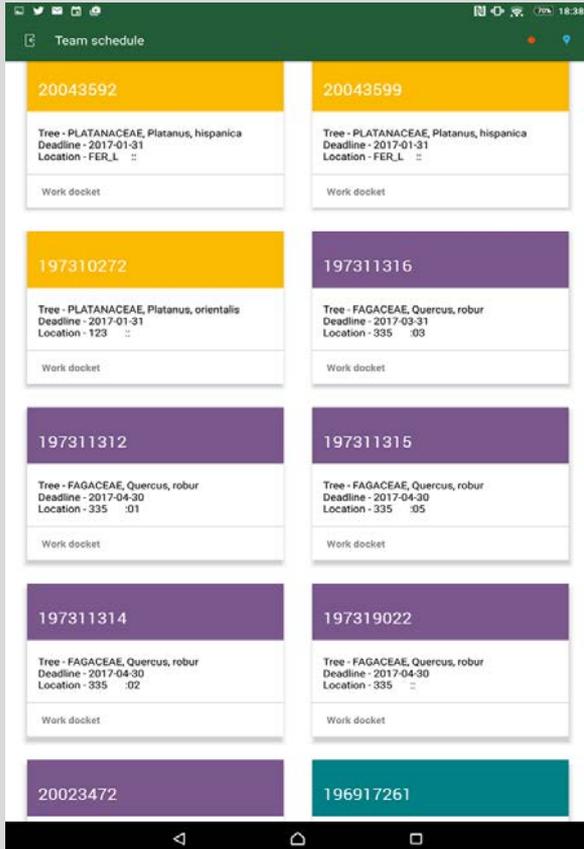
Royal Botanic Gardens
Kew

14,000 tree accessions: 2,153 taxa
8,000 shrub accessions: 3,500 taxa



TRAMS

Tree Risk Assessment Management System





Aesculus wangii



Wollemia noblis

What are the Effects of Pruning?

- Reduced photosynthesis
- Epicormic growth stimulated
- Potential energy reserves (carbohydrates) lost in cut branches
- Valuable stored carbohydrates are lost to repair pruning cuts
- Stressed trees may be weakened by pruning & more susceptible to micro-organisms

What is Phenology?

Phenology is the study of seasonal changes in plants and animals from year to year, such as the flowering of plants, the emergence of insects and migration of birds, especially their timing and relationship with weather and climate.

“The timing of natural processes”

The Four Seasons



Spring



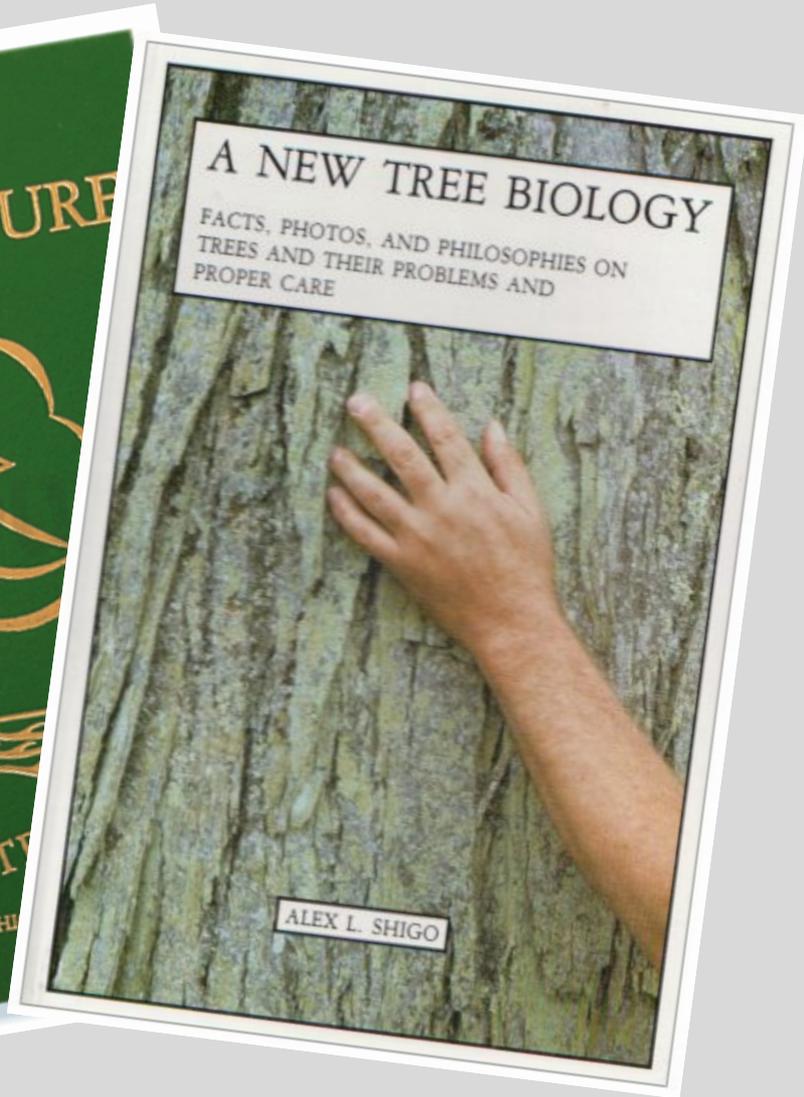
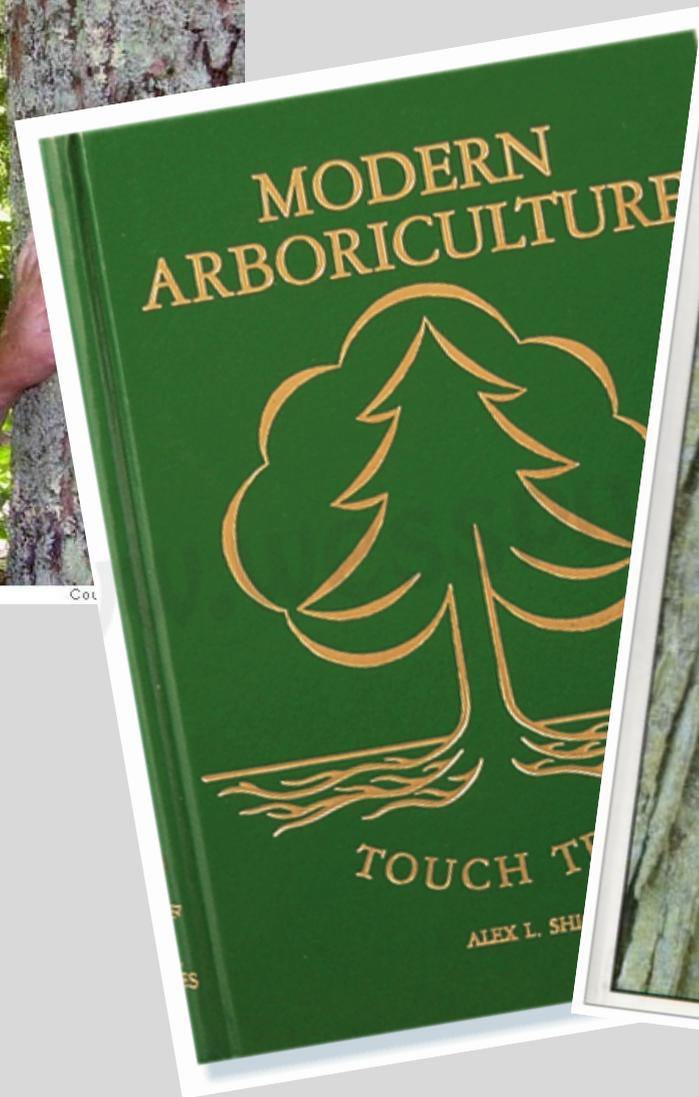
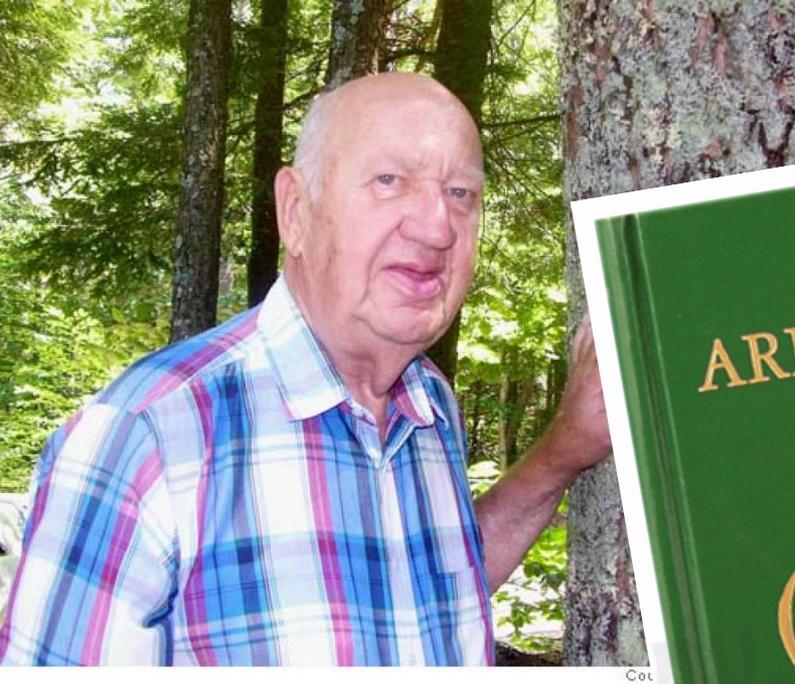
Summer



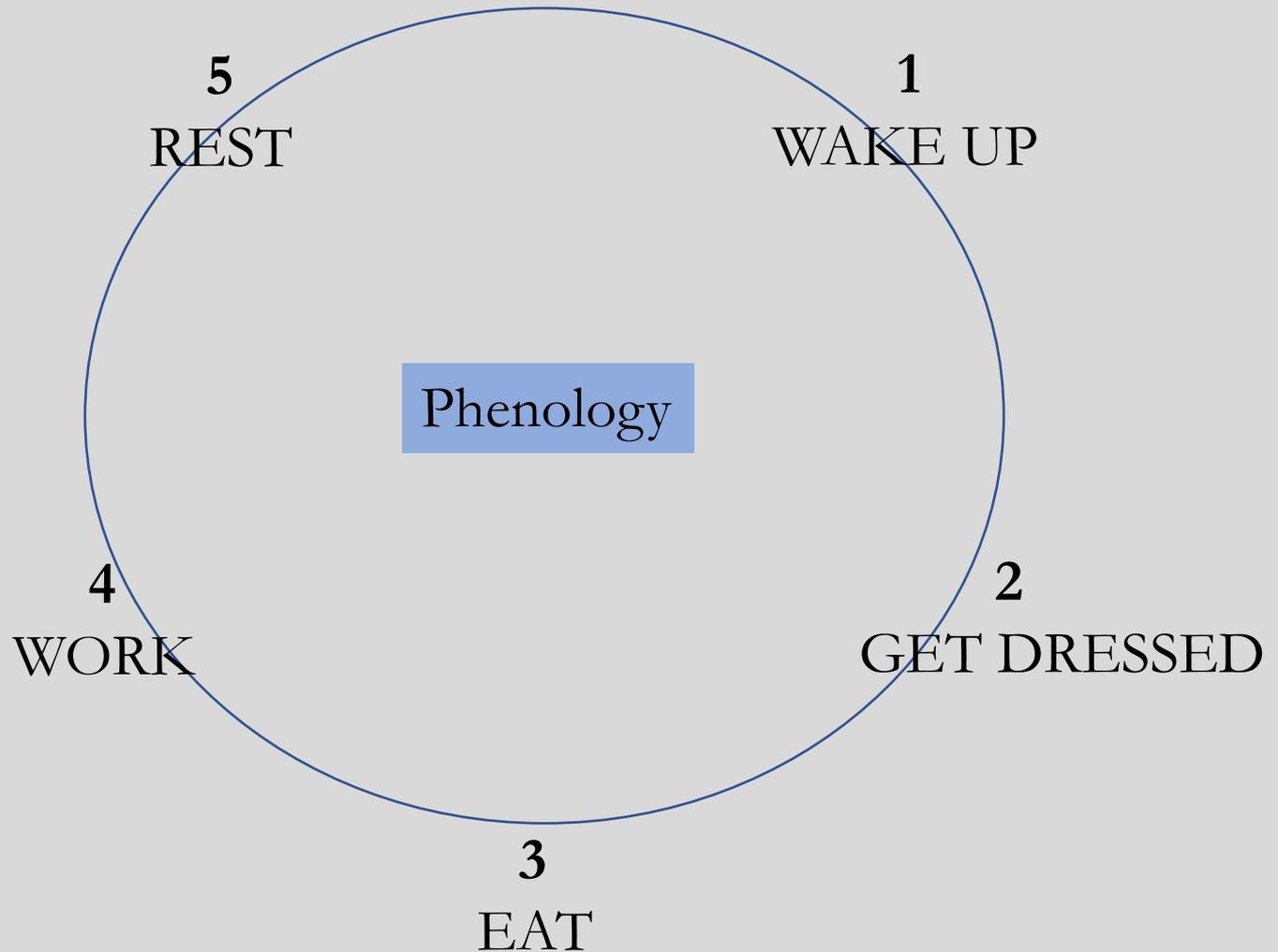
Autumn



Winter

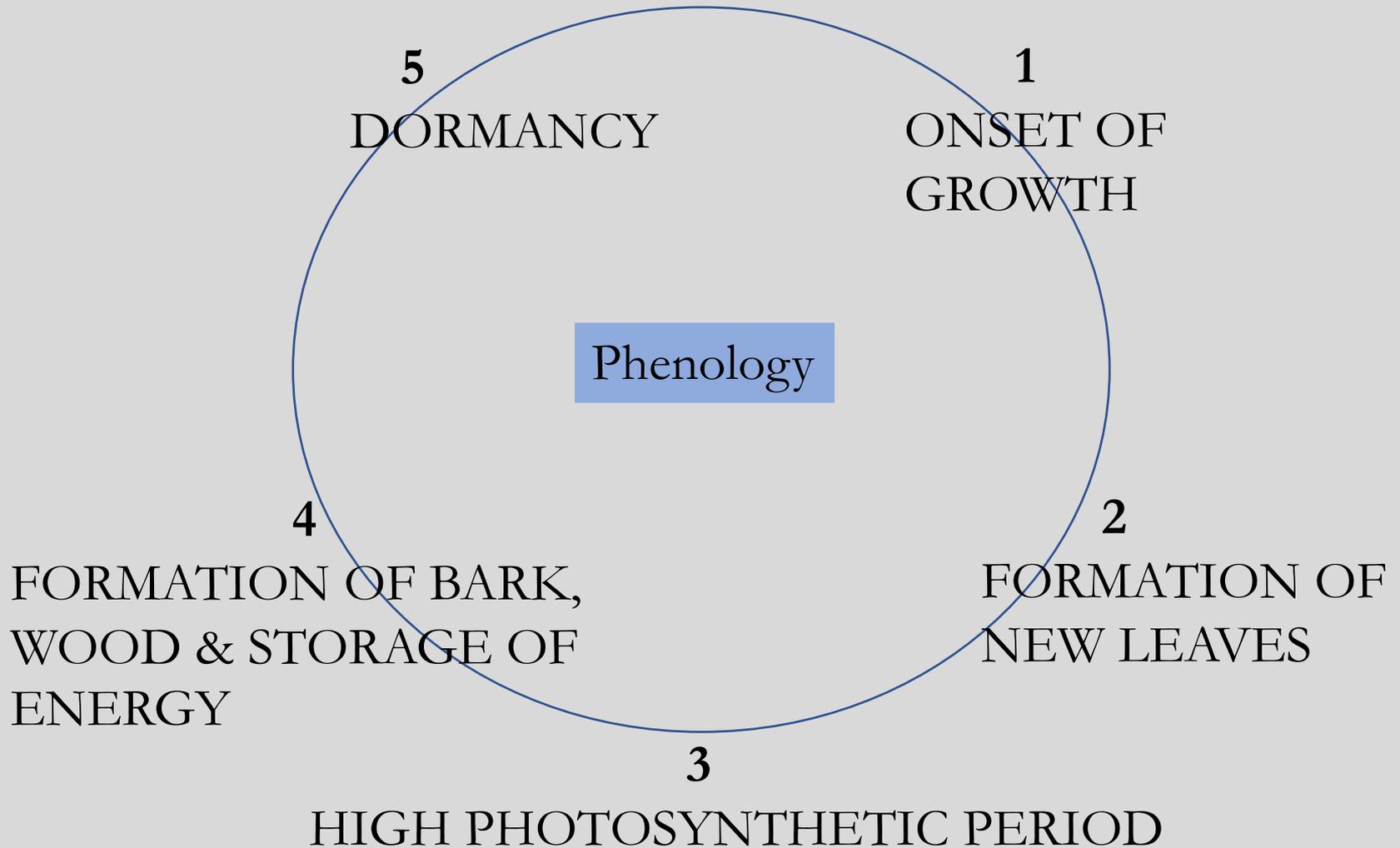


Dr Alex Shigo
Plant Pathologist with the
US Forest Services



Phenology: The Timing of Natural processes

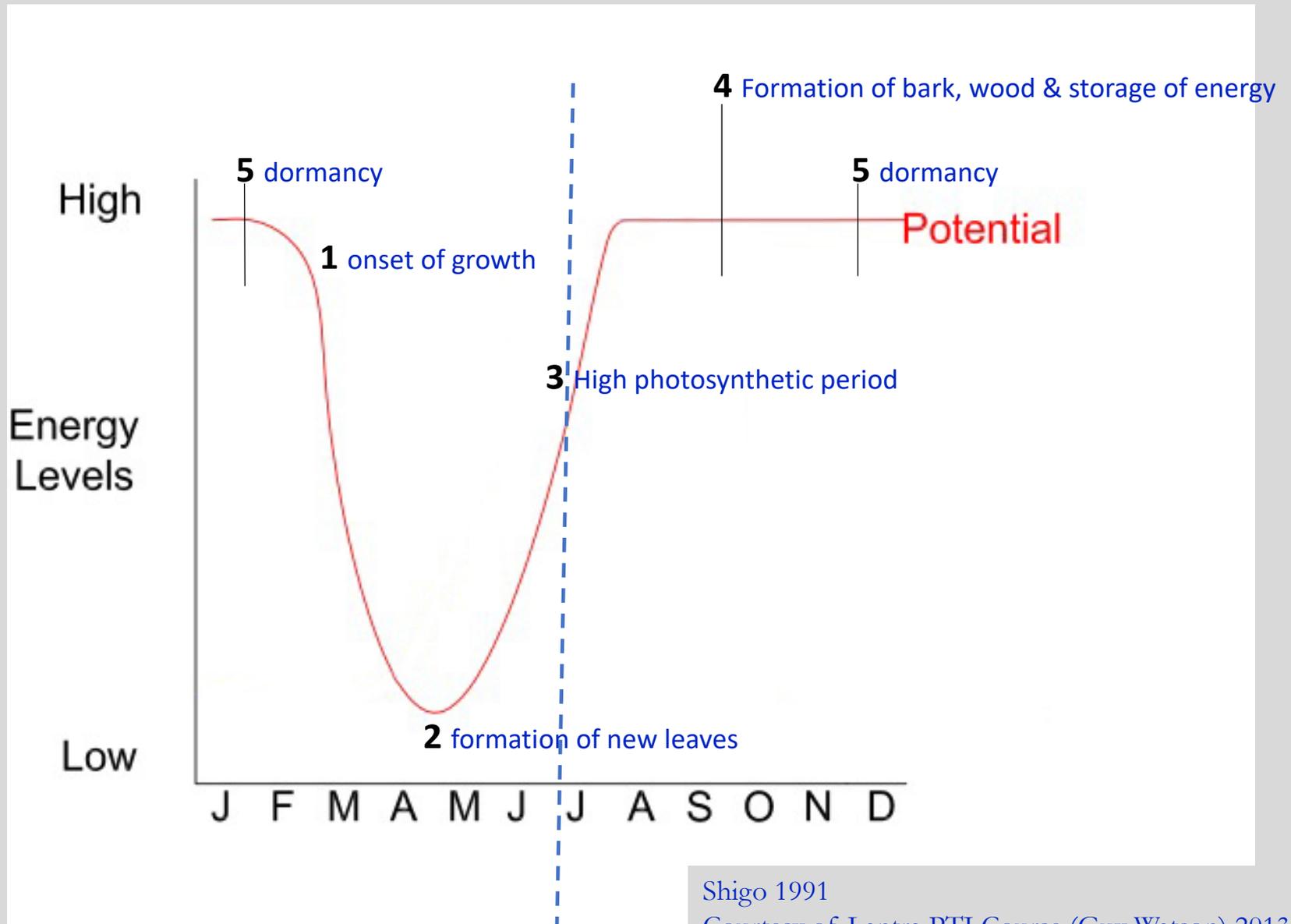
Shigo: Modern Arboriculture



Phenology: The Timing of Natural processes

Shigo: Modern Arboriculture

The Askenasy Potential Energy Curve



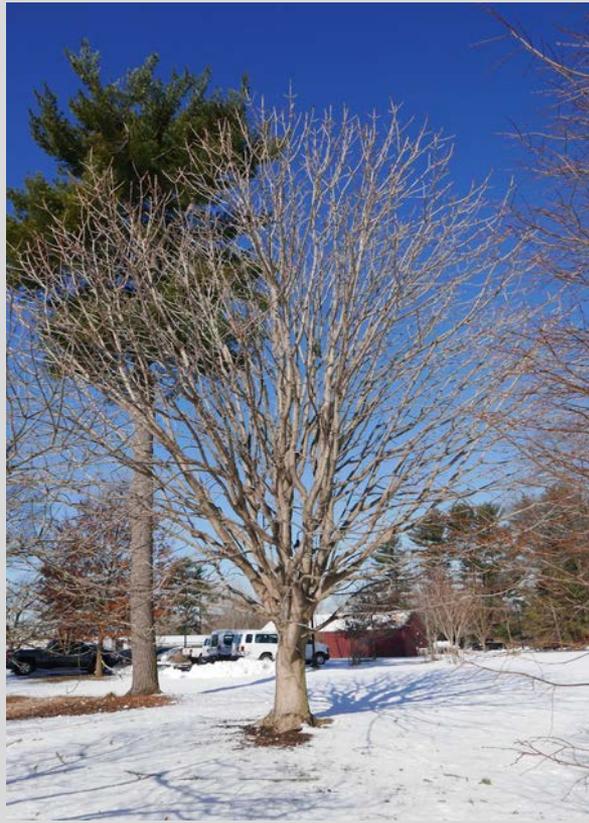
Shigo 1991

Courtesy of Lantra PTI Course (Guy Watson) 2013

Some Examples of Trees that Prefer Summer Pruning



Corylus fargesii



Aesculus turbinata



Acer tegmentosum

Bleeding or Sap leakage

Bleeding is when sap leaks from a wound or pruning cut on a tree, shrub or woody climber. Sometimes this may be a gentle seeping, other times a copious flow.

Bleeding occurs due to the pressure of sap within the tissues that conduct water and sugars around the plant.



Morus nigra



Betula utilis

All Juglandaceae

Juglans regia



Pterocarya spp.



Carya spp.



Juglans nigra



Some examples of plants that are prone to bleeding

- *Acer* (maple): Prune maples after leaf fall but before January
- *Betula* (birch): If pruning is necessary, prune in late summer to mid-winter
- *Carpinus* (hornbeam): Prune late summer to mid-winter
- *Carya* (hickory): Prune in late summer to mid winter
- *Juglans* (walnut): Prune mid-summer, before mid-winter
- *Laburnum*: Prune late summer, before mid-winter
- *Magnolia* (deciduous, spring flowering types): Prune early to mid-summer
- *Morus* (mulberry): Prune from autumn to early winter
- *Populus* (poplar): Prune late summer or early autumn
- *Sophora*: Prune in summer
- *Vitis* (grape vine – edible and ornamental types): Prune after leaf fall but before January

Timing for Pests and Diseases

Most taxa in Rosaceae, along with laburnum, poplars and rhododendrons are all at risk of silver-leaf disease. This is spread by fungal spores in damp conditions, which enter through fresh pruning wounds, and causes serious dieback. Prune in summer (**July/August**) when the spores are less prevalent and pruning wounds are dry and heal quickly, making infection less likely.



Chondrostereum purpureum

Prunus 'Asano'

Betula species

Bronze birch borer *Agrilus anxius*

Pruning should not be done between **May**
& **July**.

Avoid excessive pruning < 25% thinning



Red oaks

Oak Wilt - *Ceratocystis fagacearum*

Affects: *Quercus rubra*, *Q. palustris*, *Q. coccinea*, *Q. velutina*

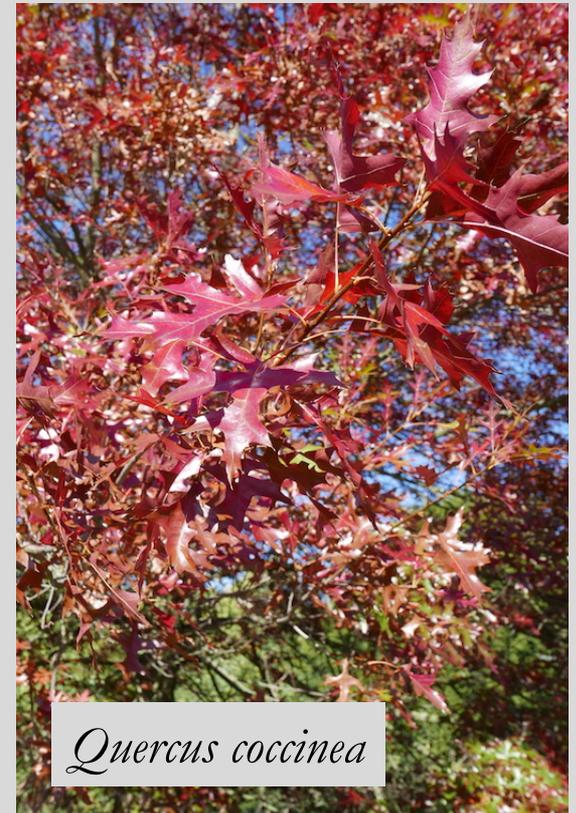
Pruning time:

Between **autumn and spring** during dormancy to greatly reduce the chance of infection. **Never between spring and late summer.**

Insects are attracted to the sap on fresh pruning wounds of infected trees and transmit the disease to healthy trees



Quercus rubra



Quercus coccinea

Oak Processionary Moth (OPM)

When is the right time to prune oaks in OPM zones?



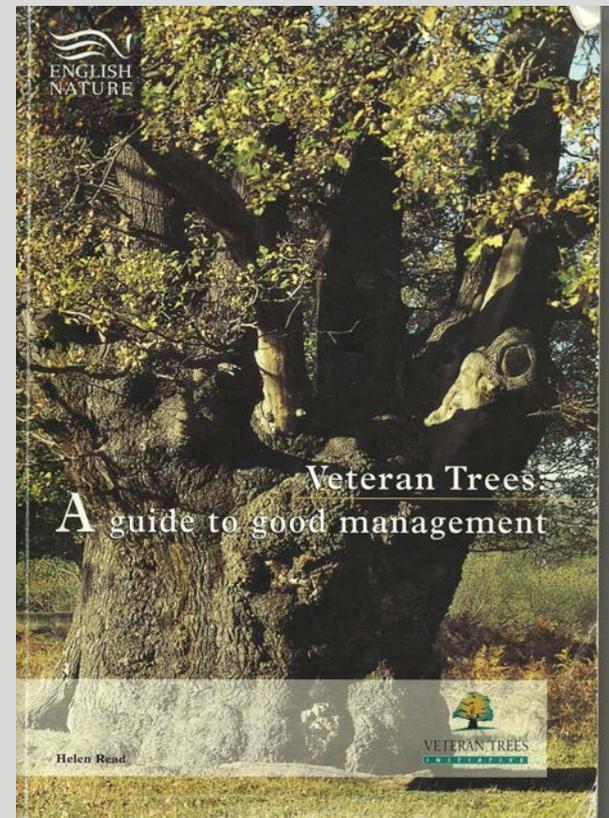
Summer Pruning of Restricted Growth Trees and Shrubs



Summer pruning can sometimes prompt the formation of flower buds rather than new shoots on restricted growth fruit trees or the branches of a wisteria with flowers.



Veteran trees



Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
***	***	***	X	X	X	*	*	X	X	**	**

* Best time

X Not Good

* Possible

X Not Good

** Better

There is also some variation between species

Nesting Birds and the Law



Some mature hedgerows are protected by law but this wouldn't normally apply to garden hedges. It's recommended not to cut hedges and trees between **MARCH & AUGUST** as this is the main breeding season for nesting birds, although some birds may nest outside this period.

It is an offence under Section 1 of the Wildlife and Countryside Act 1981 to intentionally take, damage or destroy the nest of any wild bird while it is in use or being built, or to intentionally kill, injure or take chicks or adults, or intentionally take or destroy any eggs.

ESSENTIAL PRUNING TECHNIQUES

Trees · Shrubs · Conifers

GEORGE E. BROWN

REVISED AND
EXPANDED BY TONY KIRKHAM

WITH PHOTO
ANDRE

