

Response Growth after Pruning: CODIT Rules! 4 Studies

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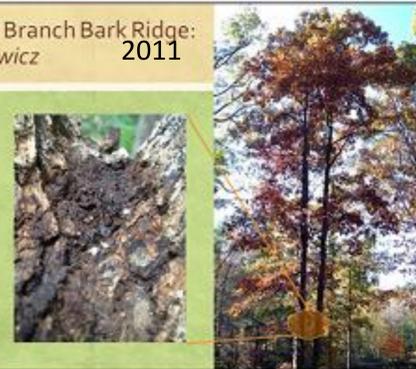
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1. Transform Included Bark to Bark Ridges

Included bark is the bane of tree structure. Pruning and cabling branches mitigates included bark. Can pruning permanently cure the problem?

From Included Bark to Branch Bark Ridge:
A Tribute to Bob Wulkowicz 2011

- Scope: Q. alba included bark 10" codom stems
- Objective: Turn included bark into a branch bark ridge
- Specifications:
1. Clean fork by scraping with trowel, knives, chisels.
 2. Rinse with water while scraping. Avoid breaking barriers and exposing living tissue??
 3. Cauterize with blowtorch, evaporating water but not burning tissue
 4. Monitor 14 months later



2015: The dominant stem fills the fork with response growth. Outer bark traced again on both sides, giving the weaker stem a chance to catch up.

July 2015 AUF study by Slater and Ennos: Forks with included bark that is embedded are nearly as strong as forks that have never had included bark. By tracing included bark, bad forks can be fixed!

SPECIFICATIONS: In forks with >50% included bark, use chisels to remove dead (black/brown) outer bark. Expose phloem (white tissue). Avoid damaging phloem. Rinse. Drench with specified materials.

2. Trace Compacted Bark: Free the Phloem!

The girdling seldom stops when the first girdling object is removed. Compacted bark, constrains sap flow, phloem expansion, and stability.



The Landscape Below Ground

Figure 4. A buttress root was damaged by construction 18 years previous, and a girdling root grew. One year after pruning, callus forms all around the wound, and more new orange tissue bulges over the girdled area. By sight and touch, this area appears relatively unchanged, indicating that severely compressed tissue is slow to recover.

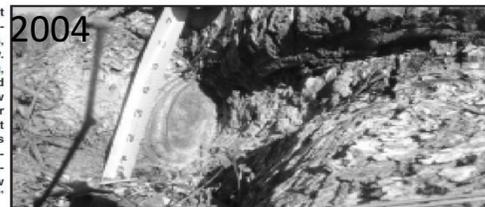


Image taken 2004. The phloem above is overflowing the compacted bark, risking a case of Dunlap's disease (as in "My belly done lapped over my belt!") A chisel can trace the bark, leaving healthy tissue.

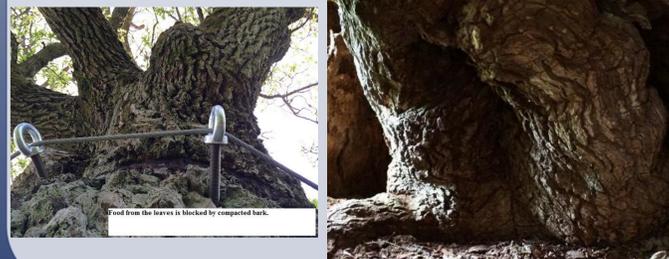
3 locations, roughly equidistant, got the tracing treatment.

2015: The traced areas are forming buttresses. The untraced areas are forming included bark.



SPECIFICATIONS: Use chisels to remove dead bark and foreign material. Expose phloem (white tissue). Avoid damaging phloem. Rinse. Drench with specified materials.

Sweden, 2014: Europe's greatest oak with over a 14-meter girth, was released from a girdling metal band. The compacted bark still dsms the sapstream. Blocked resources bulge above the compacted bark. The tree responds by adding a column inside the hollow!



3. Track Sprouts after Reducing Back to Buds

Ice broke this 10" diameter limb in January 2002. The broken end was reduced back to the first good node, where signs indicated dormant buds. A 10" stub. No laterals. No leaves. Sprouts arose in 2004; restoration!



Above 2006. Above right 2009. Coring showed a small V-shaped discoloration. Measuring sprout and callus growth.



Basal decay and a lean toward the road called for crown reduction. After this white oak branch was reduced 12' with a 2.5" cut, sunlight increased, and the tree's hormonal balance shifted. Apical dominance at the tip was gone. In Claus Mattheck's colorful language, the king was dethroned, so dukes and earls and lesser lords increased.

Accessory buds at nodes (growth points) released and started growing. This resprouting—yellow arrows—put new leaves in position to harvest sunlight. This growth is not the weakly attached, overextended "epicormic" sprouting that arises after a tree is cut back too hard, or "topped".

Because the pruning was done in a controlled dose, following the A300 Standard, these sprouts grow in a controlled fashion. If basal decay worsens in 3/5/10 years, the sprouts will be strong and productive enough for the tree to maintain vitality while sustaining further branch reduction—red arrow.



The central leader now ends in "stubs" with laterals much less than one-third their diameter. Retaining this leader keeps the tree's structural integrity.

Top view, same leader: 6 years later, the 6" wound closed. Of the 6 remaining sprouts, 3 were reduced.

4. Treat Infections, Enable Inspections!

ANSI A300 Tree Care Standard Part 8 describes the steps required to make a competent trunk, flare and root inspection:

"83.3.4 Inspection should include...:

- Stem tissue connecting the crown and the roots;
 - Girdling of buttress roots or stems by roots or foreign objects, and the tree's response;
 - Tree association with beneficial and harmful insects;
 - Tree association with pathogenic and beneficial microorganisms
 - Wounds, and the tree's response to wounds;
 - Mechanical damage to detectable roots, and response;
 - Indications of root disease and response
- "Mulch, soil and foreign material should be removed as needed to allow inspection...tracing of wounds shall remove only dead, loose, and damaged tissue. Evaluate decay, callus and woundwood growth, and response growth in trunk and crown."

A common sight: Trunk infection by soilborne organisms after root damage. Frothy flux draws moths to feed. While feeding, they lay eggs, which hatch into woodboring larvae.



SPECIFICATIONS: Clean dead and foreign material. Inspect the margins of the wound, and connected tissue. Without a competent inspection, assessment is limited.



