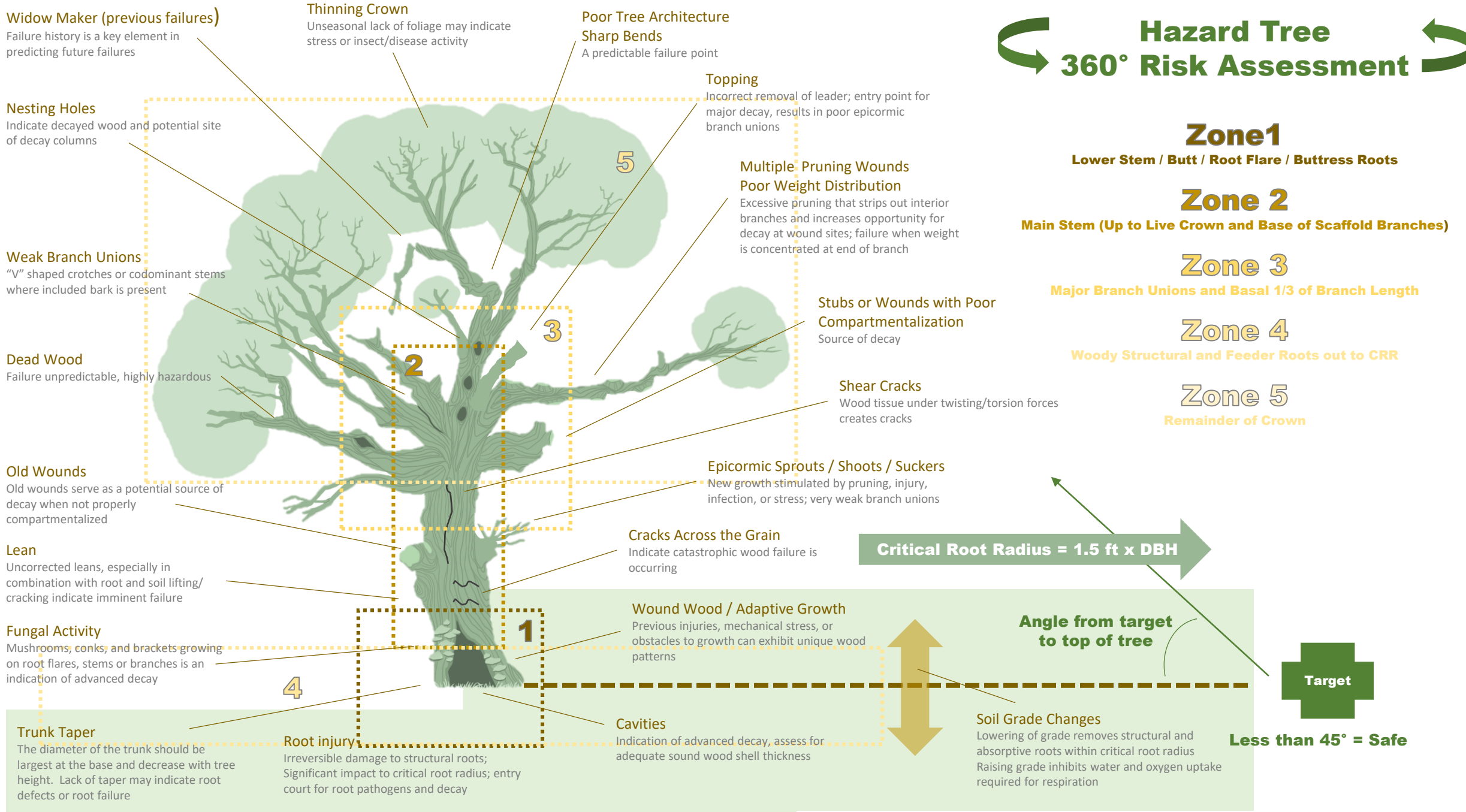


# Hazard Tree 360° Risk Assessment



## Widow Maker (previous failures)

Failure history is a key element in predicting future failures

## Thinning Crown

Unseasonal lack of foliage may indicate stress or insect/disease activity

## Poor Tree Architecture

### Sharp Bends

A predictable failure point

## Topping

Incorrect removal of leader; entry point for major decay, results in poor epicormic branch unions

## Nesting Holes

Indicate decayed wood and potential site of decay columns

## Weak Branch Unions

"V" shaped crotches or codominant stems where included bark is present

## Dead Wood

Failure unpredictable, highly hazardous

## Old Wounds

Old wounds serve as a potential source of decay when not properly compartmentalized

## Lean

Uncorrected leans, especially in combination with root and soil lifting/cracking indicate imminent failure

## Fungal Activity

Mushrooms, conks, and brackets growing on root flares, stems or branches is an indication of advanced decay

## Trunk Taper

The diameter of the trunk should be largest at the base and decrease with tree height. Lack of taper may indicate root defects or root failure

## Root injury

Irreversible damage to structural roots; Significant impact to critical root radius; entry court for root pathogens and decay

## Cavities

Indication of advanced decay, assess for adequate sound wood shell thickness

## Cracks Across the Grain

Indicate catastrophic wood failure is occurring

## Wound Wood / Adaptive Growth

Previous injuries, mechanical stress, or obstacles to growth can exhibit unique wood patterns

## Epicormic Sprouts / Shoots / Suckers

New growth stimulated by pruning, injury, infection, or stress; very weak branch unions

## Stubs or Wounds with Poor Compartmentalization

Source of decay

## Shear Cracks

Wood tissue under twisting/torsion forces creates cracks

## Multiple Pruning Wounds

### Poor Weight Distribution

Excessive pruning that strips out interior branches and increases opportunity for decay at wound sites; failure when weight is concentrated at end of branch

## Zone 1

Lower Stem / Butt / Root Flare / Buttress Roots

## Zone 2

Main Stem (Up to Live Crown and Base of Scaffold Branches)

## Zone 3

Major Branch Unions and Basal 1/3 of Branch Length

## Zone 4

Woody Structural and Feeder Roots out to CRR

## Zone 5

Remainder of Crown

Critical Root Radius = 1.5 ft x DBH

Angle from target to top of tree

Target

Less than 45° = Safe