

# Hazard Trees

## Recognizing Them Before You Climb

### Diseases, Defects, and Structural Problems



# Hazard Trees

Defective Tree

+

= Possible Failure

Climber Weight



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1990

The Capital Times

# LOCAL/STATE

## Storm kills woman in tent

Associated Press

A woman was killed and a companion was injured when high winds uprooted a tree and blew it onto their tent at a state park near Wisconsin Dells, authorities said.

The storm also caused power outages and property damage in several areas, including the college town of Janesville, Wis., and the city of Janesville, Wis.

uprooted the 27-inch-diameter tree, causing it to land on the tent between 5:30 and 6 a.m., according to Juneau County Coroner Howard Fisher.

Two other UW-Madison students with the women on the weekend camping trip were not injured, he said.

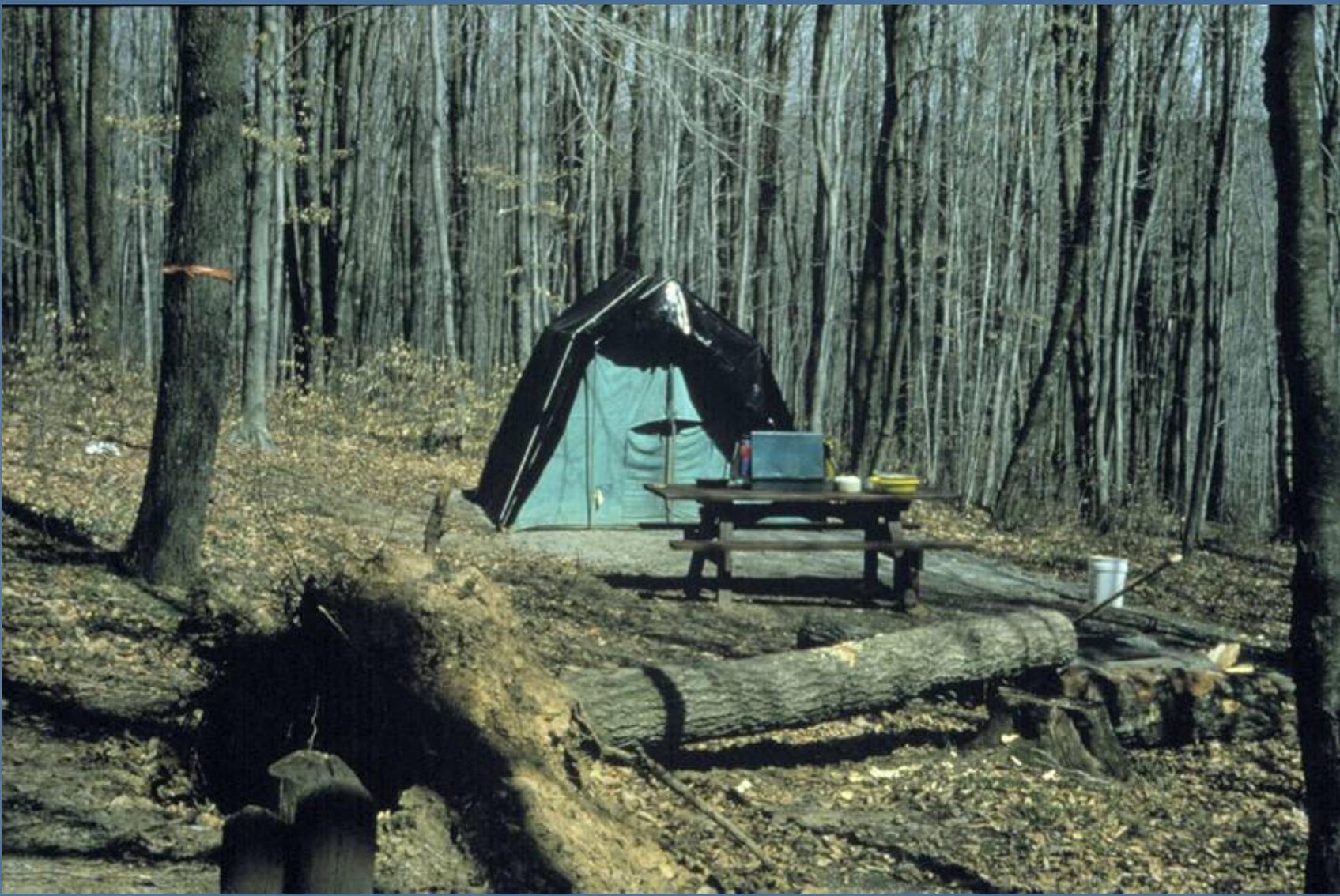
Mary Stamper, 25, Marshfield, and Marcia Christensen, 25, Chippewa Falls, were killed.

ent for the park, said the tent occurred at camp grounds were closed to the public despite the storm because of a "hazardous" loss of life.

The storm was the first of its kind in the area since 1950, when a similar storm killed a woman in a tent at the same park.



# Recognizing Hazard Trees Before You Climb



# Hazard Tree Defects: The Seven Deadly Problems

- Dead branches and trees
- Cracks
- Weak Branch Unions
- Decay
- Cankers
- Root Problems
- Poor Tree Architecture



# Hazard Tree Defects

## Dead Branches and Trees



Do not  
climb dead  
trees

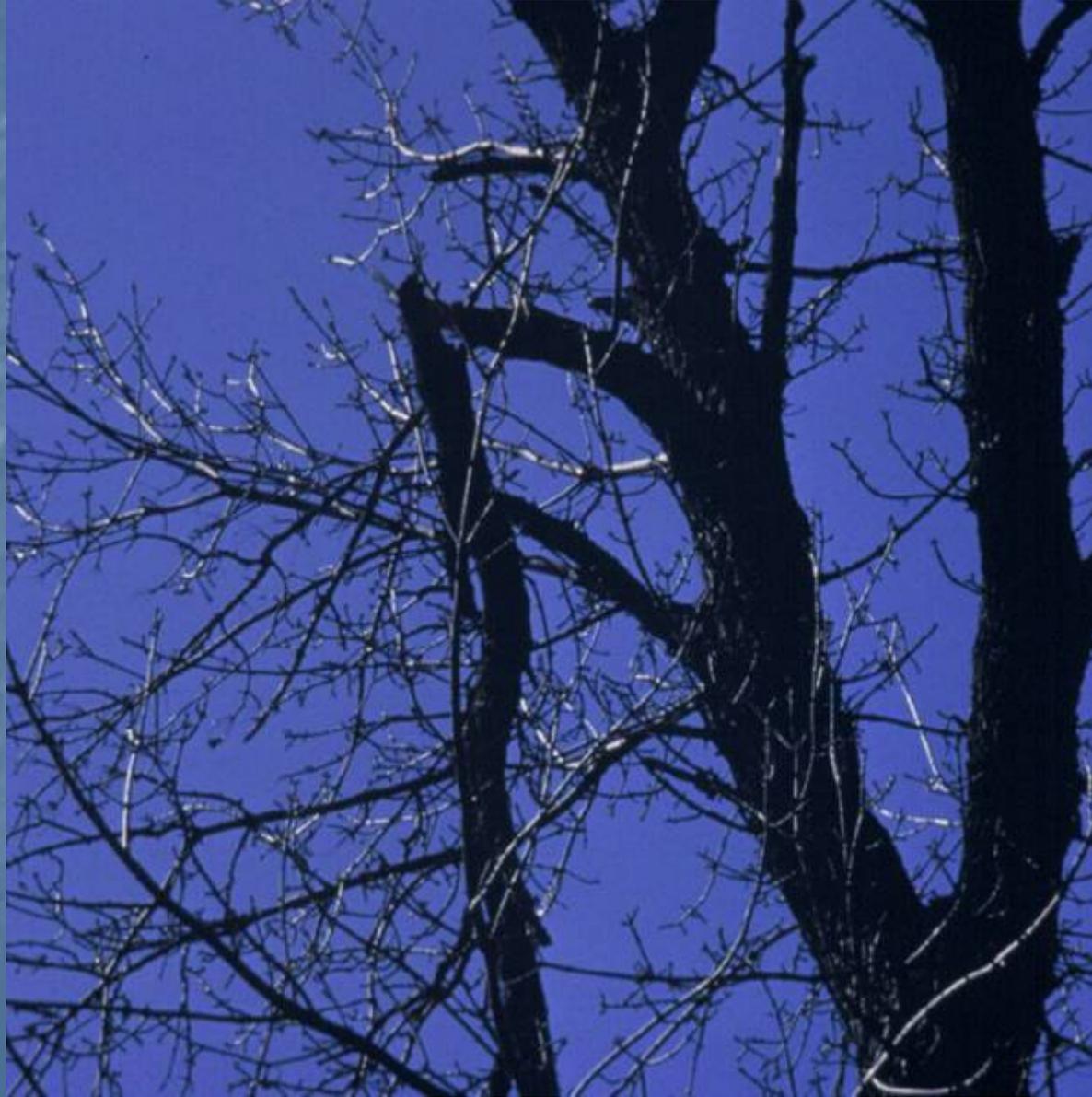


Climb?  
I'm not  
sure I  
would  
even  
stand  
there

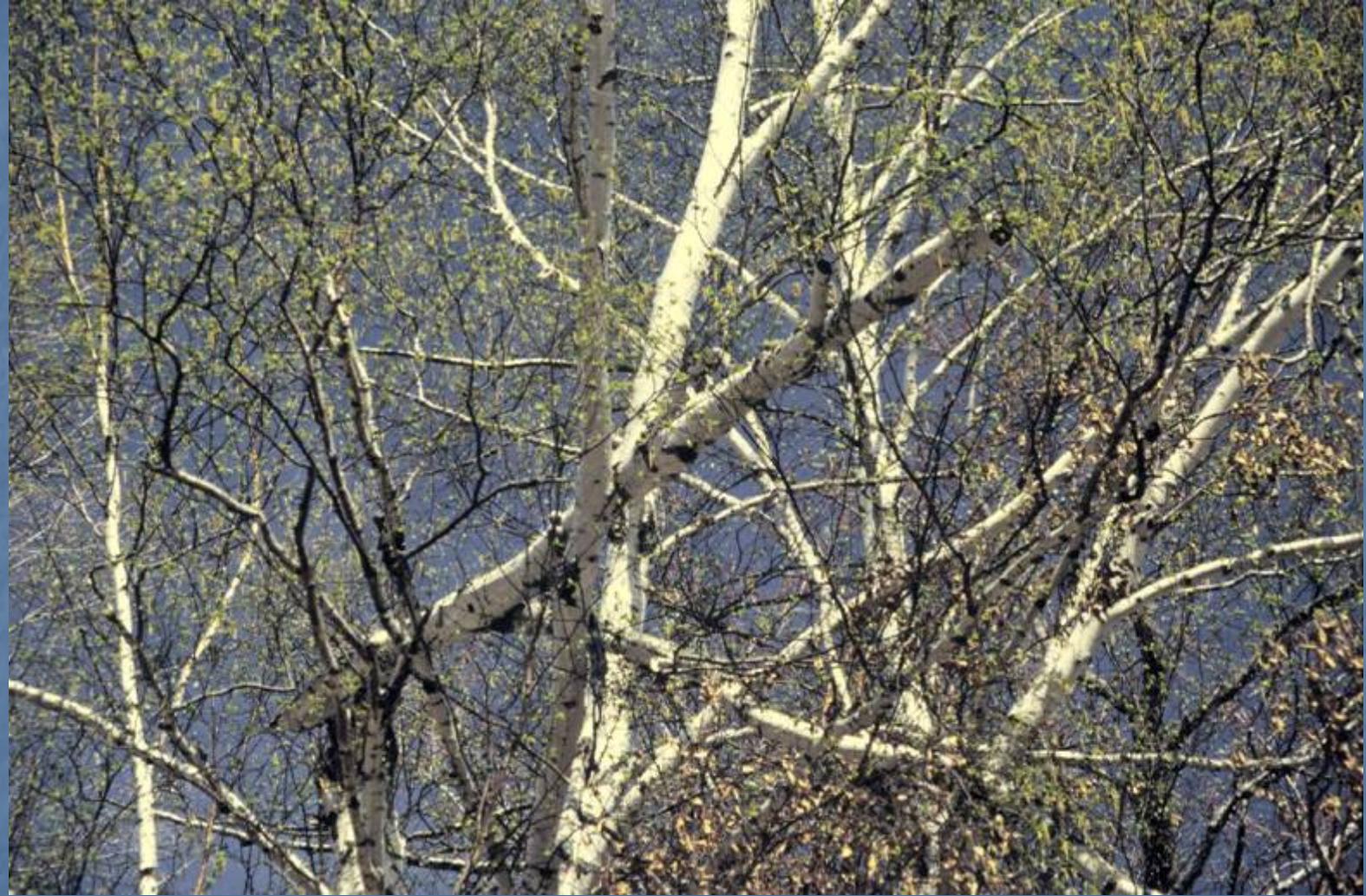


# The Classic “Widowmaker”

Recognizing Hazard Trees Before You Climb



# Dead Limb lodged in Tree



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# Hazard Tree Defects

## Cracks

Cracks are important because they indicate that the tree is *already* failing!



# Recognizing Hazard Trees Before You Climb



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# Hazard Tree Defects

## Weak Branch Unions

Upright branching and “included bark”

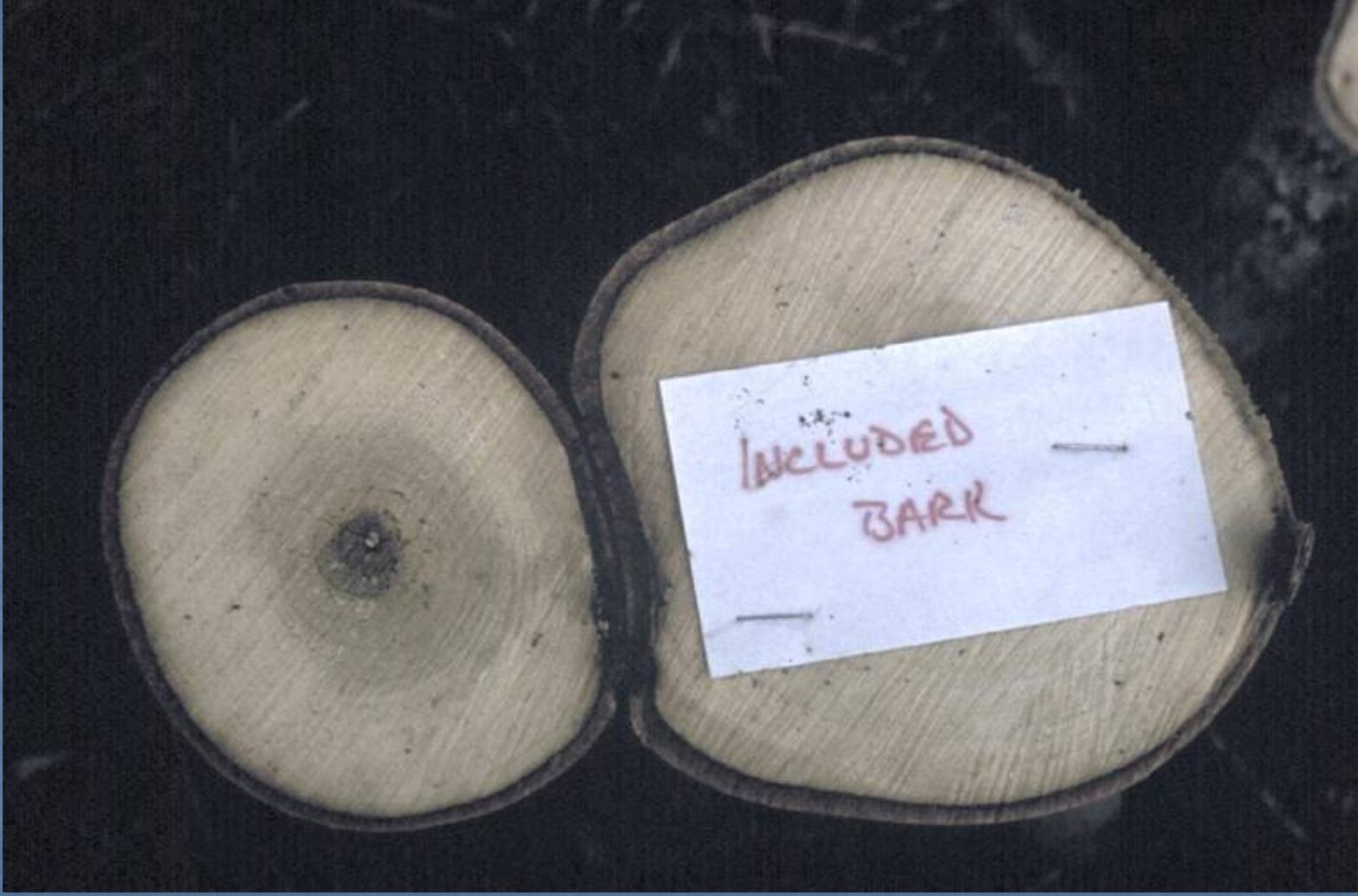


Maples and ashes tend to form upright branches with bad unions.

Included bark is formed at the arrow



# Recognizing Hazard Trees Before You Climb



Bad branch unions sometimes produce cracks in the stem.



# Split crotch



# Included Bark Leads to Cracks Which Leads to Failure

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# Topping Results in Bad Branch Unions



# Cracked branch



# Included bark failure



# A good crotch...



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# Hazard Tree Defects

Cankers, Canker Rots



# Canker exceeds 40% of tree diameter

This canker produces rolls of callus tissue.



An example of a “diffuse” canker



# Hazard Tree Defects

## Decay



# Minimum thickness guideline

A tree should always have at least 1” of sound wood radius for each 6” of diameter at any height in the tree.

Trees with wounds or other defects need even more sound wood.



This tree didn't meet the guideline...



Neither did these...



# Shell thickness?



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# Hazard Tree Defects

## Root Problems

Leaning trees, root rots and windthrow



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# Root and butt rot

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# Annosum Root Disease

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# Restricted Rooting Zone



# Hazard Tree Defects

## Poor Tree Architecture

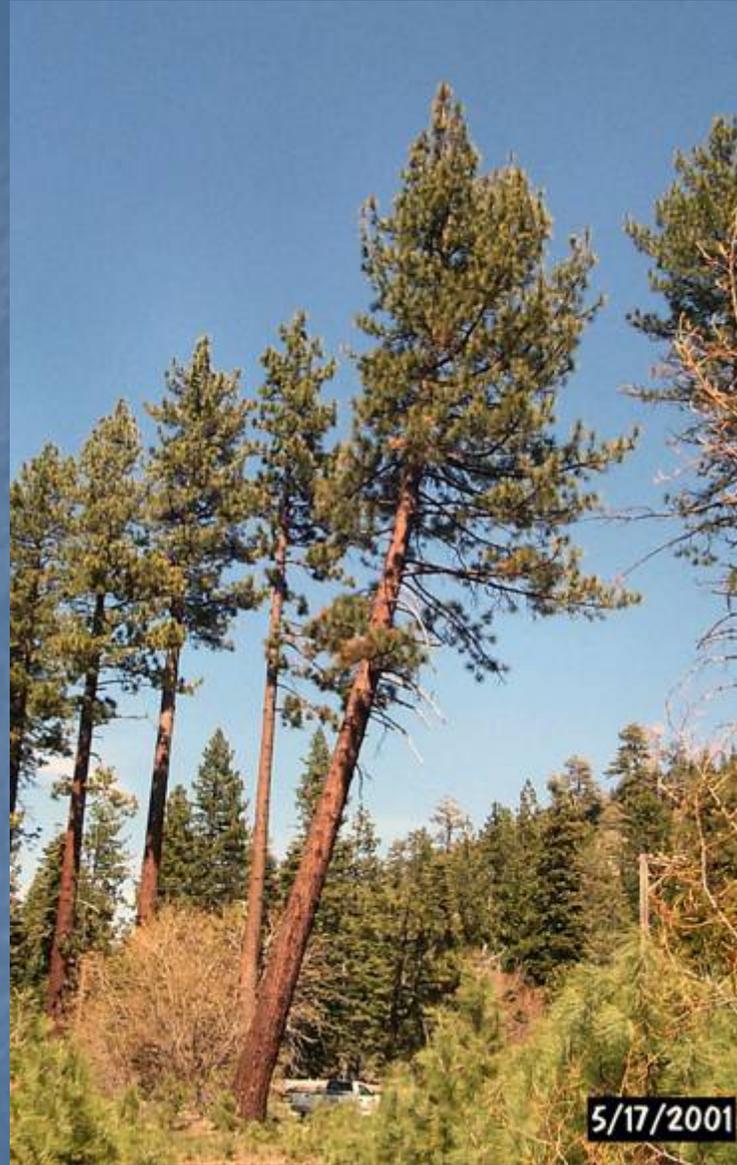
Trees that are misshapen, out of balance, or pose risks due to stem or crown architecture.



# Recognizing Hazard Trees Before You Climb



Good crown,  
but evaluate  
surrounding  
trees and site  
for possible  
root disease



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Given a choice, you rather sit here or climb  
this tree?



# Probability of Failure

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- 1 - **Low:** some minor defects present
  - minor branch dieback
  - minor wounds or defects
- 2 - **Moderate:** one to several defects present
  - stem decay or cavity within safe shell limits
  - hardwood stem with single crack and some decay
  - weak union with inrolled bark
  - defect(s) affecting < 40% of tree's circumference
  - leaning tree < 45°, without recent root lifting



# Probability of Failure

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## 3 - **High:** multiple or significant defects present

- stem decay or cavity approaching shell safety limits
- multiple cracks or a single crack which goes completely through stem
- weak union with crack or decay
- defect(s) affecting  $> 40\%$  of tree's circumference, with decay present
- leaning tree with recent root lifting or soil mounding
- dead branches
- lodged branches
- dead trees



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