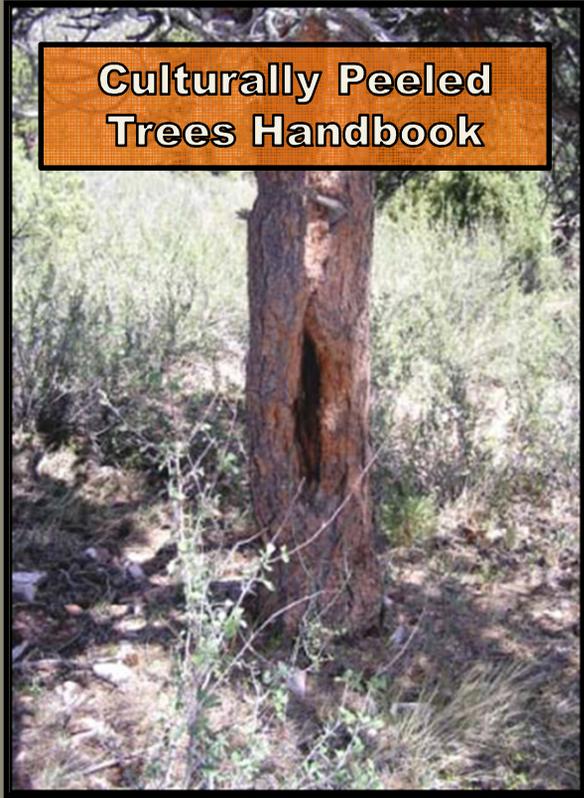


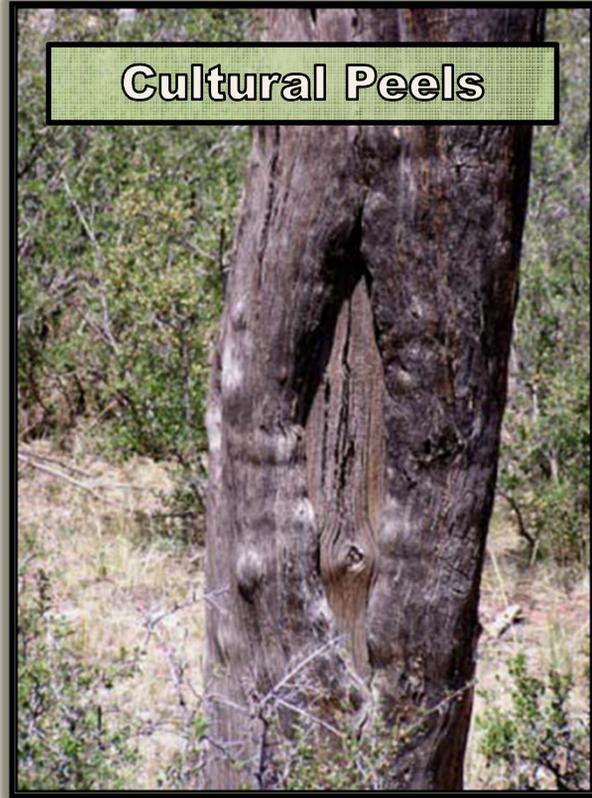
**Culturally Peeled
Trees Handbook**



Ponderosa pine, scar date 1681.

1

Cultural Peels



Dead ponderosa pine, scar not dated

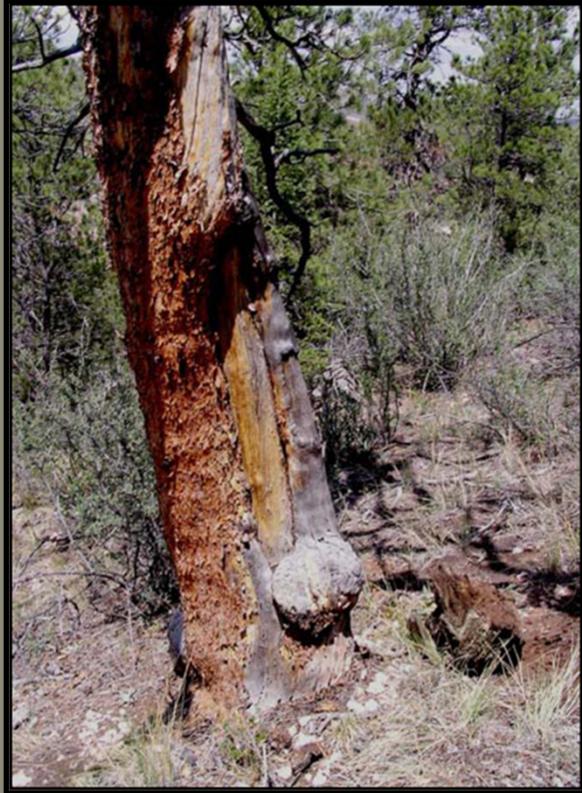
3

Characteristics of Culturally Peeled Trees

- Trees older than 200 years
- Scars on mid-trunk, do not reach ground level
- Scar diamond (ovate) or square-shaped
- Axe or hatchet marks may be visible on more recent peels
- Older peels may be mostly healed over
- Ponderosa pine and Engelmann spruce are best known; other species may be peeled, too.

A **Culturally Modified Tree**, or **CMT**, is a term used to describe trees that have been modified or scarred by humans either prehistorically or historically. Modifications include bark/cambium removal, trail blazes, territorial or boundary markers (i.e. witness trees), deliberately bent limbs or trunks (directional, territorial, ceremonial, etc.), delimiting, and the use of a living tree as a structural element (i.e. a fence post, support for a wickiup or platform, etc.).

Culturally Peeled Trees are a specific type of CMT. The term is used to describe the mostly pre-preservation practice by aboriginal or native people of “peeling,” or removing, the bark/cambium layer of a tree for a variety of procurement and symbolic purposes. The bark peel results in a very distinctive scar and heal-over which is distinguishable from other natural and human-caused injuries to the tree. Using tree-ring analysis, these scars can be crossdated , providing us with an invaluable record of the past including very precise dates –even seasonality --about when people were present on the land.



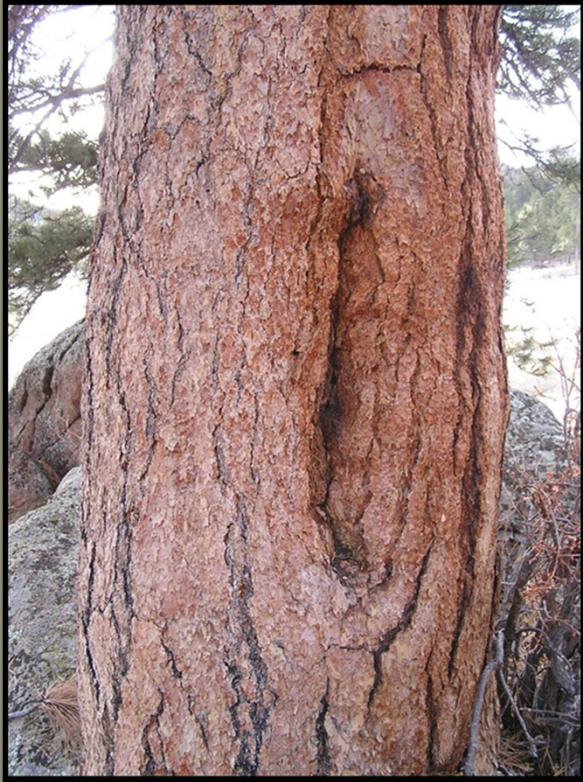
Ponderosa pine, scar date 1681

5



Engelmann spruce, scar not dated

7



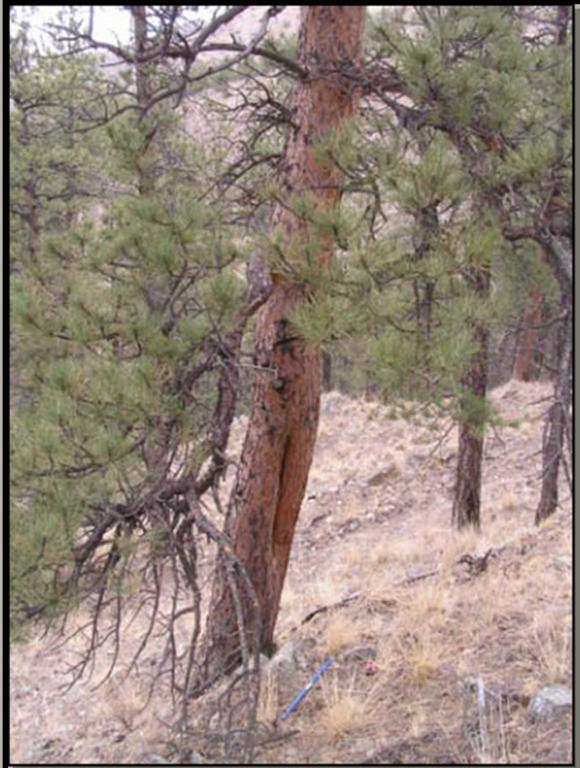
Ponderosa pine, scar date 1635

8



Ponderosa pine, scar not dated

6



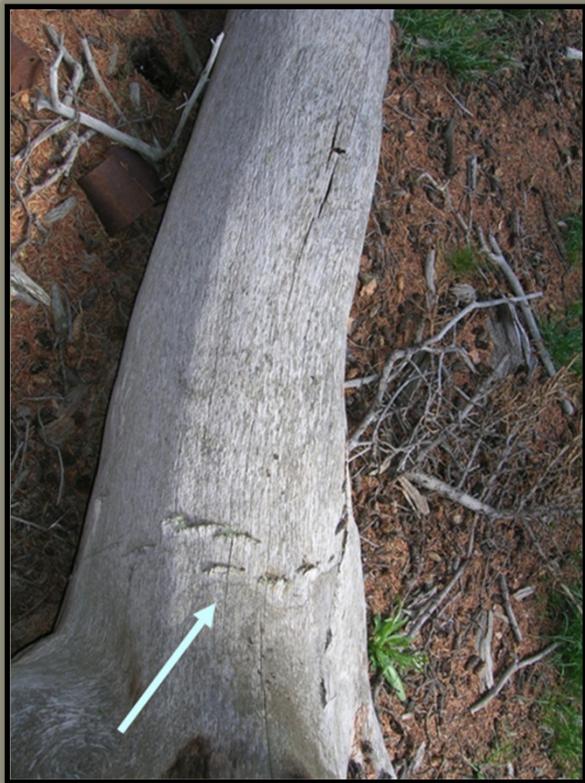
Dead ponderosa pine, scar date 1794.

9



**Older peels may be mostly healed over,
sample hit rot, dates to before 1784.**

11



Dead spruce lying on ground, hatchet marks are visible above the tree base

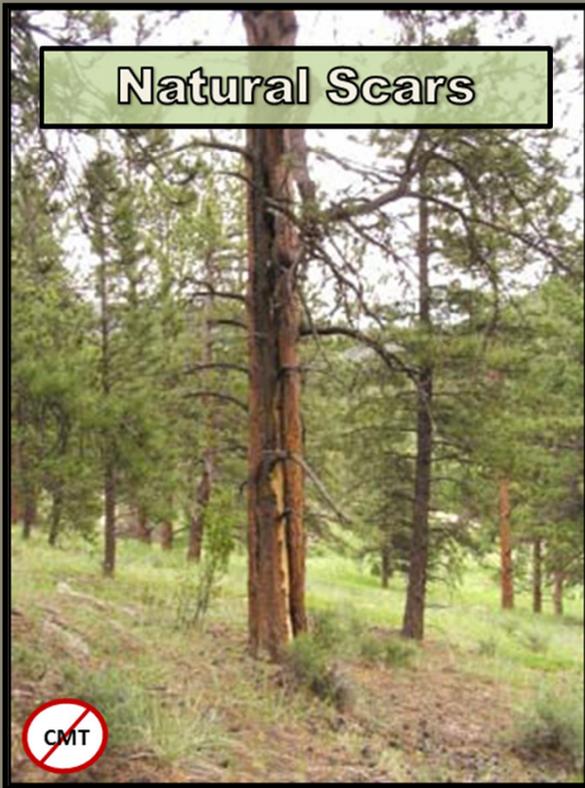
12



Dead ponderosa with scar and spruce with hatchet marks at top and bottom

10

Natural Scars



Lightning scars—often spiral up into the crown

13



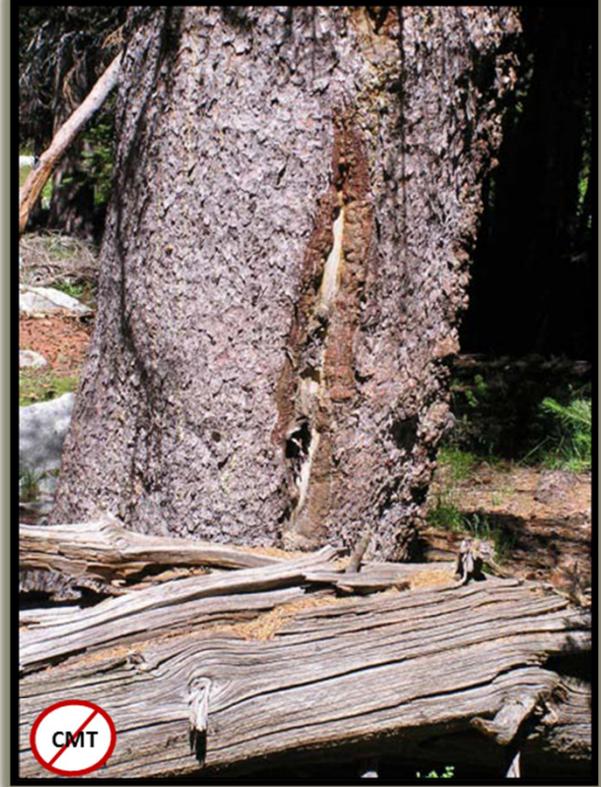
Fire scars—more or less triangular in shape

15



Fire scars—more common at lower elevations.

16



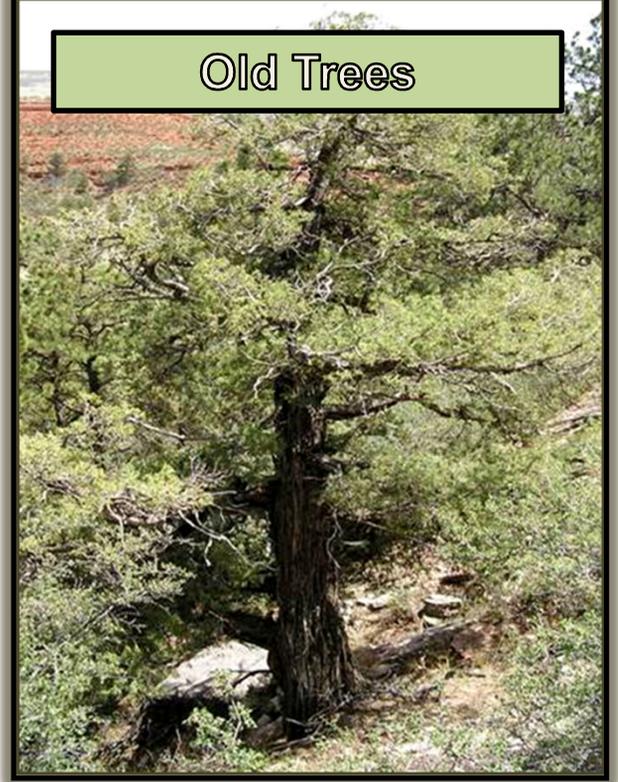
Felling scars—caused when a falling log scrapes a nearby tree

14



Fire scars—may be any height, but usually go to the ground

17



Juniper, inside date 1437

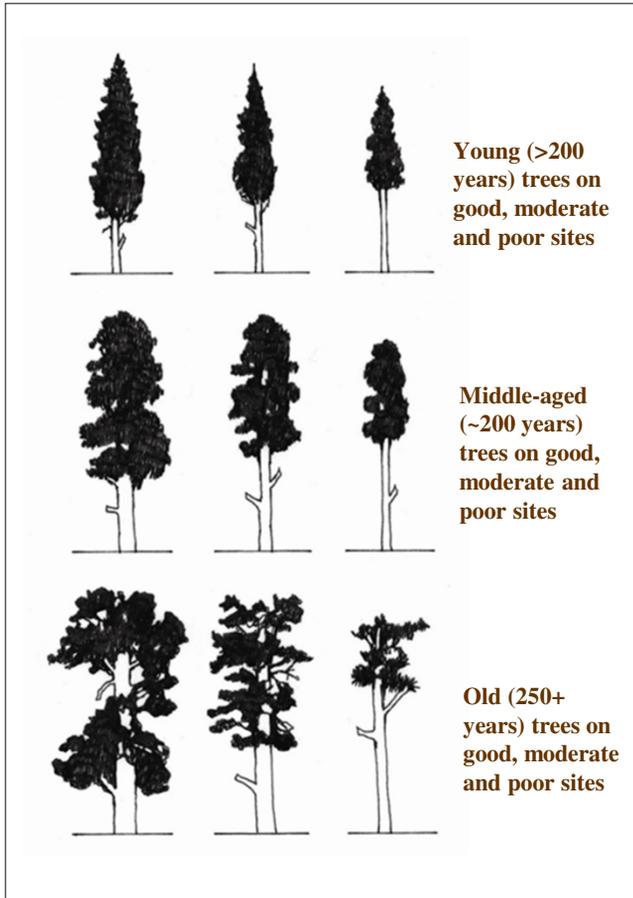
19

Old Trees

- Old trees are not always big trees
- Old trees tend to have large branches and open crowns.
- Old trees have flat “bonsai” tops or dead tops while young trees have pointed tops.
- Old trees often have scars from fire or lightning.
- Ponderosa pine, Douglas-fir, rocky mtn. juniper, Engelmann spruce, limber pine, bristlecone pine may live 500+ years; lodgepole pine & subalpine fir live 200-400 years; aspen & cottonwoods rarely live 200 years



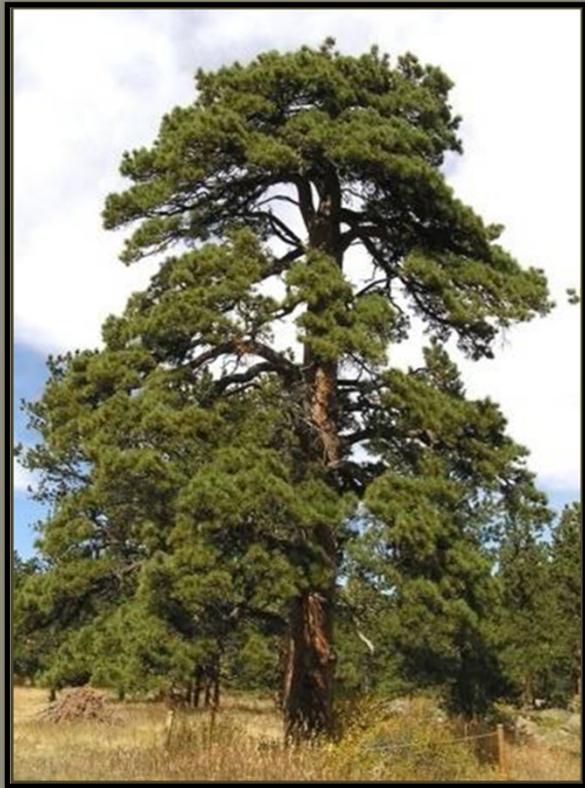
Porcupine—irregular, near ground or branch, can have multiple scars



21

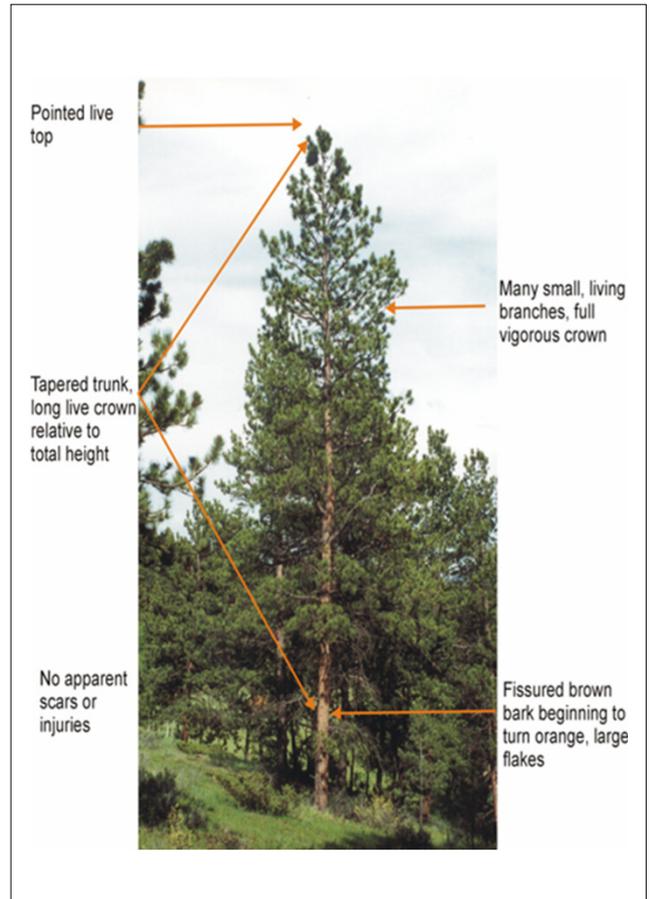


23

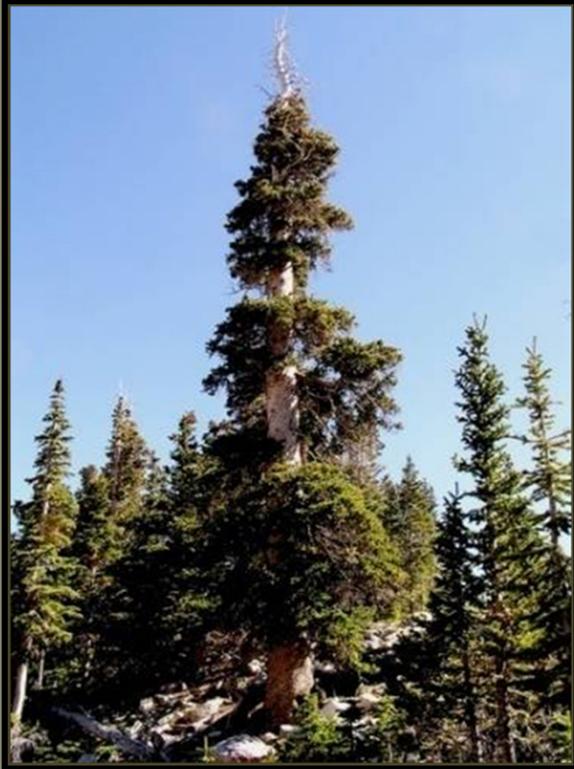


Ponderosa pine, pith 1321. Good site

24

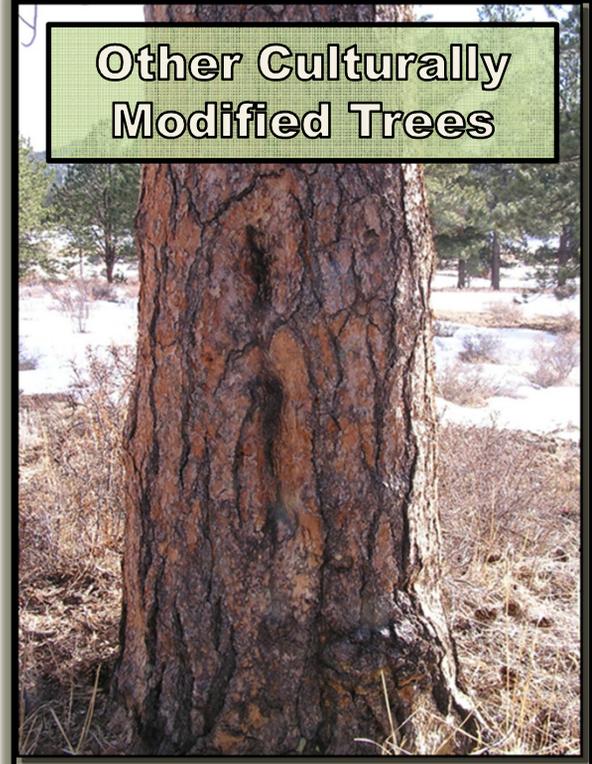


22



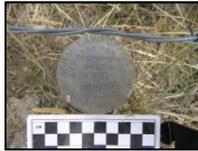
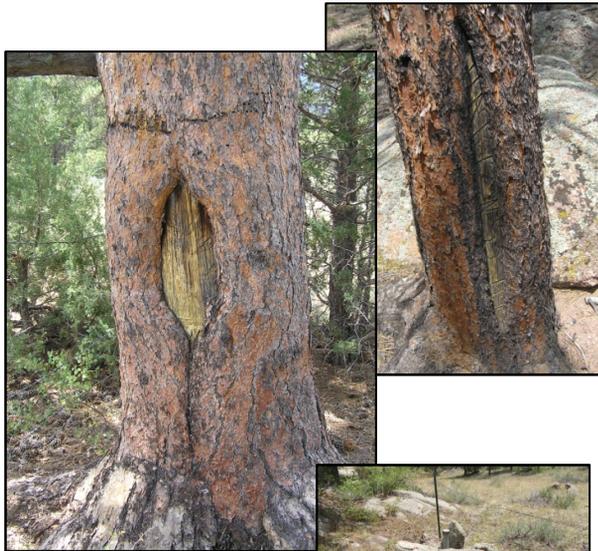
Spruce, pith 1501

25



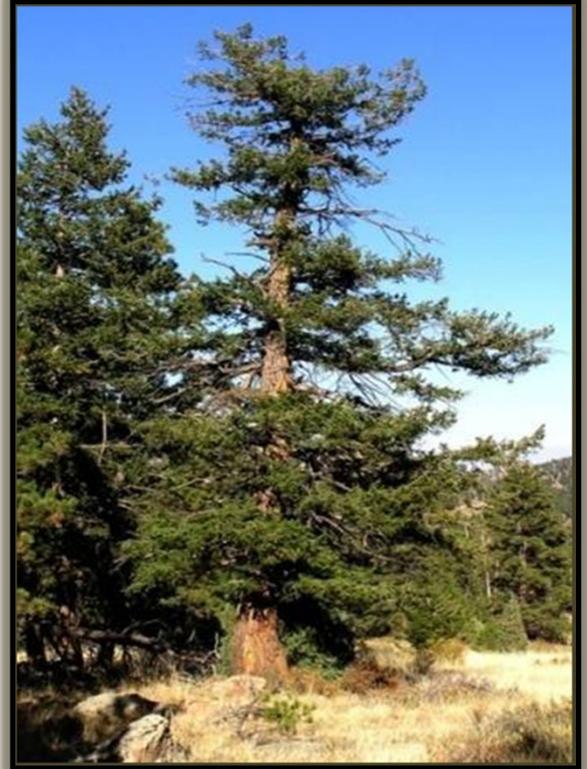
**Trail blaze or boundary marker? Scars
date, 1874**

27



U.S. GLO Survey marker, two bearing trees with PLSS (Cadastral) data and rock mound.

28



Douglas-fir, pith 1474

26



Deliberately bent ponderosa pine, a possible platform?

Sample CMT Field Data Collection Sheet
(get Photos and Coordinates at minimum)

CMT Number: _____ Date: _____

Crew: _____ Species: _____

Tree Condition (L, D, Other) _____

Slope: _____ Aspect: _____

Photo #'s: _____ Scar Drawing: _____

Landowner _____

Waypoint/GPS # _____

Zone: _____ UTM: _____

Northing _____ mN

Easting _____ mE

Elevation _____ ft/m

Measurements (cm/mm):

dbh: _____

width of scar: _____

length of scar: _____

ground to scar base: _____

length of cut marks: _____

notes on cut marks: _____

Additional Notes: _____

(see back for more details)

Sample CMT Field Data Collection Sheet (Cont'd)

Tree Condition: Living (L), Dead (D), Other
dbh: diameter at breast height

Width of scar: horizontal maximum width of scar

Length of scar: vertical maximum length of scar

Ground to scar base: vertical distance from above roots to base of scar

Cut marks: cut marks or other scars indicating a human-caused injury. Measure length of cut mark.

Additional notes such as bark present/no on sample, # of breaks in core sample, rot, other observed anomalies, etc. aid in analysis and in identifying mislabeled samples in the lab.

Other basic data includes:

Sample Type-core from increment borer (I.B.); core from archaeological borer (A.B.), cross-section (X); wedge (W), remnant (R), etc.

Side (a, b, c, & d)-see diagram on the following page; if more than one sample is taken from a side, include a sequential number. .

Outermost Ring (OR) Code—Note the OR characteristics of a sample to aid in accurate dating:

Bark present (“**B**”)

Beetle Galleries (“**G**”)

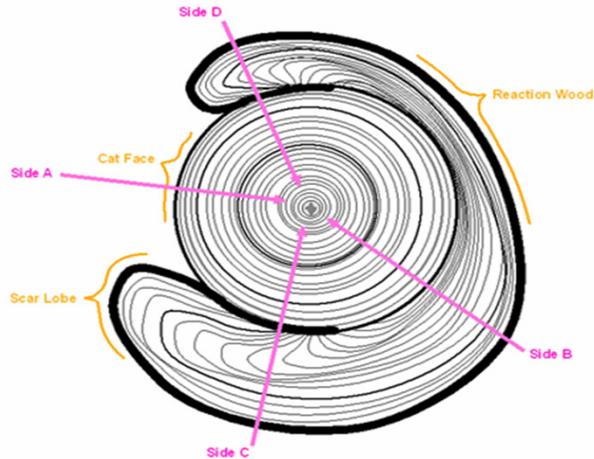
Patina (“**P**”)-this is the discoloration of wood where bark recently fell off or was removed.

Other (“**O**”),

None (“**No**”)



Unnaturally bent ponderosa pine



Obtaining Core Samples Using an Increment Borer

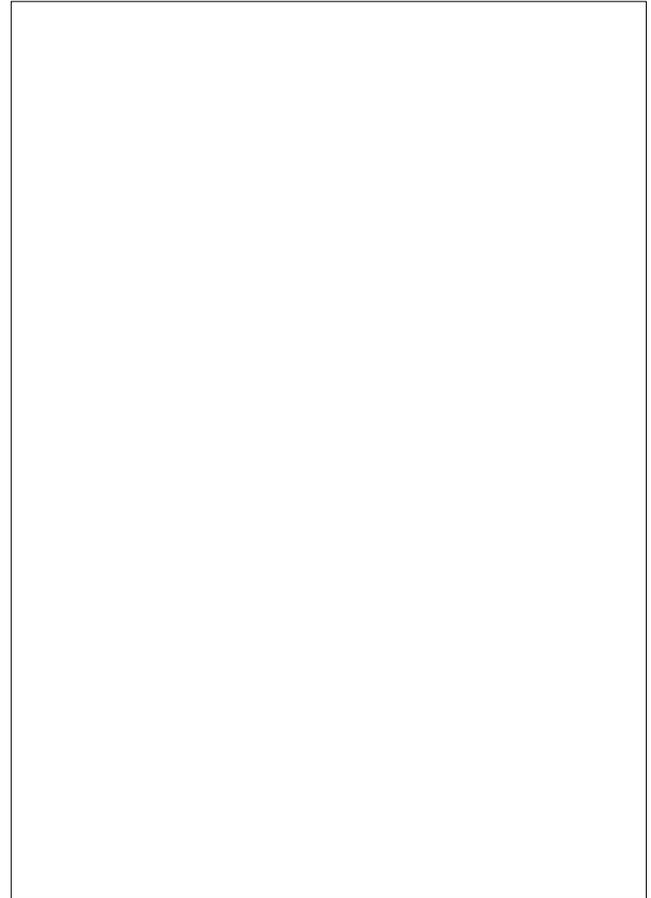
Reaction Wood – A physiological response to an event (e.g. injury) or the environment (e.g. slope) causing change in growth along the circumference of the tree.

Side a – Face of scar, generally not the most reliable sample due to degradation.

Side b – Backside of scar. A core sample should be taken from bark to pith (avoiding reaction wood) to establish an unbroken sequence of annual rings.

Side c – Right side of scar when facing scar. Attempt to capture the scar and as many rings as possible to pith.

Side d – Left side of scar when facing scar. Attempt to capture the scar and as many rings as possible to pith.



**WHAT TO DO IF YOU THINK YOU HAVE
FOUND A CULTURALLY MODIFIED TREE,
DEAD OR ALIVE:**

1. Take a picture and locate it on a map or GPS.
2. Call us!



**Contact Anyone in Your Friendly Heritage Program
Or**

**Marcy Reiser
USFS-ARFP
mreiser@fs.fed.us
970-295-6890**

**Laurie Huckaby
USFS-RMRS
lhuckaby@fs.fed.us
970-498-1298**