



GUIDELINES FOR COLLECTING TREE-RING SAMPLES

Revised 2/2001

Tree-ring samples are probably the single most important type of cultural material that can be recovered from sites in the Southwest. Tree-ring dating has become such an integral part of research in this area that archaeologists design much of their research with the assumption that they will be able to date construction events fairly precisely. This dating method also provides information about climate, stockpiling, remodeling, reuse of timbers, use of dead wood, and harvesting of green wood for construction.

Several species of wood in the Mesa Verde area are potentially datable, including pinyon, ponderosa pine, fir, and juniper. Deciduous species such as cottonwood, willow, and aspen generally are not datable, because the widths of their annual growth rings are too consistent from year to year.

Collecting

When wood or charcoal is found during excavation, it should be evaluated for its potential for tree-ring dating as soon as possible; a potentially datable sample contains a minimum of 30 to 40 rings. All potentially datable samples should be collected as promptly as possible after being exposed. If for some reason it is impossible to collect a sample soon after it is exposed, it should be covered with either damp soil or plastic. When left exposed to the air or direct sunlight, these samples deteriorate rapidly.

Great care should be taken in the exposure and handling of tree-ring samples. A potential sample should be exposed carefully with small hand tools. Pedestaling the sample during exposure can be helpful in collecting a specimen as intact as possible. In order to date a tree-ring sample to the year the tree died, some bark must be present on it. Thus, the exterior surface of the sample is of supreme importance in getting the most interpretable dating results.

Each sample should be wrapped securely with cotton string to hold it together as it dries. The optimum amount of string depends on the size and condition of the sample. The sample does not need to be completely encased in string to be stabilized, and completely encasing a sample in loose string serves no purpose. One effective method is to wrap string around the sample first lengthwise and then around the smaller dimension. The latter loops draw against the former loops and keep them taut. The ends of the string should be tied *in a bow*. Do not place the sample in any container or wrapping other than a *paper* bag. Use an unused paper bag when possible, and label it legibly. After the sample is bagged, it is a good idea to keep it in the shade (especially in hot, dry weather) until it can be transported to the lab.

If a long segment of a timber is found, it is not necessary to collect the entire specimen. A 10- to 20-cm-long sample that includes the most complete cross section is desirable. Charred specimens are more likely to be datable than uncharred specimens, owing primarily to the shrinkage and distortion that occurs during the desiccation of uncharred specimens. So in the case of partly burned logs, it is best to obtain a sample from a section that has been completely carbonized.

Multiple fragments from one specimen may be collected for any of the following reasons:

- to be sent all in one bag to the tree-ring lab for analysis (for example, if you have multiple fragments from one piece of wood and cannot tell which is the most complete)
- to be used as a vegetal sample (the sample does not need its own PL number; just put the fragments in a bag separate from the tree-ring sample and write "Vegetal—from PL X—tree-ring sample" on the bag)
- to be curated for future analysis (write that on the bag)

Recording

In most cases, tree-ring samples will be collected as point-located artifacts (if a sample is collected from a posthole, however, it may not be point located, because full provenience information will be recorded as part of the feature recording). To point locate a tree-ring sample that is larger than a nodule, an elevation should be taken beneath each end of the sample. The horizontal location of the sample should be recorded either by plotting it on an appropriate map or by recording the grid coordinates of both ends of the sample on the Point Location Catalog. The diameter of the sample should also be recorded on the catalog. An interpretation of the origin of the sample (e.g., roof support post, fuelwood, doorway lintel) is also helpful for evaluating any dates that may result.

Example:

POINT LOCATION CATALOG

Site Number 5MT5 Site Name Yellow Jacket Pueblo *Revised 2/2001*
 Study Unit Str. 1213 Vertical Fill

PL	PD	DESCRIPTION	ELEVATION	COMMENTS	DATE
1	170	Dendro 3 cm dia.	94.67 m	mapped on PD form	5-17-96
2	183	Dendro 6 cm dia.	94.02 m---- 94.13 m----	--1142.64N/836.10E --1142.58N/836.15E	5-21-96
3	191	Dendro 3.5 cm dia.	93.84 m	mapped on PD form	5-24-96
4	191	Dendro 4 cm dia.	93.80 m	1143.50N/836.01E	5-26-96