CONVERTING TREES TO BUILDING MATERIALS

FOREST STEWARDSHIP MANAGEMENT NOTE #23

INTRODUCTION

Having a source of wood for use around the farm or home is high on the list of reasons many people own woodland. Firewood is the principal wood product utilized by most woodland owners (FSMN #19), but many are also interested in posts for fencing, poles for building, and dimensioned lumber for all manner of projects. Using your own wood can save money and be a source of recreation and pride.

Much information is available from agencies and in libraries on all aspects of home wood use, from harvesting trees to wood finishing. This Note summarizes basic considerations for the various stages and types of home wood use and provides a guide to further sources of information.

WOOD PROPERTIES

The wood of different tree species varies greatly in its physical and chemical properties, so the first consideration when planning a project that uses wood is to select tree species that have suitable properties for the particular use. Wood properties to consider include strength, hardness, flexibility, weight, shrinkage, grain type, color, decay resistance, workability, finishing properties, and others.

The Wood Handbook (#8) is the standard reference on wood properties from which most other publications draw their information. Good decay resistance is a commonly needed property, and many publications are available on this topic (#1,3,4,7-10,16,17,21). Several good publications are also available that explain the subtleties of selecting the best wood for building projects (#1,9-11,17,19).

TIMBER HARVESTING

Once you know the species of wood you need, the next step is to determine the availability of suitable trees in your woodland (FSMN #15). If the needed trees are present, you should then select the timber harvesting system (FSMN #17) that will do most to help you achieve your overall goals (FSMN #34). Sometimes, the needed trees can be obtained as part of a timber stand improvement operation (FSMN #16).

Landowners who want to do their own tree harvesting, but who are not professional loggers, should carefully study relevant publications (#1,4,7,18,21). Many landowners are capable of cutting their own firewood but bringing in sawlogs is considerably more difficult and dangerous. Logging is the most dangerous occupation, and it requires specialized equipment and great skill to de done safely.

Perhaps the best way for most landowners to obtain logs from their woods for personal use is to have a logger cut and deliver them as part of a larger timber sale (FSMN #18). Where a timber sale is not needed, loggers can often be hired to do the necessary work on the basis of wood volume delivered or time spent. In most cases, landowners will not need special insurance to hire a logger, but they should make sure the logger is properly insured (#13).

USING ROUNDWOOD

In many cases, landowners have a need for roundwood products such as firewood, fence posts, poles for pole-buildings or landscaping, or logs for cabins. In such cases, little processing is needed. However, removing the bark is usually a good idea to reduce insect boring and fungal decay. Bark can be readily peeled in spring and early summer, but can be very difficult to remove at other times of year. If decay resistance is required and naturally durable species are not available, home treatment with preservatives can be done (#16).

OBTAINING DIMENSIONED LUMBER

In cases where dimensioned lumber or flattened logs are needed, landowners have three basic options. First, logs can be hauled to a stationary sawmill. Commercial, stationary mills are fast, and they can often do special types of planing, but hauling logs can be expensive. Second, logs can be processed on the property by a sawyer with a portable mill. Such mills are now quite common and do an excellent job, but they are slower than powerful stationary mills.

Another advantage of portable mills is that most models cut a very thin kerf, so much more wood can be sawn from a log than with large circular saws. Third, landowners can purchase chainsaw accessories that allow them to do their own milling. Chainsaw mills can be operated virtually anywhere, but they are very slow, stressful to operate, and wasteful of wood.

USING GREEN WOOD

For uses that require fine joinery or maximum strength from the start, wood should be fairly dry (see below). However, freshly sawn, green lumber is fine for many types of building construction (#17), some types of furniture making (#19), and other uses. However, because green wood will shrink in a complex way, users of green wood should be aware of the effects of this shrinkage and the ways to compensate for it (#17).

DRYING WOOD

As a rule-of-thumb, it takes about a year per inch of thickness for a board to stop shrinking and be considered "air dry". During the drying period, boards must be properly stacked or they will tend to warp and crack (#1,5,10,12,15). When dry lumber is needed sooner than air drying allows, commercial kilns can dry lumber within a few weeks (#14). For landowners who anticipate an ongoing need to dry lumber, designs are available for building small scale solar kilns (#5,15,20,22).

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