

A black silhouette of a tree with several branches. One branch on the right side is broken, with sharp, jagged edges indicating a recent break. The text 'Tree Repair' is positioned to the right of the main trunk.

Tree Repair

As the Nation's principal conservation agency, the Department of the Interior has basic responsibilities for water, fish, wildlife, mineral, land, park, and recreational resources. Indian and Territorial affairs are other major concerns of America's "Department of Natural Resources." The Department works to assure the wisest choice in managing all of our resources so each will make its full contribution to a better United States—now and in the future.

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Tree Repair

Conventional pruning, planned maintenance, and the regular training of trees and shrubs have been the subject of numerous articles through the years. However, it is the unplanned pruning—the correction of accidents—that must take precedence in some of our national park areas. It is not our intent to encourage pruning of all damaged trees in the National Park System, for this philosophy would not account for “normal or natural” pruning as a dynamic part of the park ecosystem. The purpose of this paper is to treat emergency situations in which prompt pruning promotes safety or aids in the maintenance of endangered or horticulturally important species.

For regular pruning maintenance, the season of the year and the type of plant are quite important for optimal results; however, with emergency pruning, the chief factor in determining success is the promptness of treatment. For example, a large piece of bark that accidentally has been knocked from a tree can be positioned back in place and growth resumed if the corrective action is taken quickly enough. Prompt care of injured trees and shrubs can often eliminate unsightly disfigurements and will generally prolong the life of the injured tree.

Branches broken either by storms or human activities present the greatest need for emergency pruning in the national parks. If the broken portion is part of a large branch, merely cut it back to the nearest crotch, making the cut as close as possible without weakening the adjoining branch. By making a close cut, and therefore leaving no stub, the callous heals over the injury much faster and there is less danger of decay-causing pathogens gaining entrance. If the injured portion is a main structural branch, it should be cut as close to the trunk as possible. Whenever there is danger of stripping the bark downward by the weight of the branch, cut the branch back to a short stub and then remove the stub (Fig. 1). Remember, the first cut must be a protective one on the bottom of the branch to prevent stripping of the bark down the trunk.

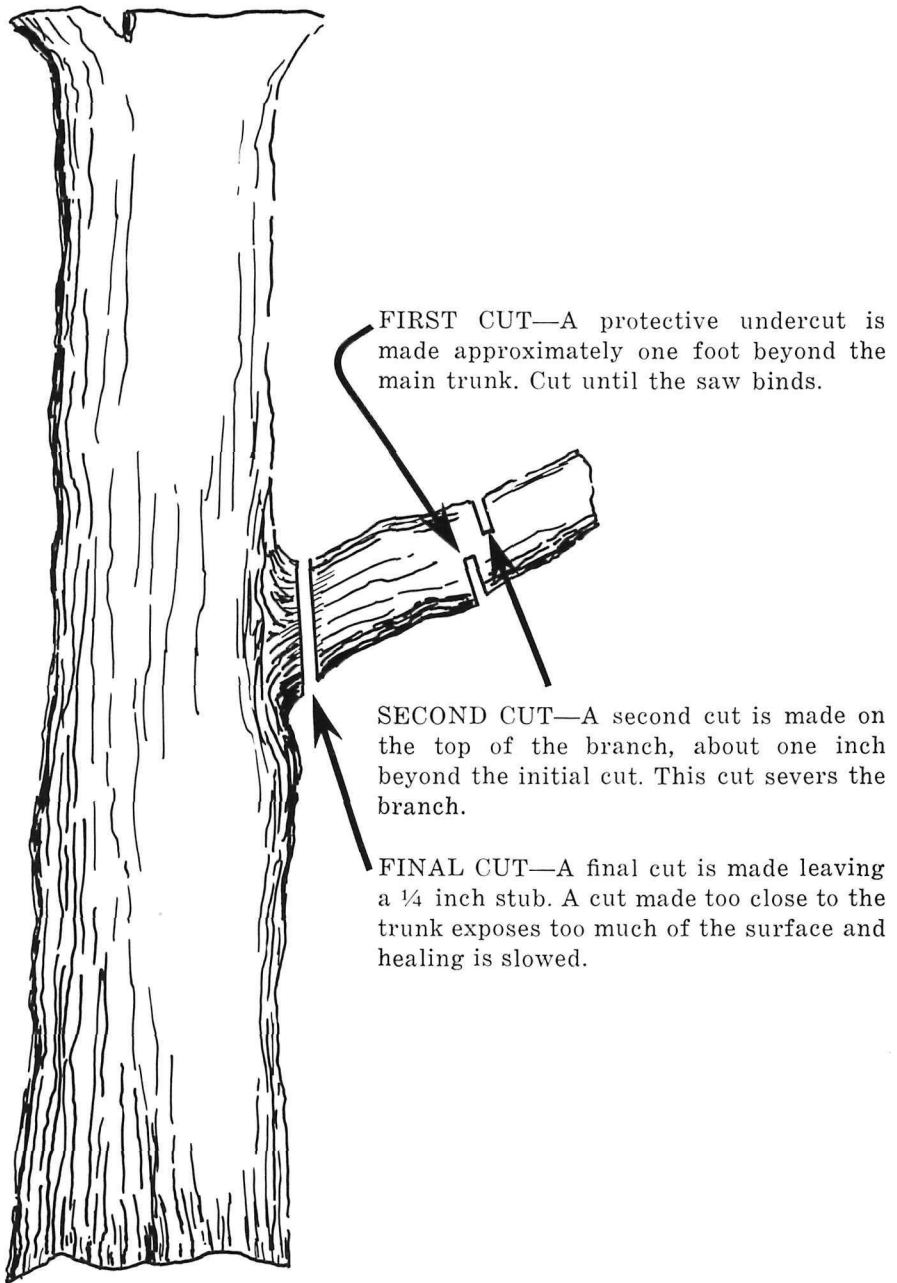


FIGURE 1. *Pruning cuts for large branch removal.*

If the bark is already stripped, remove all ragged edges with a heavy, sharp knife. Do this by shaping the wound into a narrow, vertical ellipse by cutting down to the clean, undamaged wood (Fig. 2). This promotes healing. Also, to prevent the entry of decay-forming organisms, some workers advocate painting the wound. In general, small pruning cuts (less than one inch in diameter) on deciduous trees do not require painting of the wound, while large cuts are usually so treated. The wounds of many evergreens are sealed with the natural gums and resins present and oftentimes are not painted. Even if painting is not necessary, as some suggest, the paint tends to camouflage the injury and this fact alone may merit its use. If you do paint the wound, first swab the wound and edges of the bark with alcohol or coat it with shellac. When this coat dries, cover the entire wound, as well as the edges, with a commercial tree-wound dressing. If the commercial dressing is not available, coat with an oil base house paint or an asphalt varnish. Most small wounds will completely heal in 2-3 years, and the paints mentioned should provide an adequate seal for that time; however, some of the largest wounds that heal much more slowly will require additional coats of paint.

Although stripped bark, as described above, is usually the result of broken branches tearing the bark downward, automobiles often damage trees in a similar manner except the wounds are generally wider. The same corrective process used for stripped bark is employed. On a smaller scale, lawn mowers are also responsible for this type of injury.

In particularly severe winters, many trees suffer from bark splitting and peeling. It is especially noticeable on unshaded tree trunks where there may be large fluctuations in temperature within the bark, and then the damage usually occurs on the side of the tree receiving direct sunlight. In caring for this problem, once again cut the bark to the healthy, undamaged wood that is still firmly attached to the tree and paint in the prescribed manner.

Damage by lightning, though not common, does occur with some regularity on certain exposed locations, i.e., on hilltops and exposed single trees. It usually is not possible to determine how badly lightning has damaged a tree for about a year after it is struck, but treatment should proceed as soon as damage can be assessed. In this type injury, the bark is usually torn in one or more narrow strips from the treetop to the ground. These injuries



FIGURE 2A. *Represents an incorrect pruning cut that resulted in the stripping of the bark, leaving a jagged, deep wound.*



FIGURE 2B. *Represents the necessary shaping of the wound to allow continuous drainage and rapid healing.*

are treated in the usual manner—working as high as conditions will permit. Take care to remove all shattered and hanging limbs for safety reasons.

Burned branches occur more often as greater numbers of people enjoy camping and other outdoor activities. Campfires frequently cause considerable damage when there are low-hanging branches. The injuries from any one year may appear only minor, but they accumulate and may haunt the park manager in the future in the form of weakened or broken branches. There is no cure for this injury, but the injured portion should be cut off and treated as broken branches.

In areas where there are high winds, trees may be partly or wholly uprooted. First, it is necessary to cover the exposed roots with materials such as burlap, hay, mud, etc., to retard drying. After the means are available to return the tree to its original position, cut away the shattered roots and treat them as if they were pruned branches. Once in place, install the guide wires (at least three) to hold the tree in place until the root system regenerates. Position the wires about two-thirds of the way to the top of the tree so that adequate support will be maintained. Protect the bark by covering the wire with a piece of garden hose and by using a loose loop on the tree trunk. The supporting wires should never restrict normal tree growth. Insure adequate moisture, maintain high fertility levels, and in 1 or 2 years the wires usually may be removed.

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In conclusion, one should always consider the following safety points:

1. Get help from a professional tree surgeon when large and/or important trees are damaged;
2. Never climb to a height in a tree that you do not feel confident nor carry your tools while you are climbing;
3. Always have a helper to work with you;
4. Always beware of power lines that may have fallen into an injured tree; and
5. Review the Ecological Services Bulletin entitled *Rope, Knots and Climbing* (1938). (Other information on pruning can be found in Tree Preservation Bulletin number 344.)

