

## 10. APPLE TREE AND SOFT MAST SHRUB MANAGEMENT

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Wild apple trees, along with many soft mast shrubs (hawthorn, chokecherry, dogwood, wild raisin, mountain ash, and so on) can be found scattered throughout the Vermont landscape. They provide an important source of food and cover for many species of wildlife, including white-tailed deer, ruffed grouse, snowshoe hare, cottontail rabbit, and gray squirrels. Apples or apple seeds have also been found in the stomachs of fox, fisher, porcupine, bobcat, and red squirrel. Apple trees also provide good nesting habitat for many songbirds, including bluebirds, flycatchers, robins, and orioles.

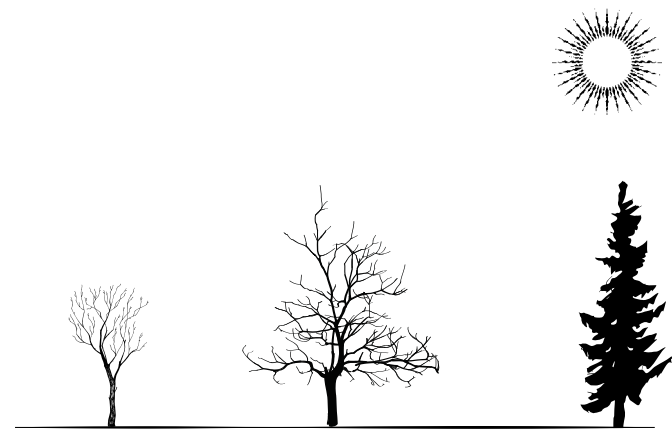
While only four species of crabapples are native to North America, none are apparently native to Vermont. Regardless, this nonnative tree is not invasive and is considered an important crop and wildlife tree. Vermont is fortunate to have an abundance of wild apple trees growing in young forests and abandoned fields. Yet, many are being lost to succession, disease, and lack of management.

Some of Vermont's wild apple trees were planted by early settlers while others have grown from seeds deposited by birds and mammals including domesticated livestock. They normally become established in clearings or on field edges, but as forests grow these trees are crowded by shrubs and shaded by other mature trees. Prolonged periods of crowding and shading will cause a decline in the vigor of apple trees, eventually leading to death and loss of an important food source for wildlife.

You can improve life span, vigor, and yield of wild apple trees and other soft mast shrubs, with some simple techniques that are commonly used by foresters, wildlife biologists, and orchardists. The most effective way to improve the productivity of apple trees and soft mast shrubs is to provide direct sunlight. To increase sunlight, cut the surrounding trees and shrubs that are competing for nutrients, water, space, and sunlight. This process of "release" removes surrounding competition and improves the crop tree or shrub's vigor and production ability.



**Figure 10.1** Before release and pruning.



**Figure 10.2** After release and pruning.

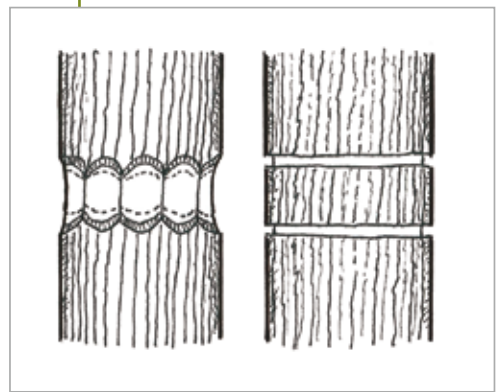
When selecting trees for release, you should consider many factors. If you choose one or two isolated trees to release, it may provide a potential food source but may have limited additional benefits. But if you select an old orchard or areas where there are numerous trees together, this will provide ample opportunities for cross pollination and early successional habitat.

When selecting trees for release, you should choose the healthiest most vigorous stems, as they have the best chance for survival. Remove any competition that is growing up into the tree, and all other stems that are growing next to or within the drip line of the apple tree's canopy (see Figures 10-1 and 10-2). With direct sunlight being the key factor to successful apple tree enhancement, release may include the removal of large trees outside of the drip line. Focus of sunlight release should be orientated to obtain the most daytime sun. Therefore release should focus on removal of competition on the south, east and western sides of the apple tree. To increase the use and value of the tree, try and leave cover on the north side of the tree. You can also girdle trees as an alternative to complete tree removal.

### GIRDLING TREES

Girdling is a management technique that involves removing a tree's bark and cambium layer, disrupting the flow of nutrients from the roots to the crown. Girdling may be easier and safer on large trees and can be beneficial to wildlife because a snag (dead/dying tree) can provide feeding, nesting and roosting sites for a variety of wildlife. Here are some tips:

- Use a chainsaw or ax to cut two encircling cuts through the bark and cambium layer into the wood to a depth of 2 inches.
- The cut band between the encircling cuts should be at least 2 inches wide. *Note:* species such as white pine may require the removal of more wood, as pitch can act as a sealant to heal the wound and allow the girdled tree to survive. See Figures 10-3 and 10-4 for details.

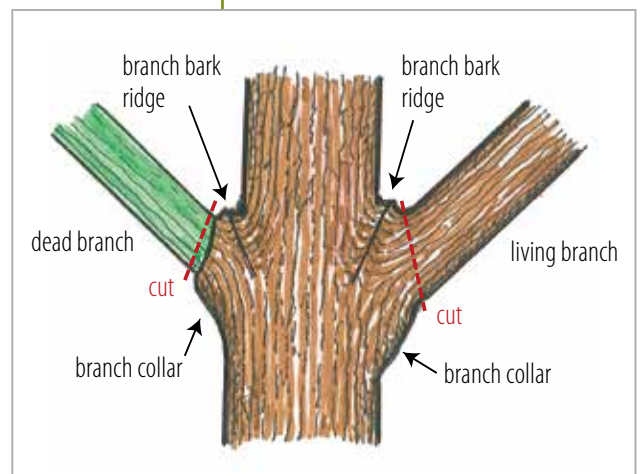


**Figures 10.3 and 10.4**  
Common girdling techniques.

### PRUNING TREES

Once a tree has been properly released from the surrounding sunlight competition, pruning is the next step to successful reclamation of these wild apple trees. Pruning should be completed in late winter (December through March) or any time before bud break, while the tree is dormant. When setting up for pruning, before a cut is made, look for the "branch collar," which is a ring of tissue around the base of the branch (see Figure 10-5). Make cuts here and not flush with the main stem to ensure that proper healing of the cut can occur.

The first pruning should focus on removing all the diseased and dead limbs from the apple tree. Cut these off with a pruning saw or shears as close to the living material as possible. Cuts should be made with sharp tools to avoid nicks, stubs, tears, and splits, which can leave the tree vulnerable to insects and disease. Be sure to disinfect pruning tools before starting another tree to avoid transferring viruses or fungi. A simple solution of 1:10 bleach to water or rubbing alcohol spray, or flaming tools can be also be effective. *Note:* Bleach can be corrosive to some metals.



**Figure 10.5**  
Before pruning a limb, look for the "branch collar" and make your cut here.

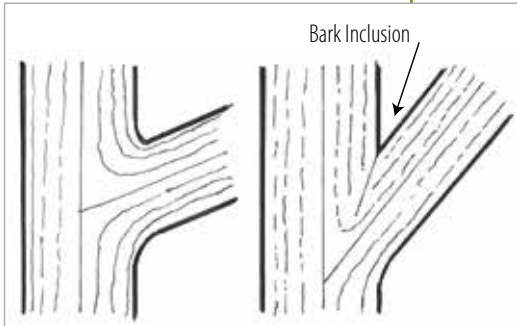
Once you've removed dead and dying material, pruning efforts should focus on removing limbs that are crowding out the canopy of the apple tree. In most cases, the removal of one to three limbs is all that is needed to allow sunlight into the remaining canopy. As a rule of thumb, removal should be less than one-third of the overall canopy, as excess removal over stimulates shoot growth. It's always best to spread out large pruning jobs across a few years.

You should also remove branches that cross or rub to prevent areas for insects or disease to take hold. When pruning, be sure to select strong branches with wide crotch angles (near 90 degrees) to the main stem. Limbs with narrow crotch angles (less than 90 degrees) are weak and tend to break under the weight of a crop or heavy snow loads (see Figure 10-6).

Also, remove any upright growing shoots or "water sprouts." These shoots are excessively vigorous and rarely fruit, and often occur in great numbers after "topping" (pruning large upright, or vertical branches) or "tipping" (cutting lateral branches between nodes). Minimize tipping and topping by working with the existing form of the tree rather than trying to shape the tree into the way you think it should look. Remember, trees do not have to

be in perfect form to provide fruit for wildlife.

Finally, go slow. These trees are wild, may have been neglected for years, or never tended to by humans at all. Pruning apple trees too aggressively or exposing them to sunlight too quickly can shock the tree and result in poor health or death. With proper maintenance, wild apple trees can be a productive link in the food chain that will lead to years of good wildlife habitat on your land.



**Figure 10.6**  
Limbs with narrow crotch angles are weak and should be pruned.



## RESOURCES

Northeast Habitat Technical Committee. *Managing Grasslands, Shrublands, and Young Forest Habitats for Wildlife: A Guide for the Northeast*.

[http://www.wildlife.state.nh.us/Wildlife/Northeast\\_Hab\\_Mgt\\_Guide.htm](http://www.wildlife.state.nh.us/Wildlife/Northeast_Hab_Mgt_Guide.htm).