

Improve Your Forest by Cutting Fuelwood.

Wood has been a fuel source for generations of Islanders because it is available, cost-effective and efficient. While firewood has played an important role in the cultural and economic development of Prince Edward Island, over the years this harvest has also had many unintended but negative impacts on the forest in general and the shade tolerant hardwood species in particular. These impacts were caused by little or no pre-harvest planning, a lack of basic forest management knowledge, and continuous harvest pressure over many, many decades.

Today, higher oil costs combined with concerns over climate change have led many Islanders to re-examine firewood as a renewable and environmentally friendly heating option. However, in many cases, firewood is still being harvested by using practices that continue the negative impacts of earlier years. Yet with a little time, effort, and knowledge land owners can cut their firewood while improving the overall health and productivity of their forests and creating opportunities for new, higher value forest products.

The most desirable species for fuelwood are usually shade tolerant species such as sugar maple, yellow birch, and beech. Shade tolerance means they prefer to grow and renew themselves on the forest floor beneath deep forest shade. As a rule, they are not well suited to the more open and exposed conditions found in larger clearcuts. Clearcutting tends to benefit tree species that have a lower heat value, so each cut reduces the number of high value trees while promoting a stand mix with poorer species.

Many of these species have suffered from generations of poor cutting practices (hy-grading) or from introduced insects and diseases. These factors have had a major impact on the growth and form of these species by creating crooked stems, multiple trunks, excess branches or defects in the wood. This often limits their suitability for higher value products.

Yet the story is not all bad. The genes of earlier generation can still be found in today's trees. Selecting a harvest method which produces firewood while restoring forest health is easier to do than most people think and can have multiple benefits for the owner and the forest environment.

The first step to restoring forest health and producing firewood should be an assessment of the species composition, health and potential of your woodlot. Qualified private sector consultants can help you prepare a forest management plan tailored to your needs. This plan will recommend silvicultural strategies for each forest stand to help you realize a wide range of possibilities and goals for your land in an effective and practical fashion.

In most cases, firewood cutting and forest restoration can employ similar silvicultural systems and approaches. The intent is to produce a product in a manner which mimics natural disturbances such as fire or wind-throw and helps to reduce the impacts of previous harvests by improving the overall tree quality and species composition in the stand.

There are two central concepts which need to be addressed when harvesting firewood to improve your forest. The first one is ensuring that the best quality trees and species are left standing to provide seed for the next tree generation. By burning crooked or diseased trees, and keeping straight, well-formed individuals from the desired species you will place more emphasis on good genetics and help to shift the stand from a mixture of shade tolerant and intolerant species toward a mix better suited to a range of high end uses.

The second concept is to ensure that enough sunlight reaches the forest floor to encourage the growth of desirable, shade tolerant seedlings without providing too much light for species of lesser value. This will help to shift the stand over to more shade tolerant species in subsequent generations as the new seedlings grow and eventually become mature trees.

Shade also plays a critical role for species such as yellow birch. Large mature trees valued for hardwood logs or veneer can develop side branches if too much sunlight reaches the bark on their trunk. Branches form knots which dramatically lower the value of the wood for other products, so care must always be taken to limit the amount of sunlight reaching the tree trunks in thinnings and selection cuts. Other factors such as trail locations, wildlife conservation, tree marking and worker safety are also integral parts of the planning process.

The process of reversing past mistakes is not always easy or straight forward but with time, knowledge and patience land owners can make real progress in restoring forest health. Consumers can also help by asking how their wood was harvested and seeking fuelwood suppliers or land owners who use methods which enhance forest quality.

The Forest Enhancement Program (www.gov.pe.ca/forestry/FEP) cost-shares the development of forest management plans with land owners. Once the plan is in place, owners can access a wide range of funding and services to help them reach their forest goals. The Forests, Fish and Wildlife also publishes the *Woodland Notes* www.gov.pe.ca/forestry/notes series to help land owners understand a variety of forest management related topics.