



**Selective Logging**

**The Hidden Disaster of  
New York's Forest  
Economy**

**What Woodland Owners Should Know**

## Definitions

### Silviculture

The art and science of controlling the establishment, growth, composition, and health of forests and woodlands to meet the diverse needs of landowners and society on a sustainable basis. Silviculture is the unique science and technique, or tool that forestry offers in service to people.

### Sustainable Forest Management

The practice of meeting the forest resource needs and values of the present without compromising the similar capability of future generations.

### High-grading

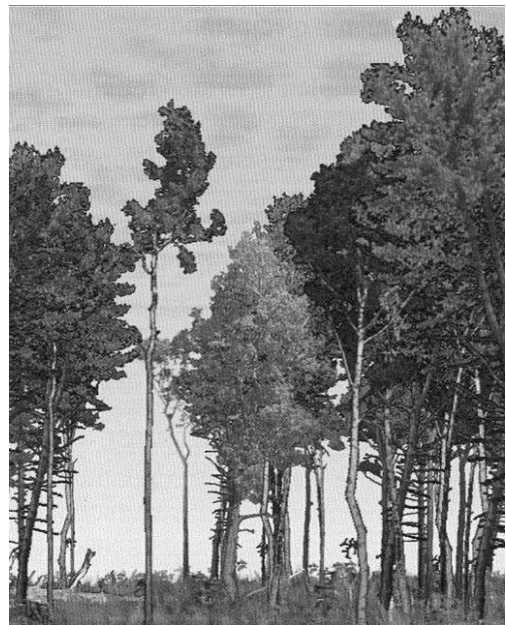
A timber harvest that removes the trees of commercial value, leaving small trees, as well as large ones of poor quality and of low-value species in the forest.

### Selective Logging

Any timber harvest that leaves a substantial number of trees. The term can refer to harvests that meet good silvicultural standards. It is more often used to describe high-grading where all of the most valuable trees are selectively cut – usually leaving a woodlot filled with poor quality trees and trees of non-commercial species.



**Before High-grading**



**After High-grading**

Selective logging in the form of high-grading is hard to recognize from a distance, yet it can significantly reduce timber productivity. The poor quality of New York's timber resource is a direct consequence of past high-grading. Forest owners, loggers, and mills are losing hundreds of millions of dollars in unrealized potential future income. This is why selective logging is the hidden disaster of the forest economy.

## **The Hidden Disaster of Selective Logging**

Most forest land in New York State is owned by families and individuals. Forests provide many benefits including wildlife habitat, watershed protection, beautiful scenery, and recreational opportunities. With careful management these woodlands can also grow high quality logs of valuable timber species including sugar maple, black cherry, red oak and yellow birch. The Department of Environmental Conservation reported that landowners received \$300,000,000 from selling timber in 2005. This income might have been double with better forest management, but timber is usually not an important ownership objective. However, landowners will usually sell timber if and when they have an opportunity. Most people believe timber harvesting is sustainable forest management as long as the trees are selectively cut.

Unfortunately, timber productivity in most woodlots has suffered significantly from selective logging. Selectively cutting all of the most valuable trees and leaving the rest is also called “high-grading”. Instead of sustainable forestry, this is actually one of the most destructive ways to harvest timber. Most woodlots are only growing one quarter to one tenth of their potential because of past high-grading. According to one forestry expert, millions of acres in the eastern hardwood region have been so degraded that there is no timber left to manage. Although we are surrounded by some of the most productive forests in the world, most of the timber products we use are imported from other regions and countries.

High-grading is very common because, in the short run, it generates the most income for the landowner, the logger, and the mill. The quick money from high-grading is a temptation few can resist. Cutting all the best trees and nothing else leaves low value trees that are unlikely to improve much in the future, and they are also the trees that will provide the seed source for the next generation of trees. High-grading may have long term ecological consequences as a result.

### **The Solution is Silviculture**

The solution to high-grading is the use of silviculture to leave a well stocked residual stand of desirable trees after every logging operation. This can be achieved if the landowner hires a well qualified professional forester to mark the trees that should be cut without high-grading the stand. It is important to make sure that the forester understands and supports this objective. Silviculture is an investment in the future. By hiring a forester and leaving a residual stand of desirable trees, the landowner is making an investment in the woodlot which will pay off the next time timber is sold.

**“Millions of acres of degraded stands in the eastern hardwood region have little left to manage”**

**Wayne Clatterbuck  
Associate Professor  
University of Tennessee**

## The Long History of Forest Exploitation in NYS

Forests in New York State have always been used as a source of wood. However, by 1870 only 22% of the state remained forested. Public concern about protecting the remaining forest land played an important role in the introduction of forestry and silviculture in the United States. Advocates promised that forestry, as practiced in Europe, could ensure a sustainable supply of high quality timber while protecting other values such as watersheds and recreational use. New York State led the nation by creating the first state forests (1885) and establishing the first college of forestry (1898) in the United States at Cornell. Yet, more than a century after forestry and silviculture were introduced, privately owned woodlots are still cut without any silviculture. Most selective logging is focused on maximizing short term profit with no attempt to improve future timber quality or productivity - just as it was in the 1800's.

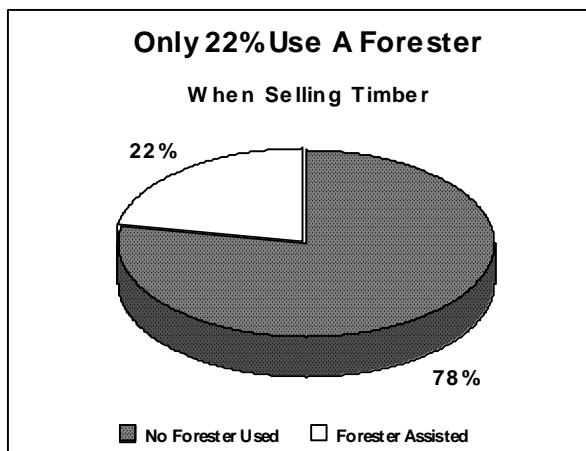
### Why Do Landowners Allow Exploitation?

Most forest owners do not use the services of a professional forester when they sell timber. This may be because timber management is not an important ownership objective, or a lack of appreciation for the value of silviculture. But money is probably the most important reason. Like most of us, landowners want to get the highest price possible for whatever they are selling. Why spend money to hire a forester if the timber buyer promises he or she will selectively cut the woodlot? Furthermore, when a sawmill or an independent logging contractor buys marked timber, they cannot pay top dollar if some of the lower value trees are marked for cutting, and some higher value trees are left unmarked for the next harvest cycle.

**“Unfortunately, many woodland owners are blinded by the short term income that high-grading can bring”**

**Charles Mowatt  
NYFOA member  
& woodlot owner**

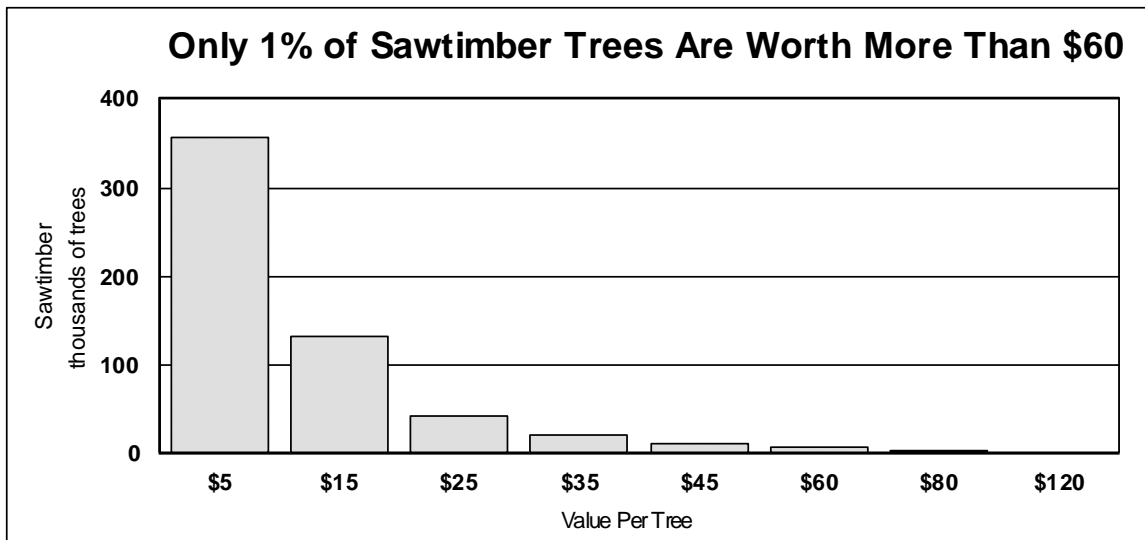
However, most loggers and sawmills are quite willing to bid on a marked timber sale. They understand that good silviculture means timber quality, value and productivity will improve in the future. The future financial health of the forest products industry depends on the quality and availability of the timber resource. In the long run, high-grading is an economic disaster for the timber industry.



Finally, landowners who have their trees marked by a forester may not realize that the woodlot could still be high-graded. Since foresters are not licensed in NYS, there is no legal definition. Anyone can identify themselves as a forester. Landowners should also recognize who the forester is working for. A forester who is paid by a sawmill does not work for the landowner.

## Consequences of Selective Cutting - Most Forest Trees Have Low Timber Value

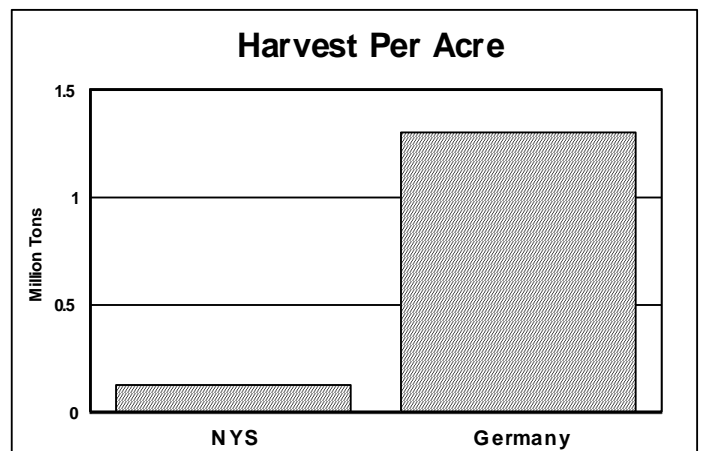
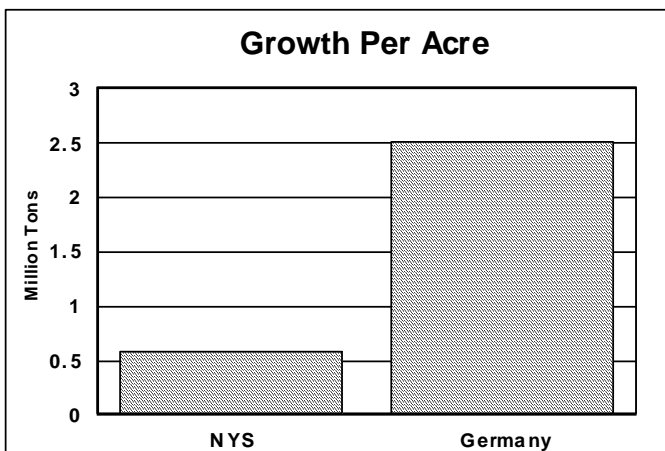
The results of decades of cutting all the best trees in woodlots across the state can be seen in forest statistics of New York State. A high percentage of sawtimber sized trees (trees over 11" diameter) are either cull, of low value species, or have poor log quality. The abundance of poor quality trees and low value species is reflected in the value of individual trees in the forest. The value of these trees can be calculated using timber prices reported by the Department of Environmental Conservation. There is a wide value range from one or two dollars per tree to one hundred or more dollars. However, large high value trees are very scarce – only 1% of all sawtimber size trees are worth more than \$60 each.



## Consequences of Selective Cutting – Forest Productivity is Low

Selective timber harvests to maximize short term income have devastated timber productivity in NYS. It is possible to get some idea of how much has been lost by comparing the forest productivity in Germany, where silviculture has been used for two centuries and in New York State where forests have been high-graded.

### Comparison of Forest Productivity



## **The High-grading Problem Can Be Solved**

Many forestry concerns, such as high property taxes, climate change, and invasive species, are difficult for an individual landowner to solve. But high-grading is a problem that landowners, with the help of professional foresters, can actually eliminate by using silviculture for sustainable forest management. Consider the following:

- That silviculture could increase the value of future timber harvests by improving tree quality, species composition and stocking levels.
- That silviculture could improve wildlife habitat by developing mast trees, creating snags and large woody debris, and protecting den trees.
- That silviculture could increase species diversity and improve the health and vigor of the forest.

## **Sustainable Timber Harvesting**

Most woodlots in New York State are capable of growing high value timber if they are properly managed. Timber is an important resource which provides income to landowners and helps support the economy. Well planned selective timber harvests can also improve other forest values such as wildlife habitat, recreational use, forest health, and species diversity. Silviculture is the key to sustainable management which includes:

- Maintaining species diversity and forest health.
- Removal of low value trees at the same time high value trees are harvested.
- Maintaining well stocked stands and protecting advanced regeneration.
- Retaining high quality future crop trees.
- Protecting watersheds from erosion
- Protecting rare plants & significant habitats.

Trees will eventually occupy any site that is left undisturbed for a period of time, and trees will re-grow after any exploitative timber harvest. But the fact that trees grow after high-grading is not proof of sustainable forest management.

## **Summary**

Woodland owners have many management options. For those who choose to harvest timber we encourage an approach that is based on the principles of sustainable forest management. Timber management should focus on leaving a well stocked residual stand of desirable trees which will provide species diversity and wildlife habitat as well as future timber crops. Good forestry practices – such as well located skid trails and landings to protect hydrologic features, and preventing the introduction of invasive plants – will help to maintain the ecological processes which are key to sustainable forest management. With wise stewardship woodland owners can ensure that forests remain productive for our children and grandchildren to enjoy.

**“The trees that are left behind after a timber harvest are more important than the trees that were cut”.**

**James Bulich  
NYFOA member  
& woodlot owner**

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