

Testimony by Kenneth Kane
Consulting Forester, Keith Horn Forestry, Inc.
representing the Society of American Foresters

Reforestation Problems on National Forests

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My name is Kenneth C. Kane. I am president of Keith Horn Forestry, Inc., Consulting Foresters, in Kane, PA. I have been practicing forestry full time on the Allegheny Plateau since 1983. I am also a native of Kane, Pennsylvania, a small community located at the eastern edge of the Allegheny National Forest. It was growing up in the Allegheny Plateau Region that motivated me to attend Penn State University and obtain my Bachelor of Science degree from Penn State's School of Forest Resources.

I am here today representing the Society of American Foresters (SAF), an organization of over 15,000 professional foresters in all segments of the profession, from consultant foresters like myself, to academics, scientific researchers, and federal, state, and local agency personnel. SAF members believe it is our responsibility as professionals to ensure the continued health and long-term sustainability of both public and privately owned forest resources for current and future generations. Over the last several decades, SAF has become increasingly concerned with the lack of action in federal forests that is needed to maintain and improve these forests and their associated resources. Foresters need to be able to apply the proven practices of silviculture, which at times can include timely human-induced reforestation, to ensure, over the long-run, that our forests are healthy and the objectives set for these forests can be met. I will include, for the record, SAF's position statement in this issue, titled Use of Silviculture to Achieve and Maintain Forest Health on Public Lands. It is difficult to meet the public's demands for these lands when foresters are prevented or restricted from practicing our profession. As the General Accountability Office Report outlines, reforestation has become a major problem on National Forest System lands. The backlog of reforestation can inhibit proper stewardship of our forests and can reduce the health and long-term viability of these forests.

Many well intentioned people ask if we should simply allow forests to regenerate on their own. In fact, most forests can regenerate successfully without human influence, However, when society expects (and legally requires) responsible stewardship of our forests and diverse values from these forests-- clean water and air, wildlife habitat, recreational opportunities, forest products, and scenic beauty, it is sometimes necessary to intervene. Human-induced or artificial reforestation is often needed to accelerate the growing process and move more quickly towards meeting the demands society places on forests. Human induced reforestation is also beneficial where there is an abundance of invasive species, wildlife such as deer, a real problem in northwest Pennsylvania, or other conditions, that would prohibit natural regeneration of the desired forest. Additionally if there is a lack of seed trees in the area, it may take years for natural regeneration to take hold, putting the soil at risk of erosion and putting the area at risk of invasive species.

Delayed or inadequate reforestation after catastrophic events, such as wildfires, hurricanes, blow downs, and ice storms, is of particular concern. In some cases it is extremely difficult to naturally reforest these areas to the desired species and composition in a timely manner and intervention is needed through forest management and reforestation practices. At times foresters need to remove a proportion of dead and dying trees in a disturbance area to provide access, remove safety hazards, or reduce the risk of insect infestations or fire danger the dead and dying trees can create. This kind of activity encourages forest regeneration.

I'd like to share a case example of the reforestation problem from the eastern US, in the Allegheny Plateau. The example demonstrates the need for timely reforestation in the Allegheny region, particularly after catastrophic events, to achieve the objectives set out for these areas and restore the desired species composition and forest structure. These problems are certainly not exclusive to the eastern US—similar issues are prevalent after wildfires in the west and south, blow-downs in the boundary waters, hurricanes on the east coast and after many other disturbances.

Extensive timber harvesting in the Allegheny region in the early 1900's coupled with a greatly reduced deer herd provided ideal conditions for the establishment of a new forest of shade intolerant hardwoods such as Black Cherry, White Ash, and Tulip Poplar, along with Red Oak and Maple. At the turn of the last century, these lands were of little value to timber companies and were sold to the federal government, forming the Allegheny National Forest. The first timber sale was conducted on the little Arnot watershed in 1927. I have attached to this testimony a pictorial sequence of the development of the forest as it moved from an early successional seedling to sapling stand, to a poletimber stand, to a light sawtimber stand to eventually in seventy years, a mature Allegheny hardwood sawtimber stand.

Unfortunately these beautiful forests do not stop changing once they are mature. Mature Allegheny Hardwood forests are very susceptible to wind throw as we experienced in 1985 with the series of tornadoes that crossed the region and again in 2003 with a combination of tornadoes and intense thunderstorms. The 2003 storm resulted in approximately 10,000 acres of downed trees.

These natural disturbances should create a scenario to regenerate the forest without human intervention-- Natural seedlings and a seedbank from the blow down trees, abundant light created from the disturbance, the same moist rich soil, and natural protection from the blow down. However, other influences on the landscape have greatly inhibited the capacity of the forest to naturally regenerate on its own.

First and foremost, the whitetail deer population has exploded. The herd that was estimated at only 400 animals in Pennsylvania in the early 20th century is now estimated at 1.6 million. The deer through over-browsing, have changed the species composition of the forest floor from diverse wild flowers, shrubs, and seedling trees to hayscented fern, beech brush, and striped maple, preventing the natural regeneration of desired species. The beech brush, fern, and striped maple eliminate other species desired for diversity and favorable stand structure.

Insects and diseases are also a factor precluding natural regeneration of this forest type. Although American Beech is a late successional forest species, an exotic disease known as the beech scale necrotic complex prevents the tree from occupying the upper canopy of the forest and providing valuable mast (food) for animals. The Hemlock woolly adelgid insect threatens the native Hemlock in a similar manner. These and other invasive species often preclude regeneration of desirable native species.

In order to overcome these hurdles and restore the forest to desirable species composition and structure, foresters must be able to employ modern science and professionally accepted techniques. In some areas, foresters need to be able to salvage a portion of the down timber to gain access to the forest or create conditions where shade intolerant species can grow. In some cases, herbicides may need to be used to control undesirable vegetation, invasive species, and promote species diversity. Deer exclosure fences can also be constructed to protect diverse early successional forests from deer and additional steps can be taken to work with wildlife agencies to bring deer populations into balance with the habitat. Fertilizers can also be used to enable regeneration to grow past the level of deer browse.

Action needs to be taken now to ensure the establishment and growth of regeneration in disturbance areas in northwest Pennsylvania and in many areas throughout the country. Forest policy, funding, and other factors that preclude timely reforestation are evident in comparing the response to the 1985 tornado and the 2003 blow down. After the 1985 event--covering a much larger area than the 2003 event-- the Allegheny National Forest completed over 80% of the salvage by 1987 and the area is now fully regenerated. Here in 2005, nearly two years after the 2003 storm, less than 20% of the affected area has been salvaged and even less has been reforested. In contrast on private land and state land, the salvage is nearly complete at over 80% salvaged. Once this material is removed, the area can be quickly reforested to ensure the presence of desirable species. On the federal lands, where this material is being removed at a much slower rate or not at all, reforestation is slow and will most likely not produce desired results.

The Allegheny Hardwood Forest type is a unique forest ecosystem. We need to utilize the science available to us to regenerate the forest in a timely manner and ensure the continuation of this unique ecosystem, before the opportunity passes.