

Policy Statement: Silviculture for Planted Areas

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Forest Stewards Guild professional members have and will continue to actively manage planted areas across the country, and will likely continue to do so for as long as society demands wood and fiber products. While the Forest Stewards Guild has adopted the Forest Stewardship Council's definitions of plantations¹ and natural forests² in our Silviculture for Natural Forests Policy Statement (May 2019), the concept of planted forests was not addressed. In contrast with plantations, planted forests are similar to plantations but may also incorporate elements like variable spacing, mixed species composition, native shrubs and grasses, etc., and can more easily be set on a trajectory that, with sound management, can potentially emulate over time the more complex structure and function of a natural forest. For the purposes of the following discussion, plantations and planted forests will collectively be referred to as Planted Areas.

This policy statement aims to provide support for Guild members and others who are engaged in planted area establishment and management. It provides a Guild-style framework with concepts and principles that can help make these stands more ecologically and socially viable as we managers attempt to balance the competing interests that vie for the growing space, how we use it, and for how long. To be clear, a planted area will likely never replace the myriad benefits provided by an existing mature and complex natural forest. The Forest Stewards Guild believes that plantations and planted forests should rarely, if ever, be established at the cost of a well-functioning natural forest, as this runs counter to one of the core values of the Guild, *to practice and promote responsible forestry as a means of sustaining the integrity of forest ecosystems and the human communities dependent upon them*. However, we believe there is a middle ground where planted areas can incorporate management strategies to layer in complexity, and hence other values, while at the same time, not sacrificing too much economic return. In today's reality, planted areas exist and thrive on the landscape and do require some form of management as they efficiently meet society's needs for wood products- both for end users but also for the forest economy that benefits from a mix of planted and natural forest-derived timber.

¹ The Forest Stewards Guild has adopted the definition of a plantation created by the Forest Stewardship Council (FSC) as "A forest area established by planting or sowing with using either alien or native species, often with one or few species, regular spacing, and even ages, and which lacks most of the principal characteristics and key elements of natural forests".

² Similarly, the Forest Stewards Guild has adopted the FSC definition of a 'natural forest', as "A forest area with many of the principal characteristics and key elements of native ecosystems such as complexity, structure and biological diversity, including soil characteristics, flora and fauna, in which all or almost all the trees are native species, not classified as plantations."

Complexity, Structure, and Function

As reforestation and afforestation become more widely discussed in terms of potential mitigation tools to help counter the adverse effects of climate change, foresters, land managers, and other decision-makers who work with planted areas will have to take into account multiple considerations. Since forest complexity is derived from natural disturbances across spatial and temporal scales, both plantations and planted forests will need treatments that mimic disturbances endemic to their locale. Planted forests can more easily emulate over time the more complex structure and function of a natural forest since they are established with built-in natural forest characteristics. This in turn will provide more opportunities for future generations from wildlife habitat and biodiversity to forest products and climate mitigation. Whereas monocultures of single-tree species plantations may create greater opportunities for (often short-term) economic gains, they will need more intensive treatments to compete ecologically or socially with a planted forest that incorporates more natural elements.

Considerations of Scale

The broader the scale of the applicable forest or forest stand under the influence of the forester or land manager, the more important the consideration of landscape level issues becomes. This is particularly true when planning regeneration cuts and harvest scheduling. At a finer scale, planted areas may increase landscape diversity, but at a broader scale the plantation or planted forest approach may overly influence landscape diversity in a negative way. As with many aspects of responsible forestry, a balanced approach should be undertaken when determining where and how planted areas should be established within the broader landscape.

Existing Planted Areas Management

Traditional plantation management is generally focused on maximizing economic returns by maximizing growth rate and minimizing rotation length. In either establishing planted areas or managing them throughout their rotation, Guild foresters must recognize, evaluate, and advocate for certain trade-offs when attempting to balance economic, ecological, and social outcomes. When “putting the forest first” involves a planted area at the onset of our management, we have the opportunity to thoughtfully bring Guild principles to bear on the management of these spaces. Pragmatism is important - society needs planted areas and among other things they can serve to take production pressure off of natural areas. By incorporating certain tradeoffs, the forester or land manager can both challenge convention and increase innovation. These trade-offs may include:

- Extending rotation ages to allow the trees to become more biologically mature, thereby allowing for greater near-term carbon storage, a potentially higher quality and more valuable wood products at harvest time, and more options for future retention with greater ecological benefits to wildlife.
- Creating harvest blocks that are not excessively large or rectilinear, but instead incorporate softer edges based on natural contours and features.
- Shifting even spacing of established planted trees to uneven spacing using a variable density thinning approach, in which a desired target of trees per acre or basal area is

reached across a stand, but small gaps or individual trees may be promoted to allow for greater ecological complexity.

- Creation of downed woody debris piles to support wildlife during thinning entries by bunching together and leaving either non- merchantable or merchantable logs.
- Retention of native shrub or brush layers in areas where the original planted area failed, or the creation of areas to be left as “set-asides” for native shrub layer development.
- The creation or retention of snags within the planted area by means of logging equipment or tree climbers. Snags may be base-girdled, full-topped (top removed), top girdled, or green topped (a certain number of green branches retained below the removed top) to create even more varied structure. Artificial cavities may also be considered to further enhance wildlife habitat. Snags should continually be recruited through subsequent stand entries to ensure a rolling inventory, as different species use different sizes and ages of snags over time.
- Species diversification by protecting and promoting other naturally regenerated species that have established in the planted area, or by creating small openings and planting or encouraging additional tree species and/or age classes not currently present in the planted area.

Expanding markets for carbon, water, and other values from forests can reduce the tradeoffs that managers have to make to balance economic, ecological, and social outcomes. Supporting and advocating for markets that include all forest values can incentivize more natural forest structures by reducing and eliminating tradeoffs.

Conclusion

The Forest Stewards Guild sees an opportunity to expand the values that planted areas provide to society through more thoughtful and creative management. This policy statement does not intend to denigrate planted areas as juxtaposed with natural forests, but rather acknowledges their role as an important component of a broader system, in coordination with the management of natural forests. For those that manage planted areas, it is recognized that, given current markets, one does not always have the luxury to incorporate these strategies to increase the ecological and social value of the stand or forest. Sacrificing future economic returns is not palatable to many. However, truly sustainable forest management should never be binary- to harvest everything or nothing, to manage purely for economic returns or only for wildlife, etc. is to miss the benefit of aggregating multiple values in one time and place- the reward of thoughtful silviculture.

Rather, the manager will recognize opportunities in which a certain number of alternative principles such as those described above may be injected into the broader planted area matrix to improve traits like stand resiliency to pests and pathogens, economic value through diversified product streams, and the societal benefits of increased carbon storage, forests to work and recreate in, and other ecosystem services. The manager will ultimately have to determine where that balancing point lies, as it will vary from ownership to ownership. In the end, while planted areas will rarely rival the benefits of a natural forest, managing part or all of these areas to emulate natural forests by foregoing some aspect of economic return (under current market conditions) can provide additional benefits that we believe to be greater than what could be achieved through conventional means.

Further Reading/Resources:

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