

Economic viability: The key to keeping non-industrial private forests in Washington green.

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My talk today will take a look at some of the economic issues surrounding keeping non-industrial private forests in Washington green.

Non-industrial private forest, or “NIPF” ownerships, are also referred to as small forest ownerships or family forest ownerships. These are private forestlands that are owned by individuals, families, or small companies as opposed to large timber corporations. These ownerships are relatively small, ranging from just a few acres to a couple thousand acres. They are generally under a hundred acres. This is a very significant ownership class that accounts for more than half of the forestland in the United States. In Washington, NIPFs account for roughly half of the private forestland, which is 19% of the total forestland, since Washington has a large proportion of public forestland such as national forests, national parks, and state trust lands.

Non-industrial private forests provide a number of important goods and public values. These include environmental services such as aesthetics, recreation opportunities, clean air, clean water, and quality habitat for fish and wildlife. They also provide product values. They are an important source of wood products such as lumber for housing, and special forest products such as boughs and floral greenery.

In terms of providing environmental services and other public values, NIPF lands are particularly important because of their location. In Western Washington, NIPF ownerships are found primarily in the lowland areas. This brings the environmental services that these forests provide in close proximity to population centers. These lands also act as a buffer between expanding urban sprawl along the I5 corridor and the industrial and public lands at higher elevations. Their lowland location further means that these ownerships tend to overlap with critical lowland riparian salmon habitat. These location factors enhance the public benefits that these forests provide, but at the same time these factors also subject these forests to tremendous conversion pressures as urban sprawl continues to expand into these areas and the market value of these ownerships for commercial development sometimes far exceeds that for forestry.

Here is a map of the state showing NIPF ownerships relative to elevation zones. The red areas are the high elevation lands which are predominantly in public ownership. The grey areas are mid-elevation lands, and the yellow areas are the low elevation lands. The green represents NIPF ownerships. Notice how the green NIPF lands predominantly overlap the yellow low-elevation

areas. Also notice how NIPF lands come right up to the urban corridor and have a heavy presence in key river drainages that are very important for conservation.

Now that I've talked about what NIPF ownerships are, where they're located, and why they're important, I'd like to talk next about the owners of these lands and what their objectives are as landowners. NIPF landowners are a very diverse group of people and thus have a diversity of ownership objectives. Interestingly, the primary motivation for owning the land is usually not timber production or economics, but simply the enjoyment of forest ownership. Timber production is often included in ownership objectives, but it is usually not the top objective. Overall, NIPF ownership objectives fall somewhere along a spectrum between timber and non-timber objectives. Different landowners will fall at different points along this spectrum.

Because timber production is usually not the top priority for NIPF landowners, NIPF lands tend to be managed very differently than industrial forestlands, for which timber production and economic return to shareholders are the primary objectives. NIPF owners tend to manage less aggressively and grow their forests on longer rotations. NIPF owners are usually not concerned with maximizing their rate of economic return and indeed do not typically employ any sort of sophisticated economic planning. Rather, they focus on short-term cash flow needs such as retirement or a child starting college. Their long-term economic outlook is based on faith that the trees will continue to grow and hold their value.

Given that timber production is not usually the top priority and economics is not explicitly planned for, this brings up the question: does economics matter? The answer is yes—economics does matter and indeed is critical. Even though timber may not be the primary objective, many landowners still consider their forest to be a business enterprise that must maintain some level of economic viability. Having timber as a secondary objective simply means that landowners are willing to accept a less than maximum economic return, as that return is subsidized by other benefits like enjoyment of ownership. Even though landowners will accept a lower than maximum return on their forestland, some level of positive return is usually necessary such that landowners can afford to own and manage their land. In other words, they need to be able to afford the costs of those ownership benefits.

Let's take a look at what some of those costs are. The most obvious are perhaps the out of pocket costs, which include taxes, maintenance expenses, and other overhead expenses associated with owning land and managing a business enterprise. There are also the costs of any management treatments needed to maintain growth, protect forest health, and improve habitat. Costs that may be less obvious but more significant are the opportunity costs associated with managing a piece of forestland. If developers are offering \$40,000 for an acre of land that yields only a \$400 net return for forestry, a landowner who elects to use that land to grow trees is forgoing a financial opportunity, and that forgone opportunity is a cost of that decision. The market benefits of forest management (i.e. timber harvest) can offset both out-of-pocket and opportunity costs of owning forestland and in combination with the non-market benefits (i.e. enjoyment of ownership) can keep forestry as an attractive option despite a huge disparity in land use values.

But there is a point at which forestry is no longer an attractive option and the forestland may be sold for development or other non-forest use. This may occur when the landowner can no longer afford the cost of ownership or when the costs of ownership outweigh the combined market and non-market benefits. The threshold at which this occurs will be different for every landowner. Factors

that will push landowners closer to this threshold include higher out-of-pocket costs such as higher taxes or road upgrade costs, higher opportunity costs as development pressures increase, and restrictions or market conditions that diminish economic viability of forest management, which may already be marginal, such that it can no longer offset the costs of ownership.

Landowners frequently hit their conversion threshold, as evidenced by the rapid rate at which NIPF land is converted to non-forest uses, especially in Western Washington. There have been several studies done on the rate of forestland conversion in Washington and there are several figures that are often cited, such as 100 acres a day, depending on the time period looked at. Regardless of what figure you use, there is general agreement that conversion, especially of non-industrial private forestland, is occurring at a rapid rate and is of great concern. From a policy standpoint, if we want to counter this trend and keep these forests green, we need to pursue policies that make forestry as attractive as possible by minimizing costs and encouraging opportunities for management revenues.

There is concern, though, that the opposite is occurring and that current regulations have significant economic impacts that increase costs and decrease revenues, which has the unintended consequence of making forestry less attractive relative to other land uses. Perhaps the most high profile example of this in Western Washington are current stream buffer requirements which restrict timber harvest up to 200 feet on either side of a stream. Buffers like this have a particularly significant impact on small ownerships.

With large ownerships, buffer impacts are somewhat mitigated because they can be averaged across a large area.

However, when the landscape is divided among small ownerships, those impacts cannot be averaged, but rather there is a disparity of impacts as the impacts get concentrated on individual properties that have streams present. It is not uncommon for an NIPF landowner with a stream on their property to find that the majority of their land is restricted and the remaining acreage is fragmented such that it is no longer economically viable.

Here is an actual example of this from Lewis County in which the required riparian buffers have been overlaid on the property. 64% of this 33-acre tree farm is in a restricted zone, and the remainder is highly fragmented.

We've done a series of case studies that show that the economic impacts of these buffer requirements are significant for many NIPF landowners. These impacts include increased operational costs, the lost value of timber that can no longer be harvested, and the lost value of land taken out of production. The biggest cost is usually the short-term loss of high-value standing timber. Perhaps the most troubling cost, though, is the long-term loss due to land taken out of production. In some cases, enough land is restricted such that the remainder is no longer enough to cover the operating expenses of the tree farm. Oftentimes landowners are willing to continue to forgo higher development values and keep managing for forestry if it can cover the expenses and provide a modest income, but in these cases where a large portion of the property is encumbered by riparian buffers, there is little incentive to continue managing for forestry in the long-term. Ironically, the same harvest restrictions would not apply if the land was to be cleared for development. Those that are the hardest hit by the regulations and most likely to be faced with a situation like this are those who have significant riparian acreage. In other words, the most important ownerships for conservation of fish habitat are pushed the hardest towards a conversion

threshold. Measures have been put in place to mitigate these impacts on NIPF landowners, but these have been largely inadequate because of underfunding and the lack of a long-term approach. The economic impacts of current riparian regulations bring up several policy issues. There are issues of economic equity and also issues of unintended consequences in that regulations designed to protect fish habitat create a significant economic incentive to pursue an alternative land use.

In addition to economic issues, there are also ecological concerns. There is broad recognition that managed forests need to be actively thinned. These are forests that have been established at high densities with uniform conditions that will result in slow growth or stagnation if not thinned. The problem is that thinning in riparian buffer zones is often not permitted by the regulations, and when it is permitted, it is often not economically viable. An example is pre-commercial thinning, which is a very important initial density reduction measure for young plantations. Pre-commercial thinning by definition removes trees that are too small to be of commercial value, and thus it is done at a net cost to the landowner. This is usually treated as an investment, though, that pays off with the improved growth of the remaining trees. However, because the future harvest of these trees is likely not permitted in the riparian zone, there is no incentive for landowners to invest in thinning these areas. Regulatory complexity also inhibits needed thinning. In portions of the riparian zone where commercial thinning is allowed under certain conditions, it is complicated and costly to determine which, if any, trees may be removed. Oftentimes the cost to lay out the thinning prescription exceeds the value of any potential harvest. In any case, the complexity of this option discourages its use. Without thinning, it is unrealistic to expect within a reasonable time period for young, dense, uniform, managed stands to achieve the goal of the regulations, which is to take on the desired features of mature, unmanaged stands, such as large trees and structural complexity. On the Eastside, the absence of thinning raises additional forest health concerns such as fire and insect outbreaks. For instance, in some forest types the minimum tree count and basal area requirements leave riparian stands at high risk of a mountain pine beetle outbreak. So again we have a policy issue. Is doing nothing really better than thinning in dense forests? By prohibiting or discouraging thinning in these stands, there are likely to be unintended results on both the Eastside and the Westside that are contrary to the goal of the regulations to provide high-quality and high-functioning riparian habitat.

Now that I've gone through some of the problems and challenges we're facing of declining economic incentives for keeping non-industrial private forests green, I'd like to talk now about some possible solutions. One solution is to identify and promote management pathways that balance environmental goals with economic viability, such as the "biodiversity pathways" that were looked at in the Washington Landscape Management project. The idea with these types of pathways is that heavy, successive thinnings over long rotations accelerate the development of older-forest structure such as large trees, a diverse understory, and overall structural complexity that is more likely to support a greater diversity of plants and wildlife. At the same time, thinning revenue and high-quality wood production can offset some of the economic costs associated with a long-rotation strategy like this. It won't eliminate the increased costs altogether, but it will minimize the overall costs such that it is more likely to be acceptable to landowners, and in cases where additional economic incentives are needed, it would minimize the required public cost-sharing. This is a win-win situation relative to a no-action preservation approach in that managed forests get the thinnings needed to improve habitat and the economic costs of increasing the production of valuable environmental services is minimized regardless of who bears those costs. An approach like this could be very successful in terms of managing riparian buffers for salmon, as it would promote development of large conifers for shade and long-term large woody debris while

having a significantly lower economic impact relative to no-harvest buffers. Washington riparian regulations allow landowners to submit alternate management plans to protect their streams at lower cost, and this would be a good application for biodiversity pathways. There are also numerous upland opportunities to improve wildlife habitat while maintaining viable economics. In any case, it will be important that these management approaches be flexible to allow landowners and regulatory agencies to work together to address site-specific concerns. Developing management approaches that minimize the costs of meeting environmental objectives should be a central part of a strategy to keep non-industrial private forests economically viable. In some cases, however, additional incentives will be needed to maintain these lands as working forests. A solution here is to develop economic incentive programs to compensate landowners for the publicly valued environmental services they provide. Tax credits alone are probably not the answer. Tax burdens are usually small relative to other regulatory costs, and tax credits benefit landowners proportional to the amount of timber they harvest. Thus, tax credits may not be the proper incentive and may not have adequate financial leverage. Rather, direct compensation programs may offer more appropriate incentives. When combined with low-cost management solutions, the overall public cost is minimized and very small relative to the public value of the environmental services provided by these forests. A competitive bid process for participating in such programs would further ensure efficient allocation of resources.

To summarize, Non-industrial private forests provide numerous public benefits—environmental services that are of great value. The lowland location of these forests enhances their public benefits but also subjects them to significant pressure to convert to non-forest uses. Even though economics is not the highest landowner priority, attractive economics is still critical for maintaining an adequate incentive to continue using the land for forestry rather than a competing use. However, at a time when we need to be finding ways to increase the economic incentive for forestry, there is concern that regulations may be having unintended consequences of promoting alternative land uses that are contrary to policy goals. Strategies do exist, though, for meeting environmental goals while minimizing costs. These strategies can be used in conjunction with programs to help pay for the environmental services that these forests provide, and flexibility will be an important part of any solution.