

THE FUTURE OF WASHINGTON STATE FAMILY-OWNED FORESTS IN AN INCREASINGLY FRAGMENTED LANDSCAPE

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ABSTRACT

Rural communities in the western United States have been experiencing dramatic demographic changes over the past decade. Areas with high natural amenity values continue to experience significant in-migrations as increasing housing costs and high crime rates drive people out of the cities and into the rural areas. Rural communities in parts of Washington State are growing; resulting in an increase in new forest landowners with smaller-sized forest parcels, changing the face of private forest landowners. As the boundaries between rural and urban landscapes become blurred, and landscapes become increasingly parceled, there is a growing concern among natural resource professionals that the “new” landowner lacks the knowledge to understand the consequences of land-use decisions on maintaining the sustainability of renewable natural resources in an increasingly fragmented environment. This paper addresses the increasing fragmentation occurring on private forestlands in Washington State, with an emphasis on ownerships within rapidly developing counties of western Washington. We ask whether changes in NIPF landowner demographics are obscuring the traditional “social contract” between urban and rural communities, increasing conflict over the growth and development of rural areas, and subsequently impacting our ability to sustainably manage family forest resources.

INTRODUCTION

Rural communities in the western United States have been experiencing dramatic demographic changes over the past decade. Areas with high natural amenity values continue to experience significant in-migrations as increasing housing costs and high crime rates drive people out of the cities and into the rural areas (Johnson and Beale 1998; Smith and Krannich 2000; Salamon 2003). Urban dwellers, seeking the qualities of a rural life, are transforming the socio-economic and cultural traditions of many rural towns (Smith and Krannich 2000). Rural communities in Washington State are changing; resulting in an increase in new forest landowners with smaller-sized forest parcels, changing the face of private forest landowners (Hull et al. 2004; Creighton and Baumgartner 2002). Many of these landowners are new to forest ownership, and although they may have small individual holdings, collectively they control a substantial amount of resources (Blatner et al. 1991; Bliss et al. 1994). Recent studies suggest that these new landowners are different than traditional family tree farmers. The newer, more urbanized landowners are less interested in harvesting timber; they have fewer familial ties to their land, and are employed in a business outside of forestry unlike the more traditional landowner who has a higher interest in timber management and longer ownership tenure. These kinds of demographic changes in private forest landownership in Washington State are occurring in other parts of the United States as well (USDA-CSREES 2003).

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Industrial forests are subdividing and selling off their forestlands in response to the increasing economic difficulties of meeting state and federal land-use regulations (Thorud 2000). People who desire a more rural lifestyle often purchase these smaller parcels, obscuring the distinction between urban and rural landowners (Bliss et al. 1994; Harmon et al. 1997). As the boundaries between rural and urban landscapes become blurred, and landscapes become increasingly parceled, there is a growing concern among natural resource professionals that the “new” landowner lacks the knowledge to understand the consequences of land-use decisions on maintaining the sustainability of renewable natural resources in an increasingly fragmented environment. The long-term implications of this lack of knowledge are: a decrease in the economic viability of rural communities; a polarization of stakeholders resulting in local communities that are ineffective in addressing impacts of continued sprawl, such as water quality, biodiversity, and quality of life; continued conversion of private lands to non-resource based uses; a limited approach to integrated resource management decision-making (DeCoster 2000; USDA-CSREES 2003). Often, new forest landowners bring with them a decidedly urban perspective on natural resource use and environmental issues, which can trigger social conflict within the rural communities (Hull et al. 2004; Edwards and Bliss 2003; Smith and Krannich 2000; Salamon 2003).

DEFINING FRAGMENTATION

The phrase *forest fragmentation* is often used interchangeably with *forest parcelization* or *land-use conversion*, but there are some important distinctions between these idioms. DeCoster (2000) defines fragmentation with regards to the object that is experiencing the fragmentation. For example, fragmentation of *ownership*, also called parcelization, is the splitting up of a contiguous tract of forest into many different ownerships; fragmentation of *vegetation* occurs when forest tracts become isolated pieces interspersed with new uses and species; and fragmentation of forest use is the complete conversion of land away from forest to a decidedly non-forest use, such as agriculture or development. Luloff, et al (2000) define forest fragmentation as “the separation of a unit into smaller and smaller blocks of timberland through management activities that may or may not reflect separate ownerships.” The authors include parcelization as the process through which the reduction in ownership size occurs. In this paper, fragmentation will be used as an inclusive term with three distinct directions: fragmented ownerships, vegetation, or uses, with some potential for overlap. Each mode of fragmentation has both social and ecological consequences (DeCoster 2000). The ecological consequences manifest themselves in the disruption of ecosystem functions, such as deteriorating water quality, loss of wildlife habitat, increases in populations of invasive species, changes in species composition, and declines in native populations. Social consequences result from the urban influence expanding into rural communities. (Johnson and Beale 1998; Sampson and DeCoster 2000).

Research suggests that one driving force behind forest fragmentation is linked to the desire for an amenity-rich rural lifestyle and societal support for policies that preserve this lifestyle (Edwards and Bliss 2003; Shelby, et al. 2004; DeCoster 2000).

Since the late 1980's, western rural counties with high natural amenities have attracted urban migrants. These migrations are often concentrated within a few high-amenity spots, rather than dispersed relatively equally across a geographical area (Nelson 1999). As these concentrations increase, growth and development opportunities also increase. Rasker (1994) introduced this as a "quality of life" model of economic development, suggesting that in natural resource-based communities decreases in extractive industries allows entrepreneurial and investment activities to flourish. A high quality of life attracts more "lone eagles" with nontraditional income sources, which in turn provide more investment opportunities. Often the landscape remains the primary source of economic gain, but in a recreational and aesthetic capacity rather than an extractive one (Nelson 1999). Whether the outcome of this shift in economic perspective is landscape preservation or landscape fragmentation, is somewhat dependant on the cultural perspectives of the meaning and identity that a community assigns the landscape.

Social Fragmentation

The cultural structures of urban communities tend to be very different from those in rural areas, especially with regards to environmental concerns (Jobes 1988). Research indicates that urban migrants are more likely to support environmental protection and oppose growth and development, as opposed to their rural counterparts. The local community may not have experienced the negative ramifications of urban development, and so are less sensitive to development pressures in their own communities (Smith and Krannich 2000). It is the general consensus of many who study rural communities that people move into rural areas to escape the rapid urbanization of the cities seeking an improved "quality of life." Quelling growth and development often creates conflict between new folks and the long-time residents (Edwards and Bliss 2003; Nelson 2002; Geisler 2000; Smith and Krannich 2000). New people bring new meanings and the cultural relationship between people and the landscape changes (Edwards and Bliss 2003; Nelson 2002; Geisler 2000; Smith and Krannich 2000). Many have identified this change as a "culture clash" between long-time rural residents and urban newcomers stemming from the differing cultural identities of the two groups, (Price and Clay 1980; Jobes P.C. 1995). These may reduce social and community well-being, perhaps even leading to the eventual loss of local resource-based economic infrastructures. A divergence of the socio-cultural values in a rural community may precipitate a social fragmentation within the community.

The term social fragmentation is often associated with Emile Durkheim and his thesis on suicide in society (Durkheim). In the psychological literature social fragmentation has been closely associated with poverty. It is also used as predictor of suicide rates (Congdon 1996), as well as an index for explaining the lack of interest in local and/or national community issues (Davey and Dorling 1997). In the context of this paper, social fragmentation is defined as a clashing of groups with divergent and uncompromising values with regards to environmental issues, land-use, and development.

How then are social fragmentation and forest fragmentation related, if they indeed are? Quantifying fragmentation is difficult, due to the lack of a widely accepted method of measurement (Butler, et al. in press). Features such as patch size, amount of edge, and interspersion are commonly used to measure the physical aspects of

fragmentation, but quantifying the social aspects of fragmentation is more problematic. Butler et al. (in press) developed a model for measuring the human-causes of forest fragmentation through land-use decisions, using multiple linear regression. The study indicates that population density and percentage of agriculture were positively correlated with fragmentation and could serve as strong predictors. The authors suggest that the variables associated with these land-use decisions are driven by environmental factors, public policies, and personal choices. Building off the conclusions of this study, we explore the relationship between forest fragmentation and social fragmentation. This paper addresses the increasing fragmentation occurring on private forestlands in Washington State, with an emphasis on ownerships within rapidly developing counties of western Washington. We ask whether changes in NIPF landowner demographics are obscuring the traditional "social contract" between urban and rural communities, increasing conflict over the growth and development of rural areas, and subsequently impacting our ability to sustainably manage family forest resources.

Growth in Washington State

Interstate 5 (I-5) is the major transportation route along the west coast of the U.S. from San Diego to the Canadian border. The freeway spans over 275 miles along Washington State's coast, west of the Cascade Crest. Nine counties along this route have been experiencing the greatest concentration of urban growth in the Puget Sound region over the past 10 years (Fig. 1). From 1995 to

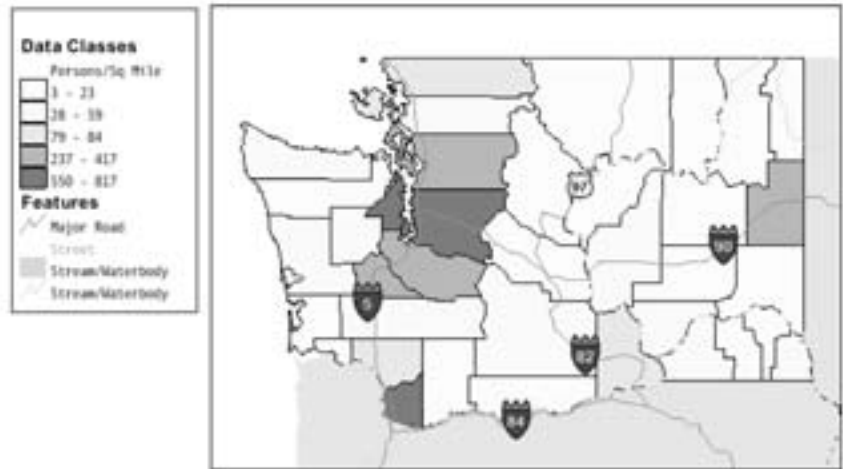


Figure 1. Population density (persons per square mile) by county, Washington state.

2000, the percent of increases in the populations of these counties ranged from 5% for Lewis County to 19% for Clark County (U.S. Census Bureau). Recent studies suggest that population density and proximity to travel routes are highly correlated with forest fragmentation (Butler, et al. in press; MacLean and Bolsinger 1997). As populations increase, forestry often competes with development as people move into the less densely populated rural areas. Increases in personal income coupled with an ever-growing population often foretell the inevitable residential expansion into these areas.

The fastest developing counties along the I-5 corridor are those in close proximity to an urban center. Many individuals are willing to drive up to one hour to work each day for the benefit of living "in the country." Some of the commercial forest companies in these counties are subdividing large blocks of forest into 10-, 20-

and 40-acre parcels and selling them off as individual residences. Often these become residential developments with large homes, and have quickly become labeled as 18-acre “big backyards.” For example, Weyerhaeuser is a commercial timber company in the Pacific Northwest that markets what are called Forest Reserve Communities, which boasts an amenity-rich lifestyle within a safe, gated community. These communities offer hiking trails, lake access, and communal recreation areas. Residents are provided with an individualized forest management plan for their property. The advertising literature for the Weyerhaeuser Forest Reserves encourages landowners to participate in the “sustainable management of their private forestland” offering the opportunity to “share in the Weyerhaeuser legacy” of traditional tree farming (Weyerhaeuser 2001). These kinds of residential developments are attractive to many people in the urban and suburban communities, especially if they are in close proximity to employment centers. Problems that occur in open-access forests closer to urban communities such as trespass, vandalism, and illegal dumping, appear virtually non-existent in the Reserve communities.

Whether this parcelization of industrial forests is adding to the overall forest fragmentation problem or alleviating some of its effects is not easily determined. Researchers are suggesting that it is increasingly common for timber companies to buy and sell timber holdings on the open market as a way to avoid takeovers by other companies, especially if these holdings are adjacent to active real estate lands (Luloff et al. 2000). DeCoster (1998) suggests that if trends continue as they have, 95% of all private forestland in the U.S. will be in parcels smaller than 100 acres by the year 2010, with parcels >100 being the most susceptible. Presumably the individuals that purchase these parcels are not interested in clear cutting their entire 20- or 40-acre plot, but an infrastructure of roads and services is necessary to accommodate residential development. In addition, the forest will still experience a parcelization of ownerships with a variety of forest management objectives.

Drivers of Fragmentation

The Forest Reserve Community provides residents with the opportunity to own forestland, with like-minded neighbors, within a relatively safe environment. These individuals may or may not be traditional tree farmers who’s primary objective is to make a living off the land. Yet, there is growing evidence to suggest that many of these people are different than traditional landowners (Edwards and Bliss 2003; Creighton and Baumgartner 2002; Bliss et al. 1994; Harmon et al. 1997).

A recent survey of family forest landowners in Washington State indicated that the median ownership size for respondents with property in counties along the I-5 corridor (N= 275) was 35 acres. Forty-eight percent were absentee landowners living a median of 30 miles away from their properties (Creighton and Baumgartner, unpublished data). Twenty-four percent indicated that a second home or cabin was located on their forest property, and 66% remarked that the harvest of timber was not significant to their family income. This group of respondents may be typical of the new landowners appearing in other parts of the U.S., as fewer and fewer forestland owners are timber-oriented (Luloff et al. 2000). How does this impact forest fragmentation and overall forest health? Some suggest that regardless of whether the land remains in forest, if it is not actively managed the resource will eventually decline. Landowners may realize only too late that they have a serious problem with their trees. This is understandable if one accepts the possibility that these new landowners are motivated by the amenity values of forestland, rather than the potential economic gain. They may be reluctant to harvest trees out of their “big backyards.”

The laws governing growth management in Washington State allow for residential development in areas where commercial development is restricted. These subdivisions are emerging throughout the rural areas around the state, but the rate of development appears faster in western Washington. One thing that may be driving the rate higher is the relative affluence of the communities in western Washington (Fig. 2). The counties experiencing the highest rate of development are also those with the largest per capita income. Affluent individuals, escaping the problems associated with living in the city, move into the rural areas seeking a higher quality of life, safer schools, and a cleaner environment (Nelson 1999). Meanwhile, the cities and the adjacent suburbs are providing relatively low-cost housing and easy access to service-oriented jobs and other low-wage employment opportunities. This is almost the reverse of 20 to 30 years ago, where the more affluent resided in the cities and associated suburbs, and the rural communities were often the centers of poverty.

With the change in relative affluence and cultural perspectives of new urban migrants, coupled with increasing rural populations, extractive industries in natural resource-based communities often decreases, allowing entrepreneurial and investment activities to flourish (Rasker 1994). Any economic activities surrounding the environment are usually non-extractive capitalizing on the natural beauty or recreation opportunities. This often results in a fundamental change in the economic infrastructure of an area. For example, a lumber mill might be replaced with a ski lodge, or saw shops with stores that sell hiking gear. It may be difficult for a landowner with an interest in traditional timber management to have access to a local forest product market, forcing them to do business outside of the community.

The new sources of income and investment opportunities often arise from self-employed migrants who are not bound to a place for income earning, and who tend to attract others like themselves into their newly adopted communities (Jones et al. 2003; Nelson 2002; Rasker 1994). Recent research done in some rural areas in the West has shown that in growing rural communities, economic development follows high investment income, which in turn is followed by high growth of income, thus perpetuating growth and income. In this sense, development makes it easier for



Figure 2. 1999 income per capita by county, Washington State. Source: U.S. Census 2000.

more development to occur since self-employment income and investment income are mutually reinforcing (Nelson 1999).

THE SOCIAL CONTRACT

Historically, humans built communities around natural resources, such as water (Barham 2001) or timber (Russell and Harris 2001). These communities were rural and isolated; thus giving rise to relative community autonomy they were not of necessity connected socially, politically, or economically to surrounding communities (Russell and Harris 2001). However, as populations grew and communities continued to develop and expand, the autonomous nature of communities changed as economic opportunities arose outside of their initial boundaries (Warren 1978; Freudenberg and Gramling 1998). A significant feature of community that is common to most sociological perspectives is that of community action or agency. Wilkinson maintains that this particular community field “gives substance to the ecological, cultural, organizational, and social psychological aspects” of a community, and that interaction is the “core property of the community, one without which community, as defined from virtually any sociological perspective, could not exist” (Wilkinson 1991, pg. 3). He argues community should provide the “proximate setting for contact with society,” and that this will reduce the human tendency towards ecological degradation. In other words, an autonomous, geographically delineated community, with free access to all resources necessary for survival, will be less destructive to the environment because of their profound reliance on its resources. Yet, most resources that flow from rural communities are shared by all of society. These source communities often pay the majority of the social and economic costs of resource extraction, but experience fewer benefits (Lane and Rickson 1997). This inequality is magnified when the flow of resources are less predictable than they once were, for example, the trend in mill closures through out the U.S. as less timber harvest is allowed off of public lands.

This social contract between the caretakers and the benefactors of our natural resources is grounded within the notion of community autonomy and the reliance on resource-based economies. In Washington State we might predict that as the boundaries between urban and rural communities fade, the “proximate setting” for societal contact vanishes. What follows is the decline of economic reliance on resource extraction and the subsequent ecological degradation, which in the case of Washington State, is demonstrated by increased forest fragmentation and development.

SUMMARY

Forest fragmentation remains an issue of great importance for Washington State, as well as many other parts of the United States. Although we cannot say with certainty the specific impacts of fragmentation on social institutions and community structure, we can predict the ecological ramifications. High rates of land conversion result in reduced water quality, fragmented habitats, and disrupted ecosystem functions. These will all have some impact on human health, quality of life, and societal well-being. Identifying what those impacts might be is the next step in solving the fragmentation puzzle. Current research is underway to identify the social consequences of forest fragmentation and how they might influence the larger ecological concerns (Creighton unpublished data). The contract between rural and urban communities was established long ago, when civilization settled down into an agrarian society. The dependence of the core urbanized centers to the “hinterland” regions, from which food and resources flow (Chew 2001) is fast disappearing as world

markets grow. This is the breakdown of the social contract. The degree to which this is being realized by society is unknown.

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