

Houses in the Woods: *Lessons from the Plum Creek Concept Plan*

by Kathleen P. Bell



Residential growth pressures have arrived at the edge of Maine's North Woods. Kathleen Bell in this article examines changes in the economics of rural land use in Maine. She notes that public debate over Plum Creek's proposal for development in the Moosehead region reminds us that we need to increase our understanding of the interactions between residential growth pressures, changing landownership patterns, and new expectations for Maine's forestlands.



INTRODUCTION

At the heart of the debate over the 2007 Concept Plan proposed by Plum Creek (2007) are myriad issues related to the conversion of forestlands to residential use or more informally, houses in the woods. The ecological, social, and economic impacts of these houses, their residents, and associated infrastructure are central to the ongoing discussions and review of the proposed Concept Plan. In what follows, I will avoid the difficult task of delineating these impacts. Thankfully, these are being studied by other researchers as part of the Concept Plan's review. Instead, I will take a broader view and share what I perceive are three valuable lessons to be learned from Plum Creek's Concept Plan. Some aspects of my discussions of these lessons are new. Other aspects are, quite frankly, restatements of established ideas and Maine policy questions.

My perspective is shaped by my training as an economist, my years of researching residential development in rural areas throughout the United States, and my experiences as a resident in the changing landscapes of Massachusetts, District of Columbia, Maryland, Washington, and Maine. I begin with general remarks on the economics of rural land use change and a summary view of recent changes in population and housing units. This overview is followed by a discussion of Maine's landscape, with emphasis given to its unique qualities. The paper next turns to the significance of the Plum Creek proposal and its concomitant public dialogue. I conclude with specific reflections on what I consider to be three valuable lessons from the submission and review of the Concept Plan.

ECONOMICS OF RURAL LAND USE CHANGE

Many landscapes in rural areas throughout the United States are increasingly subject to residential development pressures (Heimlich and Anderson 2001; Theobald 2001; Egan and Luloff 2005; Bell et al. 2006; Snow 2006).¹ Whether these pressures arise from encroaching suburbs or seasonal-home developments, the underlying dynamics of the land market are frequently similar. When returns to residential lands greatly exceed those of forest and agriculture uses,

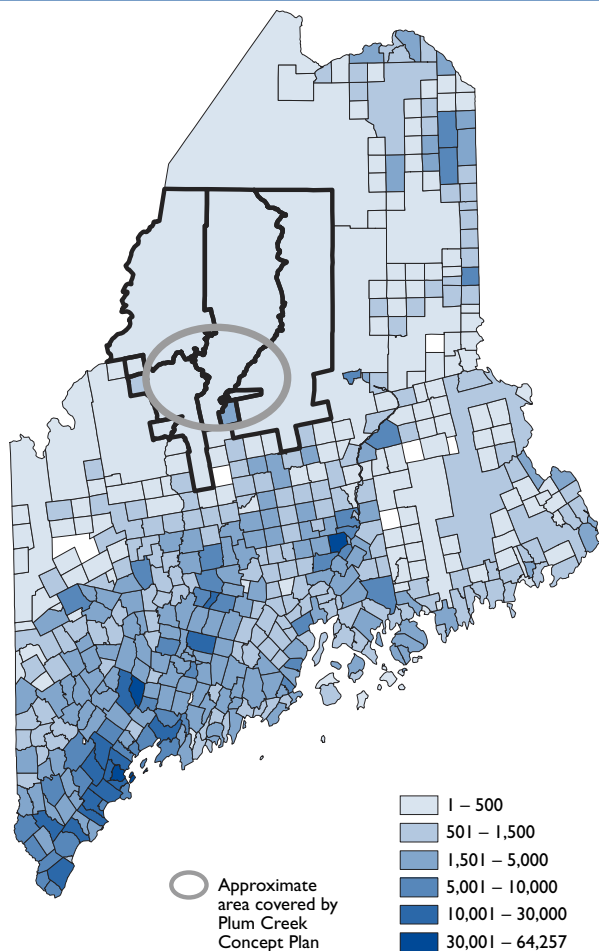
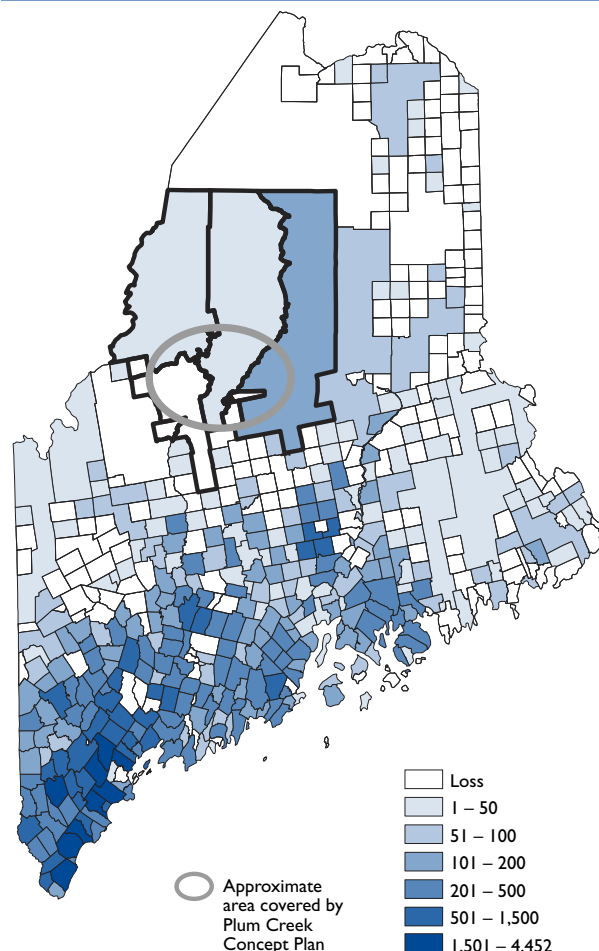
pressures mount and conversions increase. In their analysis of land use in Maine, Plantinga et al. (1999) found support for this economic model and evidence of these dynamics, demonstrating linkages between land use patterns and relative land returns and predicting future decreases in private timberland and increases in urban land. An economics perspective of rural land use change reminds us of the interdependencies between residential growth and agricultural and forest markets.

Similar predictions emerged in a recent national study of watersheds dominated by private forestlands (Stein et al. 2005). These authors ranked watersheds according to risk of forestland conversion to developed uses. Three Maine watersheds (Lower Penobscot, Lower Androscoggin, and Lower Kennebec) appear in their "top 15" (out of 1,026 watersheds nationwide), a group distinguished by the acreage expected to shift from rural to exurban or urban. The recent report by the Brookings Institution Metropolitan Policy Program (2006) offers yet another reminder of these conversions in its discussions of rural sprawl and urbanization, noting the potential impacts of changing development patterns on the "Northern Forest" brand and the capacity of these lands to support a variety of forest-based industries.

Across Maine, changes to our landscape increasingly offer evidence of the disparity between residential returns relative to agricultural and forest returns. In some instances, the rapid increase in this relative return provides a strong catalyst for conversion. Simply put, some landowners can earn significantly more through residential development than through traditional forest and agricultural activities. Of course, for these gains to be realized there must be willing sellers, demand for residential housing, and laws permitting development. Otherwise, the premiums will not prevail.

Coupling these land market trends with national growth in income and population, changes in transportation and communications, and the retiring

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FIGURE 1A: **Population by County Subdivision (2000)**FIGURE 1B: **Population Change by County Subdivision (2000–1990)**

baby-boom generation, it is not surprising to find private landowners, such as Plum Creek, pursuing returns from increased development, even in a somewhat remote region of Maine. This brings us to the *first lesson* from the proposed Concept Plan—Maine is not immune to residential development pressures experienced elsewhere. This is not a new lesson. The challenge or opportunity for Maine, as has been noted elsewhere (Dominie 1990; Colgan 2004; Richert 2004; Brookings Institution Metropolitan Policy Program 2006; Maine Governor’s Council on Quality of Place 2007), is how the state will respond to these pressures. Coastal areas have been under intense pressures for decades. Suburban areas, particularly those

in the southern counties and the Bangor metropolitan area have experienced considerable change in the last decade (Richert 2004). Shoreline and recreation-based developments are constant themes in Maine’s land use history (Judd and Beach 2003). These pressures have now intensified in a different part of Maine’s landscape. Although some of these pressures may be tempered by instabilities in financial markets and economic recession, growth pressures are likely to persist in Maine’s forests because, among other factors, land and housing in these areas are less costly than comparable areas in neighboring states and many other rural regions of the U.S.

FIGURE 2A: **Housing Units by
County Subdivision (2000)**

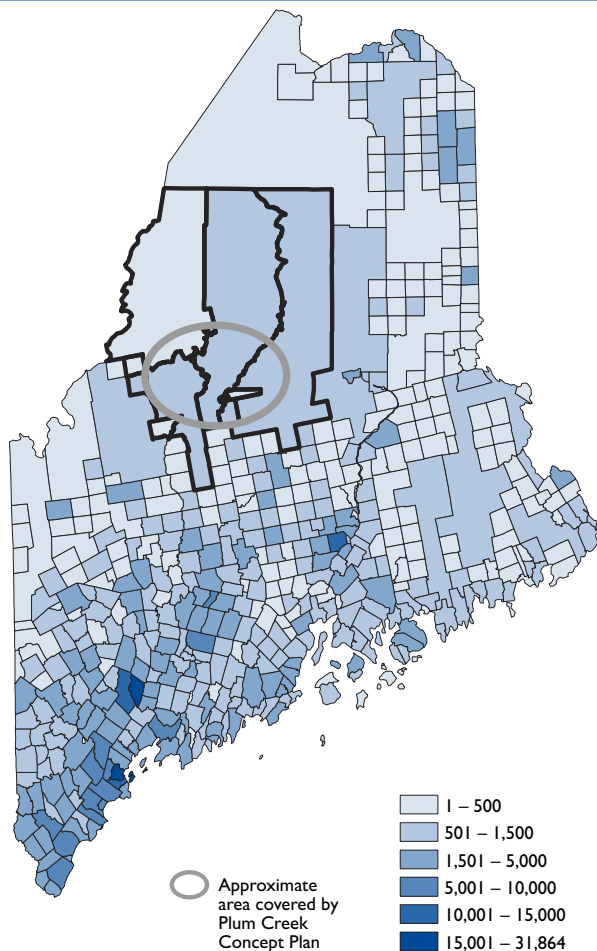
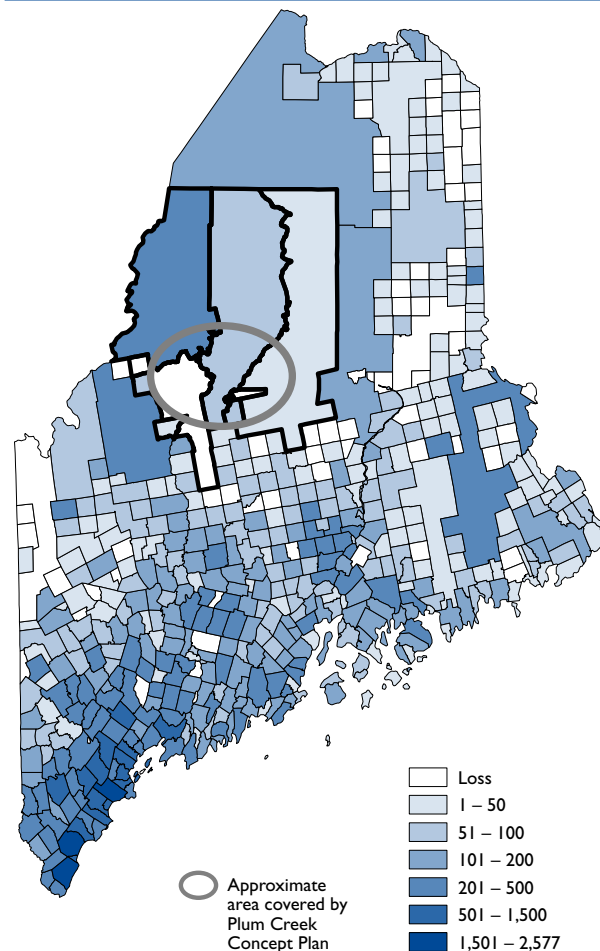


FIGURE 2B: **Housing Units Change by
County Subdivision (2000-1990)**



RECENT CHANGES IN POPULATION AND HOUSING UNITS

A comparison of the two most recent decennial census data (1990 and 2000) offers one view of recent population and housing trends. Overall, Maine experienced modest population growth (3.8 percent) and housing unit growth (11 percent) between 1990 and 2000 and had approximately 1.274 million residents and 651,901 housing units in 2000. Changes in population and housing were not homogenous over space, however, with population and housing increasing more dramatically in southern and mid-coastal areas and outside of urban areas statewide.

Figures 1 and 2 show by county subdivision the spatial variation in absolute levels of population (1A) and housing (2A) in 2000, and the changes in those levels from 1990 to 2000 (1B and 2B). County subdivision is a unit employed by the U.S. Census Bureau that corresponds with towns, cities, plantations, townships, and unorganized territories in Maine. Interestingly, population and housing did not always move in the same direction over this time period. The majority of county subdivisions in Maine (64 percent) experienced gains in both population and housing units. A subset experienced losses in both population and housing units (eight percent). A small group (two percent) experienced gains in population and losses in

housing units, and an intriguing but significant group of county subdivisions (26 percent) experienced losses in population and gains in housing units. The experiences of this latter group can partially be explained by increases in seasonal housing units. Moving forward, discussions of houses in the woods should consider the broader context of these changes. Additions to the housing stock of established, growing communities are distinct from increases in seasonal housing units in communities experiencing reductions in year-round populations.

...areas with higher levels of natural amenities and accessibility (and hence returns in residential use) are experiencing greater residential growth pressures.

Changes in housing units are one metric of residential growth pressures. The impacts of a given change will vary by community. For example, 50 new housing units in Portland may go unnoticed, whereas more attention may be given to the emergence of 50 new housing units in West Forks. The images and statistics behind these maps remind us of the variation in population and housing densities across the state. However, there are drawbacks to using U.S. Census Bureau data to describe changes in the human aspects of Maine's landscape. For example, focusing on new housing units overlooks important changes driven not by new units but by conversions of seasonal units to year-round homes. In addition, while the U.S. Census Bureau data offer valuable descriptions of year-round residents, they do not readily allow us to understand seasonal residents. They are, however, one of very few data resources collected in a consistent manner statewide to describe the human aspects of Maine's landscape.

Looking more closely at a subset of county subdivisions that include or border lands to be rezoned by the Plum Creek Concept Plan (and having wider outlines in Figures 1 and 2), we observe an area with

modest amounts of year-round residents and housing units, and variability in terms of growth in housing and population from 1990 to 2000. In 2000, there were about 5,998 housing units and 3,564 year-round residents in the nine county subdivisions of Beaver Cove, Greenville, Jackman, Moose River, West Forks Plantation, and the unorganized Northeast Piscataquis, Northwest Piscataquis, Northeast Somerset, and Seboomook Lake territories. Of these nine county subdivisions, three experienced gains in population and housing units from 1990 to 2000, three experienced losses in population and housing units from 1990 to 2000, and three experienced losses in population and gains in housing units.

A recent report prepared by Planning Decisions, Inc. (2006) provides a useful and comprehensive assessment of demographic and socioeconomic trends in the Land Use Regulation Commission's (LURC) jurisdiction from 1970 to 2000. This analysis identifies the Moosehead Region as one of the fastest-growing areas in the LURC jurisdiction, finding recent growth in population, housing units, and land accounts.² Overall, population in the LURC jurisdiction has increased by about five percent per decade since 1970, with an estimated 12,461 year-round residents in 2005 (Planning Decisions, Inc. 2006: 15). From 1970 to 2000, housing units in the LURC jurisdiction doubled, with an estimated 18,936 housing units in 2000 (Planning Decisions, Inc. 2006: 20). Comparing population and housing unit estimates from 1990 to 2000 across regions within LURC's jurisdiction conveys valuable information about recent spatial variation in these changes. The Western (17 percent increase in population; 21 percent increase in housing units), Moosehead (seven percent increase in population; 18 percent increase in population), and Downeast (seven percent increase in population; 21 percent increase in housing units) regions experienced the greatest relative increases in both population and housing units. In 2000, the Moosehead Region had a year-round population of approximately 1,120 (1,173 in 2005) and approximately 3,629 housing units, with 547 new housing units added between 1990 and 2000 (Planning Decisions, Inc. 2006: 16, 20). Notably, the number of land accounts in this region rose by 93 percent from 1985 (1,805 accounts) to 2000 (3,486

accounts). (A land account is a parcel of land or two or more contiguous parcels of land owned by the same individual or entity.) What can we learn from these numbers? In short, changes were underway prior to the Plum Creek Concept Plan.

Not surprisingly, Planning Decisions, Inc. (2006) observe certain locations in LURC's jurisdiction appear more vulnerable to residential growth pressures, including those in proximity to major roads, bodies of water, and service centers. Permits issued by LURC from 1972 to 2005 are clustered somewhat, with 40 percent of the permits issued in four percent of the jurisdiction's communities (Planning Decisions, Inc. 2006: 42). My own research of land cover transitions in Somerset, Penobscot, and Piscataquis counties confirms these findings, indicating a higher likelihood of conversion to developed land cover from 1992 to 2001 for lands located closer to rivers, lakes, major roads, and other developed lands and in proximity to minor roads and service centers. To some extent, these analyses confirm the obvious: areas with higher levels of natural amenities and accessibility (and hence returns in residential use) are experiencing greater residential growth pressures. Changes are underway, though variable over space.

MAINE'S UNIQUE LANDSCAPE

The manifestation of residential growth pressures in Maine is influenced by numerous factors, including the novel attributes of its landscape. Among these attributes, the great extent of forest cover, high degree of private ownership, and variation in land use policies are striking. Approximately 90 percent of Maine's landscape was in forest cover in 2003, making it the most highly forested state on a proportional basis (McWilliams et al. 2005). Throughout much of the United States, discussions of development in rural areas focus on conversions of agricultural land to residential housing—houses in the fields rather than the woods.³ In many respects, Maine's forest-dominated landscape presents a more complex setting for assessing, evaluating, and managing change. This latter point is accentuated by a second unique attribute of Maine's landscape—its high rate of private land ownership (approximately 92 percent). Also unique to

Maine is the variability in land use policy. The contrast between the local policies of the organized portions of the state and the regional policies in place in the unorganized territories is noteworthy, as are the town-to-town variations in local policies and traditions of home rule. Accordingly, a diverse set of responses to growth pressures and houses in the woods is expected statewide. These responses will inherently and inextricably be linked with changing forests, changing private landowners, and changing preferences for services from forests.

In the 1980s, discussions of forestland ownership change in the Northeast resulted in the Northern Forest Lands Study and the formation of the Northern Forest Lands Council (Northern Forest Lands Council 1994; Irland 1999). Concerns surfaced over the sustainability of the ecological, social, and economic systems of the Northern Forest region. The urgency of this discussion has intensified within the last decade in Maine with the increased diversification of forest landowners (Hagan et al. 2005; McWilliams et al. 2005; Sader and Jin 2006). Hagan et al. (2005) stress the significance of recent shifts in forestland ownership: marked reductions in industrial owners and increases in timber investment management organizations (TIMOs) and real estate investment trusts (REITs); increased diversification in the types of owners, including individuals and land conservation organizations; and increased fragmentation of ownership, resulting in larger numbers of owners and reduced parcel sizes. In 1994, the forest industry and financial investors owned approximately 60 percent and three percent of large tracts of timberland (>5,000 acres), respectively. In 2005, after considerable changes in ownership, the forest industry and financial investors owned about 15.5 percent and 33 percent of these tracts, respectively (Hagan et al. 2005: iii). The implications of these ownership changes are not well understood. However, it is safe to assume that owners may now be operating under different land-management objectives. Whether or not these owners are more or less likely to subdivide or convert their land to residential use remains an open question. As the numbers and types of owners increase statewide, so too does the complexity of coordinating owners and managing lands at a landscape scale. This brings us to our *second lesson*—changing ownership patterns matter.

FOREST SERVICES

Maine has a tremendous amount of forests, and the diverse services provided by these forests (e.g., timber, habitat, recreation opportunities, locations for housing, and community character) are largely under the control of private landowners. From an economic perspective, this pattern of ownership is interesting for several reasons. First, it raises an interesting social welfare question: namely, do the individual decisions of numerous private landowners support a landscape that is socially desirable? A second and related question arises from the extent to which land markets (and land returns) reflect the full range of services provided by lands in different uses. If markets do not exist for some services (e.g., recreation access, habitat), prices will not reflect the full social value of the lands in that use, undermining the ability of markets to align private and social interests. Many concerns over residential growth in rural areas inevitably link back to external effects, where the decisions of one private landowner have spillover effects on other parties, and missing markets, where the values of certain services are disregarded.

Throughout Maine's history, there are examples of struggles to find the "right" balance and offer joint respect for private property rights and social welfare when managing the use of lands. The nature of these struggles varies over time, responding to both changing public preferences for forest services and to changing forest product markets (Judd 1997: Chapter 4; Judd and Beach 2003: Chapter 6; Irland 2000). Consider the discussions in the 1970s over Bigelow Mountain and the series of forest management referenda in the 1990s. Regulations and norms have responded to ownership patterns, landscape features, and public demands of these forests. Examples of such responses include laws such as the Forest Practices Act and the Great Ponds Law, and traditions such as the "open land" tradition and seasonal camps. Acheson (2006) emphasizes the significance of these traditions and their vulnerability to change. Maine is home to a variety of unique institutions that have guided the joint provision of various forest services by numerous landowners, including forest industry groups, land trusts, sporting and recreation groups, woodlot owner associations, lake associations, and conservation organizations.

The Land Use Regulation Commission itself is an artifact of this balancing process.

Formed in 1971 by the Maine Legislature to serve as the planning and zoning authority for the state's plantations and unorganized areas, LURC emerged as a response to housing and development pressures in the 1960s as well as clashes among paper companies, environmentalists, and tourism officials regarding the future of the North Woods (LURC 1997; Judd and Beach 2003). Its origins were not free from controversy, and the Commission has evolved over time in response to changing issues. As noted previously, the contrasting land use planning approaches within the organized and unorganized portions of the state are striking. In the organized portions of Maine, the extent of private landownership coupled with local authority of land use management is noteworthy. Within the unorganized territories and state's plantations, the authority of LURC over an area in excess of 10.4 million acres is likewise remarkable.

In contrast to the regulatory setting in the organized portions of the state, LURC is designed to accommodate large-scale planning. However, it is not clear the resources and process dictating the commission's role are suited to do so, especially as development pressures increase, demands for forest services diversify and grow, and pressure for major energy and communications projects intensify. Consider the jurisdiction's four principal values: (1) the economic value of the jurisdiction for fiber and food production; (2) diverse and abundant recreational opportunities, particularly for primitive pursuits; (3) diverse, abundant, and high-value natural resources and features; and (4) natural character values such as vast forested areas and remoteness (LURC 1997). Maintenance of these values guides various decisions, including the appropriate locations of development. To date, there has been moderate success in balancing these values in the North Woods. This success is partially explained by historical patterns of few and large landowners, the management objective of those owners, interest in primitive recreation activities, and modest development pressures.

The *third lesson* to be gleaned from Plum Creek's proposed Concept Plan is that changing preferences for forest services matter. We are increasingly asking more of our forests and landscapes. As a result, the balancing

of private and social interests in a forest-dominated landscape such as the North Woods has become more complex. Accordingly, I expect LURC's job to get more difficult and varied, as re-interpretations of and trade-offs across these values will ultimately be inevitable. In turn, demands for information about the jurisdiction and these relative values will increase.

Writing in 2000 about the future of Maine's forests, Lloyd Irland (2000: 76) pointed to a pragmatic vision "blending Maine traditions with a practical eye on the new century." Looking ahead, it will be interesting to see if such a vision is realized. It remains unclear how working forests will evolve over the next century. Changes in energy markets are likely to have a meaningful impact, as will changes in emerging markets for ecological services. Varying preferences for recreation, tourism activities, and housing locations will also be important as will be the growing conservation networks surfacing in the region. The jurisdiction's forests are dynamic and under pressure from a variety of changes. Accordingly, we will continue to see the evolution of Maine traditions, laws, and institutions in response to these changes.

REVIEW OF THE PLUM CREEK CONCEPT PLAN

Plum Creek's Concept Plan seeks the rezoning of approximately 408,000 acres (Plum Creek 2007: 1). At the center of the debate and the final proposal are the approximately 20,000 acres to be rezoned for development to support 975 housing lots, as well as two resorts with 1,050 resort accommodations (Plum Creek Timber Company 2007: 4–5). Approximately, 91,000 acres under permanent conservation easements are offered to balance the impacts of these additional developed lands, and an additional 340,000 acres (295,500 acres in the Concept Plan Area and 45,000 acres at Number 5 Bog) makes up the Conservation Framework. Under this framework, approximately 266,000 acres will fall under a working-forest conservation easement and approximately 74,500 acres (29,500 in the Concept Plan Area and 45,000 acres at Number 5 Bog) will be sold to a conservation buyer (Plum Creek Timber Company 2007: 3).

The proposed Concept Plan for the Moosehead Region reflects elements of change within Maine's

landscape. In many respects, the emergence of the plan is a reminder of the significance of residential growth pressures, changing landownership, and changing forest preferences. We observe a relatively new landowner in a relatively new landownership class (REIT) seeking to increase its financial return by integrating objectives for working forests and residential development. Two discussion papers prepared by Open Space Institute and Industrial Economics, Inc. (2007a, 2007b) offer insights regarding these financial motivations. A key point made in their first discussion paper is the appropriate baseline against which to assess the plan. By comparing a future landscape without the concept plan versus a future landscape with the concept plan, these researchers provided a valuable service by framing the debate wisely and pointing out that considerable development could occur under the current zoning and land use regulations. Discussions of future landscapes benefit from consideration of alternative futures. Comparisons to the status quo are of less value. Change is inevitable. If the Plum Creek proposal does not move forward, there will still be development in the Moosehead Region, possibly in a more sprawling form.

We are increasingly asking more of our forests and landscapes. As a result, the balancing of private and social interests in a forest-dominated landscape such as the North Woods has become more complex.

The location of development and how various impacts may change with these locations were central to the public debate and technical review of Plum Creek's proposal. As we accommodate more housing in the woods, improved knowledge of such relationships is essential to "smarter" growth patterns. Because of the irreversible nature of conversions to residential use, there is an added urgency to acquiring such knowledge. Investing in improved data describing the locations and

attributes of housing (and marrying these with datasets describing other aspects of the landscape) is central to understanding the suitability of different locations for development. Gauging the preferences of individuals for different types of housing (Maine State Planning 1999a, 1999b) in lake-rich and forested landscapes also may help inform future discussions and support novel forms of development. Similarly, paying attention to heterogeneity in both housing and residents is central to understanding potential social, economic, and ecological impacts (Egan and Luloff 2005; Ploch 1988). Housing is one of many services offered by our forests. Maine stands to learn from the experiences of other lake-rich states, such as Wisconsin, that have experienced greater residential development pressures.

The interactions among residential growth pressures, changing land ownership patterns, and changing preferences for forest services are essential to the future of Maine's forested landscape.

Another interesting aspect of the Plum Creek Concept Plan is the conservation proposal linked with the approval of the plan. This proposal speaks to both changing landownership patterns and changing preferences for forest services. The conservation framework has created some unique dynamics in terms of the proposal review and underscores the various objectives of the region's landowners and the likelihood for novel and innovative partnerships moving forward. The public debate raised myriad relevant questions over the terms of the conservation easements. These questions and the related public dialogue have advanced the public's understanding of land conservation activities, forcing individuals to consider the tradeoffs of different forms of land conservation and the resiliency and adaptability of our landscape over time.

To seek approval, Plum Creek has responded to the Land Use Regulation Commission's criteria for

approval of concept plans. These criteria have therefore influenced the public debate and the framing of the public dialogue. Among the constructive topics of discourse include the satisfaction of community economic development and quality-of-life issues, reflection on the jurisdiction's principal values, the impacts of the proposed development on these values, and the balancing of increased development with comparable conservation measures.

By initiating these dialogues, inventories have been started to help us to better understand the Moosehead Region and its place in the broader landscape of Maine. This includes gathering information on the region's economic, ecological, and social systems. In many instances, there were few data to support such inventories, and these uncertainties have muddled the debate. In addition, connections among these systems are not necessarily well understood. What is important, however, is that discussions of planning, futures, and values about this region are being held.

Arguably, this proposal has prompted greater recognition of the complexities of Maine's landscape and its management as well as the interdependencies of different demands on this landscape and the reality of the issues that lie ahead. Many of our forest services extend from landscape-scale processes. The Plum Creek Concept Plan offers a unique opportunity to manage lands at this scale. In writing about the transformation of rural communities throughout the Western United States, Donald Snow (2006: 11) warns of a process called "rurbia" — "the arrival of urban/suburban forms of growth in the middle of rural places." Reflecting on how communities might prepare for this new form of growth, he urges communities to not forget their "intangibles." Moreover, he suggests they make these hard-to-describe factors central to the debate of management of future growth. As I listened to the comments of individuals at the public hearings on the Plum Creek Proposal, I was struck by the frequency of references to such intangibles and fascinated by the variation in beliefs regarding the protection and maintenance of these elements.

Regardless of the outcome of Plum Creek's proposal, there are benefits to be gleaned from the public debate. Three positive outcomes include heightened awareness of ongoing landscape changes, some

understanding of the limited information and resources to support detailed planning and related analyses, and a general appreciation for the challenges faced by many rural communities in the Maine North Woods, as they attempt to diversify their economies beyond reliance on the forest products sector.

CONCLUDING THOUGHTS

I will close by repeating the three basic lessons that provided the structure for this paper:

1. Maine is not immune to residential growth pressures. They come in all shapes and sizes, and they have arrived at the edge of Maine's North Woods. The challenge or opportunity for the future is how to respond to these pressures. Change is inevitable. When thinking about the future, the appropriate baseline is not the status quo or no change. Constructive dialogues will follow from consideration of alternative futures and the support of multiple uses of Maine's landscape. Moreover, the responses to residential development pressures in one part of Maine's landscape will have spillover impacts on other portions of the landscape.
2. Changing landownership patterns matter. The number and objectives of landowners influence the services provided by forestlands. In the last decade, there have been considerable changes in forestland ownership in Maine, including higher numbers of owners and greater heterogeneity in terms of management objectives. The implications of these changes have yet to be fully understood.
3. Changing preferences for forest services matter. As a society, we are asking more and more of our forests, including but not limited to the provision of forest products, wilderness, ecological services, recreational opportunities, community economic development, and rural character. Forest and land management strategies, in turn, are responding to changes in the

demand for these services by Maine residents, visitors to Maine, as well as individuals throughout the globe.

The interactions among residential growth pressures, changing land ownership patterns, and changing preferences for forest services are essential to the future of Maine's forested landscape. The proposed concept plan has reminded us of our limited understanding of these interactions, while raising awareness of Maine's changing landscape. 🌲



Kathleen P. Bell is an associate professor of resource economics and policy at the University of Maine, where she has been on the faculty since 2001. She has written extensively on the economic aspects of land use change and recently co-edited a text entitled *The Economics of Rural Land-Use Change*. She is currently conducting research on residential development and sustainable lake management in Maine, funded by a grant from the U.S. Environmental Protection Agency.

ENDNOTES

1. It is important to note that not all rural communities are experiencing growth pressures. In fact, some are struggling with a lack of residential growth pressure.
2. Refer to Planning Decisions (2006: 12) to discern how they define the Moosehead region. This region is smaller in scope than the nine county subdivisions discussed previously.
3. My selection of the title of this paper was influenced by John Gorka's song entitled "Houses in the Fields," which speaks broadly to changing rural communities.

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