

TIMBER AND TOWN: POST-WAR FEDERAL FOREST POLICY, INDUSTRIAL ORGANIZATION, AND RURAL CHANGE IN OREGON'S ILLINOIS VALLEY

William S. Prudham*

[W]e urge the committee to look into this question of community stability and realize that it means more than sawmill stability, it means more than the allowable sale quantity each year. . . .

—Brock Evans, National Audubon Society,
testimony before the Subcommittee on Forests, Family Farms, and
Energy, of the Committee on Agriculture, House of Representatives,
June 17, 1987

Introduction

In the spring of 1983, environmental protesters blockaded bulldozers and buried themselves up to their necks to halt the extension of a logging road on U.S. Forest Service (USFS) land in Oregon's Siskiyou National Forest. The protesters, largely young, marginal whites from nearby California as well as from local hippie communities, were organized primarily by Earth First! activists opposed to the logging of old-growth federal forests. This action was among the first instances of civil disobedience by activists directed against industrial logging on public land in Oregon and helped to initiate a period of intense local and regional conflict over the disposition of public forests in the Pacific Northwest. This period culminated in the listing of the northern spotted owl as a threatened species

*Energy and Resources Group, University of California, Berkeley, California; e-mail: sprudham@socrates.berkeley.edu

by the U.S. Fish and Wildlife Service in 1990, the ensuing Clinton Forest Plan, and more recently, a series of listings and habitat recovery plans for threatened coho salmon. Today, the Siskiyou National Forest and the nearby communities of the Illinois Valley remain at the center of administrative wrangling and environmental protests over federal timber sales.

While the Illinois Valley has earned a certain reputation as a focal point for the struggle over remaining publicly owned old-growth forests, it has received considerably less attention as one of the most impoverished areas in the state. Yet the 1990 census revealed that 23% of Illinois Valley families had incomes below the poverty threshold (U.S. Department of Commerce, 1993), while the Josephine County Commission on Children and Families (JCCCF, personal communication) reports that as many as 40% of children in the valley are being raised in poverty. If the area stands as testimony to the ecological failures of post-war federal sustained yield policies, it bears equal witness to the social failures of these policies. The question remains as to how and why these policies foundered so badly.

In this paper, I examine critically one of the foundations of post-war sustained yield forest management regimes. Specifically, I critique the original justification of such policies based on a sort of social engineering under which rational, scientifically managed supply of timber to capitalist industry was equated with social stability and development in rural communities. Essentially, my argument is that post-war policies of sustained yield were misguided not only because they conflated trees and forests, but also because they implicitly assumed a fundamentally naive model of industrial capitalism. These policies simply ignored or failed to adequately address the social implications of one of the characteristic features of capitalist industry: its inherent tendency to reconfigure the technical and social organization of production. I explore the post-war evolution of industrial organization in the forest products sector¹ to substantiate this view, using the Illinois Valley as a case study.

Restructuring and Rural Space

I see this analysis as important in two principal respects. First, careful analysis of contemporary processes of rural political economic restructuring occurring throughout the American West is required that underscores the uneven geographic and social implications of change. While some attention has been directed at restructuring of agricultural production systems and rural development, largely in Britain (Marsden et al., 1996, 1993), there remains a need to investigate the ways that natural resource production and rural space are changing under different regimes of accumulation and modes of social regulation (Goodman and Watts, 1994:15), particularly in the American West, where extraction has been so central. It is critical that this include a look not only at "new" forms of production and

consumption, but also at the particular historical role of extractive industries in community and regional development and how this role has evolved over time. Among other things, this helps to avoid laying blame for all social ills in the rural West at the feet of the environmental movement, while at the same time acknowledging the pivotal role that extractive industries have indeed played in the historical geography of the region, not least in the evolution of social structures and relations within which current restructuring is occurring (cf. Chase, 1995; Power, 1996; White, 1996).

Second, in the context of ongoing debate over the disposition of federal forests and the viability of the sustained yield regime, I believe that too much emphasis is being placed on the evaluation of state forest management regimes over public forests based on ecological criteria, at the expense of social criteria. This situation stands in stark contrast to the historical origins of sustained yield policies in the Progressive Era, when effort was directed not only at subjecting public land to rational, scientific management of renewable natural resources (Hays, 1959), but also at curbing corporate control over these resources (White, 1997). The contrast perhaps indicates the extent to which political discourse has changed in the U.S. since the early-twentieth century. While the environmental movement has become the most effective counter to corporate control of the forests, particularly in the context of organized labor's decline in the Northwest forest products sector (Widenor, 1991), the void left between the extremes of preservation and industrial exploitation is highly dissatisfying (see also Cronon, 1996; White, 1996). If all we learn from the collapse of the post-war sustained yield management regime is that forests and trees are not equal,² I think we will have missed an important lesson about the relationship between capitalist industry, the state, and civil society.

The Industry, the State, and the Town: The Illinois Valley and the Post-War Timber Compact

The Illinois Valley is a small, remote, and rural area in southwest Oregon's Josephine County. Populated by about 10,000 people,³ the valley is named for the Illinois River, a tributary of the Rogue. The principal settlement is Cave Junction, populated by about 1,200 and home to the Illinois Valley High School and the Illinois Valley Ranger District Office of the Siskiyou National Forest. Although Cave Junction is located only about 30 miles from Grants Pass and Interstate 5, the valley seems much more remote. A single highway, the Redwood Highway, winds its way through from Grants Pass to Crescent City, California, and the entire valley is rimmed by the imposing Siskiyou Mountains of the Klamath Range. These peaks, among the highest along Oregon's coast, are extremely rugged and extensive, helping to create a genuine sense of isolation.

In several respects, this valley provides both an appropriate and a poignant case study of the historical interactions of industrial forest products manufacture, federal forest management, and community development typical of the rural timber economies of the Pacific Northwest. First, forest products manufacture figures prominently in the community's historical and contemporary socioeconomic development. Yet there is now only a single lumber mill in the valley, owned and operated by a local family active in the industry continuously since 1922. Mirroring economic trends statewide, the role of the forest products industry and manufacturing in the local economy more generally has steadily diminished: lumber and wood products earnings in Josephine County declined from about 15% of the county total in 1969 to less than 6% by 1993 (U.S. Department of Commerce, 1996). During this same interval, the importance of transfer payments as a source of local income has grown at the expense of overall manufacturing employment, largely fueled by an influx of retirees to the area.

Second, the community exhibits some of the problems rural Oregon and much of the rural West are experiencing in the transition away from extraction. Although non-unionized, the mill is still the most important source of well-paying jobs in the valley, and local economic diversification has yet to alleviate depressed socio-economic conditions in the area. In addition to the high rates of poverty mentioned above, the area lags behind state median levels in employment, educational attainment, and literacy (JCCCF, personal communication). By 1990 median family income in the Illinois Valley fell to just 54% of the state median, down from over 80% in 1960 (U.S. Department of Commerce, 1962, 1993). What is important to note is that poverty and depressed socioeconomic conditions have not suddenly appeared in recent years in response to declining federal harvest levels. Rather, they have been chronic in this community, paralleling trends in the rural Northwest (Cook, 1995) and in other extractive economies in the rural U.S. (Freudenberg and Gramling, 1994; Humphrey et al., 1993).

Third, the economic history of the community revolves centrally around forests controlled by the federal government. In Josephine County, the Bureau of Land Management (BLM) and the USFS control roughly 60% of the total land base (Dicken and Dicken, 1979) and an even higher proportion of commercial forest land. Although the industry's role is diminished, it is still an important part of the community's economy. Thus, restrictions on federal timber harvests enacted under the Clinton Plan carry significant implications and have certainly done little to alleviate the community's socioeconomic problems. Timber sales in the Siskiyou National Forest dropped from 230 million board feet (MMbf) in 1988 to 3.5 MMbf in 1993 (Siskiyou National Forest Office, personal communication). Similarly, in the Medford District of the BLM, timber sales dropped from 222 MMbf in 1990 to 4 MMbf in 1994 (BLM, 1995). One of the direct implications of this decline has yet to be felt; payments to the

county from each of these agencies from the sale of public timber within the county—25% and 50%, respectively, for the USFS and the BLM—are being indexed to historical levels and reduced in graduated fashion. The loss of these revenues will have a significant impact on the county's fiscal resources.

Finally, the area has been and remains one of Oregon's most intense battlegrounds in the struggle over federal forests. Remarkable local ecological diversity, extensive federal forest lands, intensive harvesting, and a substantial local population of back-to-the-land hippies have provided the volatile ingredients for intense political struggle. The area is known throughout the Pacific Northwest among the environmental activist community as a "hotspot" and has been one of the strongholds of Earth First! for some time (see accounts of local struggles in Chase, 1995, and Dietrich, 1992).

Sustained Yield

This is not the way it was supposed to be. The rural timber basket in the Pacific Northwest was supposed to be transformed from an uncivilized sacrifice zone for industrial extraction, typified by migratory labor riven with radical political proclivities and rapid liquidation of privately owned timberlands, into a network of stable, peaceful communities brokered by rationally managed forests. In essence, the retention and subsequent management of federal forests in the Northwest are meant to catalyze a process of rural modernization writ large on the landscape. But to understand what went wrong with this plan, it is important to understand the historical process by which the sustained yield paradigm emerged prior to World War II, as well as how the evolution of post-war industrial organization undermined it.

The national forest system traces its historical origins directly to the complicated processes of disposal and retention in American federal land policy. Throughout most of the nineteenth century, the federal government pursued a policy of disposal under which land was transferred to settlers as homesteads. While succeeding in granting lands to settlers, disposal also facilitated the transfer of vast acreages into the hands of natural resource companies (Wilkinson, 1995), some in the timber industry. This included a 900,000-acre sale from the Northern Pacific Railroad to Frederick Weyerhaeuser (see Jensen and Draffan, 1995; Ficken, 1987) in 1900. Concern over such abuses, corporate control and exploitation of the forests (Coggins and Wilkinson, 1987), and the associated social and environmental implications fueled a partial reversal of federal policies in the form of retention (disposal and retention actually continued simultaneously for some time—see Adams, 1993; Limerick, 1992), including passage of an 1891 bill authorizing the president to create forest reserves. The origins and actual intent of his bill have been hotly debated by historians, but as Steen points out, it drew a direct heritage from an 1888 bill that sought "to

secure to actual settlers the public lands suitable for agriculture, to protect the forests on the public domain . . ." (HR 7901 quoted in Steen, 1992:6). As White (1997) has argued, the political momentum initiating the reservation of federal lands came not only from scientific concern over water and timber conservation and a faith in rational, scientific, public management, but also a desire to retain and conserve these resources on the public domain, for public use (cf. Hays, 1959; see also Klyza, 1996).

In Oregon, retention was accelerated by revestment of the Oregon and California Railroad lands in 1913. This amounted to a transfer of 2.2 million acres of grant lands back to the federal government and the retention of this land—including large areas in southwestern Oregon—under the administration of the BLM (Richardson, 1980). In aggregate, the legacy of retention for Oregon is federal control of 57% of the state's forested land, including 47% of its commercial timberland area (Oregon State Department of Forestry, 1996).

Sustained yield management of these lands emerged incrementally during the first half of the century from a complicated and contested set of historical processes. Very little direction was initially given by Congress on the subject of administering the lands, although it is important to note that early retention legislation is unambiguously oriented toward conservation (i.e., use) of the federal forests as opposed to preservation (Steen, 1992). Tentative steps toward administration and further commitment to the use of federal forests for timber production under federal management came in the Forest Management Act of 1897. This act "directed that the reserves were to be administered to improve and protect watersheds, aid in water flow, and *assist in furnishing timber*" (Robinson, 1975:7, emphasis added).

Whatever the intent, however, harvests from federal lands were dwarfed by harvests from private lands until just before World War II. Robbins (1982, 1987) and Klyza (1996) both portray the period between world wars as one of intense struggle between timbered interests and the federal government over the role of the state. Conflict between industry and the federal government revolved around the role federal agencies would play in the regulation of private timberlands and over how much timber would come from federal land. As Robbins (1982) documents, private capital actively resisted extensive timber harvesting on federal lands as a means of restricting timber supply and extracting oligopoly rents on private timber, while at the same time continually failing to adequately control cut-and-run forestry fueled by the overproduction of lumber (see also Schallau and Alston, 1987). Private timber further resisted federal efforts to regulate private land, in part by participating in the establishment of forest practices codes in individual states, Oregon being the first in 1941. Industry also resisted federal efforts to integrate the management of national forest land with adjacent private land (Hirt, 1994; Robbins, 1982).

Failure of federal efforts to reign in or exert much control over private forest exploitation contributed momentum to the development of a more extensive federal timber sale program based on sustained yield principles (Robbins, 1987). It also bears mentioning that radical organizing in the woods reached its zenith in the decades leading up to the second world war and this also may be seen as a critical precursor to the emergence of a post-war compact among industry, state, and local communities regarding federal timber. The Industrial Workers of the World (IWW) relied considerably on their strength in organizing forest workers, particularly in the logging camps. Living and working conditions were notoriously abysmal in these camps (Warf, 1988; White, 1991), and abusive exploitation of workers by timber bosses in the woods far from any regulatory oversight was extensive. These conditions fueled widespread worker resentment and contributed directly to union strength in the industry, further bolstered by the IWW's use of worker lodges and shelters to organize a migratory workforce (Warf, 1988; White, 1991). Timber companies feared and despised the unions and on numerous occasions enlisted repressive and sometimes deadly state intervention (Lembcke, 1978). Increasingly intense efforts to enact sustained harvest regimes in the federal forests therefore became justified in the name of stabilizing communities in the Pacific Northwest, countering not only industry cut-and-run forest practices (Robbins, 1987), but also the associated migratory—and radical—character of the workforce (Hibbard and Elias, 1993).

In the end, however, it was World War II that provided a critical impetus to increase harvest levels. Demand for lumber driven by wartime buildups created a market that could no longer be satisfied by private timber. Moving to meet this demand and to address rural development issues directly, Congress passed the Oregon and California Act (Public No. 405-75th Congress, Chapter 876, 1st Session, H.R. 7618) in 1937, which stated that Oregon and California timberlands “shall be managed . . . for permanent forest production, and the timber thereon shall be sold, cut, and removed in conformity with the principle of sustained yield for the purpose of providing a permanent source of timber supply, protecting watersheds, regulating stream flow, and *contributing to the economic stability of local communities and industries . . .*” (emphasis added). Similar wording is included in the 1944 Sustained Yield Management Act (SYMA) pertaining to the national forests.

Subsequently, post-war harvest levels from public forests soared. In Oregon between 1922 and 1942, annual timber harvest more than doubled, from 3.0 billion board feet (Bbf) to over 6.7 Bbf, yet 90% of the harvest still came from private lands. Between 1942 and 1952, while the total harvest increased by a further 24%, harvest from the national forests increased by almost 300%; by 1962, harvest from public lands in Oregon reached half of the state total (data from Oregon State Department of Forestry, 1996). With 25% of revenues from the sale of USFS timber and 50% of revenues from the sale of BLM timber guaranteed to the counties in which

the timber was sold, the state solidified itself as a kind of broker between industry and community, attempting in part to weave a stable rural social fabric out of towns reliant on private industry and public timber. It hasn't worked.

Industrial Organization

The working population therefore produces both the accumulation of capital and the means by which it is itself made relatively superfluous, and it does this to an extent which is always increasing.

—Karl Marx, *Capital*, Volume 1, p. 783

The main reason it hasn't worked, in addition to the unforeseen or ignored differences between old-growth and young-growth forests, is that the equation of federal timber and capitalist industry with community stability was based on a fundamentally naive model of how capitalist industry evolves. The post-war sustained yield compact seems to take for granted that existing geographies of production would remain in place, contingent on raw material being continually available. This is a highly problematic view of the way that production systems develop over time. Competitive pressure among privately held companies pushes these firms to innovate to increase their relative profitability. Firms systematically attempt to reduce their labor costs by extracting more surplus from workers (by working them harder or longer) and by replacing workers with machinery. This tendency, awesome in its potential for dynamism, creates a technology treadmill within capitalist industries that lurches from innovation to innovation, creating upheaval in the historical development of capitalist production systems and economies (Marx, 1977; Schumpeter, 1938). Among other things, this plays havoc with the geography of production systems (Harvey, 1981; Massey, 1984). As Richard Walker argues, "the enormous productive powers unleashed . . . make capital capable of producing places and reproducing and restructuring the immense geographical apparatus of cities, factories, highways and the like across the face of the globe" (1988:59).

This view of production is central to understanding the post-war evolution of industrial organization in forest products manufacture. The specific trajectory of development is a function of a set of factors, some common across a spectrum of U.S. manufacturing sectors in recent decades (e.g., increasing importance of export markets, technological change, declining union density, and the collapse of pattern bargaining) and others particular to this sector (notably the shift from old-growth to second-growth timber). Yet the one constant feature of the industry during the post-war period has been change in the organization of production,

entailing ongoing reconfiguration of the technical, social, and geographic character of the industry.

I argue that an integrated set of processes circumscribes the evolution of the post-war solid-wood products industry. First, there has been a consistent assault on economies of scale in lumber manufacture (and to a lesser extent in plywood). This has caused the number of mills to fall, has driven up average mill size, and has progressed by means of improvements in material and labor efficiencies that have resulted in persistent productivity-induced job loss. Second, internationalization of forest products capital in recent decades and the growing importance of exports have produced a more globally integrated industry. Third, restructuring of production relations, notably during the 1980s, has decreased union density and the power of organized labor in the sector, and the declining availability of old-growth timber resources has precipitated changes in production technologies, as well as the emergence of engineered wood products.

The most glaring contrast between World War II-era solid-wood products manufacturing and the mills of today is in the sheer size of mills. Lumber manufacturing, dating to the 1820s in the Oregon Territory (Warf, 1989; Williams, 1989), gradually expanded in the region until the outbreak of the second world war. By 1920, there were approximately 1250 sawmills in Oregon and Washington combined (Mitchell, 1988), with 325 in western Oregon alone. The war induced a rapid increase in the number of mills so that between 1936 and 1946 the number of sawmills in western Oregon grew from 470 to over 1100 (West Coast Lumbermen's Association, 1956). Most of these mills were small, cutting fewer than 3 MMbf per year⁴ (Mitchell, 1988), and were operated by a handful of men, initially utilizing water and oxen for power and later small diesel engines. These small mills were also mobile, facilitating their transfer from one location to another, following the availability of timber. Typical operations employed eight to ten men and cut timber within a radius of about two miles of the mill. While divisions of labor did exist, complete with a hierarchy of positions within them, evidence suggests that these divisions were very fluid (T. Joad, personal interview). Mill ownership was both common and fleeting, and mill workers often worked outside in the woods, along with loggers. Commonly, logging crews were employed exclusively by a single mill. Moreover, timber was supplied predominantly from private landholdings.

Immediately following the war, however, mill size began to increase. Lumber production peaked in Oregon in the mid-1950s, and increasingly large mills, combined with stagnant or contracting markets, led to rapid attrition in the industry. Sawmills, many utilizing newly available rural electricity, became increasingly industrial operations. These mills employed hundreds of employees and utilized production line techniques with rigid, highly specialized divisions of labor. The consolidating effect of this increase in scale economies caused the number of sawmills in western Oregon, having peaked at almost 1300 in 1947, to drop to just over 300

by 1964 (with little change in total production). Nationally, although the lumber industry has always been considered one of the least concentrated manufacturing industries in the U.S., between 1947 and 1963 the four-firm concentration index⁵ in lumber manufacture increased from 4.8 to 11.0 (Irland Group, 1993). Average lumber mill output in western Oregon during this interval increased by almost three times, from about 6 MMbf per year to well over 17 MMbf per year (West Coast Lumbermen's Association, 1956). And this process has continued (see Table 1).

Consolidation of solid-wood products manufacturing facilities in Oregon has entailed processes familiar to students of industrialization, namely deepening divisions of labor and solidifying class structures. It is almost as though Fordism came late to the forest. One of the principal social costs of consolidation has been that increases in productivity and stagnant market demand have cast workers out of their jobs. Greber (1993) estimates that productivity increases in Oregon and Washington between the late 1970s and late 1980s—holding output constant—accounted for the loss of about 30,000 jobs (see also Raettig and McGinnis, 1996). In absolute terms, the number of workers employed in sawmills in Oregon dropped from 25,500 in 1969 to 18,500 in 1989, while production increased from 6.9 Bbf to 8.5 Bbf. In plywood, employment over the same period dropped by over half from 24,300 to 11,000 while production dipped by about 6% (Ruderman, 1976, 1984; Warren, 1994). A number of observers (Chase, 1995; P. Ehinger, personal communication) have discounted this effect, noting that total employment in the wood products industry per volume harvested has changed little in decades. While largely true, this ignores important structural differences within these aggregate industrial classifications, particularly in lumber and wood products. This classification includes lumber and plywood, but also such industries as mobile-home construction and millwork (windows and doors, etc.). Secondary wood manufacturing jobs tend to pay much less than primary wood products jobs. Moreover, their geographies are distinctly different than primary wood processing jobs, tending to concentrate closer to markets rather than

Table 1. Oregon Sawmill Industry Snapshots, 1968 and 1988

Year	Number of Sawmills	% Capable of Producing 120 Mbf per Day	Aggregate 8-Hour Capacity (MMbf per day)
1968	300	20	23
1988	165	60	25

Sources: Manock, E.R., G.A. Choate, and D.R. Gedney (1968) *Oregon Timber Industries: Wood Consumption and Mill Characteristics*. Portland, OR: Pacific Northwest Range and Experiment Station, U.S. Department of Agriculture.

Howard, J.O. and F.R. Ward (1991) *Oregon's Forest Products Industry, 1988*. Portland: Pacific Northwest Range and Experiment Station, U.S. Department of Agriculture.

raw materials. Thus, the considerable and ongoing shift in the composition of wood products jobs toward secondary manufacturing is neither socially nor geographically neutral (see Raettig and McGinnis, 1996).

Internationalization of production has also changed the landscape of competition in the industry. This is indicated by two trends: (i) the increasingly dominant role of large, integrated multinational forest products companies and (ii) the growth of exports. Forest products firms are by no means the most internationally integrated firms of the late-twentieth century, but at the same time, there is no shortage of multinational forest products firms with lands and manufacturing facilities in Oregon and the rest of the Pacific Northwest. Prominent examples include Georgia-Pacific, with operations in Canada, Mexico, Hong Kong, Switzerland, Panama, and Germany, and the Weyerhaeuser Corporation, with operations concentrated in the U.S. and Canada, including ownership of land or cutting rights on about 28 million acres between the two countries, but also with substantial interest in New Zealand. The regional development implications of the presence of such multinational companies are not wholly generalizable. Yet the international integration of these companies—particularly their often extensive investments in timberlands abroad—creates the potential for firms to gain leverage over communities, labor, and regulators by trading locations off of one another, a familiar tactic in the politics of industrial location.

Also notable in recent decades has been growth in exports of Oregon wood products. Export of raw logs (logs cut only in lengths, but otherwise not processed) from Oregon escalated dramatically in the 1960s, with softwood log exports increasing from about 200 MMbf in 1961 to over 600 MMbf in 1971. Despite a ban on log exports from public forests in 1973, growth in the export of softwood logs from Oregon continued through 1988, reaching 1.4 Bbf that year (Ruderman, 1976, 1985; Warren, 1994). Large integrated forest products firms simply substituted logs from their own lands to feed the export demand, driven in large part by high prices available in the Japanese market. More recently, Oregon primary wood products mills have begun to export manufactured wood products, particularly lumber.

The third process of restructuring central to understanding the way that forest products production has evolved in the post-war period has taken place in the arena of industrial relations. As outlined above, organizing efforts on the West Coast were critical to the political dynamics of the industry prior to World War II, but were also of national significance in the struggle between the American Federation of Labor (AFL) and the Congress of Industrial Organizations (CIO) and between radical and business unionism (Lembcke, 1978). Moreover, Widenor (1991) argues that despite the attention given to early autoworker pacts, labor-management relations in the western solid-wood products industry helped establish pattern bargaining in other industries across the country. Union density in the western solid-wood products industry peaked in the 1940s, however, and

has been declining more or less ever since (Lembcke, 1978). The increasing tendency of forest products companies to outsource logging and falling operations has been a factor, as have internal divisions within the unions. In the mid-1980s, following a deep recession in the industry, Louisiana-Pacific succeeded in decertifying locals of the IWW and the Western Council of Industrial Workers (WCIW) at fifteen of their facilities (Widenor, 1991). Subsequently, Weyerhaeuser negotiated a major wage concession from its workers, and the pattern collapsed. These changes in industrial relations, closely tied to shifting patterns of regional industrial development and profitability, have changed the landscape of social relations in the Pacific Northwest. Moreover, the collapse of the pattern immediately preceded the zenith of the regional environmental movement's strength, the fallout from which has further eroded labor power.

The last process that is critical to understanding post-war trends in the organization of the industry is the transition from harvesting old-growth, large-diameter timber to younger-growth, smaller-diameter timber. While restrictions on federal timber sale programs are often viewed as a watershed, it is clear that the industry has been restructuring around a changing raw material supply base for some time. Transition in the resource base since the late 1950s is indicated by declining log diameters and by shifts in the timber inventory toward younger age classes (Lettman, 1988). This has resulted in a gradual intensification of silvicultural efforts as firms try to increase yields from cultivated plantation forestry. Smaller-diameter timber has allowed for the introduction of increasingly mechanized logging systems and is thereby implicated in the growth of contract logging, as firms put the costs of equipment onto contractors. It has also placed pressure on regional mills accustomed to old-growth timber, forcing some mills to close. However, surviving mills utilizing smaller, younger logs have endured a profitability squeeze in their manufacturing operations and have been forced to invest in new mill technologies. At the same time, entirely new sectors have emerged as competitors to traditional solid-wood products, producing substitutes such as laminated veneer lumber and oriented strand board (collectively termed engineered wood products; see Skog et al., 1995). These sectors are characterized by relatively capital-intensive production technology and have thus been pioneered and largely dominated by existing large integrated forest products companies.

The Illinois Valley

Statewide historical patterns in the organization of production in the forest products sector—and specifically in lumber manufacture—provide a context for parallel developments in the local industry during the post-war period. The history of the forest products industry in the Illinois Valley reveals clearly an unfolding logic of capital involving a deepening technical division of labor and progressive escalation in the scale of

production. Thus, while local skills and perceptions have been shaped by decades of community reliance on forest products manufacture, the industry itself has been constantly changing, evolving toward fewer, larger mills and directly employing fewer and fewer people per unit of output. It is a familiar story of the dynamics of capitalist industry. But it also calls into question the basis of the post-war compact, namely, the equation of federal raw materials and capitalist industry with community social and ecological sustainability. This is a perspective that is sadly lost amid the rhetorical dichotomy between preservation and industrial exploitation.

In Josephine County and the Illinois Valley, accurate records reporting the number of mills and aggregate employment levels are difficult to find, although it seems that the expansion in both the number of mills and output came somewhat later than in rest of the state, as did escalation of the timber harvest from local federal forests. Early mills, as in other parts of the state, were primarily small and mobile, employing diesel engines to run the headrig and horses and oxen to haul logs. Also mirroring regional patterns, private land sustained the early industry, with many tracts left to the county following timber removal (Josephine County Historical Society, 1988). When expansion of the industry did come, it was driven by the buildup to World War II. Timber harvest in Josephine County in 1925 was a mere 4.2 MMbf, but exceeded 35 MMbf by 1937 (Oregon State Department of Forestry, 1996). Oral histories (H. Ford, personal interview; J. Hagus, personal interview; T. Joad, personal interview) and West Coast Lumbermen's (1956) data for Josephine County suggest there were somewhere between 50 and 100 mills in the county by the early 1940s.

Timber harvests in Josephine County soared further immediately after the war, as the region's lumber and plywood industries geared up to supply the nation's booming housing industry. By 1951, harvest levels in the county reached 320 MMbf, representing a 600% increase over 1941 and establishing an all-time high for the county. Incredibly (given harvest levels of today), about 95% of this volume came from the county's private lands. In the ensuing decades, however, public lands became increasingly devoted to sustaining local industry and, ostensibly, communities. By 1962, public lands (overwhelmingly those of the BLM and the USFS) accounted for roughly 83% of the year's harvested volume.

Soon after the war, however, the number of mills began to decline. Small mills were rapidly replaced by larger, more capital-intensive operations, utilizing newly available rural electricity to power permanent (i.e., immobile) operations. With the assault on economies of scale, combined with stagnating aggregate harvest and production levels both in Oregon in general and Josephine County in particular in the post-war period, the number of mills in the county dropped from a peak of 81 in 1948 to 10 in 1964. Interview data and historical records clearly indicate a consistent process of local attrition in the Illinois Valley, as expanding capital intensity combined with restricted resource availability and market demand to

reduce the number of operating mills. Four main mills dominated the local industry as recently as 1965 (J. Hagus, personal interview), but the last significant local competition for the remaining mill closed in the early 1980s.

In addition to the consolidating effect of post-war reorganization, the local industry has exhibited other patterns consistent with region-wide trends. Specifically, the single remaining mill in the Illinois Valley has become increasingly reliant on export markets for its Douglas-fir lumber. Advanced automation technologies introduced in the late 1970s and early 1980s have allowed the mill to manufacture smaller-diameter logs, while also facilitating batch production of imperial and metric dimensional lumber, the latter primarily intended for sales to Japan. Though never unionized, the mill has moved toward outsourcing trucking and logging services, thereby decreasing its payroll. And while the mill has remained in the hands of an independent local family since the 1920s, it competes in local timber and lumber markets with the likes of Boise-Cascade, Roseburg Forest Products (a regionally important integrated firm), Stone Container, Georgia-Pacific, and Weyerhaeuser.

As the industry has become more consolidated, employment opportunities in lumber milling have been reduced. Further, outsourcing for fallers and cutters ("loggers") has not only reduced the payroll of the mill, but has at the same time displaced the risks of accidents⁶ and discontinuous work onto now independent contractors. These changes have occurred in the context of slow change in the local economy, as diversification in the Illinois Valley has lagged behind more rapid changes in Josephine County's overall economy. Fewer employment opportunities in the wood products sector, coupled with specialized skills applicable primarily to timber cutting and lumber manufacture, as well as scarce alternative employment opportunities, have helped feed a spiral of escalating poverty and socioeconomic depression (JCCCF, personal communication), including chronic underemployment.⁷ Local trends echo nationwide growth in rates of rural poverty (Kodras, 1997) and, more specifically, chronic low income and employment levels in rural extractive economies (Freudenberg and Gramling, 1994; Humphrey et al., 1993).

As Massey (1984) has argued, local labor skills and social structures are profoundly shaped by dominant regional production systems, one of the factors reinforcing regional agglomerations. A downside of this phenomenon, however, is that restructuring or a decline in the dominant industry can leave communities ill-suited for attracting investment in new sectors. In this case, the industry encouraged development of specialized skills, yet placed little value on education. This has helped perpetuate low levels of literacy and high school graduation. Low educational attainment and specialized labor skills have in turn been identified by local planners as handicaps in the community's efforts to attract new investment (M. Franklin, personal interview; JCCCF, personal communication). In this sense, the post-war reliance of communities such as those in the Illinois

Valley on the forest products sector, underwritten by federal natural resource management policy, has contributed directly to the problems such communities now face (see also Power, 1996).

Conclusion

In the mills and in many mining areas are the years of employment of children (and of women underground); and the large scale enterprise, the factory system with its new discipline, the mill communities—where the manufacturer not only made the riches out of the labour of the ‘hands’ but could be seen to make riches in one generation—all contributed to the transparency of the process of exploitation. . . .

—E. P. Thompson, *The Making of the English Working Class*, p. 198

The central point of this paper is that the post-war sustained yield compact among the federal government, capitalist industry, and rural society in the Pacific Northwest was fundamentally flawed. This compact, equating the combination of a perpetual flow of timber from federal forests with community economic and social stability, implicitly assumed an overly static model of industrial organization under capitalism. Yet the forest products industry has shown a consistent tendency to evolve and restructure, reconfiguring as it does the technical, social, and geographic organization of production. Specifically, the industry has shown a consistent tendency to shed workers and mills in an ongoing pattern of consolidation stemming from increasing economies of scale under stagnant markets. More recently, restructuring in the industry has encompassed growing international integration through direct investment and expanding export markets, restructured production relations, new production technologies, and conversion from old-growth to young-growth timber, all wrapped together in ongoing reconfiguration of the industry’s technical, social, and geographic organization. The end result is that policies were endorsed and helped to solidify community reliance on the timber industry, even while the dynamic evolution of the industry was systematically undermining this relationship. The analysis of dynamic patterns of forest products manufacture presented in this paper recalls themes that have long been identified with industrial change and social differentiation under capitalism, including the ways that accumulation draws rural areas into cycles of production and exchange. Marx (1977), of course, described these processes in detail, arguing that the progressive development of production systems under capitalist social relations continually calls into question existing patterns of social organization. Polanyi (1944), too, touches on a related theme in his analysis of nature as one of three types of fictitious commodity, anathema to full commodification under capitalism,

and so rendered inherently problematic and subject to historically mediated struggles among industry, the state, and civil society.

Thus, the dynamics I have described are hardly novel. Nor is their severity particularly extreme. As Power (1996) demonstrates, the average duration of employment in wood products manufacture is no different than in other sectors. What he doesn't tell us is whether to laugh or cry. As Thompson (1963) observes (see above), what really differentiates industrial evolution in rural, extractive communities is the relative clarity of the social process involved, as structurally simple economies fail to diversify fast enough to absorb displaced workers.

Given the open hostility toward corporate capital at times shown by Gifford Pinchot and other Progressives and the sweeping character of New Deal reformism, it may seem overstated to claim that sustained yield federal forest management policies constructed in these political climates betray both a naive understanding of capitalism's tendencies and the source of these tendencies. Indeed, the motivation of New Deal reforms in general and the Oregon and California Sustained Yield Management Acts in particular was in part to address a growing and widely perceived crisis in American capitalism. And yet it is telling that neither these acts, nor subsequent legislation, nor policy development within the BLM and the USFS ever seriously defined community stability, much less prescribed actual steps to protect communities aside from guaranteeing sustained yields of timber in local timber sheds (Robbins, 1987; Schallau and Alston, 1987; Waggenor, 1977). If the destructive tendencies of capitalism were recognized, the problem seems to have been located not in the social organization of production, but in the ownership of the forests.

Instead of developing genuine attempts to follow through on commitments to supporting local communities, the USFS and BLM have allowed community stability, along with multiple use, to languish in the dogged pursuit of accelerated cutting rates (Hirt, 1994). This only serves to highlight, however, the need to defend public interest in federal natural resource management, something that has been largely subordinated in the post-war period—and a perspective that remains largely and conspicuously absent from the contemporary political discourse regarding federal forest management. Given the scale of ecological transformation entailed in the conversion of publicly owned old-growth forests to younger forests and, indeed, in the appropriation more generally of vast quantities of the American West's "natural capital," it is germane, paraphrasing Harvey (1996), to ask not simply whether such transformations are ecologically sound or unsound, but also for whom they have occurred.

Acknowledgments

I wish to thank the people of the Illinois Valley for suffering my inquiries, as well as all of those who agreed to do interviews both within the valley and elsewhere. I also

wish to thank Lesley Barnhorn, William Boyd, Julie Guthman, James McCarthy, and Paul Sabin for comments, along with Don Mitchell for a close reading of and helpful comments on an earlier draft. All remaining errors are my responsibility. This research has been supported by a grant from the Social Sciences and Humanities Research Council of Canada (752-93-0612) and by the MacArthur Foundation.

Notes

1. Pulp and paper, lumber, and plywood comprise the core commodity systems of the primary wood products industry. My analysis here is restricted to the solid-wood products industry and particularly to the lumber industry. This is because there are no pulp mills in Josephine County and no plywood mills in the Illinois Valley.
2. Trees in young stands are smaller on average (in height and girth), while artificial reseeded has reduced tree species diversity. Biological communities associated with forests of different ages make the differences between older and younger forests even more apparent. Whichever type of forest is more socially desirable, it does seem obvious that a major transformation of the Pacific Northwest's forests has been accomplished by 150 years of industrial logging. Incredibly, some prominent observers seem to want to deny even this (see Chase, 1995).
3. The 1990 census records 7,600 people in the combined census county divisions of Wilderville and Cave Junction (U.S. Department of Commerce, 1993), while local sources put the population of the county closer to 12,000 (M. Franklin, personal interview).
4. By comparison, a typical modern sawmill in Oregon will manufacture 5 MMbf in one month.
5. The share of total industry production accounted for by the largest four firms.
6. Logging is perhaps the most dangerous occupation in America. Fatal accident rates occur in logging at nationwide rates of between 90 and 100 per 100,000 loggers per year, compared to 11 and 23 per 100,000 for police and farm-workers, respectively (Bureau of Labor Statistics, 1997).
7. Census figures for 1990 show county unemployment near 10%, with data for the valley closer to 16%. More recent estimates indicate the persistence of this disparity, with Grants Pass unemployment consistently in single digits, while the valley's unemployment has remained at or above 13% (JCCCF, personal communication; State of Oregon Employment Department, 1996).

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