FORUM

ECO-FORESTRY VERSUS THE STATE(US) QUO:

Or Why Innovative Forestry Is Neither Contemplated nor Permitted within the State Structure of British Columbia

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INTRODUCTION: THE RETURNING WAR IN THE WOODS

As the "war in the woods" returned to British Columbia in the summer of 1997, the forestry-environment conflict seemed to have been with us always. Yet, it was only as cutting rates increased after the Second World War and accelerated through the 1970s and 1980s[1] that many began to realize that the forests were not inexhaustible and to challenge forest industry plans in their regions. A little over a decade ago, environmental campaigns started to focus on the "last places left" in an attempt to preserve one or more of the unlogged landscapes remaining in several highly developed regions. Notable early examples of public conflict were South Moresby, the Valhalla region of the Slocan, Meares Island in Clayoquot Sound, and the Stein Valley. As was written, for example, about the Stein Valley:

> There are no lakes under 2500 feet in altitude within 100 miles of Vancouver that have not been logged to the shoreline, dammed or both. *Not one* ... There is only *one* major valley within 100 miles of Vancouver that has not been logged, flooded or both. *Only one.* It is the valley of the Stein River. It's just that simple. (Mason, cited in M'Gonigle and Wickwire 1988)

Throughout the 1980s and early 1990s, a running series of "valley-by-valley" battles ensued, involving environmentalists, the corporate-

[1] Currently, the Allowable Annual Cut exceeds the Long Term Harvest Level (until recently, called the Long Run Sustained Yield) by approximately 30 million cubic metres (personal communication, Cassandra Mann, Ministry of Forests, Timber Supply Branch, July 1997).

dominated forest industry, and the provincial government. Throughout this period, the strength and power of the wilderness preservation movement grew from a handful of individuals to a broad-based social movement represented by dozens of new organizations.

In 1991, the election of the New Democratic Party (NDP) set the stage for change. The new government's platform of protecting 12 per cent of the province was implemented with the creation of the Commission on Resources and the Environment (CORE) in 1992. By the end of the Harcourt term, over 200 new protected areas were established, an accomplishment that probably stands as the premier's greatest achievement. In addition, the government implemented two other initiatives that affected the character of the forest industry: the Forest Practices Code and Forest Renewal BC.

Despite these tangible outcomes, forestry conflict has not faded from view. Far from it. Forest cutting permits are issued in areas where past grievances remain unresolved, such as the Slocan Valley, and in new hot spots, such as the central coast (as the protesters call it, the "Great Bear Rainforest"), reigniting protests and causing new arrests. Part of the current problem lies in the limited protection provided to those old-growth valley bottoms where one finds the forests that are the most prized, both economically and ecologically.[2] But the roots of the conflict are more pervasive, reflecting the industry's and the government's continued dependence on a program of resource liquidation across the entire forest landscape, and its accompanying commitment to a demand-and-production-oriented ideology. Ecological problems are politically intractable to the extent that they cannot be resolved by being either safely segmented into "protected areas" or converted into new profit centres for large industries. In this situation, the conflict in the woods in British Columbia and, indeed, around the world entails a fundamental choice between "industrial" and "eco" forestry. If the values associated with natural forests are to be sustained, then the finite nature and immense non-timber value of forest ecosystems must be recognized, and there must occur a shift in the character of forestry planning and practice across the landscape.

In this essay, we introduce the concept of "ecosystem-based forestry," contrast it with industrial forestry, and consider the substantive com-

[2] Generally, it is claimed that, within the province's overall target of 12 per cent protection, only 5 to 6 per cent of old-growth forests is being protected. The difference is often accounted for by visually dramatic, but economically and ecologically less productive, alpine areas – what environmentalists dismiss as "rock and ice."

ponents of an eco-conversion strategy. The key elements of this strategy are land tenure redistribution, administrative reorganization, and economic redirection. Despite the logical necessity of such reforms, we argue that they are inconceivable within the current structures of the BC state, whether ruled by a Social Credit, Liberal, or New Democratic administration. State authorities are quite simply too deeply implicated in the forest industry – economically, administratively, technically, and institutionally – to conceive of alternatives outside the status quo.

This relative lack of autonomy of the BC state has implications for future political action. For one thing, the effort-effectiveness curve of statist environmental strategy is levelling out as British Columbia reaches the limits of legislative solutions to the forestry crisis. Indeed, allied with industry and labour, the government is further entrenching industrial forestry in the province through the Jobs for Timber Accord. In this situation, a new strategy is necessary – one that focuses on a comprehensive vision for change and on building a community forestry social movement that brings together First Nations, municipalities, private and public woodlotters, environmentalists, eco-foresters, horse loggers, community economic development specialists, cooperatives, family-owned enterprises, and community groups in a new program of social change.

INDUSTRIAL VERSUS ECO-FORESTRY

British Columbia's industrial strategy is to respond to global timber demand by maintaining competitiveness in commodity production through maximizing the scale of timber production while minimizing the costs of operation (M'Gonigle and Parfitt 1994; Burda and Gale 1996). To achieve this, the industry strives to increase its "efficiency" in logging and milling by adopting technologies that process more wood with fewer people. As a result, high-capacity mills have come to dominate British Columbia's rural landscape, depending on ever-increasing supplies of timber to produce four main commodities for export to the global marketplace – pulp, paper, newsprint, and dimensional lumber.[3] These products generate relatively low marginal returns, necessitating high short-term levels of exploitation and

[3] For example, approximately half of the timber (per cubic metre) cut on public land finds its way either directly or indirectly into the pulp mill. Pulp, newsprint, and dimension lumber comprise 88 per cent of British Columbia's forest products exports. See Burda and Gale 1996.

production that, given the character and limits of the resource, are not sustainable.[4]

This demand-driven path has been carved through almost all of the province's valley bottoms, clearcutting over 200,000 hectares of forest per year. According to the Sierra Club's most recent mapping project, over half of British Columbia's ancient coastal rainforest has already been logged.[5] Industrial logging practices, namely clearcutting, have led to such negative ecological consequences as the loss of biodiversity, soil erosion, contamination by pesticides and herbicides, and the destruction of riparian ecosystems.[6] Meanwhile, the present policy of protecting islands of wilderness within a sea of industrial activity does little either to prevent further fragmentation or to ensure the maintenance of biodiversity where cut levels remain unchanged.[7]

During the 1980s, timber production peaked, with an Allowable Annual Cut (AAC) of some 90 million cubic metres. Meanwhile, forestry-related jobs and provincial revenue generated by the forest industry declined.[8] Industrial forestry sheds labour for capital investment in machinery, and this investment is controlled largely by financial institutions external to the community and the province. Not only does the community lack control over both investment

[4] In the pulp sector, for example, the industry responds to global price and supply cycles that lead to overproduction and market gluts. In 1995, when pulp prices rose to US$1000, the industry was stimulated to oversupply, which resulted in plunging prices, mill closures, and layoffs. While the industry often claims that it suffers from a timber shortage, overproduction has resulted in an actual pulp log surplus on the Coast, with cheap pulp logs being imported from Alberta, Saskatchewan, and the Yukon. See *Papermaker*, January 1996, 14, 29.

[5] See Sierra Club of British Columbia 1997.

[6] It is estimated that loss of productivity due to soil erosion caused by industrial forestry costs the province over $800 million a year – a figure that does not include its impact on water quality and fisheries (M'Gonigle and Parfitt 1994, 73).

[7] In the United States, despite 36 million hectares of protected wilderness, forty-two species of mammals have disappeared from parks since their establishment. Over 800 species are on the federal endangered species list, with a further 3,600 species being candidates for inclusion. In contrast to a parks-only strategy, biodiversity maintenance requires special management of large areas of land that include entire watersheds and corridors linking reserves that have been managed with biodiversity as the primary governing principle. In contrast, the common practice of clearcutting right up to the park boundary compromises ecological integrity on both sides of the park boundary. For a discussion of the American experience here, see Noss and Cooperrider 1994.

[8] Between 1981 and 1991, 27,000 jobs were lost in the forest sector due mainly to capital investment in high-technology automation (British Columbia, 1991). In the 1980s, a period of "sympathetic administration" led to a lowering of stumpage rates, and for most of the decade it cost the Ministry of Forests more to run the forest ministry than it collected in direct revenues. See Travers 1993.

decisions and production revenues, but the industry's overriding mandate to reduce costs, increase production, and service its capital needs supersedes any commitment to maintaining community stability or ecosystem integrity. As a result, the industry has always been opposed to environmental regulations in British Columbia and has lobbied to have new laws and policies revoked (Meissner and Curtis 1997b).

Industry's ever-increasing appetite for timber has historically led to a rate of logging that is not sustainable. Already, the province is experiencing the "falldown effect" – the reduction in both the quality and availability of commercial timber as industry makes the transition from first- to second-growth forests. Ironically, this transition is the inevitable consequence of "sustained yield management," a fifty-year-old policy that mandates the liquidation of diverse old-growth forests and their replacement by even-aged conifer plantations. Sustained yield policy was supposed to ensure that liquidation rates were sustainable, with second-growth forests to come smoothly on stream as the old-growth forests declined. Instead, responding to short-term economic pressures, the chief forester has, over the years, regularly increased the AAC well beyond the agreed-upon "long run sustained yield." Even today, driven to remain competitive in the global commodities market, the industry remains fixed in its demand-driven mandate. Therefore, recent attempts to mitigate the effects of falldown do not concentrate on changing the character of the demand but, rather, on gaining access to fresh supplies of old-growth from more remote places, from contentious community watersheds, or from accelerated logging rates.

Thus has industrial forestry perpetuated itself by depleting the province's inherited natural capital; as it continues on this path, it limits society's options. For example, current zoning strategies, such as the Vancouver Island Resource Targets (VIRT), are intended to lock up vast areas of forest land (some 50 per cent of the Island's forest base) for intensive timber production (VIRT 1996), regardless of its negative impact on biodiversity, fisheries, or tourism, or even on alternative techniques of forestry. Indeed, confronted with a decline in its international competitiveness, advocates of industrial forestry propose to restructure the tenure system in British Columbia in order to gain even greater control of the province's land base. Building on models employed in the United States and New Zealand, the former dean of forestry at the University of British Columbia, Clark Binkley, argues

that the current tenure system requires reform in the corporate interest to stimulate investment and to create a globally competitive and efficient forest products industry (Binkley 1997). Binkley proposes a three-tier zonation approach to forest tenure. In the first tier, "a core of protected areas must be selected so as to include a reasonable representation of the great variety of BC ecosystems in large enough blocks to sustain landscape-scale processes" (Binkley 1997, 50). With the protected areas set aside, joint-use zones for integrated resource management would be established. These areas would be managed under a modified Forest Practices Code that would not lead to forest fragmentation. Finally, approximately 20 million hectares of British Columbia's forest land would be zoned and "managed very intensively to make up the harvests lost through the creation of protected areas and low-intensity management areas" (50-1).

At first blush, Binkley's model is attractive because it promises BC citizens that they can have their cake and eat it too. That is, they can simultaneously achieve increased environmental protection and maintain the AAC at the existing level. The price, however, is that a significant proportion of the BC land base (20 million hectares) would be handed over to corporations on tenure conditions much more secure than those currently available under either Forest Licences (FLs) or Tree Farm Licences (TFLs). Current tenure arrangements, according to Binkley, are insufficient to encourage corporate investment, and "in BC stronger property rights could be achieved either through outright privatization of those lands in the intensive management zones created by CORE or through the sale of long-term leases along the lines of New Zealand's recent policy" (Binkley 1997, 53-4).

There are several reasons why Binkley's model will not achieve the goal of sustainable forest management in British Columbia. First, the practices of intensive forest management – large-scale clear-cutting; monoculture plantations; the use of chemical herbicides, pesticides, and fertilizers – have negative environmental effects well beyond the areas in which they are practised. Second, ecosystems are interdependent, and dividing them into separate zones does not lead to sustainability. Third, with regard to growing timber, British Columbia is at a competitive disadvantage compared to countries with climates better suited to plantation forestry, such as the southern United States, Chile, New Zealand, Brazil, and Indonesia. Corporations are already investing outside of British Columbia to take advantage of plantation forestry, and there are significant doubts

that British Columbia and Canada can remain competitive in this field (Burda and Gale 1996). Fourth, the best growing sites for the industry are also the best sites for biodiversity and, thus, are coveted by both groups. Exclusive industrial zoning will not resolve the conflicts over these sites, and, by putting them under corporate control, anti-environmental practices will be encouraged and conflict will increase. Finally, Binkley's proposal further entrenches corporate and union power within the provincial political economy without resolving the lack of access to timber that plagues woodlotters, First Nations, and secondary manufacturers. It binds the province to a tenure system even more rigid and resistant to change than the present one.

By comparison, ecosystem-based forestry, built on the science of conservation biology and landscape ecology, sets the protection and conservation of biological diversity as the cornerstone of natural resource management and discourages practices that simplify ecosystems. In contrast to current zonation policies that employ political objectives in delineating forest use areas, ecosystem-based planning recognizes that diverse ecosystems must cohere across broad spatial and temporal dimensions and that connectivity, or corridors, within a forest landscape is essential for the movement of plants, animals, energy, and nutrients (Silva Forest Foundation 1996). While industrial forestry is premised on economic criteria and reshapes natural processes to accommodate economic demands, eco-forestry does the reverse.

Fundamental to eco-forestry is a shift in forest practices that allows some timber to be cut without compromising the integrity of the whole forest. Eco-forestry replaces clearcutting with lower impact methods such as individual tree selection. An ecosystem-based (as opposed to timber-based) approach to forest use focuses on what to leave, not on what to take, in order to maintain the ecosystem in the long term. This also permits the ecologically sustainable use of both timber and non-timber products and services, such as berries, mushrooms, salal, medicinal plants and herbs, and tourism (Drengson and Taylor 1997). Cutting levels, therefore, are not determined by a volume-based AAC, but by the constraints of maintaining intact forest ecosystems (Silva Forest Foundation 1996). Fundamental to eco-forestry is the need to reduce the volume of timber cut and, in so doing, to sustain the forest's natural capital.

A shift to eco-forestry, which necessitates a significant reduction in timber volume, entails the maximization of value in order to sustain local economies and employment. By maintaining old-growth forests through careful stewardship, and by fostering a diverse value-added manufacturing sector, communities can enjoy the forest's benefits in perpetuity. Eco-forestry offers a workable technical alternative to industrial forestry. But the short-term economic impacts of removing the extensive environmental subsidies underpinning industrial forestry cannot be denied. Making the transition demands a supportive government and broad social consensus (Select Standing Committee on Forest, Energy Mines and Petroleum Resources 1993; Power 1996). Yet, even where eco-forestry can be demonstrated to have great economic potential, it is a huge challenge to overcome the ideas that justify massive investments in volume-based corporate infrastructure and deference to the inertia of centralized bureaucratic management.

CHALLENGING THE STATE-US QUO

The political challenge of eco-forestry requires that the state adopt a new "political ecology." This begins with the needs of the *ecosystem* itself; that is, it takes sustainability seriously as an overriding social objective. In addition, it sees the human community as part of what must be maintained within an overriding natural context. In examining the forestry challenge, this perspective thus draws a distinction between incremental reforms within the context of established state and corporate hierarchies, and structural change that reconstructs the institutions of the state and economy so as to accord with the primary goals of maintaining ecosystem and community health. Today, these institutions stand astride natural ecosystems and marginalized communities as the reservoir from which they draw their wealth. The task of political ecology is to create the intellectual foundations for an institutional reconstitution. As one political ecologist put it, the aim is "to achieve a consciously self-regulating society in the face of the ecological abyss, to climb off the roller-coaster of run-away social evolution and actively take responsibility for social organisation into our own hands" (Atkinson 1991).

At the heart of this social reorganization is a new relationship between institutions of centralized power and those rooted in an ecosystem. Today, central power is based on the cooperative integration of three dominating hierarchical forces: big corporations, big gov-

ernment, and organized labour. This "iron triangle" receives ideological legitimation from the modernist "scientific" enterprises of neoclassical economics, industrial forestry, and bureaucratic systems management. Embodied within the theory and practice of sustained yield management, these centralist ideologies equate a particular, historically contingent and increasingly unsustainable organizational form and set of short-term interests with the long-term evolutionary destiny of the social and natural worlds (M'Gonigle and Parfitt 1994). Geographically, what might be called "industrial centralism" is supported by resource flows from the hinterland to the heartland; politically, these flows are backed by a system of corporate/bureaucratic decision-making that concentrates authority at the top. Economically, these structures are fuelled by linear flows of energy and materials that displace traditional circular wealth-creating processes that sustain communities where they are. In contrast to existing state strategies, which seek to maintain these centralist hierarchies by preserving linear resource flows, the task of political ecology is to empower both spatial (i.e., territorially based) communities and new forms of non-hierarchical social and economic organization in order to reinvigorate the circular processes on which sustainability has always been, and is inevitably, based. In the debate over forestry, therefore, a political ecology approach contrasts industrial forestry with a decentralized, non-hierarchical, community-based eco-forestry alternative.

THE COMMUNITARIAN ALTERNATIVE

Over the past decade, scholars and activists have begun to articulate such a community-oriented alternative to state- and corporate-based structures of decision-making and production. The academic literature is marked by a broad incursion of communitarian thinking into political theory (Etzioni 1983; Taylor 1989; Kymlicka 1989; *Critical Review* 1994). In our relations with the natural world, this thinking has been manifest in the resurgence of concern for the protection of communally regulated "common property" resources.[9] This concern stems from a growing awareness that the historic patterns of centralist economic development (promoted through the market and the state)

[9] For an ongoing account of this new approach, see the *Common Property Resource Digest*, a publication of the School of Forestry and Environmental Studies, Yale University. A leading text is Ostrom 1990.

have been fuelled by a planet-wide attack on the natural world, accompanied by the erosion of those traditional, community-based cultural systems of common property management that embody a territorial perspective. In this understanding, economic growth embodies a privatizing process of "development as enclosure" (*Ecologist* 1993).

At a practical level, many resource managers have begun to articulate a new school of "ecosystem-based management" (Keiter 1994; Grumbine 1994). Taking their impetus from ecological science and the awareness it has generated about the loss of ecosystem integrity and biodiversity, these resource managers note that existing modes of regulation do not safeguard ecosystem health. In their prescriptions, ecosystem scientists point as much to the need to reform agency mandates, alter jurisdictional boundaries, and restructure decision-making processes as they do to the need to set out strict scientific principles and criteria to protect biodiversity and ecosystem integrity (Grumbine 1994). A telling distinction is emerging between "ecosystem management" and "ecosystem-*based* management." The former seeks to preserve status quo industrial processes by expanding established institutional mandates to manage entire ecosystems for timber production; the latter takes a precautionary approach to economic impacts by seeking to constrain human activity *within* the limits of ecosystem functioning (Grumbine 1994). As the landmark report of the Clayoquot Sound Scientific Panel (CSSP) notes, the issue is not so much *forest* management as it is *forestry* management – controlling human activities and impacts within ecosystem limits rather than taking existing productive and regulatory institutions as given and seeking only to contain the associated environmental damage or to repair it once it has been done (Scientific Panel 1995a/b/c).

A community, ecosystem-based approach to forest management offers an innovative approach in British Columbia and elsewhere (M'Gonigle 1998; Lynch and Talbot 1995). In practical terms, three components characterize the communitarian/ecological approach. These are community management and control, the generation of local economic benefits and employment, and a commitment to ecosystem integrity. Directly involving citizens in the management of regional resources, ecosystem-based local governance extends beyond the notion of the community as mere tenure-holder under existing institutional structures to the notion of the community as significant

decision-maker. Similarly, community control can better ensure that timber and non-timber products are retained locally for "value-added" processing that fosters employment and helps build a diverse economy. Retaining revenues locally is critical to a community's capacity to practise sustainable community economic development (Mathewson and M'Gonigle 1997).

The ecological component is often overlooked by communitarians, however – even by those promoting "community forestry." For example, Etzioni (1993) compares communitarianism to the environmental movement: "Communitarians are dedicated to working with our fellow citizens to bring about changes in values, habits, and public policies that will allow us to do for society what the environmental movement seeks to do for nature: to safeguard and enhance our future." Etzioni (and many other communitarians) fail to integrate these two movements because they adopt too limited a definition of "community." In its fullest sense, a territorial community includes not only the human community, but the natural community; not only present inhabitants, but future generations. Continuity with such a whole context is what community is all about.

THREE COMPONENTS OF A TRANSFORMATIVE REGIME

At a practical level, the implementation of ecosystem-based forestry in British Columbia requires that reforms be made to the tenure system, to the structure of administration, and to the supporting economic framework.

1) Tenure Reform: The Foundation for Eco-Forestry

The implementation of ecosystem-based forestry hinges on the transformation of the tenure system. The current tenure system was designed to encourage the construction of large manufacturing facilities by granting corporations exclusive rights to a large timber supply and by institutionalizing "sustained yield" forestry that liquidates existing old-growth forests and replaces them with faster-growing even-aged plantations. Today, corporate-held tenures control about 85 per cent of British Columbia's public forest land, mainly in the form of TFLs and FLs. In the interests of cost-minimization, nearly 100 per cent of the logging on these corporate holdings is conducted

according to conventional forestry methods; that is, clearcutting. The success of this form of forestry is predicated on the one-time-only boon provided by the existing stock of forest wealth.

With over four-fifths of the province's forest land base locked up in corporate tenures, locally based small businesses and individuals wishing to practise ecologically responsible forestry are excluded from public lands and forced to use private land when it can be obtained.[10] Even the public woodlot program, which makes less than 1 per cent of the provincial AAC available to local people, is limited in its capacity to accommodate eco-forestry, as it is administered under the Forest Act, which promotes volume-oriented industrial forestry on all public tenures. Whether a woodlotter or a large TFL-holder, public forest tenure holders have little flexibility with regard to making decisions about the types of products to manage for, the forest practices to apply, or the cut rate to set. Thus is the AAC determined centrally by the province's chief forester under Section 7(3) of the Forest Act, whose economic objective is to "sustain timber production." Under the "log it or lose it" clause, tenure holders can be penalized for reducing the actual cut below the set AAC level.

But even if provincial objectives were changed to accommodate ecosystem-based forestry, corporations are ill-equipped to meet them. MacMillan Bloedel (MB), for example, found itself having to contend with a 75 per cent reduction in cut in Clayoquot Sound following the recommendations of the Clayoquot Sound Scientific Panel (CSSP). While the actual quality of post-CSSP logging in the Sound continues to be debated, the central problem remains less the company's compliance in the woods and more its inability to transcend the demand-dependent industrial paradigm. In 1996, MB announced that it would be unable to maintain operations and employment levels at the mandated reduced cut level and temporarily withdrew its operations. Prior to that time, the provincial Forest Renewal Program was also called upon to provide extensive financial support to displaced workers in the region. Regardless of the accommodations made in the short run, the conflicting dynamics of the industrial and ecological approaches mean that corporate forestry in British Columbia is ultimately incompatible with eco-forestry. Had the CSSP had the latitude to address the issue of land rights and tenure, it might have recommended that corporate-held tenures in Clayoquot Sound be

[10] For example, ecoforester Merv Wilkinson and the Ecoforestry Institute Society's three demonstration eco-forestry sites are on non-industrial private land owned by individuals/families.

redesigned and reallocated to integrate the region's economy within its ecological limits. Instead, the First Nations in the area were mandated to create a joint venture arrangement with MB – an arrangement that came to fruition in April 1997.[11]

In recent years, several proposals have been made to restructure tenure so as to give corporations a better opportunity to practise sustainable forestry. Most industry proposals centre on extending and expanding tenure arrangements to provide increased security that will encourage corporations to make long-term silvicultural investments (Forest Sector Strategy Committee 1995). Some proponents propose that full ownership via privatization of Crown forest land would encourage the self-interested company to protect its natural assets for the future (Haley and Luckert 1992; Pearse and Zang 1994; Binkley 1997). Although such reforms increase tenure security for corporations, they do not create the conditions necessary for ecosystem protection. This is because the limited financial interests of forest corporations encourage long-term *timber* production, which inherently conflicts with the maintenance of the multiple attributes associated with overall *forest* health.

While existing corporate tenures assign basic timber rights, ecosystem-oriented community tenures would also assign extensive stewardship responsibilities. The woodlot program, with its orientation to the local citizen, is a promising community-based tenure model. However, many of the conditions for woodlot licences set out in the Forest Act would need to be modified to make a stewardship model of woodlot forestry feasible.[12] In addition to restructuring the woodlot program, the establishment of a Community Forest Tenure (CFT) could give local, non-corporate tenure holders (municipalities, First Nations, worker-cooperatives, and community groups) the op-

[11] The Central Regional Board (CRB) was established under the Interim Measures Agreement, 1994, to coordinate all planning and management activities in Clayoquot Sound pending treaty settlement. Under the Interim Measures Extension Agreement (IMEA) the parties agree that logging will continue, in accordance with the CSSP's recommendations, the Forest Practices Code, and the Clayoquot Sound Planning Process. It also requires the Nuu-Chah-Nulth to undertake joint ventures with MB, the licensee of TFL 44. While comanagement by the CRB offers some input into planning processes and logging methods on traditional lands, it does not address tenure but, rather, focuses on logging according to the dictates of the tenure contract. It should be noted that many participants in the joint venture corporation see it as a vehicle that could lead to tenure reform by other means. See *Clayoquot Sound Interim Measures Extension Agreement* 1996.

[12] In addition to altering the AAC constraint, to make eco-forestry economically feasible the woodlot program would have to increase the size and scale of woodlots and extend the current fifteen-year tenure term so as to foster a long-term commitment to the land.

portunity to manage local forest land and, with the appropriate conditions, to manage it with the long-term health of the forest and the community in mind. Currently, the Forest Act does not provide for a CFT, but this has not deterred dozens of communities from seeking to establish community forests (Cortex Consultants Inc. 1996). While some communities, such as Malcolm Island and the Slocan Valley, have proposed the establishment of community forests based on an alternative tenure model (Silva Forest Foundation 1996), most communities are constrained by the existing legislation and so are required to apply for an FL or TFL. Under current structures, a community with an FL practises forestry no differently than does a corporation with an FL, although some of the benefits from cutting could accrue to the community.

The community of Revelstoke, for example, has operated a TFL for the past four years. It successfully retains some local revenues and employment, but actual forest practices are dictated by general legislation. Many of the directors of the Revelstoke forest corporation may be interested in "going beyond the Code," but only 20 per cent of the logging that takes place can be described as remotely "alternative." In contrast, the Slocan Valley's ecosystem-based plan would take away the control and management authority of a single licencee, while challenging the bureaucratic processes that underlie the development of existing landscape-level plans and zones. Not surprisingly, the Slocan plan, which proposes an 80 per cent reduction in cut for the whole watershed, has been dismissed by the Ministry of Forests.[13] The lesson from both those who establish "community forests" within the existing tenure system and those who seek to go beyond it is the same: the legislative framework needs reforming. Amendments to the Forest Act are essential, but better still would be an alternative process that places the community in an authoritative managerial position over local forest lands, with the ability to both allocate tenure rights and to mandate innovative practices predicated on eco-forestry (Burda et al. 1997).

[13] The completed Plan for the Slocan Valley was rejected by the Ministry of Forests on the basis that it would require fundamental changes to legislation, tenure, and the decision-making roles of the provincial and local governments. See Zirnhelt 1997.

2) Management Reform: Escaping the Bureaucratic Imperative

As part of the neoconservative insurgence in recent years, the centralist model of "command-and-control" has been increasingly under attack. In British Columbia, a critical perspective on government regulation of the forest industry is widely held whether you are a conservative free marketeer or a communitarian ecologist, a tree farm licencee or an overburdened woodlot owner. For example, the hugely bureaucratic Forest Practices Code was intended to improve forest practices but actually presents significant obstacles to an expanded woodlot program. This is due both to the high cost in time and paperwork the code imposes on the woodlot owner and to the inherent "unmanageability" it imposes on the Ministry of Forests, which would have to process the plans from numerous small-scale operations.[14] In this light, the creation of a set of alternative tenures offers the potential for rethinking the traditional approach to regulation and management.

Such a rethinking has penetrated neither the bureaucratic nor the political apparatus of the BC state. Quite the contrary, in the evolving politics of wilderness preservation and forest practices, the NDP in British Columbia embraces a command-and-control ideology that explicitly delegitimizes the consideration of any sort of alternatives. In its first term in office, environment and forest ministers told environmentalists that tenure reform was a consideration for a second term in office, thus freeing the Harcourt government to concentrate its energies on the combination of new land use zoning (parks and protected areas as well as designated "low intensity areas" for special forest management) and enhanced forest practices regulation within the existing tenure system. The latter is now seen as a complete management package within which tenure reform is unnecessary because the environmental and social objectives of alternative tenures can be met by regulated zones and practices. That such a package is inherently unworkable – because corporate forestry will resist uneconomic constraints and because centralist bureaucratic regulation will be too unwieldy – is not addressed by its proponents. The detailed character of a comprehensive community-based management regime has been considered elsewhere (Burda et al. 1997) and will not be discussed in

[14] Recent revisions to the Forest Practices Code reduced the level of planning and administration for woodlot licencees, although it is not known to what degree these changes will affect the workability of woodlots on the ground. See British Columbia 1997.

detail here.[15] Nevertheless, two new models need to be elucidated, one of which is based in private self-regulation and the other of which is based in a new locus of public control.

In the current regulatory regime, some areas of corporate forestry are already privately regulated through the Association of British Columbia Professional Foresters. This is a hierarchical form of self-regulation, with "registered professional foresters" empowered to approve forest planning within a corporate/bureaucratic planning framework. In contrast, self-regulation under eco-forestry can best be achieved by utilizing what might be called a "network" model of "horizontal regulation" applied to a range of alternative tenures such as woodlots, community forests, or First Nations forests. Such self-regulation would utilize an association of tenure-holders established on the basis of geographical networks (rather than of professional or corporate organizations) that could set broad forestry goals (such as maintaining local biodiversity or retaining forest structure and function), which each member would have to achieve in his or her own way (rather than according to rigid rules) as a condition of licensing. Eco-forestry would also shift away from time-limited tenures to performance-limited tenures, providing the tenure holder with long-term security of tenure conditional upon fulfilment of goal-oriented criteria.

Under this new regulatory model the level of oversight could be reduced dramatically, as there would be an established, successful eco-operator with a high-status licence that required a reduced level of formal management – always, however, subject to the cultural pressures and regulatory oversight of membership in a geographically oriented peer group (e.g., the North Island Woodlot Association). Overall, the intention would be to embed the regulatory function in a larger process of economic/cultural development around ecosystem-based values and institutions, the ultimate goal being the creation of a territorially based culture of sustainable self-management that depends on neither state nor market discipline to do what is right.

In addition to this new form of essentially private management, the level of state involvement can be reduced further by shifting many aspects of public regulation to the community. How an authoritative "community forest board" might operate does not require much eluci-

[15] A central element of this regime is the implementation of a Community Forest Trust Act, which would allow individual communities to opt into a transition mechanism that would ultimately move Crown forest land into a trust status, such lands to be managed according to ecosystem-based principles.

dation, as a range of variations has been well described by many commentators over the years (Slocan Valley Community Forest Management Project 1975; Hazelton 1991; Tin-Wis Coalition 1991; Pinkerton, 1993). In summary, such boards should have a clear mandate to implement ecosystem-based approaches, to possess real standard-setting and enforcement authority, to embody a structure that is both representative of community interests and democratically accountable (at least for some proportion of their composition), and to have an entitlement to a funding base that is independent of Victoria. The Central Region Board in Clayoquot Sound is as close to an operating community resource board as the province has come, but this is far from being embraced as either a model or a precedent, or from being put onto a long-term footing with its own funding base.[16]

Support for these new management approaches does not imply blindness to the possibility of local abuses. Indeed, while the central government would turn over many of its direct, detailed managerial functions to these boards, it would still set minimum standards, retain oversight and appeal powers, and provide technical support through the existing ministries of forests and environment. The overall objective is to design processes that will counterbalance hierarchical power wherever it occurs, centrally or locally. To achieve this, however, requires the "reinvention" of the state; that is, it would leave its role as a handmaiden of corporate/centralist exploitation and become a vehicle for community/territorial transformation.

Under the NDP government, possibilities for such transformation have been systematically undermined. For example, in late October 1996, the provincial government overrode a vociferous local movement to implement an "ecosystem-based plan" in the Slocan Valley (Silva Forest Foundation 1996) and, instead, issued cutting permits in community watersheds to Slocan Forest Products. These permits were issued under the rubric of implementing the local "land use plan," a characterization that highlights the larger nature of the regulatory model at stake (Land Use Coordination Office 1996). Similarly, despite the opportunities for innovation in land tenure and management offered by the First Nations treaty settlement process, the

[16] The Central Region Board (CRB), comprised of representatives from First Nations, government, and other selected members of the local community, has greater decision-making authority than does the local management body; however, it remains limited in its ability to make decisions regarding tenure allocation, planning, and revenue collection, all of which remain centralized. See Central Regional Board 1996).

only draft agreement to date – the Nisga'a Agreement-in-Principle – imposes stringent restrictions to ensure that forestry operations deviate as little as possible from the status quo. No new tenure forms are contemplated outside the settlement lands where, on the contrary, the ministry would entertain only a standard Forest Act tenure that addresses "regional timber supply needs" (Canada, British Columbia, and the Nisga'a Tribal Council 1996; Curran and M'Gonigle 1997).

3) Economic Policy:
Towards a Community Forestry Economy

The BC forest products industry is structured to produce a high volume of mostly low value-added commodity goods for export markets (Burda and Gale 1996). This well-known feature of the BC industry is not inherent to the resource itself, nor is it a necessary result of the province's proximity to the United States; rather, the commodity-export structure reflects the interaction of historic market, regulatory, and institutional policies that have supported large, publicly controlled corporate production strategies. Thus, any tenure and administrative reforms must be accompanied by a broad set of economic policies to encourage the production of high value-added timber and non-timber forest products that are sustainably produced. Given the complex network of economic relations bound up in the forest sector in British Columbia, and the high degree of economic dependence on an unecological mode of production, real reform demands a comprehensive transition strategy. Although it is not possible here to outline a complete package of those economic measures that could be taken (Burda et al. 1997), it is possible to cite two exemplary, and implementable, policies that would assist the transition to eco-forestry: competitive log markets and eco-certification.

A policy to establish a competitive log market in British Columbia contrasts with the prevailing policy of using administrative prices to value cut timber. Provincial stumpage rates have increased rapidly in the past few years, and the industry's capacity to absorb these price increases corroborates past charges by environmentalists, community groups, and the US-based Coalition for Fair Lumber Imports that, in the past, low stumpage rates constituted an effective subsidy to large corporations.[17] Thus, in its investigation into the rate of stumpage

[17] This argument is still valid, notwithstanding the industry's criticism of stumpage rate increases and the heavy losses it sustained in 1996, especially in the pulp and paper industry. The industry's commodity orientation means that it is subject to large cyclical swings in

used in British Columbia, the Forest Resources Commission (1991, 67) concluded:

> Clearly, the asset base generated through private transactions is markedly higher than the asset base generated through provincial stumpage ... In fact, private transactions produce an asset value more than four times higher than that found for stumpage. This suggests that industry is capturing a much higher value from the forests than is the government. Stumpage payments are not capturing the full value of the resource.

Recent forest policy changes in British Columbia (stumpage increases, the creation of new protected areas, the passage of the Forest Practices Code) have increased operating costs, and industry has responded by reinvesting its profits in other jurisdictions and in lobbying to reverse government policy (Hamilton 1996a/b; Gale and Burda 1997). The policy goals of the industry (lower stumpage rates, fewer protected areas, and lower standards for forestry practices) are precisely the opposite of those sought by eco-forestry advocates. In particular, promoters of community eco-forestry seek to enhance the value of timber by replacing the current system of state-administered pricing with a network of locally based, competitive log markets.

Substituting competitive log markets for stumpage ensures that the market value of the logs cut is paid. In the Vernon District, for example, a competitive log market has been running in Lumby since 1993 (Price Waterhouse 1995). The log market was established by the Ministry of Forests under the innovative leadership of Jim Smith, the manager of Vernon's Small Business Forest Enterprise Program (SBFEP). Timber cut under the SBFEP is transported to Lumby, where it is sorted into over forty different categories, depending on species, size, and quality. The large number of categories ensures that high-quality timber sells for a price premium, and the sealed bidding system offers value-added manufacturers the opportunity to purchase good-quality timber directly on the market (rather than having to seek a Category II licence under the SBFEP, another major source of timber for value-added manufacturers). The prices paid for timber at the Lumby log market are markedly higher, on average, than are those paid under the administrative pricing scheme.[18] Moreover, revenues

profit and loss. It is notable that 1995, for example, was one of the most profitable years in the industry's history.

[18] Price Waterhouse estimated that the Lumby Log market made a profit of just over $2 million after all costs of operation, including stumpage, had been paid. Stumpage rates

earned by the program flow back and help support the infrastructure required to run the log yard, with excess revenues over expenditure flowing back into the province's general account.

The log market at Lumby offers a model that could be replicated throughout British Columbia. Selling logs at local competitive markets could ensure that at least the market value of the forests is reflected in the prices paid.[19] Moreover, log markets make wood available to the highest bidder, giving value-added producers the opportunity to purchase timber on the open market. This contrasts with the present system, in which many value-added producers are effectively shut out of the market unless they can obtain a Category II licence or purchase good-quality logs directly from the mills (Select Standing Committee on Forest, Energy, Mines, and Petroleum Resources 1993).

A policy to promote competitive log sales could easily be articulated with another policy that would benefit value-added manufacturers: eco-certification. Eco-certification is a market-based instrument to enable customers to exercise their consumer preference and opt to purchase sustainably produced forest products. Existing evidence supports the contention that a proportion of consumers respond to market signals beyond those of price, quality, and availability (Ozanne and Smith 1995; Institute for Sustainable Forestry 1995). The emerging niche markets in "green" products testifies to the importance of such market claims. However, while the making of green claims is easy, their substantiation is more difficult (Read 1994). Eco-certification is a market-based tool that, when properly and rigorously applied, can guarantee that the product certified has been produced to a high ecological standard.

In the forest products industry, eco-certification could be an important market mechanism for promoting locally produced value-added products. Although there is general scepticism in the BC forest products industry concerning eco-certification (World Forest Institute 1993; Silva Forest Foundation 1996; Gale and Burda 1996),

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could have been more than doubled (from approximately $17 to $38) in this operation, and the project would still have emerged with a small profit, again illustrating the current subsidy that exists in the industry (Price Waterhouse 1995, 33).

[19] The market is, of course, a defective evaluative mechanism from a political ecology perspective because it only values those goods and services for which there is an effective demand and supply and that can be traded. Most environmental "goods" and "services" do not have a monetary value because they are not (and could not be) traded in the marketplace; thus market prices discount such non-market values.

consumer surveys reveal that, given the choice, a segment of consumers (ranging from 10 to 20 per cent) would opt to buy eco-certified forest products even if they had to pay more for them (Ozanne and Smith 1995). It is almost certain that this market segment could be substantially increased through a well-coordinated advertising and publicity campaign, especially if global trade rules were altered to permit products to be treated as "unlike" on the basis of their process and production methods (Tietje 1995; Gale 1998).

The BC government maintains a position of official neutrality in relation to the emerging eco-certification debate in Canada, which is pitting a management-systems approach created by the Canadian Standards Association (CSA) against the performance-based approach pioneered by the Forest Stewardship Council (FSC). The government is ill-disposed towards the FSC-based scheme,[20] remaining more comfortable with the CSA's Sustainable Forest Management System. The CSA scheme, developed with substantial financial and informational support from the industry, is based on sustained yield management so as to secure the continued high-level production of commodity-based timber products, and it does not stipulate specific practices on the ground. In contrast, the FSC scheme is based in an evolving paradigm of eco-forestry, and it adopts performance-based standards that have the effect of significantly reducing the volume of timber the forest can supply. In short, the CSA scheme is designed to safeguard the status quo and to develop a system of certification that protects Canada's overseas markets, while the earlier FSC scheme puts forest ecosystems first and seeks to encourage the growth of new markets that are consistent with their continued health.

Although performance-based eco-certification schemes offer a genuine opportunity for BC producers to earn a price premium for value-added products, this potential is being undermined by the reactive industry-based strategy. Notwithstanding the theoretical potential of eco-certification as a market-based instrument to promote genuine sustainable eco-forestry, in practice the proliferation of national and industry-based schemes and labels could well lead to

[20] This emerges clearly in the review of BC attitudes towards the eco-certification carried out by the World Forestry Institute. The authors of the report note, in respect to interviews with the Ministry of Forests, that "participants did not endorse the FSC's initiative. They did not feel that this initiative would be the right way for British Columbia to move towards sustainable forestry, adding that the province already has its own process in place ... The FSC's credibility was also questioned: participants did not consider the FSC's members to be important stakeholders and it was pointed out that the process has excluded the forest industries" (World Forest Institute 1993, 2).

consumer confusion and a general unwillingness to trust any claims made about a good's environmental sustainability (Gale and Burda 1997). In the forest products industry, at the very least, the FSC will be under tremendous competitive pressure from other labels and will have to develop a very sophisticated marketing strategy if it is to ensure consumer awareness and label recognition.

The establishment of competitive log markets and performance-based eco-certification are examples of two concrete policies that could facilitate the transition to a more sustainable forest-products economy in the province. Such policies would help ensure that the products that are produced from the forests are appropriately valued to more fully reflect their costs. Numerous other supporting policies can also be envisioned. These include the restructuring of tax policy, especially corporate tax policy; the use of developmental subsidies to promote value-added manufacturing; the adoption of a government procurement policy favouring FSC-certified goods; the alteration of building codes to promote increased use of sustainably produced wood in governing construction projects; the establishment of value-added advertising and marketing boards to promote BC certified forest products locally, regionally, and globally; the establishment of a provincial investment fund for new, community-based businesses producing ecologically sound forest products; the facilitation of new forms of business organization (such as workers' cooperatives) that might hold new tenures or own new production businesses; and the provision of a range of new education and training facilities (Johnson 1995; Gale 1998). In short, therefore, a government committed to eco-forestry could adopt a range of economic policies in order to create incentives to practise eco-forestry in the province. The problem is clearly not the absence of relevant and feasible policies but, rather, the absence of what is popularly termed "political will."

CONCLUSION: BEYOND THE STATE(US) QUO

Talk of a transformation to community-based eco-forestry clearly appeals to environmentalists. But the potential constituency is much larger. If it is elaborated with the full participation of First Nations, progressive labour and community leaders, woodlot owners, value-added manufacturers, non-timber small business owners, and social justice groups, then it holds the promise of meeting an array of interests seeking to safeguard cultural values, stabilize communities,

and create meaningful livelihoods. Even though community forestry offers an integrative solution to the "war in the woods" (Burda et al. 1997), the continuing struggle between civil society and the corporate sector prevents this from happening. Throughout British Columbia, forest-dependent communities are held hostage by their over-reliance on a single corporate employer who, in turn, is driven by the international marketplace to downsize or relocate when supplies run short or rates of return fall below the industry average. From the experience with Evans Forest Products in Golden to Skeena Cellulose in northeastern British Columbia, more and more communities are experiencing the vulnerability that results from this, while the industries turn to the province for more timber, more financial assistance, and fewer controls.[21] In responding to these crises, the lack of cooperation between workers, First Nations, environmentalists, small-scale foresters, municipal groups, and others impedes the ability of civil society to create a new path.

In such circumstances, people look to the state as the public institution that should reconcile differences, mediate interests, and provide solutions. This model of the state is grounded, consciously or not, in a pluralist conception of liberal democracy, the essence of which is not the search for a common purpose but the recognition "that within Western democracies, power is fragmented and dispersed among a wide variety of interest groups" (Stasiulis 1988, 224). The limits of this incrementalist conception have been clearly revealed with the terms in office of a "progressive" NDP government dedicated, from its inception, to ending the war in the woods. Its approach to forest policy reform has been designed to placate specific interests without disturbing the fundamental compromise between industry, labour, and the state over the sharing of resources flowing from British Columbia's forests. Yet, from their inception, even these reforms were continuously attacked by corporations, labour, and "scientific" foresters, resulting in the rollback of some of the hard-won, if marginal, gains. In short, the state in British Columbia has, notwithstanding its control by a "progressive" political party, found itself structurally constrained to support the corporate status quo against the initiatives for progressive change.

[21] The problems of over-reliance on a single industry and a single corporation, which always appear as "new" problems, are, in fact, part of a constant refrain in the history of forestry in British Columbia. For a historical analysis of the decline of the Cowichan Lake Timber Industry, and the role played by large corporations in its demise, see Rajala 1993.

In place of liberal pluralism, a critical perspective reveals that the state in a market-based society can only be, at most, relatively autonomous from the sphere of production (Stasiulis 1988; Carnoy 1984). The inability of the NDP to introduce transformative policies to the forest products industry is unsurprising, therefore, given how heavily implicated it is in all aspects of the forest industry. This would be the case even if it were less programatically committed to "statist" solutions to public policy problems than it is. In recognition of the BC state's structural inability to act autonomously, progressive forces within civil society are shifting away from a state-based lobbying strategy to a civil society-based strategy of protest and direct action. Here, however, one lesson from the past must be heeded – a lesson that identifies the limitations of single-issue campaigns organized by single-issue groups. To achieve sustainable forestry, progressive civil society organizations must work together to strengthen their movement's cohesion and its capacity to cooperate directly in transforming the structures and institutions of production. Conservation of biodiversity must be linked to economic transformation, and economic transformation must be linked to community and cultural revitalization. To do this, a stronger, broader, reinvigorated social movement is required – one that, drawing on a new range of interests and alliances in pursuit of the territorial alternative of community sustainability and development, has the capacity to successfully challenge the entrenched forces of centralist power.

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COMMENTARY

PATRICIA MARCHAK

That the forestry tenure system needs to be replaced is undeniable. Every interest group from corporate leaders to grassroots speakers agrees that the system is up for renovation. But of course there is no agreement on how it should be changed. The Victoria University team – Burda, Gale, and M'Gonigle – articulates one school of thought and does so with considerable panache and conviction.

There are three arguments in their presentation. One is that the entire system operates, and has always operated, as a handmaiden of industrial forestry. The second is that forestry should be based solely on ecosystem criteria. The third is that management should be handed over to communities operating within a Trust Act and subject to agreements about conservation. The communities would become not only the custodians, but also the reapers of stumpage.

The relationship between forestry companies and governments is embedded in the policy of granting long-term logging rights (tenures) to companies that build mills and employ workers. The policy was recommended by the two Sloan Commission reports (1945, 1957) and firmly entrenched during the massive expansion of forestry between the 1940s and late 1970s. Huge mills were installed and single-industry company towns were established. Governments became dependent on the companies their policy favoured.

The Forest Act is still embedded in that policy. Explicit in it are conditions for granting tenures and Allowable Annual Cuts (AACs) on the basis of political policies, economic interests, and social needs, with only an occasional nod in the direction of ecological limits. The mills have vastly greater capacity to manufacture the resource than either the resource or markets can sustain, but the government is so dependent on the companies that, like the sorcerer's apprentice, it can't stop the machinery.

The theory of "sustained yield" that accompanied the Sloan recommendations yielded nothing sustainable. Some areas were left without reforestation. Nature, stymied by silted streams, impacted soil, scarred mountainsides, subtly changed micro-climates, and much else that followed massive clearcuts, did not gently accept the task of regeneration. Elsewhere, publicly funded companies and contractors to government planted seedlings but spent too little time nurturing a new forest. Only in the mid-1980s did governments – with the

federal government kicking in a large part of the funding – begin to take reforestation seriously.

Even at that, reforestation in the language of industrial forestry actually means the planting of only commercially valued species. Industrial forests lack the biodiversity and multi-layered canopies of real forests. Also, these second-growth trees yield considerably less, and lower-quality, fibre than do old-growth forests, so even if these forest practices were acceptable on other grounds, they cannot support industrial forestry on its present scale.

Ecosystem-based forestry, by contrast, means very selective forestry designed to preserve biodiversity, attention to what remains even more than to what is culled, and scientific studies of how much can be extracted without destroying the forest. It is a very different way of using forest resources, and it would spell the end of the mass-extraction, mass-production timber-based industry that has characterized British Columbia for the better part of this century. The Scientific Panel on Clayoquot Sound provided the model, and the panel argued that to maintain the ecosystems of British Columbia's forests it would be necessary to undertake scientific studies of every watershed, and sometimes even stands within them, to determine how many trees could be safely extracted.[1]

So the Victoria team has strong backing for this argument. I think they are right to insist that ecosystem-based forestry is the only way we can sustain what remains of mature forests in this province. We cannot continue with the farce called "sustained yield."

There are other reasons for abandoning industrial forestry in the old mould. Despite all the noise to the contrary, the industry has had declining employment per unit of wood for most of the postwar period; and since 1980, there has been an absolute decline in employment in the three central industries of logging, sawmills, and pulp mills, even while production was increasing throughout the 1980s.[2] The reasons for this are technological: labour-intensive production is no longer necessary. Since the rationale for massive clearcuts was to provide employment and stable communities, the employment trends oblige us to reconsider the policy.

[1] Scientific Panel for Sustainable Forest Practices in Clayoquot Sound, 1995, *Sustainable Ecosystem Management in Clayoquot Sound: Planning and Practices, Report 5*. Victoria: Cortex Consultants.

[2] Between 1980 and 1995, there was an absolute decline of 5.6 thousand employees, or 23 per cent, in logging; 6.7 thousand workers, or 18.8 per cent, in sawmills; 3.6 thousand workers, or 18.7 per cent, in pulp and paper mills (Statistics Canada, *Canadian Forestry Statistics* and the CANSIM database, series SFL959).

Production, now, is gradually declining from the peaks of the 1980s, in part because of supply deficiencies. The forest has been dramatically overcut even by the estimates of the extremely conservative and industry-oriented Ministry of Forests.[3] In addition, market demand is not what it once was. The Canada/US lumber agreement has reduced lumber exports; the Asian market collapse has limited pulp and lumber exports; and much cheaper pulp is now on the market from fast-growing plantation regions of the southern United States, Brazil, and other warm climates.[4] Most of the big companies in British Columbia posted losses this year, and they have not been robust for a very long time.

This situation spells a reduction in stumpage fees for the provincial government. But it is not a drastic situation by any stretch of the imagination. Forestry used to command over 10 per cent of British Columbia's labour; now, it commands maybe 5 per cent. Other industries are more important. Secondary industries that use wood (but much less of it) in higher-value operations are also growing. With the reforms of the Forest Practices Code in place, there are more service jobs in the woods than ever before. These jobs will remain, whether we move to genuine ecosystem-based forestry or not: what is on the way out is industrial production jobs that used to be the backbone of the provincial economy.

So with the gradual decline of industrial forestry, and the beginning of new ways of utilizing, valuing, and living in forests, who should be in charge of the resource? The Victoria team argues a strong case for communities. They have recommended a contract that would bind communities to take care of the forests in return for collection and allocation of rents. It is a nice idea, and it would quite possibly work in three or four communities in British Columbia: in the Slocan Valley, in the Nisga'a territories of the Nass Valley and Hazelton, maybe in Nelson. These are communities that are fairly cohesive and stable, and they have traditionally concerned themselves with the nearby forests.

But there are real defects in the proposal. Not all rural communities are stable, cohesive, interested in forests, or likely to be willing

[3] See for examples, BC Ministry of Forests, 1998 "AAC listing by Timber Supply Areas and Region," Timber Supply Branch, February, website: http://www.for.gov.bc.ca/tsb/other/tsa.htm, and other publications that provide details by region and company of "falldown" (also known as overcut) data. Falldown in Ministry terms means the gap between what is currently being logged and what can be "sustainably" logged.

[4] M.P. Marchak, *Logging the Globe* (Montreal: McGill-Queen's University Press, 1995).

custodians of ecosystem-based forestry (some, quite the contrary). Communities are not always discrete entities, moreover, and watershed management might require the coordination and agreement between many small communities whose economic outcomes could differ.

We have to face the facts that some forests are too far gone to reap economic benefits in the foreseeable future, even with careful management, and that non-timber, economically rewarding resources from temperate coniferous forests are not plentiful. A few communities could mount eco-tourism operations or sustain small businesses in furniture-making, oils and resins, floral materials, and mushrooms. But there are many communities and few real opportunities for these enterprises (mushrooms, for example, are already traded within an oligopolistic market: there is no guarantee that newcomers would find a way in).

In any event, substituting one form of single-type control (communities) for another (industrial corporations) is probably unwise. What we need is diversity of contracts: some for non-timber products, some for eco-tourism; some held by (much smaller) companies practising ecosystem forestry, some held by small businesses making furniture, and so on. The benefits of the forest should be widely dispersed, and that, then, returns us to the question of who should retain ownership and exercise ultimate control.

When governments (whether provincial or municipal) discover the benefits of reaping rents from forests, they tend to forget their long-term stewardship obligations. There is a conflict of interest involved in giving communities control of ecology and rents at the same time. It is the same conflict that provincial governments have experienced for the past century: and we know how they have chosen to live with it!

I suspect, on the basis of human history no less, that no government will give up control of a resource if it provides economic returns. And I suspect that no government will exercise genuine ecological stewardship as long as it gets economic benefits by ignoring the stewardship role. Governments think in terms of four years: stewardship pays off in terms of centuries. For the same reason, corporations will not act as forest stewards: why should they replant when the trees will not reach commercial size in the lifetimes of the planters?

Perhaps the answer is to oblige governments to play the stewardship role fully by being absolutely constrained to plough back every rental fee into forest (genuine forest, not plantation) renewal. But this would

work only if governments were (1) supervised and accountable and (2) rewarded for stewarding rather than for spending. The first condition can be achieved easily. We make governments more accountable by creating auditors and ombudspersons who have the power of publicity. A standing committee of "forest auditors" that includes appropriate ecologists would play the parallel role to financial auditors. The second condition would have to be contrived at first, but eventually there would be more understanding of the need for long-term stewardship.

Another possibility is to divert industrial forestry away from mature forests. Already, in fact, companies are creating hardwood plantations, some on Vancouver Island, more of them in the Northern Interior. These are agricultural crops rather than artificial forests. They have the defects of plantations everywhere: they need copious quantities of fertilizers; they may deplete the water table; they probably affect the atmospheric temperature; and they are monocultures, with all the disease and pest problems that all monocultures involve. On the other hand, their establishment on land that has no higher value (and is not forested) might provide a reasonable substitute. They could be privately owned lands: no need for public ownership of agricultural crops and no rationale for stumpage. This may be the lesser of two evils: either destroy the mature forest or accept the risks of current agricultural practices.

The most attractive possibility is that this province move away as rapidly as possible from forestry-based industry. There is room for the non-timber activities, but other communities will need many alternative, non-wood-based jobs: that is what the leaders of this province must focus on, must help to develop. If in future we spend as much energy developing conservation-based industries as we now spend debating and fighting about forestry, then we will reduce the forest labour force to 1 per cent and create more stable communities along the way.

There is now solid evidence that remedial conservation activities create a net increase in jobs relative to job losses due to increased environmental standards and regulations.[5] These jobs are in such areas as water management and wastewater treatment, waste management, air pollution control, noise control, contaminated land remediation, and the like. Once such developments are in place, new jobs in the

[5] Organization for Economic Co-operation and Development, *Environmental Policies and Employment* (Paris: OECD, 1997).

private sector will follow. There are also jobs being created elsewhere in large communications networks, and various transport and energy networks, consciously designed to meet both employment and environmental objectives.[6]

Governments around the world are coping with shifts from resource-based and steel-based industries to telecommunications and service-based industries. One blushes to note that Alberta has shot ahead of British Columbia in manufacturing: it has attracted more of the telecommunications industries and even produces more furniture. It is surely time for this province to accept the fact that industrial forestry is not where its future lies and to get on with the task of establishing new economic opportunities.

COMMENTARY

MICHAEL CHURCH

"Eco-Forestry Versus the State(us) Quo" is a polemical statement. It presents caricatures of "industrial forestry" and "eco-forestry" in order to argue that the rules by which the former game is played must be altered radically if we are to salvage the qualities of either the society or the forest landscape of British Columbia in any desirable form. Caricatures command attention when there are significant elements of truth lurking within them. That certainly seems to be the case with industrial forestry. I am less certain of the concept of eco-forestry, particularly when it is yoked to "community interest," as it is here.

A significant problem with most caricatures is that they tend to be static. They do not inform us well about the history that brought about the circumstances they highlight, so they may not be very helpful in finding the way ahead.

It is pointed out that the BC forest industry operates in a global market while attempting to maximize returns on investment. Increasingly, this means using technology to increase production while minimizing labour participation. And it invariably seems to mean outstripping resource supply. The authors refer to this as "British Columbia's industrial strategy." It sounds to me a lot more like a general description of late twentieth-century capitalism, the hallmarks of which are aggressive globalization of industrial and commercial

[6] OECD, *Environmental Policies*, Ch. 4

activity, and the manipulation of labour both by moving production facilities internationally and by technological innovation. The question that this situation raises is to what extent it is possible to reform the relations between society and the landscape in British Columbia without incurring substantial penalties upon the former in terms of access to markets, to capital resources, to trade – in short, to those economic mechanisms that sustain the standard of living here today.

An interesting element of the present social and economic organization of British Columbia – tied as it is to external institutions and organizations – is its largely homegrown origin. The stateless industrial giants that control our forest industry grew mainly out of locally established companies. When they became sufficiently large, either they projected their activities onto the global trading stage or they were taken over by major corporations from elsewhere. The latter are interested in gaining access to BC resources in order to bolster their international position. Today, we have a substantial number of "second-rank" companies, also homegrown, apparently following the same evolutionary pathway. What forces drive this evolution?

Leaving aside the institutionalized incentives to encourage growth and accumulation, an important element is simply the growth of the society. Until recently, the growth of the BC forest industry tolerably mirrored the growth of the BC population. Governments, at least, appear to regard exploitation of the forest as one sure way to guarantee jobs. It is a remarkably short-sighted attitude, but it is neither surprising nor particularly Machiavellian. Nor is it by any means purely a preoccupation of government, as one can find out in any upcountry bar. The temptation will surely continue. British Columbia remains – despite the apparent destruction of our landscape – one of the last, best places on the planet, so immigration will continue apace. The urge to find jobs for a constantly growing populace will continue throughout the next century. In these terms we seem almost certain to outstrip resource supplies. Whether it is forestry or agriculture, urban land conversion, or the targeted appropriation of more localized resource commodities, a universal consequence of population growth is the division of ecosystems, the reduction or disappearance of certain resources, and the reconstruction of landscapes. Some of the world's most attractive landscapes, and some of its most productive, are almost entirely human creations that have been entirely stripped of primeval forests. So are some of its least attractive and least productive. The continuing reconstruction of the BC landscape, including the modi-

fication of its forests, seems to me to be a certainty: we need to study the history of how we got to where we are in order to try to understand how to guide the further redevelopment of the landscape. Dean Binkley's proposals for the "zonation" of the BC forests are the outcome of such an exercise.

Assertions about productivity and attractiveness – as in the last paragraph – are human judgements. So, it seems to me, are assertions about the superior quality of natural landscapes that underlie the concept of "eco-forestry" promoted in the essay. Such assertions are relatively new in the dialogue about the relation between society and the landscape – at least within the dominant, European society here. They were not dominant fifty years ago and scarcely existed at the beginning of the century. The notion of sustained yield forestry that was forcefully advocated in this province by Mr. Justice Sloan was a European idea rooted in mercantilism and state-directed corporatism. It certainly anticipated dramatic modification of the forests. The notion of "sustainability" – at least as promulgated in our society today – is also a predominantly European idea (perhaps it is better today to refer to it as an "amphiatlantic" idea) that appears to have as much to do with stabilizing societies and economies as it has to do with the landscape. However, in North American debates, it has become attached to the notion of preserving the current landscape, or even reconstructing naturalistic landscapes that have been more or less severely modified.

These observations lead me to wonder whether community control of the forests would necessarily lead to their preservation or improve their management at all. I expect it would in some places, though it might not lead to an "eco-forestry" model of forest husbandry. And I expect that it would not in many others. I can see no reason why some communities would not decide, entirely rationally within the constraints of likely economic conditions, to liquidate the forest resource, invest (or consume) the proceeds, and turn the land base to some other production. I see no essential connection (as is assumed in the essay) between wise stewardship of the land and the necessary preservation of the forest landscape. I guess that many communities that accepted and acted on such a suggestion might face a substantial reduction in living standard. The local forest resource base might simply be inadequate to sustain standards that have been realized.

All of which appears to fly disgracefully in the face of the science that I practise. (I am a physical geographer, and I have taken a sub-

stantial interest in the forest landscapes of British Columbia.) What I learn from my science, and from the larger field of what is fashionably called "landscape ecology," is that there are no permanent values or features in the landscape. At all scales of space and time, change is characteristic. A task that landscape scientists have set themselves is to understand this flux. Today, the presence and activities of humans plainly comprise the most significant agency forcing change on the face of the Earth, and the pace is very strongly forced because human numbers and human needs are expanding dramatically. This is the real root of concern about the industrial remaking of the Earth's surface. It behooves us to understand the wellsprings of that expansion, both in terms of the effects of humans upon ecosystems and in terms of the social and philosophical reasons for them. The latter is not a scientific issue.

The essay contrasts two forms of human organization that exploit the landscape. It implies that an approach rooted in ideas of community sustainability (amplified to include the natural ecosystem around the community) must be inherently superior to an approach based on a globally integrated, competitive, corporate economy dedicated to maximizing resource production in evident disregard for the welfare of local communities. The judgement is rooted in acceptance of the notion that, in order to sustain communites, sustaining the extant natural (or semi-natural) ecosystem must be an overriding concern. Hence, the promotion of "eco-forestry." But this notion is a long way from what science can confidently assert, faced both with the inevitability of change and with the handiwork of past societies. In the end, the essay sounds to me much more like an argument about social justice, pitched in terms of who should have access to the resources of the land and on what conditions. I do not think it demonstrates either that a transformation of the economic system will guarantee ecological sustainability (meaning, here, sustaining naturalistic forests) or that the achievement of ecological sustainability will assure the security of the society. To achieve either of these ends, we need to think well beyond the apposition of two caricatures of forest management. To sustain the forests of British Columbia – if that is the socially agreed-upon goal – we need to reduce dramatically our day-to-day reliance on their economic value.

REPLY

CHERI BURDA, FRED GALE, AND MICHAEL M'GONIGLE

It is not often that authors get an opportunity to try to answer some of the inevitable criticisms and reactions that their writing will generate – before it is even published. So it is with considerable gratitude that we respond to two very interesting, and divergent, commentaries on our essay.

Perhaps it is important to note that the perspectives of Patrica Marchak and Michael Church are as much in contrast with each other as either of them is with our analysis. Marchak's argument is, in particular, close in overall approach to ours; Church's is fundamentally at odds with ours. Interestingly, however, while we are looking for ways that the forest economy of British Columbia might indeed be sustained, both of our commentators think that the solution to sustainability in the forests is to leave that economy behind. As we discuss below, this is perhaps our major point of collective difference.

Church begins by suggesting that our analysis is based on "caricatures" of industrial forestry and eco-forestry. While there are certainly shades of difference, we see these as Weberian "ideal types" that highlight the existence of a spectrum, with short-term economic objectives at one (industrial) end and long-term social ecological interests at the other (community) end. In this regard, the juxtaposition of ecological/communitarian institutions is not the abstraction or artificial construct that he suggests. Indeed, this fall the Eco-Research Chair at the University of Victoria is hosting a Pacific Rim workshop of community-based eco-foresters from over twenty countries – from Indonesia to Oregon to Chile – as part of the growing worldwide movement to restructure land rights in favour of communities.

But Church is certainly correct in pointing out that our analysis of British Columbia's corporate forest strategy is a symptom of a larger ailment – one that arises from the more general structures of late twentieth-century capitalism. The problems that British Columbia is experiencing in its forests are being replicated in all forests around the world – tropical, temperate, and boreal. Conflicts over sustainability are also common to other resource sectors – notably, conflict over fisheries management, agricultural practices, energy development, and mining.

Solutions to the problems identified in British Colubmia, consequently, go far beyond a simple strategy for the province's forest

industry. What is required is a shift in our production and consumption patterns from a higher to a lower physical-throughput economy that places significantly fewer demands on the natural environment. At issue here is the level of consumption of physical goods and not, as Church asserts, "a continuously growing populace."

Any industrial strategy that takes sustainability seriously (for any resource or industry) must address that fundamental ecological reality. As we are witnessing in all too many sectors, our high level of consumption of physical goods is having a profound environmental impact (e.g., declining biodiversity, global warming, fisheries depletion, increases in persistent organic pollutants, ozone depletion) and is not, as Church seems to imply, merely a matter of social preference or taste. The real difficulty, however, is not that we do not recognize that reality but that we deliberately and systematically ignore it because it is not in our own short-term interest to take it seriously. Consequently, political and bureaucratic leaders of every persuasion, ever dependent on the flow of taxes and wealth generated by short-sighted economic development formulas, encourage us to ridicule sensible policies that do not emerge out of a narrow calculus of our own self-interest.

Marchak summarizes the communitarian thrust of our piece very well in her introduction. Historically, the developmentalist state has overridden local opposition to resource extraction in the interests of the "greater good," the latter invariably aligned with the interests of urban, corporate capital. The story of oil in Arabia, furs in Canada, and forests in Penang is the same story. But Marchak implies that our solution in British Columbia is to create a single form of community forest tenure (rather than a "diversity of contracts") when our specific ambition is to create a new context for all forms of tenure.

At stake more generally, however, is the historical role of the developmental state, in which power is centralized in a Crown whose prime objective is the exploitation of natural resources in order to improve private and public welfare. The objective itself is not wrongheaded, but the policies and practices through which it is currently being achieved certainly are. Our own long-term survival is being jeopardized by our own short-term approach. What is required, therefore, is a new social contract that puts in place the ecological state as a facilitator of a genuine eco-development, not its opponent.

The policies of such an ecological state are impossible to specify precisely in advance of its being instituted, and clearly compromises

will have to be made with powerful political economic forces within BC civil society if it is to be instituted. In general, however, one could envisage fiscal, regulatory, and institutional policies that alter the tax structure, transform production processes, and devolve management responsibilities to the most appropriate level. While certainly not all responsibilities would be vested locally (important oversight powers being retained centrally), there is a solid ecological logic in giving BC communities more power and more responsibility with regard to the management of their own resources, particularly where the consequences of (mis)management are most acutely experienced.

Both authors note the difficulties in bringing about the ecological state. In order to achieve such a transformation, a new hegemony needs to be created – one that appeals to those social forces interested in husbanding nature, securing sustainable and clean production, and structuring a political system that is constitutionally oriented to this task. To Church, any such transformation will be "uneconomic"; to Marchak, it will be "unrealistic." And both are right if we view the goal through the ideas and practices of the day. So what do we do?

Confronted by the need for deep structural change in the face of the continued domination of economism, the keys to success are threefold. First, as academics we need to continue to investigate and to develop the idea of a feasible ecological political economy that will "deliver the goods" in a practical sense while ensuring that the ecosystems upon which such delivery is predicated are maintained and, where necessary, restored. This goal requires, in part, the transformation of academia itself, where past practices of hiving off the natural sciences from the social sciences within a reductionist framework work against the development of the more integrative, wholistic approach required of an ecological age. Given their training, we should not be surprised that our engineers, chemists, physicists, and biologists adopt an exclusively instrumental approach to nature, ignoring the complexities of ecosystem structures and processes.

Second, we must actively await and, if possible, anticipate opportunities to increase public awareness of the fundamental intersections between our current ecological crises and the existing systems of power and production. Thus, continued and heightened activism is required of those actors who presently exist at the fringes of organized power (e.g., social movements, disenfranchised communities, non-traditional businesses) in drawing attention to the costs of existing practices and in creatively exploring alternatives. In the forestry sector,

this is the critical contribution of the growing worldwide movement of ecosystem-based forest practitioners and community activists.

Third is the actual creation of alternative ecological paths to production, exchange, and the good life. Church points to a dramatic decrease in our quality of life if economic throughput slows down. This is simply not true, providing only that we distinguish between economic activity (measured in terms of GNP and GNP per capita) and the physical throughput of resources. Our current patterns of production and consumption, especially in the OECD countries, are incredibly wasteful, inequitable, and involve massive transformations of physical resources in order to produce all manner of goods and services (including waste), many of which are inessential and cosmetic. Our car-based culture, for example, is incredibly wasteful, requiring a massive throughput of physical resources with large uncounted costs to environmental and social sustainability. The functions that the car performs, moreover, can be rendered more effectively in many cases through the provision of better public transport systems and more effective communications infrastructure.

As Church notes, change is a constant and we must learn to live with it. But that does not mean being a victim of change, passively sitting on our hands while external forces reshape the conditions of life around us. Indeed, most of us never simply observe the unfolding of events, especially when they are producing consequences that negatively affect ourselves, our families, and our communities. For many today, environmental protection and restoration are critical issues that require some significant level of restructuring of our existing systems of production, exchange, and consumption. Legitimate disagreement exists over the direction and depth of that restructuring. While the prudent course of action in such circumstances is to avoid hubris and to adopt an attitude permissive of social experimentation, unfortunately the sad fact of BC politics is that only a posture of confrontation is understood.

With the existing configuration of social power – the triad of state, corporation, and union – working actively to preclude more ecologically oriented alternatives (as the sad case of the Slocan Valley reveals), continued struggle is inevitable. While it is ultimately a historical question as to whether or not British Columbia's resource communities can be mobilized to fight for greater control over their ecosystems, in the short term it is fundamentally a political and economic one. Our essay aims to demonstrate that, under a necessary

double movement of management devolution and the creation of an ecological ethos, there is a coalition to be forged between communities and environmentalists in the pursuit of sustainable forest use. In putting forward such an analysis, we are not ourselves sitting on our hands. We are not only observing the world, we are seeking to change it. This is "all we can manage: more than we could."