

# Tomorrow challenges Pacific Coast foresters

**A background paper for the  
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The program for the 1971 CIF Convention in Victoria is designed to contribute to the nation-wide search for some new ground rules for forest management. The most productive way to explore the general pressures on land-use decisions is to have a real set of forces and limits defined. The emphasis on the British Columbia region is to do just that — put some bounds on a problem or two for meaningful discussion. Most of the issues in the region west of the Rockies have national significance in themselves and represent problems common to other regions.

This paper will hopefully provide a useful background to discussions. A major effort at projection of future trends is not feasible here. Historic statistics of the industry and its trade, and of forest management expenditures in B.C. are readily available from the Dominion Bureau of Statistics, the Council of Forest Industries of B.C., and the B.C. Forest Service.

Some of the most frequent questions about British Columbia Forestry concern our ways and means of allocating forest to the forest industry. It is hard to find a unified published description of these critical systems, and of the forces that brought them into being. My intention here is to review briefly developments along this public-forest private-industry frontier as a background to the broader problems now appearing. Opinions expressed are mine.

## Forest resources allocation

**Public ownership.** The most significant factor up to the present time started when "the administration of 1905 nailed its colors to the mast"; its motto was "public ownership of the forests" (Sloan 1957, p. 30). The passage of the Forest Act in 1912 and the founding of the B. C. Forest Service marked the official beginning of public forest management.

The placing of forest lands in public trust was far from universal in appeal (neither in B.C. nor elsewhere in North America where the same conservationist forces were at work). Arguments for the abolition of these public monopolies have been heard for over half a century.

At the Forestry Commission Hearing in 1956, Dr. C. D. Orchard, Chief Forester of the B.C. Forest Service, (Sloan 1957, p. 60) testified: "If we were just looking for the greatest benefit for the most people over the longest period of time, I think that we should dispose of one-half of our land into private ownership, and the rest of it into forest management licences" (i.e. public land which is privately managed under contract).

The general intent of increasing competition in land markets was in line with the "delivered" theory of economics, even if the number of superlatives was too great. Dr. Orchard did not think his sugges-

tion of land sales was politically feasible (p. 60), and the indications to date are that he was correct in this assessment.

The Chief Forester's dilemma over efficient forest use in 1956 was a good example of a continuing tug-of-war working on B.C. forest managers. Conservation objectives would be best served by public control, but free competitive markets would be the most efficient, equitable means of resource allocation. The two are of course not incompatible, but some of our crude attempts at grafting them together are showing signs of failure. A large measure of our difficulty lies in generally inadequate models of how **either** institution actually behaves, or should behave according to its goals, or even, in what the goals of each are.

***If further outright sale of public lands is out of the question (except to farmers?), what allocative mechanism replaces the price of land, and what criteria does it use? (One can claim "public welfare", but surely some closer definition is necessary.)***

**The post-war years.** According to the available information in 1945, the accessible forests of B.C. were being mined under public administration. Two main policy initiatives were recommended to reorganize forestry tenure into units of sustained yield (Sloan 1945):

a/ The establishment of Forest Management Licences (FML) that would be privately managed on a sustained yield basis but remain in public ownership. These large, long-term licences would include contiguous tenures already held by the licensee, and thus many older tenures would be brought under sustained yield management.

This FML system was intended to recruit the organizational and innovative talents of large forest corporations to help meet (and hold down) long-run social costs of forestry on public lands. The companies' own interests were also served by the surety of wood supply that the FML provided. The public landowner would bear up to 50% of forestry costs when stumpage was above minimum limits.

b/ the establishment of Public Working Circles (PWC) in geographical subregions, where the sustained yield concept could be defined and managed in detail. Timber from these PWC areas was to be open for competitive auction via Timber Sales.

The extensive forests of the interior offered the major opportunity for expansion within the sustained yield framework. A wide-ranging industrial shift into the interior, started during the war, accelerated to a rush in 1945. The more accessible forest areas of the interior (i.e., close to the existing railways) were rapidly opened up to timber sales.

In spite of the post-war expansion at the extensive margin of forest production in B.C., intensive pressures continued to mount in crowded parts of the coastal region, and soon began to develop in the more accessible areas of the interior. Cut-throat competition in public timber auctions became a major issue in the 1956 Sloan Commission Hearings.

There was much discussion and general disagreement about the extent and severity of collusion, blackmail, speculation, and other malfunctions of some local public-timber markets (Sloan 1957, p. 161-67). In some subregions of the coast and the interior, established and incoming capacity in the industry exceeded timber supply under current knowledge and a sustained yield constraint.

***How do we compare proposed additions to the forest industry? What are the relative costs and benefits of the same integrated mill complex north of Prince George supported by opening new areas of forest, and on the south coast supported by more intensive forestry?***

Sloan concluded that further expansion into unexploited areas would relieve these pressure points (p. 167). Suggestions that the BCFS should allocate long-term cutting rights in Public Working Circles to established operators in each region were strongly opposed (p. 187, 191) by the Chief Forester. Sloan was less categorically opposed, but did not see any real necessity for such planned allocation of PWC timber. He recognized that:

"... the questions in issue involved not only matters relating to pure forestry, but complex problems lying in wider fields, embracing far-reaching social and economic implications. Many of these issues brought into focus a conflict between those who favored a controlled economy and others who desired a continuation of the free enterprise system." (Sloan 1957, p. 185).

Further Forest Management Licences were, however, advocated in 1956 and these large grants created regional monopolies rather than free enterprise in forestry. This monopoly element was roundly attacked in 1947, when the enacting legislation was introduced, and again in the Commission Hearings in 1956. (See, for example, Sloan 1957, p. 63-64). Commissioner Sloan was not convinced that competitive allocation of all timber rights was essential to socially efficient operation of the B.C. forestry sector. He felt that increasing the degree of manufacture of forest products in B.C. would require large, sophisticated firms.

***What are the implications of new federal policies on competition for the wide variety of province-industry wood supply monopolies? Are there any other elements of forest product marketing that may be affected?***

Sloan recognized the important relationship between stability in raw material supply and complex industrial planning. Heavy capital investments in pulp mills did not flow automatically to B.C. to take advantage of low-cost sawmill wastes, without a stabilizing element in their wood supply. The bulk of FML's<sup>1</sup> was granted to large integrated producers

<sup>1</sup>After a name change to Tree Farm Licence (TFL) about twenty additional licences were granted. Today, after some consolidation, there are 34 TFL's covering 22.5 million acres of B.C., of which 10.2 million acres are productive forest land (about 30% of coast forest land; 3% of interior).

of lumber, plywood, and pulp, as this type of industry structure was held to offer dynamic economies of scale.

This economic debate at the forestry hearings of 1956 suffered from the normal difficulties of defining the economic structures being defended or attacked. There was a paucity of testimony by economists (Pearse 1967). Much of the rhetoric for or against various freedoms or controls could be more easily interpreted in terms of the timber position of the spokesman than in terms of socio-economic philosophy. No doubt the anti-planning (anti-Stalin) reaction of the 1950's was a significant factor.

***"To plan or not to plan" is no longer the question, but how adequately are we addressing its successor: "how to plan"?***

Commissioner Sloan recognized that local timber markets in B.C. were not all effectively competitive in 1956. Some were in competitive turmoil; some were perhaps too comfortable for efficiency. He still felt, as in 1945, that a policy of licencing procedures in each region would be advantageous. However, such official allocation of Public Working Circle timber to selected conversion plants would confront the Forest Service and the government with a task that they were not prepared to handle (Sloan 1957, p. 190).

Sloan (1957, p. 191) envisaged in 1945 that such allocation might be accomplished through "... a powerful Forest Commission, free from trammelling influences, political or otherwise ... (and) not that the Government itself or the Forest Service should be faced with such harsh and politically distasteful decisions." Without such an independent commission, Sloan agreed with Dr. Orchard, the Chief Forester, that controlled allocation of Timber Sales would be completely impracticable.

Sloan most likely overestimated the degree of independence that would be feasible or desirable for such a commission. The commission's decisions would be socio-political in their effect, and quite rightly should be made in that arena. However, the Commissioner did realize the need for the best possible economic and social information in such a planning system (Sloan 1957, p. 90, 92).

***Do the current forestry agencies in B.C. have the structure and staff to adequately identify local and world demands on public forest resources?***

**Public private planning in the 1960's.** No planning commission with decision power, or economic council for advisory purposes has yet been established in the provincial forestry sector. But, the past decade has seen a continuous series of public policy initiatives to control the allocation of timber on Public Working Circles (now called Public Sustained Yield Units, PSYU or SYU). These changes have developed incrementally, on a trial and error basis, with industry used as a sounding board for each new regulation or policy. One of the main developments has been the gradual legitimization of

"quota", or long term cutting rights, affixed to timber sales.

An objective of improving the structure of the independent segment of the industry was involved from an early stage. It was hoped that stability of wood supply could attract capital to independent logging and sawmilling as well as to integrated pulp development. With future cutting rights affixed as a tradeable part of Timber Sales, small loggers and millers could merge or sell out to each other to create a viable timber source for a larger, more efficient operation. (See Fig. 1.)

As seen by the Deputy Minister of Forests:

"(These were) the birth pains of sustained-yield forestry . . . after seventeen years of going from one crisis to another, the Department, with the backing of the Government is pleased with the progress made to date in stabilizing the wood supply of the industry and in shifting more of the log scale from the Coast to the Interior." (McKee 1963, p. 2).

**Bilateral conflict, cooperation and trading games (i.e. with only two players) are easier to understand and monitor than multi-dimensional versions. But what if they don't adequately represent the real forces at work on a particular forestry problem?**

Once the broad constraint of resource preservation had been established and institutionalized by the sustained yield framework, reduction of waste in B.C. logging operations became a major goal of

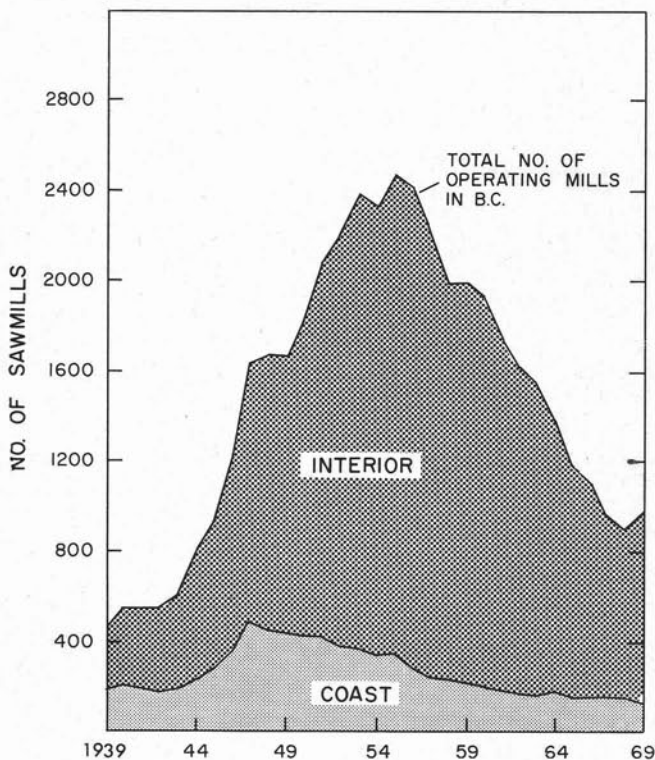


Fig. 1. The BC Forest Service record of the number of sawmills in BC over the past thirty years shows the drastic changes in structure which have occurred in this industry. Production rose rapidly in the post-war years with small mills increasing in number. Production continued to grow at nearly 5% per year over the past fifteen years, while the number of mills rapidly declined.

public forest policy. Surveys showed that closer utilization could greatly expand the allowable cut (B.C. Forest Service 1957). Utilization of lower grade wood necessarily involved further development of pulp production in B.C., particularly in the Interior where there had been no pulp development until the 1960's.

The Public forest administration launched a new forest tenure in 1961, the Pulpwood Harvesting Area (PHA).

In a Pulpwood Harvesting Area, optional cutting rights were allocated to a pulp company for salvageable wood not normally utilized by the sawmill economy. This might include: tops, decay-stained logs, damaged or down trees, logs below sawmill standard, non-sawn species, decadent or non-sawn stands, or stands not at sawmill standard but at the defined rotation age. Each PHA could cover one or more Sustained Yield Unit. The allowable sawlog cut (according to current definitions) was normally already allocated on these units, to independent logger-sawmillers. Thus, the PHA was an "overlay" tenure to give a pulp company a wood base within such a region. Many sawmills joined or were absorbed by pulp companies, thus forming integrated multi-product firms in the interior similar to those on the coast.

Apparently a real constraint to pulp development was alleviated by the PHA tenure; they induced an unprecedented rush of pulp mills to the interior of B.C.<sup>2</sup>

In total, the early 1960's saw in the B.C. forestry sector one of the largest surges of timber allocations in world forest history. Applications, hearings, and allocations ensued to 1965, sometimes at gold-rush speed.

Gradually, the forest administration has become more specific about its **Close Utilization** policy, as physical and economic limits are defined for each region and stand type. Close utilization wood, or salvage wood, was priced at a low rate to encourage harvesting of the extra volume. Another incentive for the operator to take out the optional Close Utilization Timber Sale was provided by an affixed increase in his allowable annual cut. Up to one-third additional volume would be allowed annually on a Timber Sale which applied for or converted to the Close Utilization basis.

**Does intensive clean up of each logged acre offer the best socio-economic opportunity for increased returns from forestry this year? When? What alternatives are considered?**

At this same time (latter half of the 1960's), a second decade of improved inventory and growth studies, over most of the Sustained Yield Units of the province, was coming to fruition. Re-calculation of allowable annual cuts using new volume and growth information revealed a significant "new" and uncommitted forest resource.

<sup>2</sup>Hardwick (1963) noted the role played by an evolving perception of world softwood scarcity in accelerating the speculative rush to tie up B.C. reserves (p. 77). See B.C. Hydro and Power Authority (1966) for a catalogue of this pulp expansion.

A new concept of **maximum utilization** was introduced, to administer the "considerable volume of unallocated wood, over and above the intermediate utilization plus one-third . . ." which was already allocated (Williston 1969, p. 7; see also Williston 1968).

A separate allocation system is still evolving to administer this unallocated balance, which has been named "third band" wood. The tenure being used — the Timber Sale Harvesting Licence (TSHL) — will involve certain forest management responsibilities; that is, private management of public lands as in the Tree Farm Licences. The public may share in the forestry costs through stumpage rebate, as in TFL's. The operator will obtain benefits, such as "consolidation of operation, reduction of carrying charges, the allowance for longer range planning, etc." (Williston 1969, p. 5).

The maximum utilization policy places the public forest administration of B.C. squarely into a position towards which it has been moving for two decades — that of direct economic planning of the future of the regional forestry sector. Resource pricing, product-mix and industry structure are being directly manipulated through a technically controlled allocation system for forest resources.

**A price established in a competitive market is an efficient allocative mechanism. What about a price established in a notably imperfect market?**

The original broad goals of sustained yield, community stability, and more full employment of wood resources are gradually being met, or at least appear feasible under the merging industry structures. The new maximum utilization goals go a step further; they aim to deliberately maximize benefits from regional forest industry production. But many problems remain. Though the public forest administration, and the industry, firmly committed the forest sector to a public-private planning approach to resource allocation, some of the important conditions usually held to be necessary for long-term success with such a system have not been fulfilled in B.C. (Nagle 1970).

**Are goals of socio-economic stability and full employment impossible to measure? Why don't we establish firm targets in these areas for the forestry sector?**

**The Forest**

At 216,000 square miles, the productive forest land of B.C. (95% owned by the Province) exceeds the area of commercial forest in the eleven western states (U.S. Forest Service 1965). The mature softwood volume in B.C. (261 billion cu ft (B.C. Forest Service 1969) is nearly as great as the mature plus immature volume of the same eleven states. B.C. has over half of Canadian softwood reserves, on less than one quarter of the forest land of Canada (Forest Economics Research Institute 1970).

Planned allocation of this resource is indeed a significant task. Yet it would be unfair to foster the

impression that activities already described, aimed at carving up the pie into sustained yield blocks, were the only ones pursued in Pacific Coast forestry since 1945. Fire prevention and control has improved in quantum jumps; reforestation effort has been greatly increased; forestry research has been set on a new footing through federal-provincial-industry cooperation. Many of the foresters most closely involved would argue that progress has not been fast enough, but progress has been real.

The forest was not being run down over-all; in fact, current allowable cut has only been achieved in the Vancouver Forest District (Fig. 2). Of course these gross figures conceal many problems. For example, some species are still being overcut; this may bring future problems. Although the ultimate **extensive margin** to the North has not been reached, several subregions besides the South Coast are in the position of needing liquid capital investment in forestry to increase (sustain?) present levels of cut. The state of the backlog of poorly-stocked logged lands is not well defined, but the area is significant<sup>3</sup>. Nonetheless, by the late 1960's some real investment choices for intensive forestry in B.C. were being more tightly defined than ever before.

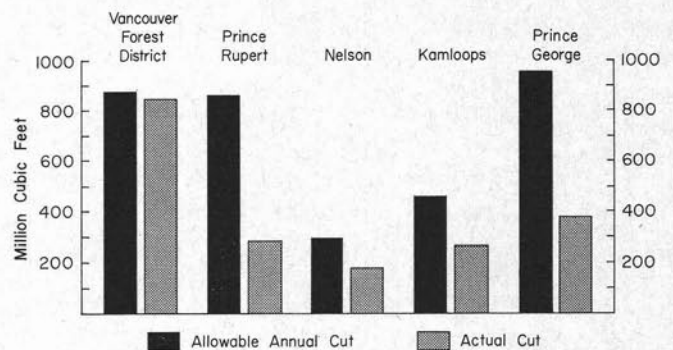


Fig. 2. Sustained yield allowable cut and actual cut by forest district in 1970. (BC Forest Service calculation for all forest lands outside parks.)

**Is the public at large able to comprehend the complexity of reforestation issues? Have we presented them clearly and honestly?**

**The industry and the economy**

The forest industry has been the "engine of growth" in the B.C. economy for over ten decades, and there are few signs that it will be displaced in the 1970's<sup>4</sup>. Indications of a faster rate of growth in recreation and tourism (see Fig. 3, for example) are significant. However, at the moment, I am unconvinced that the economic and other values of

<sup>3</sup>The area of insufficiently restocked land plus land covered with non-commercial cover, over the whole province, is greater than the area of mature forest left in any of the southern forest districts — Vancouver, Kamloops, Nelson (B.C. Forest Service 1969).

<sup>4</sup>B.C. forest industry output in 1970: 1,932 million cu ft of logs; 7,967 million fbm of lumber; 1,731 million sq ft 3/8 inch of plywood; 1.3 million squares of shingles 4.5 million ADT of pulp and 1.8 million ADT of paper (Council of Forest Industries of B.C. 1970). Total sales value was \$1.7 billion (DBS).

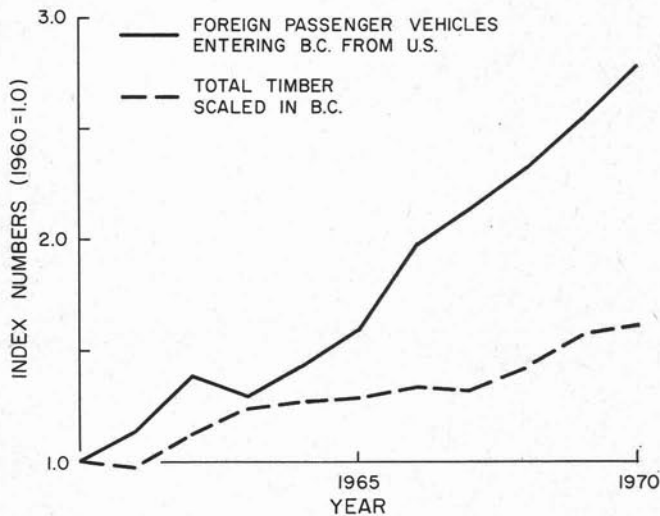


Fig. 3. Good measures of the growth in recreation and tourism sectors of the economy are hard to find. Indexes of tourist entry into B.C. and of total timber scale over the past decade indicate a more rapid rate of growth in the tourism industry. (DBS and BC Economics and Statistics Branch.)

recreation can replace resource and manufacturing industries at the base of a regional economy.

In B.C., the forest industries produced nearly half of the value added in manufacture every year of the sixties. They generated 75-95% of the capital investment and repair expenditure in B.C. manufacturing in the same period. By comparison, in Ontario the forest industries accounted for about 8% of value added in manufacture, and 9-10% of manufacturing capital and repair expenditure (DBS). Since 1965, forest products have averaged about 9% of total Ontario export sales value; in B.C., this proportion has remained close to 60%.

Only a few geo-political regions of the world are so dependent on a particular commodity line, and most of these are underdeveloped regions or countries. The prosperity this specialization has brought to B.C. in the past is a function of increasing world demand for softwood products, set against relatively inelastic world supply of these products. Zivnuska (1967) has foreseen a continuation of high world demand for B.C. softwood reserves but B.C. forest economists pray a lot.

Something over 80% of the value of output of the B.C. forest industry comes from firms that have achieved the most important economies of scale in their industry. The Council of Forest Industries of B.C. can speak with a relatively unified voice for most of the industry. Market promotion has been its major role, but it must deal with a broadening range of public-private issues (see Council of Forest Industries of B.C. 1970). These industry structures give the region a comparative advantage over most other forestry regions for effective planning. Yet many of the problems facing the industry exceed the capacity of the association, or any but the largest firm (for example, the development and marketing of new wood product building systems). Much of the industry, though in large units, is in the form of branch plants of foreign firms. This complicates regional approaches to research and development, for example. New forms of public-private

planning will be required to meet the challenges of the seventies. A region like B.C. cannot tolerate a technology gap between forest products and other materials.

**How well do we understand the economies and diseconomies of scale in forest-based production? Are we getting the anticipated benefit of increased research and development, in our large forest companies? Have our present organizations surpassed optimum "human" scale?**

### The 1970's

Perhaps the only certainty is that the relatively simple days of bilateral industry-forest service decision-making are over. The environmental and recreation issues arising over historic forestry operations are getting much attention at the moment. The heat of the current controversy over the prime forest of the Nitinat Lake area (a wilderness park proposal overlying a Tree Farm Licence) is symptomatic of a late, startled reaction by the forestry sector to a foreseeable event.

Many equally thorny economic issues will have to be grasped firmly in the seventies. Foreign ownership and control of the forest industry will not be made to disappear by wishful thinking or rhetoric on either side of the argument. Consumerism is on the rise; this may well be the ultimate test for the industry—to be face-to-face with the desires of real customers rather than with some intermediate link of a tangled chain. The pricing policies of all industries are under review in the weird light of an inflationary recession. Labor relations in the industry have been reaching for new lows.

Yet, the potential remains great. Increasing the degree of manufacture of forest products in the province could increase greatly economic benefits without increased timber harvest. The location economics of such manufacture, and tariffs, have been a historic block for B.C. Technology and negotiations have changed these "economics" for other industries and, I believe, have a prospect of success in forest products. Sound arguments for this manufacturing development (or for further commodity development) will have to be presented to the many B.C. residents who feel that the economy of B.C. is already too dependent on forest products. They would rather see diversification given top priority.

Some of the most conspicuous problems of our society relate to land use in and around our cities. Some of the accessible forest lands of the South Coast (and other regions) already have real estate values far exceeding their forest productivity values.

**What do city dwellers' demands for second homes, or for at least a few weeks of rural living each year, imply for forest land use planning? Will these demands go away if only we ignore them? Is there a manageable, profitable opportunity in them?**

Across the forestry slate, improved planning is needed. "How?" is the relevant question. Great in-

creases in central powers are not required. I suspect that less central power, more effectively coordinated, could do a better job. The main characteristics of improved public-private planning in forestry would involve getting more explicit about:

- the design of information systems, and decision-making structures which would clarify the effects of land-use policies and broaden the representation of non-forestry interests.
- the estimation of future developments as a basis for policy decisions (with relatively less reliance on past developments).
- the formulation of the aims of the policy (with less incidental reaction).
- coordinated action by public agencies and firms (with less random action).

A key element in most successful planning systems today is some kind of a model of the system. Experience with forest planning models is increasing (Wardle 1971). A useful mathematical formulation of the B.C. forestry sector (in segments) need not be too sophisticated. Any notion that "technical-economic standards of coordination . . . constitute the whole planning, mistakes the point of departure for the destination." (Chamberlain 1965, p. 143). Equally mistaken is any notion that even the most representative planning committee can effectively guide a complex social system without some basic model of how it works.

A structure of interdepartmental committees headed by the ministerial Environment and Land Use Committee is now evolving within the provincial administration. This should improve the representation of different provincial interests in major forest land-use decisions. The new federal Department of

the Environment should unify federal approaches to renewable resource problems. As yet, neither level of government nor the private sector have developed adequate models of the socio-economic effects of rural land use decisions. Heavy reliance is placed on biophysical information systems such as forest inventories, land capability surveys and wildlife counts. All of these are known to be improvable, and are being improved, but to paraphrase Gerry Burch: "those trees don't have any problems — it's those people that have problems!"

People don't know what they want? Tell THEM that — they seem to have a fair idea. Different people want different things from the forest? Exactly. They also think that they are paying managers and researchers to clarify **total** demands on forest resources, assess available supplies, identify resulting issues and conflicts, and reduce these to decision form. But they won't necessarily accept all the stone tablets handed down without question. They will be particularly hard on the anyway-will-do-as-long-as-it's-my-way approach which has too often crept into forest land-use discussions in the past. They will be less and less easy on decision-by-default, where lack of formulation of alternatives protects existing practices.

Everyone in forestry now knows that hard questions spring out of various publics at an unprecedented rate these days. What will be the questioning rate by 1980? Will DBS be publishing a Consumer Dislike Index for each industry? Overly-simple beauty contests can be poor indicators of total merit, as the women's lib movement already knows. But the forestry sector has been living too long with an even simpler approach to its image: "mirror, mirror, on the wall . . ."

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